TABLE OF CONTENTS

CALENDAR OF ACADEMIC DATES 3

PEOPLE AT UNB:

- Board of Governors 2004-2005 8
- Fredericton Senate 2004-2005 9
- Saint John Senate 2004-2005 10
- Officers of the University 11
- Deans of Faculties 11
- Emeritus Honorees 12
- Allan P. Stuart Excellence in Teaching Award Recipients 13
- Associated Alumni 14

SECTION A:
HISTORICAL SKETCH 15-18

SECTION B:
ADMISSION REQUIREMENTS AND UNIVERSITY REGULATIONS

- See Section B - Table of Contents 19

SECTION C:
FINANCIAL INFORMATION

- Fee Payment Information 50
- UNB Fredericton Undergraduate Tuition and Student Fees 51-52
- UNB Fredericton Residence Fees 53-55
- UNB Saint John Undergraduate Tuition and Student Fees 56-57
- UNB Saint John Residence Fees 57
- Governmental Student Loans 57
- Notes to Fees Tables 58
- Regulations for Payment of University Fees 59
- University Refund Policy 59
- Regulations for the Payment of Residence Fees 59
- Estimate of Costs 60

SCHOLARSHIPS, PRIZES & AWARDS

- Regulations and General Information 61
- Scholarships Open to High School Students 63-69
- Scholarships Open to High School & UNB Continuing Students 69-76
- Scholarships Open to UNB Continuing Students 76-95
- Prizes and Awards 95-111
- Scholarships for Part-time Students 111-112
- Scholarships Administered by Outside Agencies 112-117
- Loans 117-118

SECTION D:
ACCOMODATION, FACILITIES & SERVICES

- Accommodations 119
- Aboriginal Student Services and Programs 122
- Associated Alumni 122
- Athletics 122
- Awards Office (Undergraduate) 123
- Bank 123
- Bookstores 123
- Campus Ministry 124
- Childcare Services 124
- Continuing Education and Programs for Part-Time Students 124
- Counselling Services 125
- Employment Services 126
- English Language Programme 126
- Faculty Advisors 127
- Financial Aid 127
- Fine Arts 127
- Food Services 128
- Graduate Studies 128
- Health Insurance, Student 129
- Health Services 129
- Information Centres 129
- Integrated Technology Services 130
- International Student Advisor/CIDA Coordinator/Canadian Student Exchanges 130
- Libraries 131
- Lost and Found Items 132
- Math Help and Writing Centre 132
- Museums and Collections 132
- Post Office 132
- Research Centres 133
- Security and Traffic 133
- Sexual Harassment Policy 134
- Spring and Summer Sessions 133
- Student Affairs and Services 134
- Student Centres 135
- Students with Disabilities, Services For 135

SECTION E:
SAINT JOHN ACADEMIC PROGRAMS

- General Information 136
- Bachelor Of Applied Management 137
  - Accounting 139
  - Electronic Commerce 139
  - Hospitality And Tourism 140

- **Bachelor Of Arts** 141
  - Biology Major 143
  - Cognitive Neuroscience 143
  - Comparative Literature 144
  - Criminal Justice Minor 144
  - Economics 145
  - Education 145
  - English 146
  - French 148
  - Gender Studies 149
  - History 150
  - Information And Communication Studies 151
  - International Development Studies Minor 152
  - International Studies 152
  - Law In Society 153
  - Linguistics Minor 153
  - Mathematics And Statistics 154
  - Philosophy 154
  - Politics 155
  - Psychology 155
  - Psychosocial Dimensions Of Sport Minor 156
  - Sociology 156
  - Sport And Exercise Psychology 157
- **Bachelor Of Business Administration** 158
  - BBA Co-op Option 164
  - Business Administration Certificates 166
  - Certificate in Accounting 167
  - Certificate in Electronic Commerce 167
  - Certificate in Human Resource Management 168
- **Bachelor of Computer Science** 168
  - Certificate in Computing 170
- **Bachelor of Data Analysis** 171
  - Certificate in Data Analysis 172
- **Bachelor of Health Sciences** 173
- **Bachelor Of Nursing Degree** 173
- **Bachelor Of Science** 175
  - Biology Option 177
  - Environmental Biology Option 177
  - Marine Biology Option 177
  - Chemistry Option 177
  - Geology Option 178
  - General Science Option 178
  - Mathematics Option 178
  - Certificate in Mathematics of Teachers 179
  - Mathematics And Economics Options 179
  - Physics Option 179
  - Psychology Option 179
  - Biology-Psychology Option 180
  - Statistics Option 180
  - Interdepartmental Programs 180
  - Pre-Professional Programs in Science 181
- **Bachelor Of Science In Engineering** 181

SECTION F:
SAINT JOHN COURSE DESCRIPTIONS

- Standard Course Abbreviations 184
- Biology 185
- Biology-Psychology 189
- Business Administration 189
- Chemical Engineering 197
- Chemistry 198
- Civil Engineering 201
- Classics And Ancient History 201
- Computer Engineering 202
- Computer Science 202
- Data Analysis 206
- Economics 207
- Education 209
- Electrical Engineering 210
- English 211
- French 214
- Forensic Science 218
- Gender Studies 218
- Geography 218
- Geology 219
- German 220
- Greek 220
- Health Sciences 220
- History 221
- History & English Joint Honours Program 220
- Hospitality And Tourism 226
- Humanities 227
- Information And Communication Studies 228
- International Studies 228
- Kinesiology 229
- Latin 230
- Linguistics 230
- Mathematics 230
- Mechanical Engineering 232
- Nursing 233
- Philosophy 235
- Physics 237
- Politics 237
- Psychology 240
- Science 243
- Social Sciences 244
- Sociology 244
- Spanish 246
- Statistics 247
- Surveying Engineering 248
- World Literature 248

SECTION G: FREDERICTON PROGRAMS

- General Information 249
- Bachelor Of Arts 250
  - Anthropology 253
  - Classics And Ancient History 254
  - Culture & Language Studies 256
    - German 256
    - German Studies 257
    - Liinguistics 258
    - Russian And Eurasian Studies 259
    - Spanish And Latin American Cultures 260
    - World Literature And Culture Studies 261
  - Economics 262
  - English 266
  - Fine Arts 268
  - French 269
  - History 272
  - International Development Studies 273
  - Law In Society 274
  - Multimedia Studies 275
  - Philosophy 277
  - Political Science 278
  - Psychology 280
  - Sociology 282
  - Women's Studies 283
  - Concurrent Degree Programs 284
  - Certificate In Family Violence Issues 286
  - Certificate In Film Production 286
  - Certificate Of Proficiency In French 287
  - Arts And Law 287
- Bachelor Of Applied Arts (Craft And Design) 287
- Bachelor Of Business Administration 288
  - Certificate Programs 289
  - Concurrent BA/BEd Program 295
- Bachelor of Computer Science 296
  - Concurrent Degree Programs 300
  - Certificate In Computer Telephony Integration 301
  - Certificate In Software Development 301
- Bachelor Of Education 302
  - Bridging Year Progam 311
  - Certificate In Adult Education 311
  - Certificate In French Immersion Teaching 311
  - Certificate in Teaching English as a Second Language 311
  - Diploma In Advanced Undergraduate Study 312
- Environmental Studies Programs 312
- Bachelor of Integrated Studies 313
- Bachelor Of Laws 315
- Bachelor Of Nursing 315
  - Certificate In Critical Care 318
  - Certificate In Holistic Care 318
  - Certificate In Mental Health Nursing 319
- Bachelor Of Philosophy In Interdisciplinary Leadership (Renaissance College) 319
- Bachelor Of Recreation And Sports Studies 321
  - Concurrent BRSS/BEd Program 323
- Bachelor Of Science 324
  - Biology Option 326
  - Chemistry Option 329
  - Environmental Biology Option 331
  - Environmental Geochemistry Option 332
  - Geology Option 332
  - Mathematics & Statistics Option 334
  - Physics Option 337
  - Psychology Option 339
  - Interdepartmental Programs 340
  - Pre-Professional Programs 343
  - Concurrent Degrees 343
- Bachelor of Medical Laboratory Science 345
- Bachelor Of Science In Engineering 345
  - Chemical Engineering 347
  - Civil Engineering 350
  - Computer Engineering 352
  - Electrical Engineering 354
  - Geological Engineering 356
  - Geomatics Engineering 358
  - Mechanical Engineering 361
    - Diploma in Technology Management and Entrepreneurship 364
- Bachelor Of Science in Forest Engineering 365
- Bachelor Of Science in Foresty 367
- Bachelor Of Science In Kinesiology 371
  - Concurrent BScKIN/BEd Program 373
- Bachelor Of Science In Software Engineering 374

SECTION H:
FREDERICTON COURSE DESCRIPTIONS

- Standard Course Abbreviations 377
- Aboriginal Studies 378
- Anthropology 379
- Applied Science 383
- Arts 383
- Astronomy 383
- Biology 384
- Bridging Year For Aboriginal Students 389
- Business Administration 390
- Chemical Engineering 397
- Chemistry 401
- Chinese 404
- Civil Engineering 404
- Classics And Ancient History 408
- Computer Engineering 411
- Computer Science 412
- Economics 416
- Education 421
- Electrical Engineering 432
- Engineering 434
- English 435
- Environmental Studies 439
- Family Violence Issues 440
- Fine Arts 441
- Forest Engineering 442
- Forestry 444
- French 449
- French Linguistics 453
- Geodesy & Geomatics Engineering 455
- Geography 458
- Geological Engineering 458
- Geology 459
- German And German Studies 462
- Greek 464
- History 464
- International Development Studies 477
- Japanese 477
- Kinesiology 478
- Latin 483
- Law 483
- Law In Society 483
- Linguistics 483
- Mathematics 484
- Mechanical Engineering 488
- Multimedia Studies 493
- Nursing 495
- Philosophy 500
- Physics 502
- Political Science 506
- Psychology 512
- Recreation And Sports Studies 516
- Renaissance College 520
- Russian 522
- Russian And Eurasian Studies 522
- Science 523
- Sociology 523
- Software Engineering 528
- Spanish And Latin American Cultures 529
- Statistics 531
- Technology Management and Entrepreneurship 533
- Women's Studies 534
- World Literature And Culture Studies 535

Important Notices

This Calendar is printed some months before the year for which it is intended to provide guidance, and students are advised that matters dealt with in it are under continuing review and revision. The content of this Calendar is subject to change without notice, and every student accepted for registration in the University shall be deemed to have agreed to any such deletion, revision or addition whether made before or after said acceptance.

The University will make every reasonable effort to offer courses as required within programs. Prospective students should note that admission to a degree or other program does not guarantee admission to any given course except those specified as required within that program. Students should select elective courses so as to ensure that courses are taken at the most appropriate time within their schedule.

The University of New Brunswick does not accept any responsibility for loss or damage suffered or incurred by any student as a result of suspension or termination of services, courses or classes caused by reason of strikes, lockouts, riots, weather, damage to university property or for any other cause beyond the reasonable control of the University of New Brunswick.

The University of New Brunswick Undergraduate Calendar is available in electronic form on our website:
www.unb.ca/calendar/undergraduate/

Inquiries regarding academic matters should be directed to the Office of the Registrar

Fredericton Campus
2nd Floor, Sir Howard Douglas Hall
University of New Brunswick
Fredericton, New Brunswick, E3B 5A3
Telephone: (506) 453-4864 Fax: (506) 453-5016
E-mail: registrar@unb.ca

Saint John Campus
Room 141, Philip W. Oland Hall
University of New Brunswick
Saint John, New Brunswick, E2L 4L5
Telephone: (506) 648-5670 Fax: (506) 648-5691
E-mail: sjreg@unbsj.ca

Errors and omissions are the responsiblity of the editor.

UNIVERSITY OF NEW BRUNSWICK
Calendar of Academic Dates, 2005-2006

NOTE: The dates shown below apply to undergraduate programs. They do not necessarily apply to the School of Graduate Studies, the Faculty of Law, or to courses offered through the College of Extended Learning. Students in other programs should consult the appropriate calendar or brochure.

July, 2005	Thursday	01	• Canada Day - University Holiday - no classes *.
	Monday	04	• UNB Fredericton Summer Session begins.
	Saturday	09	• UNB Fredericton On-Campus Early Registration for New Students
August, 2005	Monday	01	• New Brunswick Day. University Holiday - no classes *.
	Wednesday	10	• UNB Fredericton Summer Session ends.
	Thursday - Friday	11-12	• UNB Fredericton Summer Session Examination Period.
September, 2005	Friday	02	• Residence opens fior new and returning students
	Monday	05	• Labour Day. University Holiday - no classes *.
	Tuesday-Wednesday	06-07	• Academic Programming and Orientation week. Details to be announced.
	Tuesday	06	• Start of NURS classes for 2md, 3rd and 4th Year Nursing students; UNB Fredericton, Bathurst & Moncton • Academic Orientation for 1st Year Nursing students, UNB Fredericton, Bathurst & Moncton
	Wednesday	07	• Start of NURS classes for 1st Year Nursing students, UNB Fredericton, Bathurst and Moncton
	Thursday	08	• Start of classes. Both Campuses. • Last day for payment of appropriate University fees.
	Tuesday	20	• Last day for adding Fall term and full-year courses. Fall term and full year courses dropped up to and including this date are not shown on the academic transcript
	Friday	23	• Last Day to opt-out of Health and Dental Plan. • Last Day to opt-out of International Health Insurance.
October, 2005	Monday	10	• Thanksgiving Day. University Holiday - no classes *.
	Thursday	20	• Fall Convocation - Fredericton Campus.
	Friday	21	• Fall Convocation - Saint John Campus.
	Monday	24	• Last day to withdraw from Fall term courses with pro-rated refund. *(see University Refund Policy, Section C).*
November, 2005	Thursday	03	• Last day to withdraw from Fall term courses without academic penalty (no refund). A grade of "W" (Withdrawn) will be shown on the academic transcript.
	Friday	11	• Remembrance Day. University Holiday - no classes *.
	Friday	19	• Last day in Fall term to hold class tests. (see regulations on Examination, Standings and Promotion, - Section B, Item VII. A.7.)
December, 2005	Wednesday	07	• Last day of classes.
	Thursday	08	• Reading period.
	Friday	09	• First day of Examinations.
	Wednesday	21	• Last day of Examinations.
January, 2006	Wednesday	04	• Start of classes - Winter term.
	Friday	13	• Last day for payment of Winter term fees for new students. • Last day for payment of University fees for full-time students paying by installments.
	Friday	20	• Last Day to opt-out of Student Union Health and Dental Plan for those students who enrolled in January 2006. • Last Day to opt-out of International Health Insurance for those students who enrolled in January 2006.
	Tuesday	17	• Last day for adding Winter term courses. Winter term courses dropped up to and including this date are not shown on the academic transcript. • Last day to withdraw from full-year courses without academic penalty. A notation of "W" (Withdrawn) will be shown on the academic transcript. *(see University Refund Policy).*
February, 2006	Friday	24	• Last day to withdraw from Winter term courses with pro-rated refund *(see University Refund Policy, Section C).*
March, 2006	Monday	06	• Last day to withdraw from Winter term courses without academic penalty (no refund).
	Monday-Friday	06-10	• Winter Term Break. No classes.
	Monday	13	• Academic Advising and Registration for continuing students begins for UNB Fredericton. Details to be announced by Faculties.
	Thursday	23	• Last day in Winter term to hold class tests (*see regulations on Examination, Standings and Promotion, - Section B, Item VII. A.7.)*
April, 2006	Thursday	06	• Last day of classes.
	Friday	07	• Reading Period.
	Saturday	08	• First day of Examinations.
	Friday-Monday	14-17	• Easter. University Holiday - no classes *.
	Monday	24	• Last day of Examinations.
May, 2006	Monday	01	• UNB Fredericton Intersession begins.
	Wednesday-Thursday	17-18	• The One Hundred and Seventy-Seventh Encaenia - Fredericton Campus.
	Friday	19	• The Thirty-Second Spring Convocation - Saint John Campus. • Last Day to opt-out of International Health Insurance for Intersession or Spring Session
	Monday	22	• Victoria Day. University Holiday - no classes *.
May-July, 2006			• UNB Saint John Spring Session. Details to be Announced.
June, 2006	Saturday	03	• UNB Fredericton On-Campus Early Registration for New Students. Dates and details to be announced for UNB Saint John On-Campus Early Registration for New Students
	Friday	16	• UNB Fredericton Intersession Ends.
	Monday-Wednesday	19-21	• UNB Fredericton Intersession Examination Period.
July, 2006	Saturday	01	• UNB Fredericton Summer Session begins.
	Monday	03	• Canada Day - University Holiday - No classes*.
	Friday	22	• Last day to opt-out of International Health Insurance for Summer Session.
August, 2006	Monday	07	• New Brunswick Day. University Holiday - no classes *.
	Wednesday	09	• UNB Fredericton Summer Session classes end.
	Thursday-Friday	10-11	• UNB Fredericton Summer Session examinations.

* Except for essential operations, most university offices will be closed on the dates indicated as "University Holiday". Essential functions, for example, Security, Heating Plant and the Residences will be staffed and operational. Physical Plant will have staff on call should they be needed. A few departments and facilities such as the libraries, computer labs, Financial Services, Registrar's Offices may offer some services on certain holidays. Those wishing to use such services on any holiday are advised to check with the specific department about operations for that day.

Teaching days: Fall Term 2005 - 63; Winter Term 2006 - 62

THE UNIVERSITY OF NEW BRUNSWICK
BOARD OF GOVERNORS, 2004-2005

EX OFFICIO MEMBERS

Chancellor:
Richard J. Currie, OC, MBA, LLD, PEng

President and Vice-Chancellor:
John D. McLaughlin, BScE, MScE, PhD, PEng

Vice-President Fredericton (Academic):
Angelo N. Belcastro, BA, BPE, MSc, PhD

Vice-President (Finance and Corporate Services):
Daniel V. Murray, BComm, CA

Vice-President (Research):
Gregory S. Kealey, BA, MA, PhD, FRSC, FRHistS

Vice-President(Saint John):
Kathryn E. Hamer, BA, MA, PhD

Mayor of Fredericton:
His Worship Brad Woodside

Mayor of Saint John:
His Worship Norm McFarlane

Director of Alumni Affairs:
Mark Hazlett, BPE, MPE

MEMBERS APPOINTED BY THE LIEUTENANT-GOVERNOR-IN-COUNCIL

- George C. Estey, BS, MBA, Toronto, Ont.
- R. Roxanne Fairweather, BA, Saint John, N.B.
- J. Robert Howie Q.C., P.C., BA, LLB, Fredericton, N.B
- John S. Little, BSc (Honours), PhD, DSc, Linville, N.C.
- Kathryn McCain, BA, Toronto, Ont.
- Nancy McFadyen, BA, Toronto, Ont.
- David O'Brien Q.C., BBA, LLB, MScBA, Florenceville, N.B.
- Georges Roy, BScEng, PEng, Edmundston, N.B.
- David Stevenson, BBA, CA, FCA, Moncton, N.B. **(VICE-CHAIR)**

MEMBERS APPOINTED BY THE BOARD OF GOVERNORS

- Brian E.H. Baxter, BA, Moncton, N.B.
- David A. Ganong, BBA, MBA, St. Stephen, N.B. **(CHAIR)**
- Pauline Lordon, BA, BEd, Miramichi, N.B.
- Anne-Marie McGrath, BA, BEd, MEd, Saint John, N.B.
- G. Wayne Squibb, BA, Toronto, Ont.

MEMBERS ELECTED BY ALUMNI AND ALUMNAE

- Andy Devereaux, BScEE, BA, DLITT, MA, Beverly, MA
- Margie Gregg, BA, Fredericton, N.B.
- Sally McAllister, BA, BEd, Fredericton, N.B.
- Bonnie Murray, BA, Fredericton, N.B.
- Richard Scott Q.C., BBA, LLB, Fredericton, N.B.

MEMBERS ELECTED BY THE FACULTY

Fredericton Campus
- Barry G. Bisson, BScE, MScE, MBA, PEng
- Thomas Kuttner, BA, MA, LLB, LLM
- Constantine Passaris, BA, MA, PhD
- Will van den Hoonaard, BA, MA, PhD

Saint John Campus
- Roberta Clark, RN (Dip), BN, MN
- Debra Lindsay, BA, MA, PhD,

MEMBERS ELECTED BY THE STUDENT BODY

Fredericton Campus
- Greg W. LeBlanc, Mazerolle Settlement, N.B.
- Nicholas A.G. Ouellett, Hatfield Point, N.B

Saint John Campus
- Trevor L. Richard, Quispamsis, N.B.

MEMBER ELECTED BY THE NEW BRUNSWICK TEACHERS' ASSOCIATION

- Frank Brian Bawn, BEd, MEd, PhD, Fredericton, N.B.

GOVERNORS EMERITI

- Thomas J. Condon, BA, MA, PhD, Saint John, N.B
- M. Louise Lynch, QC, BCL, LLD, DCL, Ottawa, Ont.
- M. Patrick Gillin, BSc, BScE, DSc, Ottawa, Ont.
- Reginald E. Tweeddale, BEng, DSc, PEng, Fredericton, N.B

SECRETARY

- Stephen Strople, BA, MA

FREDERICTON SENATE
2004-2005

EX-OFFICIO MEMBERS

The President, J. D. McLaughlin, BScE, MScE, PhD, PEng

Vice-President Fredericton (Academic),
A. N. Belcastro, BA, BPE, MSc, PhD

Vice-President (Finance & Corporate Services),
D. V. Murray, BComm, CA

Vice-President (Research), G. S. Kealey, BA, MA, PhD

Vice-President (Saint John), K. E. Hamer, BA, MA, PhD

President, St. Thomas University,
D. W. OBrien, BComm, MSW, DSW

Dean of Administration: D. Coleman, BA, PhD

Acting Dean of Arts: P. Kent, BA, BEd, MScEcon, PhD

Dean of Computer Science: V. Bhavsar, BEng, MTech, PhD

Dean of Education: M. Small, BA, MA, EdD

Dean of Engineering:D. Coleman, BScE, MScE, PhD, PEng

Acting Dean of Forestry & Environmental Management:
I. Smith, BScCE, MSc, PhD

Dean of Graduate Studies: G. Davies, BA, CertEd, MA, PhD

Dean of Kinesiology: C. L. Stevenson, BSc, MA, MPE, PhD

Dean of Law: P. Bryden, BA, BCL, LLM

Dean of Nursing: C. H. Gibson, BN, MScN, PhD

Dean of Renaissance College: P. Zundel, BScF, MScF, PhD

Dean of Science: A. R. Sharp, BSc, MSc, PhD

Acting Director of Student Affairs & Services:
A. Forrestall, BA, MA

Director of Alumni Affairs: M. Hazlett, BPE, MPE

Director of the College of Extended Learning:
J. Potter, BSc, MAdEd, EdD

Director of Libraries (Fredericton): J. Teskey, BA, MLS

Registrar (Fredericton): D. J. Hinton BSc, MSc

Secretary of the Senate (non-voting): S. Strople, BA, MA

THE ELECTED FACULTY MEMBERS OF THE BOARD (FREDERICTON)

- B. Bisson, BScE, MScE, MBA
- T. Kuttner, BA, MA, LLB, LLM
- C. Passaris, BA, MA, PhD
- W. van den Hoonaard, BA, MA, PhD

TWO MEMBERS APPOINTED BY THE BOARD FROM THE MEMBERS OF THE BOARD EXCLUSIVE OF THE ELECTED FACULTY MEMBERS OF THE BOARD

- S. McAllister, BA, BEd
- J. Robert Howie Q.C., P.C.

ALUMNI REPRESENTATIVE

- Richard J. Scott Q.C., BBA, LLB

FACULTY REPRESENTATIVES ELECTED BY FACULTIES

Faculty of Administration	• E. Maher, BBA, MBA, CA • N. Betts, BBA, PhD, CA
Faculty of Arts	• G. Campbell BA, MA, PhD • A. Hamling, BA, BEd, MA, PhD • M. Rimmer, BA, MA, PhD • D. Voyer, BSc, MSc, PhD • M. Wiber, BA, MA, PhD
Faculty of Computer Science	• G. Dueck, BSc, MSc, PhD
Faculty of Education	• L. Doige, BA, BEd, MEd, PhD • L. Eyre, Cert Ed, BA, MAHED, PhD
Faculty of Engineering	• M.F. Couturier, BSc, MSc, PhD,PEng • Eldo Hildebrand, BASc, PhD, PEng • R. Langley, BSc, PhD
Faculty of Forestry and Environmental Management	• Thomas Beckley, AB, MS, PhD
Faculty of Kinesiology	• P.H. Wright, BA, BPE, MS, EdD
Faculty of Law	• D. Bell, BA, MA, LLB, LLB
Faculty of Nursing	• L.T. Haller, , BScN, MScN
Renaissance College	• J. Pazienza, BA, MEd, PhD
Faculty of Science	• B. Broster, BSc, PhD • A. Didyk, BA, PhD • A. Hamza, BSc, MSc, PhD • R. J. McKellar, BMath, MMath, PhD

LIBRARY REPRESENTATIVE

- L. Balcom, BA, MLIS

SIX FACULTY MEMBERS ELECTED AT-LARGE

- E. Aubanel, BSc, PhD
- A. Ghorbani, BS, MS, PhD
- B. Lowry, BASc, MASc, PhD
- S. Mattar, BSc, MSc, PhD
- J. Roy, BPR, MBA, PhD
- R. Tervo, BSc, MSc, PhD

STUDENT MEMBERS:

Six Student Representatives Elected At-Large:
- Jeff Brewer
- Ciana Chiasson
- Desmond Lockhart
- Jeff Matheson
- Lyle Mathew Skinner
- Wei Zhang

Part-time Student Representative:
- Jeanette Robertson

Graduate Student Representative:
- Natalie Henneberry

SAINT JOHN SENATE
2004-2005

EX-OFFICIO MEMBERS

President (Chair of Senate):
J.D.McLaughlin, BScE, MScE, PhD, PEng

Vice-President (Saint John) (Vice-Chair of Senate):
K.E. Hamer, BA, MA, PhD

Vice-President Fredericton (Academic):
A. N. Belcastro, BA, BPE, MSc, PhD

Vice-President (Finance and Corporate Services):
D. V. Murray, CA, BComm

Vice-President (Research):
G. S. Kealey, BA, MA, PhD

Associate Vice-President (Saint John):
M. Kabir, BA, MA, MA, PhD

Dean of Graduate Studies:
G. Davies, BA, CertEd, MA, PhD

Dean, Faculty of Arts:
R. MacKinnon, BA, MA, PhD

Dean, Faculty of Business:
S.Rinehart, BA, MBA, PhD

Dean, Faculty of Science, Applied Science & Engineering:
D. MacLatchy, BSc, PhD

Registrar (Saint John):
T. Buckley, BA, BEd

Director, Information Services & Systems:
S. Collins, BA, MLS

Director, Student Life & Support Services:
K. Bonner, BA, MEd

Secretary (Saint John) (non-voting):
S. DeVarenne, BSc

ONE MEMBER APPOINTED BY AND FROM MEMBERS OF THE BOARD EXCLUSIVE OF ELECTED FACULTY MEMBERS

- A.M. McGrath, BA, BEd, MEd

ELECTED FACULTY MEMBERS OF THE BOARD

- R. Clark, RN (Dip), BN, MN
- D. Lindsay, BA, MA, PhD

FACULTY REPRESENTATIVES: ELECTED BY FACULTIES

Faculty of Arts

- L. Chalmers, BA, MA, PhD
- L. Jeffrey, BA, MA, PhD

Faculty of Business

- R. Farnsworth, BBA, MBA, PhD
- M. Mendelson, BA, MSc

Faculty of Science, Applied Science & Engineering

- J. Christie, BScE, MScE, PEng
- L. Garey, BSc, MA, PhD

NINE FACULTY MEMBERS ELECTED AT-LARGE

- T. Alderson, BSc, MSc, PhD
- S. Bell, BA, MA, PhD
- P. Cavaliere, BA, MA, D. Phil
- J. Dunstan, BBA, LLB
- J. Frooman, BS, BA, MA, MBA
- R. Humphries, GRIC, MSc, MA, PhD
- M. Jones, BA, MA, PhD
- N. Logue, BN, MN
- A. Wilson, BA, M A, PhD

ALUMNI REPRESENTATIVE

- Carey Ryan, BA, MEd

THREE STUDENT REPRESENTATIVES ELECTED AT-LARGE

- Matthew Burrill
- Ronald Barry
- David Waddell

OFFICERS OF THE UNIVERSITY

President and Vice-Chancellor:
John D. McLaughlin, BScE, MScE, PhD, PEng

Vice-President (Finance and Corporate Services):
Daniel V. Murray, CA, BComm

Vice-President Fredericton (Academic):
Angelo Belcastro, BA, BPE, MSc , PhD

Vice-President (Research):
Dr. Gregory S. Kealey, BA, MA, PhD, FRSC, FRHistS

Vice-President (Saint John):
Kathryn B. Hamer, BA, MA, PhD

Associate Vice-President Academic (Learning Environment): Jane Fritz, BSc, MScCS, DPhil

Associate Vice-President (Campus Planning and Development): Michael Ryan, BEng, MCP, PEng

Associate Vice-President (Human Resources and Organiational Development):
Peter McDougall, BA, MIR, CHRP

Associate Vice-President (Integrated Technology Services): Lori MacMullen, BBA

Associate Vice-President (Research) & Dean, Graduate Studies: Gwen Davies, BA, CertEd, MA, PhD

Associate Vice-President (Saint John):
Muhammed Kabir, BA, MA, MA, PhD

Assistant. Vice-President (Finance & Corporate Services) and Comptroller: Larry J. Guitard, BA, LLB, CA

Assistant Vice-President (Saint John) (Financial & Administrative Services):
Christopher Callbeck, BBA, CA

Coordinator, Institutional Research:
Averlyn Pedro, BA, MA, MEd, EdD

Executive Director, Alumni Affairs:
Mark Hazlett, BPE, MPE

Executive Director, Office of Research Services:
Dwight Ball, BSC, MSc

Director, Advancement (UNBSJ):
David Emerson, BAA, EcD

Director, College of Extended Learning:
Judith Potter, BSc, MAdEd, EdD

Director, Development and Donor Relations:
Susan Montague, BA, MSEd

Director, Student Affairs and Services (UNBF):
Anne Forrestall, BA, MA

Director, Student Services (UNBSJ):
Kevin Bonner, BA, MEd

Director, Student Recruitment & Integrated Marketing:
Susan Mesheau, BA, APM

Director, Information Services & Systems (UNBSJ):
Susan Collins, BA, MLS

Director, International Office (UNBSJ):
Lee Jolliffe, BA, MA, PhD

Director of Libraries (UNBF):
John Teskey, BA, MLS

Associate Director, Research (UNBSJ):
Richard Stevens

Registrar (UNBF):
David J. Hinton, BSc, MSc

Registrar (UNBSJ):
Thomas Buckley, BA, BEd

Residential Life & Conference Services (UNBF)

- **Associate Director (Residential Life):** John Craighead
- **Associate Director (Finance & Operations):** Ed Reid

Special Advisor to the President & VP (Saint John):
Keith De'Bell BSc, MSc, PhD

University Secretary:
Stephen Strople, BA, MA

DEANS OF FACULTIES

Fredericton

Faculty of Administration: Daniel Coleman, BA, PhD

Faculty of Arts: James Murray, BA, MA, PhD

Faculty of Computer Science:
Virendra Bhavsar, BEng, MTech, PhD

Faculty of Education: Marian Small, BA, MA, EdD

Faculty of Engineering:
David Coleman, BScE, MScE, PhD, PEng

School of Graduate Studies:
Gwendolyn Davies, BA, Cert.Ed, MA, PhD

Faculty of Forestry and Environmental Management:
Ian Smith, BScCE, MSc, PhD (Acting)

Faculty of Kinesiology:
Christopher Stevenson, BSc, MA, MPE, PhD

Faculty of Law: Philip L. Bryden, BA, BA, BCL, LLM

Faculty of Nursing: Cheryl Gibson, BN, MScN, PhD

Renaissance College:
Pierre Zundel, BScF, MScF, PhD

Faculty of Science: Allan Sharp, BSc, MSc, PhD

SAINT JOHN

Faculty of Arts: Robert MacKinnon, BA, MA, PhD

Faculty of Business: Shelley Rinehart, BBA, MBA, PhD

Faculty of Science, Applied Science, and Engineering:
Deborah MacLatchy, BSc, PhD

EMERITUS HONOREES

Chancellor Emerita:
Lady Aitken, LLD

Vice-President (Academic) Emeritus:
Robert E. Burridge, BScE, MS, PhD, Peng

Vice-President (Finance and Administration) Emeritus:
James O'Sullivan, BBA, LLD

Vice-President (Saint John) Emeritus:
Thomas J. Condon, BA, MA, PhD

Vice-President (Research and International Cooperation) Emeritus:
Frank Wilson, BScE, MScE, PhD, FCAE, FCSCE, FEIC, P.Eng

Professors and Deans Emeriti

- Christian. John A., BEng. PhD, FICE, FCSCE, PEng, CEng
- Faig, Wolfgang, Dipl Ing, MscE, DrIng, PEng
- Methven, Ian, BScF, PhD
- Nair, K. P. K., BE, MTech, PhD
- Unger, Israel, BSc, MSc, PhD
- Wasson, W. Dana, BSc(EE), SM, PhD

Professors Emeriti

- Acheson, T. William, BA, MA, PhD - History
- Alcoe, Shirley, BA, BEd, MA, MEd, EdD - Nursing
- Allardyce, Gilbert D., BA, MA, PhD - History
- Arcelus, Francisco, BA, MS, PhD - Administration
- Bottomley, Frank, BSc, MSc, PhD, DSc, FCIC-Chemistry
- Bray, Dale I., BScE, MScE, PhD - Civil Engineering
- Bremner, Theodore W., BScE, MSc, DIC, PhD, FCSCE, FACI, PEng - Civil Engineering
- Brown, Wallace, BA, MA, MA, PhD - History
- Buckner, Phillip, BA, PhD-History
- Burt, Michael D. B., BSc, PhD, FLS - Biology
- Cameron, Ann C, BA, MA, PhD-Psychology
- Cameron, Ian R., BSc, PhD - Physics, Saint John
- Chrzanowski, Adam J., BScE, MScE, Dr Ing - Geodesy and Geomatics Engineering
- Cogswell, Frederick W., OC, BA, MA, PhD - English
- Cockburn, Robert Hood, BA, MA - English
- Croll, James C., BA, BEd, MPs, MA, EdD - Education
- Davies, Huw, BSc, PhD, PEng - Mechanical Engineering
- Davar, Kersi S., BECivil, MIE, PhD - Civil Engineering
- Edwards, Viviane M., BA, BEd, MEd - Education
- Eppert, Franz, Wissenschaftliche Profong fur das Lehramt an Hoheren Scholen, Zweite Philologische Staatsprufung, DPhil - Culture and Language Studies
- Ericson, Penelope, BScN, MScN - Nursing
- Forbes, Ernest, BA, BEd, MA, PhD - History
- Gibbs, Robert J., BA, MA, PhD - English
- Graham, Dominick S., BA, MA, PhD - History
- Grein, Friedrich, BSc, MSc , PhD, FCIC - Chemistry
- Hamilton, Angus C., BASc, MASc - Surveying Engineering
- Hamilton, Willis D., BA, MA, BEd - Education
- Hawkes, Robert E., BA, BEd, MA - Education
- Jollineau. R. Wayne, CD, BSc, MBA, CMA - Business, Saint John
- Kaiser, Reinhold, BSc, MSc, PhD - Physics Kelly, Ronald B., BSc, MSc, PhD - Chemistry, Saint John
- Kelly, Ronald B., BSc, MSc, PhD - Chemistry, Saint John
- Kepros, Peter G., BS, MS, PhD - Psychology
- Krause, Margarida, Licenciature, MSc, PhD - Biology
- Lane, Lauriat, Jr., AB, MA, PhD, FRSC - English
- Leckie, Irene, BScN, MSN - Nursing
- Lees, Ronald, BSc, MSc, PhD - Physics
- Levine, Aaron Lawrence, BA, MA, PhD - Economics
- Logan, Alan, BSc, PhD - Physical Sciences, Saint John
- London, J. Dalton G., BA, MA, D d'U - Education
- Love, Robert J., BA, MA, BPaed, DEd, LLD - Education
- MacIver, Donald A., BEd, MEd, PhD - Educational Foundations
- MacKeracher, Dorothy, BSc, MEd, PhD - Education
- Mason, Gordon R., BSc, MSc, PhD - Mathematics & Statistics
- McAllister, Arnold L., BSc, MSc, PhD, FRSC - Geology
- McDonnell, Paul M., BA, MA, PhD - Psychology
- McFarlane, Howard W., BSc, MSE - Civil Engineering
- McLaughlin, Robert H.B., BScE, MScE, Bldg Eng - Civil Engineering
- Milham, Mary Ella, BA, MA, PhD - Classics
- Morris, David, BSc, PhD - Chemical Engineering
- Nicki, Richard M., BA, MA, MA, PhD - Psychology
- Paim, Uno, BA, PhD - Biology
- Patterson, Stephen E., BA, MA, PhD - History
- Picot, Jules J. C., BE, MSc, PhD - Chemical Engineering
- Powell, Graham, BSc, Msc, PhD - Forestry & Environmental Management
- Poyatos, Fernando, BA, MA, PhD - Spanish
- Pullman, Douglas R., BEd, MA, PhD - Sociology
- Rowan, Donald F., BA, BA, MA, PhD - English
- Ruthven, Douglas M., BA, MA, PhD, ScD - Chemical Engineering
- Scott, Robert N., BSc , DSc - Electrical Engineering
- Shyu, Larwrence N., BA, MA, PhD - History
- Smith, Beverley G., BCL - Law
- Stevens, Albert M., BScE, MScE - Civil Engineering
- Frank Steward, SB, SM, ScD, PEng- Chemical Engineering & Centre for Nuclear Energy Research
- Stirling, Mary Lou, BA, MEd, EdD - Education
- Thomas, Martin L. H., Bsc, MSA, PhD - Biology, Saint John
- Tupper, Brian O.J., BSc, PhD, DSc, FIMA - Mathematics and Statistics
- Valenta, Zdenek, Dipl. Ing. Chem., MSc, PhD - Chemistry
- Vanicek, Petr, MEng, PhD, DSc, - Geodesy & Geomatics Engineering
- Venart, James, BASc, PhD - Mechanical Engineering
- Verma, Ram D., BSc, MSc, PhD- Physics
- Wells, David E., BSc, BASc, MASc, PhD, PEng - Geodesy and Geomatics Engineering
- Williams, Paul F., BSc, MSc, PhD - Geology
- Young, D. Murray, BA, PhD - History

Librarian Emerita
Gunn, Gertrude E., BA, MA, MLS, PhD

Registrar Emeritus:
Beckett, Barry, BSc, Dip Ed, Phd

Resident Fellow Emeritus:
MacGill, Neil, BA, MA - Philosophy

Note: Only living Emeritus Honorees are listed.

ALLAN P. STUART EXCELLENCE IN TEACHING
RECIPIENTS OF THE AWARD

ENCAENIA 2004:	• Nancy Nason-Clark (Sociology, F)
ENCAENIA 2003:	• Kathleen Berry (Education, F) • Constantine Passaris (Economics, F)
SPRING CONVOCATION 2003:	• Jim Kiefer (Biology, SJ) • Sarah Maier (English, SJ)
FALL CONVOCATION 2001:	• E.W. (Ted) Robak (Forestry & Environmental Management,F) • Barry Bisson (Engineering, F)
FALL CONVOCATION 2000:	• Dianna Austin (English, F) • Thom Erdle (Forestry & Environmental Management, F)
FALL CONVOCATION 1999:	• Lilly Both (Psychology, SJ) • Paul McDonnell (Psychology, F)
FALL CONVOCATION 1998:	• Ruth Shaw (Math, Stats & CS, SJ) • Stephen Ross (Physics, F)
FALL CONVOCATION 1997:	• Kate Frego (Biology, SJ) • Wendy Robbins (English, F)
FALL CONVOCATION 1996:	• Judy Buchanan (Nursing, SJ) • James Murray (Classics & Ancient History, F)
ENCAENIA 1995:	• Gracie Getty (Nursing, F) • Steven Turner (History, F)
SPRING CONVOCATION 1994:	• Mohammad Hamdan (Mathematics, Stats & CS, SJ)
ENCAENIA 1994:	• Lesley Fleming (Biology, F)
ENCAENIA 1993:	• David Townsend (Law, F)
SPRING CONVOCATION 1993:	• Robert Chanteloup (Sociology, SJ)
FALL CONVOCATION 1992:	• Philip Wright (Administration, F)
ENCAENIA 1992:	• Barbara Trenholm (Administration, F)
ENCAENIA 1991:	• William Mullin (Biology, F) • Roger Ploude (English, F)
ENCAENIA 1990:	• William Chernoff (Mathematics & Stats, F) • Byron Walton (Engineering, SJ)
ENCAENIA 1989:	• Jane M. Fritz (Computer Science, F) • Friedrich Grien (Chemistry, F)
ENCAENIA 1988:	• Teresa Killoran (Education, F) • James M. Tolliver (Administration, F)
ENCAENIA 1987:	• Barbara MacKinnon (Biology, F) • Donald F. Rowan (English, F)
SPRING CONVOCATION 1986:	• Pete McGahan (Dean of Faculty, SJ)
ENCAENIA 1986:	• Jillian Sullivan (Mathematics & Stats, F)
ENCAENIA 1985:	• Wiktor Askanas (Administration, F) • Arun J. Valsangkar (Civil Engineering, F)
ENCAENIA 1984:	• David Rehorick (Sociology, F) • Beverly G. Smith (Law, F)
ENCAENIA 1983:	• Reavley Gair (English, F) • G. Charles Kunn (Political Science, F)
ENCAENIA 1982:	• Daniel M. Hurley (Law, F) • Linda A. Parker (Psychology, SJ)
ENCAENIA 1981:	• Kevin Halcrow (Biology, SJ) • Howard McFarlane (Civil Engineering, F)
ENCAENIA 1980:	• Clayton R. Lewis (Mathematics, F) • C. Shirley MacLeod (Nursing, F)
ENCAENIA 1979:	• Thomas A. Austin (Computer Science, F) • Daniel M. Keppie (Biology and Forestry, F)
ENCAENIA 1978:	• Verne M. Ireton (Mechanical Engineering, F) • Ronald M. Lees (Physics, F)
ENCAENIA 1977:	• Gilbert Allardyce (History, F) • Wilfred B. W. Martin (Sociology, F)
ENCAENIA 1976:	• Sidney I. Pobihushchy (Political Science, F) • Joanne E. Harris (Mathematics, SJ)
ENCAENIA 1975:	• Leonard C. Smith (Classics, F) • Lawrence E.Garey (Mathematics, SJ)
ENCAENIA 1974:	• William Y. Smith (Economics, F) • Zdenek Valenta (Chemistry, F)
ENCAENIA 1973:	• Allan P. Stuart (Chemistry, F) • R. Wayne Jollineau (Administration, F)
FALL CONVOCATION 1972:	• Leonard P.Edwards (Mathematics, F) • Barbara J. Pepperdene (Sociology, F)

THE ASSOCIATED ALUMNI

The Associated Alumni was founded in 1862 for "the advancement of the interests of the University of New Brunswick by all honourable means." Its membership consists of all those who have attended at least one semester at UNB and numbers over 40,000.

THE ALUMNI COUNCIL

Each spring the membership of the Associated Alumni elects a representative group of individuals to act as a council for the Alumni Association. This council meets at least three times a year and conducts the business of the Associated Alumni through various committees.

The Office of Alumni Affairs, an office of the University, works with the Council of the Associated Alumni in attaining its objectives.

ASSOCIATED ALUMNI OBJECTIVES

1. The Association strives to enhance the image of the University in the eyes of the general public.
2. The Association is a liaison between the University administration and the student body.
3. The Association fosters good relations among the student body, the Fredericton and Saint John communities and the Alumni Association.
4. The Association endeavours to make students' stay at UNB as rewarding as possible, developing an "Alumni conscious" student body.
5. The Association assists the University in its fund raising activities with (a) governments, (b) private corporations and (c) individuals, be they Alumni or others.
6. The Association encourages, through personal contact and through its scholarship program, top-quality prospective students to attend UNB and maintains an interest in their welfare during their University careers.

MEMBERS OF THE ASSOCIATED ALUMNI COUNCIL 2004-05

Following are the names of the current members of the Associated Alumni Council:

EXECUTIVE

- President: Carey A. Ryan, BA'70, MEd'79, Saint John
- Vice-president: Barry Beckett, PhD'70, Saint John
- Treasurer: Marti-Lou Neill, BA'69, Fredericton
- Secretary: Kathie Brien, BBA'67, Saint John
- Executive Member at Large: Judy Weeks, BBA ‘77, Saint John
- Immediate Past President: Richard J. Scott Q.C., BBA'74, LLB'76, Fredericton

REPRESENTATIVES TO BOARD OF GOVERNORS

- Andy Devereaux, BScEE ‘71, BA ‘73, DLITT ‘98, Beverly, MA
- Sally W. McAllister, BA'72, BEd'73, Fredericton
- Richard J. Scott, Q.C., BBA'74, LLB'76, Fredericton

COUNCILLORS

- Eric Burchill , BBA'92, Halifax
- Jeff Clark, BSc97, BBA98, Montreal
- Kevin Ferguson , BBA'92, BA'93, Natick, Mass.
- Carol Foley, BBA'83, London, Ont.
- Larry Hachey, BBA'87, Quispamsis, N.B.
- Lynn A. Hruczkowski, BA'82, Edmonton
- Jill Jollineau, Class of 75, MEd02, Saint John
- David T. Le Blanc, BBA'82, Ottawa
- Aaron McIntosh, BBA ‘87, BA ‘00, Toronto
- Mary Ellen McKinney, BBA77, BN ‘00, Fredericton
- Heather Neilson, BPE72, Fredericton
- Judy Orr, BA'75, BBA'76
- Marcia Trail, BN'73, MN'99

OTHER MEMBERS

- President of the Associated Alumnae: Bonnie Murray, BA ‘78, Fredericton
- Student Representative: Cassandra Simmonds
- UNB President: John McLaughlin, BScSE69, MScSE71, PhD'75 (Wisconsin)
- Association Executive Director: Mark Hazlett, BPE'87, MPE'89

THE ASSOCIATED ALUMNAE

The Associated Alumnae was founded in 1910 and incorporated in 1919. The object of the Association is to promote, directly and indirectly, the educational and financial interests of the University, especially as such interests are related to the women graduates and undergraduates of the University. Membership in the Associated Alumnae consists of women graduates and former women students of the University who have successfully completed one year.

The Association furnished and equipped UNB's first residence for women, the Maggie Jean Chestnut House, generously donated to the Alumnae by Lord Beaverbrook. In May 1952, this residence was transferred to the University. The Alumnae Memorial Library, located in Lady Dunn Hall, and libraries in other residences for women students, were established and are maintained by the Association.

The Associated Alumnae annually awards several scholarships to women students, including: an Entrance Scholarship in Education named in honour of Muriel Farris Baird; the Zula V. Hallett Scholarship, awarded to a woman student entering third-year Physical Education; the Marion Fleet Rogers Scholarship to a woman student entering third year at UNB Saint John; and an award for part-time students. The total annual value of all scholarships provided exceeds $18,000. Two prizes, the Dorothy Elson Prize and the Agnes Grey Wilon Prize, are also donated by the Associated Alumnae.

ASSOCIATED ALUMNAE COUNCIL 2004

EXECUTIVE

- President: Bonnie Murray, BA ‘78
- Past President: Margie Gregg, BA ‘92
- 1st Vice-President: Catherine Sutherland, BA ‘78, BBA ‘94
- Secretary: Heather Baird-Perritt, BPE '69
- Treasurer: Kim Poffenroth, BA'92, LLB'95

COUNCILLORS

- Althea Macaulay, BA '39, MA, PhD, LLD '90
- Mardi Cockburn, BA '52
- Deborah Hackett, BA '88, LLB '95

REPRESENTATIVES TO THE BOARD OF GOVERNORS

- Bonnie Murray, BA ‘78
- Margie Gregg, BA '92

UNIVERSITY OF NEW BRUNSWICK
HISTORICAL SKETCH

PRINCIPALS (1820-1860) AND PRESIDENTS OF THE UNIVERSITY (1861-PRESENT)

James Somerville	1820-1829
Edwin Jacob	1829-1860
Joseph Hea	1860-1861
William Brydone Jack	1861-1885
Thomas Harrison	1885-1906
Cecil Charles Jones	1906-1940
Norman MacKenzie, C.C.	1940-1944
Milton F. Gregg, V.C.	1944-1947
A. Foster Baird	1947-1948
Albert Trueman, O.C.	1948-1953
C. William Argue (Acting)	1953
Colin B. Mackay, O.C., Q.C.	1953-1969
James O. Dineen	1969-1972
Desmond Pacey (Acting)	1972-1973
John M. Anderson	1973-1979
Thomas J. Condon (Acting)	1979-1980
James Downey, O.C.	1980-1990
Robin L. Armstrong	1990-1996
Elizabeth Parr-Johnston	1996-2002
James F. O'Sullivan (Acting)	1997
John D. McLaughlin	2002 -

FREDERICTON CAMPUS HISTORY

As the American Revolutionary War drew to a close, thousands of Loyalists gathered in New York City to await transportation to homes in other British Colonies. Among these Loyalists were Charles Inglis, a former interim President of King's College, New York (Columbia University); Benjamin Moore, later President of Columbia; and Jonathan Odell, minister, poet and pamphleteer. These men were the visionaries of their day. In the midst of war, privation and exile, they drew up a plan for the future education of their sons in the Nova Scotia wilderness. Recognizing that the new American nation would provide instruction only in revolutionary "Principles contrary to the British Constitution" and that the cost of an overseas education would be prohibitive, they urged the representatives of the British government to consider the "founding of a College . . . where Youth may receive a virtuous Education" in such things as "Religion, Literature, Loyalty, & good Morals . . . ."

Initially, these gentlemen intended that the area of Nova Scotia have only one college. However, in 1784 when the Province of New Brunswick was created from a part of Nova Scotia, New Brunswickers began a clamour for their own school which led to the foundation of two of Canada's oldest institutions of higher learning - King's College, Windsor, Nova Scotia (now affiliated with Dalhousie University) and the academy which became the University of New Brunswick.

UNB began with a petition presented to Governor Thomas Carleton on 13 December 1785. Headed by William Paine, the seven memorialists asked Carleton to grant a charter of incorporation for an "academy or school of liberal arts and sciences," which they maintained would result in many "public advantages and . . . conveniences." In addition, the "principal Officers of disbanded Corps and other Inhabitants" in and around the provincial capital of Fredericton asked that the Governor reserve a substantial grant of land in support of this academy.

Despite the approval of Carleton, it was many months before the academy opened. During this period a draft charter was written, based on the 1754 Charter of King's College, New York, urging that the college never "exclude or restrain any Person . . . of any religious Denomination, Sect, or Profession . . . from equal . . . Liberties, Privileges, [or] Degrees" - a very liberal notion in the eighteenth century. Unfortunately, times were changing in New Brunswick and such sentiments seemed to recall the recent American Revolution. Therefore, while the academy had commenced operation by the 1790s, it functioned less as a college and more as a symbol of Carleton's governmental policy for the promotion of the twin tenets of the Anglican religion and the British Constitution. As the provincial leaders of the opposition dismissed the academy as nothing but a "country school," Carleton realized he must more actively and effectively offer it support. On 12 February 1800, over the signature of Provincial Secretary Jonathan Odell, the College of New Brunswick received a Provincial Charter, the first college in Canada to be so honoured. It was intended that the academy would serve as the College's preparatory school and that the two would be governed by a common College Council drawn almost entirely from the ranks of a governmental hierarchy. As for the professors, they were all to be Anglicans.

For a number of years, the history of the future University continued to lie with the academy. A series of masters came and went until 1811 when the Reverend James Somerville, an ex-patriate Scotsman, took the position of Principal Preceptor. There can be no question that Somerville, a graduate of the University of Aberdeen, was a superb teacher who provided the Council and New Brunswick with their first chance to have a real College. In 1820, Somerville was formally named President of the College of New Brunswick and, in April 1822, he held the very first college classes in Fredericton. This development helped spur efforts to set the institution on a firmer footing. A new Charter for "Brunswick College" was proposed in 1823, asking for permanent and substantial funding directly from the King. Lieutenant Governor Sir Howard Douglas quickly threw his influence behind the scheme. Douglas viewed the welfare of the College to be of prime importance to the success of New Brunswick. To this end, he pressed for a Royal Charter and urged the erection of a fine stone building to house the institution.

Three designs for the building were submitted in 1825 to the Council, which selected that drawn by J.E. Woolford. There was, of course, a good deal more involved in the transformation of the neglected College of New Brunswick into King's College, Fredericton. Douglas spent the next four years keeping a wary eye on the growth of his "child." In 1826, having chosen the site for the building himself, Douglas laid the cornerstone. In December 1827, largely through Douglas' efforts in Great Britain, King's College, Fredericton, received a Royal Charter nearly identical to that granted to King's College, Toronto. Before allowing the new Charter to take effect, the College of New Brunswick performed one final, official act, on 21 February 1828, by awarding degrees to its first and last three graduates.

On 1 January 1829, King's College and the structure (now known as Sir Howard Douglas Hall, formerly referred to as the Old Arts Building) erected to house it were officially opened. In one way, King's was a failure. In its thirty-year tenure it graduated fewer than 125 students, in large measure because its classical curriculum was not well-suited to the needs of New Brunswickers. Yet, it was at King's that many of the courses offered in later years by the University of New Brunswick had their start. In 1834, for example, three of the professors proposed admitting "young men of good abilities and diligence" to a special, one-year course entitling each to a teacher's certificate. Even after the creation of the Provincial Normal School this kind of university training continued sporadically and in various forms until the Faculty of Education emerged in the twentieth century.

It was also in the 1830s that King's introduced "public lectures," more familiar to today's students as "extension courses." These early lectures dealt with subjects such as geology, chemistry, physics and astronomy. Much to the disgust of one professor, James Robb, some of his lectures at the College were open to the general public, including the young women of Fredericton. Some years later, Mr. McMahon Cregan, an engineer from England who was brought to New Brunswick to conduct a survey for the European and North American Railway, offered "instruction of a really practical and useful character" in the field of engineering to students and non-students alike.

King's spent several tumultuous periods in conflict with members of the New Brunswick Legislature. Ostensibly, they were arguing over the issues of curriculum and religion but the real issue was probably the cost of higher education. Fortunately, King's did have defenders, in particular, the elegant debater William Needham who, in the face of threats to burn down the College or to turn it into an agricultural school, made an impassioned speech that saved the institution from such ignominious fates. Through the efforts of Needham, Lieutenant Governor Sir Edmund Head and a few others, the Legislature was persuaded to reform rather than destroy the College. On 13 April 1859, the act creating the secular, provincial University of New Brunswick was passed.

At first, the UNB Charter seemed to promise more than the University could deliver but, slowly, under the guidance and tutelage of several innovative professors, both the University's attitude and curriculum blossomed. In 1880, UNB began offering a certificate to those women who performed well in entrance (matriculation) examinations, though women were not permitted to enrol at the University. In 1885 a brilliant young woman named Mary Kingsley Tibbits met head-on the University's stricture against women and, in 1886, became UNB's first, regularly admitted, woman student. The racial barrier had been broken earlier with the completely non-controversial entry of Arthur St. George Richardson, a black who came to UNB via Bermuda and Saint John. Gradually, the University expanded its educational horizons. In 1887 the four-year program was introduced and in 1891 a Bachelor of Science degree was added to complement the traditional BA. Just after the turn of the century, when Cecil Charles Jones took over as Chancellor of the institution, whose title subsequently was changed to that of President, the foundations were laid for three major faculties: Law, Engineering and Forestry.

The post-World War I era brought the first great expansion of the physical facilities of the campus. In 1920, UNB consisted of the Sir Howard Douglas Hall (Old Arts Building), the Science Building, the small Observatory, a small gymnasium and the Dominion Entomological Laboratory. By 1931, Memorial Hall, a modern Library and a Forestry and Geology Building had been added. The first university residence was a gift from Lord Beaverbrook who, growing up in New Brunswick as William Maxwell Aitken, studied law, and over the succeeding years developed an increasing interest in the welfare of the university. Other buildings brought into being through his efforts and those of his family were the Lady Beaverbrook Gymnasium, Aitken House, Ludlow Hall, for the Faculty of Law, and the Aitken Centre. In 1947, his Lordship became the University's Chancellor, to be succeeded by his son, Sir Max Aitken, in 1966 and in turn by Lady Violet Aitken, the wife of Sir Max, who served until 1993.

After World War II, returning veterans pushed registration to over 770 in 1946, almost double the number enrolled in 1941. With this increased student population came a commensurate increase in faculty and course offerings, and a surge of building activity from 1953 to 1977 that transformed the campus. The year 1964 brought three important developments: Teachers' College (the old Provincial Normal School) was relocated on the campus, to become incorporated into an enlarged Faculty of Education in 1973; St. Thomas University also relocated on campus, moving from Chatham and affiliating with UNB; and a second UNB campus was established in Saint John.

UNB reached the end of its second century as a major provincial and national institution, offering a wide range of graduate and undergraduate programs in administration, arts, computer science, education, engineering, forestry, law, nursing, physical education and science: the University enters its third century proudly treasuring its past and eagerly facing the challenges of the future.

SAINT JOHN CAMPUS HISTORY

The University of New Brunswick Saint John was established in September 1964 following the recommendation of the Royal Commission on Higher Education, chaired by the late Dr. John J. Deutsch of Queen's University. The Deutsch Commission emphasized the need for facilities for higher education in this metropolitan community of over 100,000 persons.

During the first five years of operation, classes were offered in the first two years of degree programs in Arts and Science, Business, Engineering, Physical Education, Forestry and Nursing. Classes took place at various locations in the city of Saint John, including Beaverbrook House, formerly the home of the UNB Faculty of Law. In the fall of 1969, the new campus at

Tucker Park was opened consisting of three buildings - Sir Douglas Hazen Hall, William Ganong Hall and the Ward Chipman Library Building. This site, proposed by the City Council as early as 1963, was originally bequeathed to the City of Saint John for park purposes. At the request of the City, the New Brunswick Legislature authorized the conveyance of a portion of this land for the new campus.

In 1975 the G. Forbes Elliot Athletics Centre was added to the physical plant. Since its opening, the versatile, well-equipped building has served the recreational needs of both the campus and greater Saint John communities. In 1985 the Jeux Canada Games Stadium was constructed on campus, and in 1986 the Thomas J. Condon Student Centre was opened.

UNB Saint John's physical facilities expanded again in the 1990s with the opening of a new academic building, Philip W. Oland Hall, in late 1992, and the addition of the campus's first on-site student housing facility, the Sir James Dunn Residence, in the fall of 1993. K.C. Irving Hall, opened in January 1999, followed by a new residence and Saint John College in 2003.

A special feature of UNB Saint John is the fact that all of the permanent buildings on the campus are connected by a series of tunnels and walkways, allowing comfortable access to all facilities during inclement weather and the months of winter.

UNB Saint John now offers full four-year degree programs in Arts, Business Administration, Data Analysis, Science, Computer Science, Education, Health Sciences and Nursing. Students now enroll in the first two years of Engineering programs on the Saint John campus, after which they would transfer to the Fredericton campus to complete the degree The campus is also home to a number of Masters students whose research is contributing to regional, national, and international endeavours. In addition to the full-time enrolment, large numbers of part-time students are now pursuing their studies at the Saint John Campus.

FREDERICTON HISTORIC BUILDINGS

Burden Academy

As a Centennial project, the University brought to the campus and restored a one-room New Brunswick schoolhouse, located for more than a hundred years at Burden in York County. The schoolhouse, located at the King's College Road entrance, was officially opened in May 1967.

McCord Hall

McCord Hall, located at the east entrance of the Sir Howard Douglas Hall (Old Arts Building), was once used as the University's ice house. The nineteenth-century structure was restored in 1963 and named in honour of David T.W. McCord, the distinguished writer and former executive director of the Harvard University Fund Council, and honorary graduate of UNB.

The Neville Homestead

The Neville Homestead, a small white clapboarded house on the east side of the campus, dates back to 1876. It was the home of Fred Neville, University groundskeeper for 42 years, who lived in the house from his birth in 1878 to his death in 1969. The Neville family first settled the land in 1850 with a purchase from the Hon. William Odell. In its 84th year, the house was moved a short distance to its present location to make way for a new men's residence, named to honour Mr. Neville. The Homestead now houses the Student Employment Service.

Sir Howard Douglas Hall

The building that housed King's College is now known as the Sir Howard Douglas Hall (Old Arts Building) and is the oldest university building in Canada still functioning as a viable part of a university campus. In the Great Hall are portraits of past presidents and two memorial stained glass windows. Immediately to the left of the front entrance is the Edwin Jacob Chapel, named in memory of the Vice-President and Principal of King's College. A permanent display illustrating the history of the University is located in the Great Hall, including the cornerstone of the building, laid in 1826 and excavated in 1978 prior to the sesquicentennial celebrations.

William Brydone Jack Observatory

The Observatory, located at the east entrance to the Sir Howard Douglas Hall (Old Arts Building), was built in 1851 through the efforts of William Brydone Jack, Professor of Mathematics and Natural Philosophy at King's College and later President of UNB. Constructed of wood, it has an octagonal tower especially designed to house its equatorial telescope. It now houses a small museum.

SAINT JOHN CAMPUS BUILDINGS

Sir Douglas Hazen Hall

This building is named for Sir Douglas Hazen (1860-1937), a prominent former premier, member of the federal cabinet and Chief Justice of the province. Hazen Hall houses the offices of all departments in the Faculty of Arts, the campus computing centre, classrooms and a 240-seat lecture theatre.

William Ganong Hall

The Science building, William Ganong Hall, is named after William Francis Ganong (1864-1941), a graduate of UNB, long-time faculty member at Smith College and a former president of the Botanical Society of America. The four-storey building is designed to provide facilities for Biology, Chemistry, Geology and Physics. Ganong Hall houses the largest lecture theatre on the campus, a micro-lab, a spacious display area, student laboratories, and facilities of a more specialized nature, such as a large greenhouse, a controlled environment room and research laboratories.

Philip W. Oland Hall Philip

W. Oland Hall opened in December, 1992 at UNB Saint John and houses the Faculty of Business and most of its administrative offices, including the Registrar's Office, the Business Office, the President's Office, the Vice-President's Office, the Advancement Office, the Alumni Office, and Student Services. Five classrooms, an audio-visual theatre, a business case room with four break-out labs and a micro-computer lab are also contained in Philip W. Oland Hall.

The building is named for one of UNB's staunchest supporters. A loyal alumnus (BSc 1930, DLitt 1978), Philip W. Oland (1910-1996) was chairperson and CEO of Moosehead Breweries Ltd. Dr. Oland dedicated a lifetime of service to his country and his community. He served in the Canadian Armed Forces during World War II, was the founder of the New Brunswick Youth Orchestra and sat on numerous boards and committees for such organizations as the United Way, the YM/YWCA, the University of New Brunswick and St. Thomas University.

Ward Chipman Library

The Ward Chipman Library, one of the three original buildings on campus, is named in honour of Ward Chipman (1754-1824), a Massachusetts Loyalist who was deputy muster-master general to the British forces during the American Revolution; thereafter, he settled in Saint John where he culminated a distinguished legal career in being named to the New Brunswick Supreme Court.

The building accommodates the campus library, a study area, bookstore, classrooms, art gallery and snack bar. For a description of library holdings, facilities and services, see Libraries in Section D.

K.C. Irving Hall

The K.C. Irving Hall is one of UNB Saint John's newest academic buildings, opened in fall 1999. The home of the campus's Biology, Engineering and Nursing Departments, Irving Hall features modern classrooms and state-of-the-art research and computer laboratories.

The building is named for Kenneth Colin Irving, in recognition of his family's significant contribution to the economy of New Brunswick and to the lives, culture and education of New Brunswickers. The Irvings have provided generous support to the university as well as numerous community groups and initiatives.

Thomas J. Condon Student Centre

UNB Saint John's Student Centre, located adjacent to the Athletics Centre, is interconnected to the other buildings on campus by an overhead walkway and an underground tunnel. The centre houses the cafeteria, Students Representative Council offices, a social club and lounge. The building was named in honour of Vice-President Emeritus Thomas J. Condon.

G. Forbes Elliot Athletics Centre

UNB Saint John's Athletics Centre features a 30,000 square foot surface with an all purpose synthetic floor. The Athletics Centre includes space for four basketball courts, four tennis courts, four volleyball courts, six badminton courts and a four-lane running track. There is also plenty of space for activities such as soccer and flag football. Spectators can enjoy the Universitys athletic teams, the Seawolves, from the 900 bleacher seats overlooking the main court surface. The ground floor includes locker and shower rooms, equipment storage rooms, a trainer's room, and an officials' room. Upstairs, there are a suite of offices and a reception area, a classroom, lounge, games room, and conditioning room.

The Athletics Centre serves the recreational and physical education needs of UNB Saint John students, faculty and staff, as well as several community groups. The Centre bears the name of the founding principal of UNB Saint John.

Canada Games Stadium

UNB Saint John boasts one of the finest track and field facilities in the country. A legacy of the 1985 Jeux Canada Games, the Stadium has a 400-meter, eight-lane all weather running track and a natural grass infield lighted for night play. There is fixed seating for 5,000, a press box, and other auxiliary facilities.

Sir James Dunn and New Residences

UNB Saint John offers two residences on campus overlooking the beautiful Kennebecasis River.

The new residence, opening September 2003, was designed with input from our own students. It offers 168 beds in the form of spacious double suites for independent style living. Suites include two single bedrooms, kitchenette, complete with microwave and fridge and private three-piece bath. At UNB Saint John, housing is non-smoking, co-ed and security locked. Each room is furnished and standard house amenities include furnished TV rooms and study lounges, high-speed Internet and cable TV connections and laundry facilities.

The Sir James Dunn Residence, which opened in September 1993, offers 71 beds and an indoor connection to the campus. Single and double rooms are available. Construction of the Dunn was made possible by a generous donation from the Sir James Dunn Foundation. It is named in honour of the noted Canadian industrialist and philanthropist, Sir James Dunn, who was a native of Bathurst, NB.

Saint John College

The Saint John College building is the newest addition to UNB Saint John. Saint John College is an academic preparatory institution offering a wide variety of second language courses. Completed in 2003, the building has several classrooms and a state-of-the-art computer language laboratory. Saint John College students also have full access to all UNB facilities and services.

Annexes

The annexes house facilities for the International Office, International Recruiting, the Student Health Centre, and for part-time faculty and graduate students.

Program	NB	PEI	NS	NL	QC (High School Leaving Examination)
Bachelor of Arts and Sciences *(Fredericton)* **Bachelor of Arts/ Bachelor of Science** *(Fredericton)*	English 122 (min. grade of 60%), Trigonometry and 3-Space + Advanced Math with an Intro to Calculus, Physics 122, Chemistry 122, 1 unit of Social Studies. Minimum admission average 75%.	English 621 (min. grade of 60%), Math 521A or Math 521B, Math 621A or Math 621B, Physics 621, Chemistry 621, 1 unit of Social Studies. Minimum admission average 75%	English 12 (min. grade of 60%), Advanced Math 12 + Pre-Calculus Math 12, Physics 12, Chemistry 12, 1 unit of Social Studies. Minimum admission average 75%	English 3201(min. grade of 60%), Advanced Math 2205, Advanced Math 3205, Physics 3204, Chemistry 3202, 1 unit of Social Studies. Minimum admission average 75%	English 516 (min. grade of 60%), Math 436, Math 536, Physics 534, Chemistry 534, 1 unit of Social Studies, Minimum admission average 75%
Bachelor of Arts **Bachelor of Applied Arts (Craft and Design)** *(Fredericton)*	English 122 (min. grade of 60%), French 122 or Geometry & Applications + Functions & Relations, 1 unit Social Studies, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 65%.	English 621 (min. grade of 60%), French 621 or Math 521A or Math 521B, 1 unit Social Studies, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 65%.	English 12 (min. grade of 60%), French 12 or Academic Math 11 or Advanced Math 11, 1 unit Social Studies , 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 65%.	English 3201(min. grade of 60%), French 3200 or Academic Math 2204 or Advanced Math 2205, 1 unit Social Studies, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 65%.	English 516 (min. grade of 60%), French 594 or Math 436, 1 unit Social Studies, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 65%.
Bachelor of Arts / Bachelor of Computer Science *(Fredericton)*	English 122 (min. grade of 60%), Trigonometry and 3-Space + Advanced Math with an Intro to Calculus (min. grade of 65%), Physics 122 or Chemistry 122 (min. grade of 65%), 1 unit Social Studies (min. grade of 60%), 1 elective - Group 1 or 2 or 3 (min. grade of 60%). Minimum admission average 75%.	English 621 (min. grade of 60%), Math 521A or Math 521B (min. grade of 65%), Math 621A or Math 621B (min. grade of 65%), Physics 621 or Chemistry 621 (min. grade of 65%), 1 unit Social Studies (min. grade of 60%), 1 elective - Group 1 or 2 or 3 (min.grade of 60%). Minimum admission average 75%.	English 12 (min. grade of 60%), Advanced Math 12 (min. grade of 65%) + Pre-Calculus Math 12 (min. grade of 65%), Physics 12 or Chemistry 12 (min. grade of 65%), 1 unit Social Studies (min. grade of 60%), 1 elective - Group 1 or 2 or 3 (min. grade of 60%). Minimum admission average 75%.	English 3201 (min. grade of 60%), Advanced Math 2205, Advanced Math 3205 (min. grade of 65%), Math 3200 (min. grade of 65%), Physics 3204 or Chemistry 3202 (min. grade of 65%), 1 unit Social Studies (min. grade of 60%), 1 elective - Group 1 or 2 or 3 (min. grade of 60%). Minimum admission average 75%.	English 516 (min. grade of 60%), Math 436 (min. grade of 65%), Math 536 (min. grade of 65%), Physics 534 or Chemistry 534 (min. grade of 65%), 1 unit Social Studies (min. grade of 60%), 1 elective - Group 1 or 2 or 3 (min. grade of 60%). Minimum admission average 75%.
Bachelor of Business Administration **Bachelor of Applied Management in Hospitality and Tourism** *(Saint John)*	English 122 (min. grade of 60%), Trigonometry and 3-Space + Advanced Math with an Intro to Calculus (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 75%.	English 621 (min. grade of 60%), Math 521A or Math 521B, Math 621A or Math 621B (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 75%.	English 12 (min. grade of 60%), Advanced Math 12 + Pre-Calculus Math 12 (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 75%.	English 3201(min. grade of 60%), Advanced Math 2205, Advanced Math 3205 (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 75%.	English 516 (min. grade of 60%), Math 436, Math 536 (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 75%.
Bachelor of Computer Science *(Fredericton)* **Bachelor of Data Analysis** *(Saint John)* **Bachelor of Science in Computer Science** *(Saint John)*	English 122 (min. grade of 60%), Trigonometry and 3-Space + Advanced Math with an Intro to Calculus (min. grade of 65%), Physics 122 or Chemistry 122 (min. grade of 65%), 1 elective - Group 1 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.	English 621 (min. grade of 60%), Math 521A or Math 521B (min. grade of 65%), Math 621A or Math 621B (min. grade of 65%), Physics 621 or Chemistry 621 (min. grade of 65%), 1 elective - Group 1 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.	English 12 (min. grade of 60%), Advanced Math 12 (min. grade of 65%) + Pre-Calculus Math 12 (min. grade of 65%), Physics 12 or Chemistry 12 (min. grade of 65%), 1 elective - Group 1 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.	English 3201 (min. grade of 60%), Advanced Math 2205 (min. grade of 65%), Advanced Math 3205 (min. grade of 65%), Physics 3204 or Chemistry 3202 (min. grade of 65%), 1 elective - Group 1 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.	English 516 (min. grade of 60%), Math 436 (min. grade of 65%), Math 536 (min. grade of 65%), Physics 534 or Chemistry 534 (min. grade of 65%), 1 elective - Group 1 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.
Bachelor of Computer Science / Bachelor of Science *(Fredericton)*	English 122, Trigonometry and 3-Space + Advanced Math with an Intro to Calculus (min. grade of 60%), Physics 122, Chemistry 122, 1 elective - Group 1 or 2. Minimum admission average 75%.	English 621, Math 521A or Math 521B, Math 621A or Math 621B (min. grade of 60%), Physics 621, Chemistry 621, 1 elective - Group 1 or 2. Minimum admission average 75%.	English 12, Advanced Math 12 + Pre-Calculus Math 12 (min. grade of 60%), Physics 12, Chemistry 12, 1 elective - Group 1 or 2. Minimum admission average 75%.	English 3201, Advanced Math 2205, Advanced Math 3205 (min. grade of 60%), Physics 3204, Chemistry 3202, 1 elective - Group 1 or 2. Minimum admission average 75%.	English 516, Math 436, Math 536 (min. grade of 60%), Physics 534, Chemistry 534, 1 elective - Group 1 or 2. Minimum admission average 75%.

ON	MB,SK,AB,BC, NT,NU,YT	US	INFO
English 4U (min. grade of 60%), Math MGA4U Math MCB4U, Physics SPH4U, Chemistry SCH4U, 1 unit Social Studies. Minimum admission average 75%.	English (min. grade of 60%), 2 Maths, Physics, Chemistry, 1 unit of Social Studies. Minimum admission average 75%.	English (min. grade of 60%), 2 Maths, Physics, Chemistry, 1 unit of Social Studies. See Note #16.	Senior-year Mathematics, Physics and Chemistry are required courses for admission to these programs. An average of the marks in senior-year math and the best two grades from grade 12 Biology, Chemistry, Geology and Physics must be at least 75%. Students should note that two years each of high school Chemistry & Physics will normally be required; students lacking these courses will be considered on an individual basis. Courses which can be used to fulfill the unit of Social Studies include: History (Jr. or Sr. Year), Geography (Jr. or Sr. Year), senior-year Economics, Political Science, Sociology or World Issues. See note #12.
English 4U (min. grade of 60%), MCF3M or MCR3U or FS F4U, 1 unit Social Studies, 2 electives - Group 1, 1 elective - Group 1, 2 or 3. Minimum admission average 65%.	English (min. grade of 60%), French or Math, 1 unit Social Studies, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 65%.	English (min. grade of 60%), French or Math, 1 unit Social Studies, 2 electives - Group 1, 1 elective- Group 1 or 2 or 3. See Note #16.	Courses which can be used to fulfill the unit of Social Studies include: History (Jr. or Sr. Year), Geography (Jr. or Sr. Year), senior-year Economics, Political Science, Sociology or World Issues. Students interested in the Bachelor of Applied Arts (Craft and Design)must make application to both UNB and the New Brunswick College of Craft and Design (NBCCD). As well as the BAA requirements listed here, applicants must meet the NBCCD diploma program admission requirements. Students must contact the NBCCD directly for information regarding admission requirements, as well as the application procedures, for the diploma program. See note 15 re. Math requirement for New Brunswick applicants.
English 4U (min. grade of 60%), MCB4U (min. grade of 65%), One of MDM4U, MGA4U or MCF3M, Chemistry SCH4U or Physics SPH4U (min. grade of 65%), 1 unit Social Studies (min. grade of 60%), 1 elective - Group 1, 2 or 3 (min. grade of 60%). Minimum admission average 75%.	English (mim. grade of 60%), 2 Maths (min. grade of 65%), Physics or Chemistry (min.grade of 65%), 1 unit Social Studies (min. grade of 60%), 1 elective - Group 1 or 2 or 3 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 60%), 2 Maths (min. grade of 65%), Physics or Chemistry (min. grade of 65%), 1 unit Social Studies (min. grade of 60%), 1 elective - Group 1 or 2 or 3 (min. grade of 60%). See Note #16.	Courses which can be used to fulfill the unit of Social Studies include: History (Jr. or Sr. Year), Geography (Jr. or Sr. Year), senior-year Economics, Political Science, Sociology or World Issues. See note #12.
English 4U (min. grade of 60%), Math MCB4U plus one of MGA4U, MDM4U, or MCF3M (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1, 2 or 3. Minimum admission average 75%.	English (min. grade of 60%), Math 11, Math 12 (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 75%.	English (min. grade of 60%), Math 11, Math 12 (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3. See Note #16.	Applicants who do not meet the admission requirements for direct entry to the degree program, but offer a minimum admission average of 60% (and other conditions as may be required by the admitting faculty) may be given conditional admission to the appropriate faculty in an entrance program to the extent that capacity allows.
English 4U (min. grade of 60%), Math MGA4U (min. grade of 65%), Math MCB4U (min. grade of 65%), Physics SPH4U or Chemistry SCH4U (min. grade of 65%), 1 elective - Group 1 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 60%), 2 Maths (min. grade of 65%), Physics or Chemistry (min. grade of 65%), 1 elective - Group 1 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 60%), 2 Maths (min. grade of 65%), Physics or Chemistry (min. grade of 65%), 1 elective - Group 1 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%). See Note #16.	Applicants who do not meet the admission requirements for direct entry to the degree program, but offer a minimum admission average of 60% (and other conditions as may be required by the admitting faculty) may be given conditional admission to the appropriate faculty in an entrance program to the extent that capacity allows. Students with high academic standing may be considered for admission to the Bachelor of Science program if they present any two of three grade 12 Sciences. e.g. Biology/ Chemistry; Biology/Physics; Physics/Chemistry. See note #12.
English 4U, Math MGA4U, Math MCB4U (min. grade 60%), Physics SPH4U, Chemistry SCH4U, 1 elective - Group 1 or 2 . Minimum admission average 75%.	English, Math 11, Math 12 (min. grade of 60%), Physics, Chemistry, 1 elective - Group 1 or 2. Minimum admission average 75%.	English, Math 11, Math 12 (min. grade of 60%), Physics, Chemistry, 1 elective - Group 1 or 2. See Note #16.	Senior-year Mathematics, Physics and Chemistry are required courses for admission to these programs. An average of the marks in senior-year Math and the best two grades from grade 12 Biology, Chemistry, Geology and Physics must be at least 75%. Students should note that two years each of high school Chemistry and Physics will normally be required; students lacking these courses will be considered on an individual basis. See note #12.

Program	NB	PEI	NS	NF	QC (High School Leaving Examination)
Bachelor of Computer Science / Bachelor of Science in Engineering (Geodesy & Geomatics) *(Fredericton)*	English 122 (min. grade of 60%), Trigonometry and 3-Space + Advanced Math with an Intro to Calculus (min. grade of 65%), Physics 122 (min. grade of 65%), Chemistry 122 (min. grade of 65%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 621 (min. grade of 60%), Math 521A or Math 521B, (min. grade of 65%), Math 621A or Math 621B (min. grade of 65%), Physics 621 (min. grade of 65%), Chemistry 621 (min. grade of 65%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 12 (min. grade of 60%), Advanced Math 12 (min. grade of 65%) + Pre-Calculus Math 12 (min. grade of 65%), Physics 12 (min. grade of 65%), Chemistry 12 (min. grade of 65%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 3201(min. grade of 60%), Advanced Math 2205 (min. grade of 65%), Advanced Math 3205 (min. grade of 65%), Physics 3204 (min. grade of 65%), Chemistry 3202 (min. grade of 65%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 516 (min. grade of 60%), Math 436 (min. grade of 65%), Math 536 (min. grade of 65%), Physics 534 (min. grade of 65%), Chemistry 534 (min. grade of 65%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.
Bachelor of Nursing	English 122 (min. grade of 60%), Geometry & Applications + Functions & Relations or Trigonometry & 3-Space (min. grade of 60%), Chemistry 122 (min. grade of 60%), Biology 120 (min. grade of 60%), 2 electives - Group 1. Minimum admission average 70%.	English 621 (min. grade of 60%), Math 521A or Math 521B or Math 621A or Math 621B (min. grade of 60%), Chemistry 621 (min. grade of 60%), Biology 621 (min. grade of 60%), 2 electives - Group 1. Minimum admission average 70%.	English 12, Academic Math 11 or Advanced Math 11 (min. grade of 60%), (min. grade of 60%), Chemistry 12 (min. grade of 60%), Biology 12 (min. grade of 60%), 2 electives - Group 1. Minimum admission average 70%.	English 3201(min. grade of 60%), Academic Math 2204 or Advanced Math 2205 or Advanced Math 3205 (min. grade of 60%), Chemistry 3202 (min. grade of 60%), Biology 3201 (min. grade of 60%), 2 electives - Group 1. Minimum admission average 70%.	English 516 (min. grade of 60%), Math 436 or Math 536 (min. grade of 60%), Chemistry 534 (min. grade of 60%), Biology 534 (min. grade of 60%), 2 electives - Group 1. Minimum admission average 70%.
Bachelor of Philosophy (in Interdisciplinary Leadership Studies) *(Fredericton)*	English 122, Geometry & Applications + Functions & Relations, 3 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 75%.	English 621, Math 521A or Math 521B, 3 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 75%.	English 12, Academic Math 11 or Advanced Math 11, 3 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 75%.	English 3201, Academic Math 2204 or Advanced Math 2205, 3 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 75%.	English 516, Math 436, 3 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 75%.
Bachelor of Recreation and Sport Studies *(Fredericton)*	English 122 (min. grade of 60%), Trigonometry and 3-Space or Advanced Math with an Intro to Calculus, one of: Biology 120, Chemistry 122, or Physics 122, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3 or 5. Minimum admission Average: 65%.	English 621 (min. grade of 60%), Math 621A or Math 621B, One of: Biology 621, Chemistry 621, or Physics 621, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3 or 5. Minimum admission Average: 65%.	English 12 (min. grade of 60%), Advanced Math 12 or Pre-Calculus Math 12, One of: Biology 12, Chemistry 12, or Physics 12, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3 or 5. Minimum admission Average: 65%.	English 3201 (min. grade of 60%), Advanced Math 3205, One of: Biology 3201, Chemistry 3202, or Physics 3204, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3 or 5. Minimum admission Average: 65%.	English 516 (min. grade of 60%), Math 536, One of: Biology 534, Chemistry 534, or Physics 534, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3 or 5. Minimum admission Average: 65%.
Bachelor of Science in Engineering	English 122, (min. grade of 70%), Trigonometry and 3-Space + Advanced Math with an Intro to Calculus (min. grade of 70%), Physics 122 (min. grade of 70%), Chemistry 122 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 621 (min. grade of 70%), Math 521A or Math 521B, Math 621A or Math 621B (min. grade of 70%), Math 621 (min. grade of 70%), Physics 621 (min. grade of 70%), Chemistry 621 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 12 (min. grade of 70%), Advanced Math 12 (min. grade of 70%) + Pre-Calculus Math 12 (min. grade of 70%), Physics 12 (min. grade of 70%), Chemistry 12 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 3201 (min. grade of 70%), Advanced Math 2205 (min. grade of 70%), Advanced Math 3205 (min. grade of 70%), Physics 3204 (min. grade of 70%), Chemistry 3202 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 516 (min. grade of 70%), Math 436 (min. grade of 70%), Math 536 (min. grade of 70%), Physics 534 (min. grade of 70%), Chemistry 534 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.

ON	MB,SK,AB,BC, NT,NU,YT	US	INFO
English 4U (min. grade of 60%), Math MGA4U (min. grade of 65%), Math MCB4U (min. grade of 65%), Physics SPH4U (min. grade of 65%) Chemistry SCH4U (min. grade of 65%), 1 elective - Group 1, 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 60%), 2 Maths (min. grade of 65%), Physics (min. grade of 65%), Chemistry (min. grade of 65%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 60%), 2 Maths (min. grade of 65%), Physics (min. grade of 65%), Chemistry (min. grade of 65%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). See Note #16.	Note: Students offering less than 70% in high school Chemistry, Physics and senior-year Mathematics may have to take additional courses. Students should note that two years each of high school Chemistry and Physics will normally be required; students lacking these courses will be considered on an individual basis. See note #12.
English 4U (min. grade of 60%), Math MCF3M or MCR3U (min. grade of 60%), Chemistry SCH4U (min. grade of 60%), Biology SBI4U (min. grade of 60%), 2 electives - Group 1. Minimum admission average 70%.	English (min. grade of 60%), Math 11 or Math 12 (min. grade of 60%), Chemistry (min. grade of 60%), Biology (min. grade of 60%), 2 electives - Group 1. Minimum admission average 70%.	English (min. grade of 60%), Math 11 or Math 12 (min. grade of 60%), Chemistry (min. grade of 60%), Biology (min. grade of 60%), 2 electives - Group 1. See Note #16.	Senior-year Chemistry and Biology are required. A minimum overall average of 70% is required on English, Math, Biology and Chemistry. Mature applicants must present Grade 12 English, Chemistry and Biology plus Grade 11 Mathematics with a minimum grade of 70% in each course. Other forms in addition to the normal application are required for this program; these forms are available from the Admissions Office or the UNB website. All admissions are on a competitive basis; satisfaction of the minimum requirements does not guarantee admission.
English 4U Math MCF3M or MCR3U 3 electives - Group 1 1 elective - Group 1, 2 or 3. Minimum admission average 75%.	English, Math, 3 electives - Group 1, 1 elective - Group 1 or 2 or 3. Minimum admission average 75%.	English, Math, 3 electives - Group 1, 1 elective - Group 1 or 2 or 3, See Note #16.	An average of 75% or higher on senior-year English and the required Mathematics is required. All admissions are on a competitive basis; satisfaction of the minimum requirements does not guarantee admission. Applicants must also submit to the Admissions Office a résumé which clearly and concisely outlines the applicant's : educational and career goals, volunteer activities, prior learning experiences, diversity of background and skills (such as, but not limited to: artistic, musical, athletic, cultural, linguistic), and leadership experience. Typically, this information can be communicated well in two or three pages. No special forms or formats are required.
English 4U (min. grade of 60%), Math MGA4U or MCB4U, One of Biology SBI4U, Chemistry SCH4U, Physics SPH4U 2 electives - Group 1, 1 elective - Group 1, 2, 3 or 5. Minimum admission average 65%.	English (min. grade of 60%), Math, One of: Biology, Chemistry, or Physics, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3 or 5. Minimum admission Average: 65%.	English (min. grade of 60%), Math, One of: Biology, Chemistry, or Physics, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3 or 5. See Note #16.	All admissions are on a competitive basis; satisfaction of the minimum requirements does not guarantee admission. Ontario applicants may present PSE4U Exercise Science to satisfy the senior biology requirement.
English 4U (min. grade of 70%), Math MGA4U (min. grade of 70%), Math MCB4U (min. grade of 70%), Chemistry SCH4U (min. grade of 70%), Physics SPH4U (min. grade of 70%), 1 elective - Group 1, 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 70%), 2 Maths (min. grade of 70%), Physics (min. grade of 70%), Chemistry (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 70%), 2 Maths (min. grade of 70%), Physics (min. grade of 70%), Chemistry (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). See Note #16.	Students not offering at least 70% in high school Chemistry, Physics and senior-year Math may have as much as 9 credit hours added to their programs because of course substitutions which take place in 1st year when such prerequisites are not met. Students should note that two years each of high school Chemistry and Physics will normally be required; students lacking these courses will be considered on an individual basis. Applicants who do not meet the admission requirements for direct entry to the degree program, but offer a minimum admission average of 60% (and other conditions as may be required by the admitting faculty) may be given conditional admission to the appropriate faculty in an entrance program to the extent that capacity allows. Only the first two years of Engineering are offered at UNB Saint John. See Note #12.

Program	NB	PEI	NS	NL	QC (High School Leaving Examination)
Bachelor of Science in Forest Engineering	English 122 (min. grade of 70%), Trigonometry and 3-Space + Advanced Math with an Intro to Calculus (min. grade of 70%), Physics 122 (min. grade of 70%), Chemistry 122 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 621 (min. grade of 70%), Math 521A or Math 521B, Math 621A or Math 621B (min. grade of 70%), Physics 621 (min. grade of 70%), Chemistry 621 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 12 (min. grade of 70%), Advanced Math 12 + Pre-Calculus Math 12 (min. grade of 70%), Physics 12 (min. grade of 70%), Chemistry 12 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 3201 (min. grade of 70%), Advanced Math 2205, Advanced Math 3205 (min. grade of 70%), Physics 3204 (min. grade of 70%), Chemistry 3202 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 516 (min. grade of 70%), Math 436, Math 536 (min. grade of 70%), Physics 534 (min. grade of 70%), Chemistry 534 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.
Bachelor of Science in Forestry *(Fredericton)*	English 122 (min. grade of 70%), Trigonometry and 3-Space + Advanced Math with an Intro to Calculus (min. grade of 70%), Chemistry 122 (min. grade of 70%) plus either Biology 120 or Physics 122 (min. grade of 70%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.	English 621 (min. grade of 70%), Math 521A or Math 521B, Math 621A or Math 621B (min. grade of 70%), Chemistry 621 (min. grade of 70%) plus either Biology 621 or Physics 621 (min. grade of 70%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.	English 12 (min. grade of 70%), Advanced Math 12 + Pre-Calculus Math 12 (min. grade of 70%), Chemistry 12 (min. grade of 70%) plus either Biology 12 or Physics 12 (min. grade of 70%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.	English 3201(min. grade of 70%), Advanced Math 2205, Advanced Math 3205 (min. grade of 70%), Chemistry 3202 (min. grade of 70%) plus either Biology 3201 or Physics 3204 (min. grade of 70%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.	English 516 (min. grade of 70%), Math 436, Math 536 (min. grade of 70%), Chemistry 534 (min. grade of 70%) plus either Biology 534 or Physics 534 (min. grade of 70%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.
Bachelor of Science in Kinesiology *(Fredericton)*	English 122 (min. grade of 60%), Trigonometry and 3-Space + Advanced Math with an Intro to Calculus, Chemistry 122, Biology 120 or Physics 122, 1 elective - Group 1, 1 elective - Group 1 or 2 or 3 or 5. Minimum admission average: 65%.	English 621 (min. grade of 60%), Math 621A or Math 621B, Chemistry 621, Biology 621 or Physics 621, 1 elective - Group 1, 1 elective - Group 1 or 2 or 3 or 5. Minimum admission Average: 65%.	English 12 (min. grade of 60%), Advanced Math 12 + Pre-Calculus 12, Chemistry 12, Biology 12 or Physics 12, 1 elective - Group 1 or 2 or 3 or 5. Minimum admission Average: 65%.	English 3201 (min. grade of 60%), Advanced Math 3205, Chemistry 3202, Biology 3201 or Physics 3204, 1 elective - Group 1, 1 elective - Group 1 or 2 or 3 or 5. Minimum admission Average: 65%.	English 516 (min. grade of 60%), Math 536, Chemistry 534, Biology 534 or Physics 534, 1 elective - Group 1, 1 elective - Group 1 or 2 or 3 or 5. Minimum admission Average: 65%.
Bachelor of Science in Software Engineering	English 122 (min. grade of 70%), Trigonometry and 3-Space + Advanced Math with an Intro to Calculus (min. grade of 70%), Physics 122 (min. grade of 70%), Chemistry 122 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 621 (min. grade of 70%), Math 521A or Math 521B, (min. grade of 70%), Math 621A or Math 621B (min. grade of 70%), Physics 621 (min.grade of 70%), Chemistry 621 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 12 (min. grade of 70%), Advanced Math 12 (min. grade of 70%), + Pre-Calculus Math 12 (min. grade of 70%), Physics 12 (min. grade of 70%), Chemistry 12 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 3201 (min. grade of 70%), Advanced Math 2205 (min. grade of 70%), Advanced Math 3205 (min. grade of 70%), Physics 3204 (min. grade of 70%), Chemistry 3202 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English 516 (min. grade of 70%), Math 436 (min. grade of 70%), Math 536 (min. grade of 70%), Physics 534 (min. grade of 70%), Chemistry 534 (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.
Bachelor of Science **Bachelor of Medical Laboratory Science**	English 122, Trigonometry and 3-Space + Advanced Math with an Intro to Calculus, Physics 122, Chemistry 122, 1 elective - Group 1 or 2. Minimum admission average 75%.	English 621, Math 521A or Math 521B, Math 621A or Math 621B, Physics 621, Chemistry 621, 1 elective - Group 1 or 2. Minimum admission average 75%.	English 12, Advanced Math 12 + Pre-Calculus Math 12, Physics 12, Chemistry 12, 1 elective - Group 1 or 2. Minimum admission average 75%.	English 3201, Math 2205, Advanced Math 3205, Physics 3204, Chemistry 3202, 1 elective - Group 1 or 2. Minimum admission average 75%.	English 516, Math 436, Math 536, Physics 534, Chemistry 534, 1 elective - Group 1 or 2. Minimum admission average 75%.

ON	MB,SK,AB,BC, NT,NU,YT	US	INFO
English 4U (min. grade of 70%), Math MGA4U (min. grade of 70%), Math MCB4U (min. grade of 70%), Physics SPH4U (min. grade of 70%), Chemistry SCH4U (min. grade of 70%), 1 elective - Group 1, 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 70%), Math 11, Math 12 (min. grade of 70%), Physics (min. grade of 70%), Chemistry (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 70%), Math 11, Math 12 (min. grade of 70%), Physics (min. grade of 70%), Chemistry (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). See Note #16.	Students not offering at least 70% in high school Chemistry, Physics and senior-year Math may have as much as 9 credit hours added to their programs because of course substitutions which take place in 1st year when such prerequisites are not met. Applicants who do not meet the admission requirements for direct entry to the degree program, but offer a minimum admission average of 60% (and other conditions as may be required by the admitting faculty) may be given conditional admission to the appropriate faculty in an entrance program to the extent that capacity allows. Students should note that two years each of high school Chemistry and Physics will normally be required; students lacking these courses will be considered on an individual basis. See note #12.
English 4U (min. grade of 70%), Math MGA4U (min. grade of 70%), ath MCB4U (min. grade of 70%), Chemistry SCH4U (min. grade of 70%) plus either Biology SBI4U or Physics SPH4U (min. grade of 70%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 70%), Math 11, Math 12 (min. grade of 70%), Chemistry (min. grade of 70%) plus either Biology or Physics (min. grade of 70%), 1 elective - Group 1 or 2 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 70%), Math 11, Math 12 (min. grade of 70%), Chemistry (min. grade of 70%) plus either Biology or Physics (min. grade of 70%), 1 elective - Group 1 or 2 (min. grade of 60%). See Note #16.	BScF applicants who have a mark less than 70% in senior year Chemistry must take Chemistry 1801 which will add 4 credit hours to the program. Applicants who do not meet the admission requirements for direct entry to the degree program, but offer a minimum admission average of 60% (and other conditions as may be required by the admitting faculty) will be given conditional admission to the appropriate faculty in an entrance program. See note #12.
English 4U (min. grade of 60%), Math MGA4U and MCB4U, Chemistry SCH4U, Biology SCI4U or Physics SPH4U 1 elective - Group 1, 1 elective - Group 1, 2, 3 or 5. Minimum admission average 65%.	English 12 (min. grade of 60%), Math, Chemistry, Biology or Physics, 1 elective - Group 1, 1 elective - Group 1 or 2 or 3 or 5. Minimum admission Average: 65%.	English 12 (min. grade of 60%), Math, Chemistry, Biology or Physics, 1 elective - Group 1, 1 elective - Group 1 or 2 or 3 or 5. See Note #16.	All admissions are on a competitive basis; satisfaction of the minimum requirements does not guarantee admission. Ontario applicants may present PSE4U Exercise Science to satisfy the senior biology requirement.
English 4U (min. grade of 70%), Math MGA4U (min. grade of 70%), Math MCB4U (min. grade of 70%), Chemistry SCH4U (min. grade of 70%), Physics SPH4U (min. grade of 70%), 1 elective - Group 1, 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 70%), 2 Maths (min. grade of 70%), Physics (min. grade of 70%), Chemistry (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). Minimum admission average 75%.	English (min. grade of 70%), 2 Maths (min. grade of 70%), Physics (min. grade of 70%), Chemistry (min. grade of 70%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%). See Note #16.	Note: Students offering less than 70% in high school Chemistry, Physics and senior-year Mathematics may have to take additional courses. Students should note that two years each of high school Chemistry and Physics will normally be required; students lacking these courses will be considered on an individual basis. See note # 12.
English 4U, Math MGA4U, Math MCB4U, Physics SPH4U, Chemistry SCH4U, 1 elective - Group 1 or 2. Minimum admission average 75%.	English, 2 Maths, Physics, Chemistry, 1 elective - Group 1 or 2. Minimum admission average 75%.	English, 2 Maths, Physics, Chemistry, 1 elective - Group 1 or 2. See Note #16.	Senior-year Mathematics, Physics and Chemistry are required courses for admission to these programs. An average of the marks in senior year Math and the best two grades from grade 12 Biology, Chemistry, Geology and Physics must be at least 75%. Students should note that two years each of high school Chemistry and Physics will normally be required; students lacking these courses will be considered on an individual basis. Applicants who do not meet the admission requirements for direct entry to the degree program, but offer a minimum admission average of 60% (and other conditions as may be required by the admitting faculty) may be given conditional admission to the appropriate faculty in an entrance program to the extent that capacity allows. Students with high academic standing may be considered for admission if they present any two of three grade 12 Sciences, e.g. Biology/Chemistry; Biology/Physics; Physics/Chemistry, etc. See note # 12.

NOTES TO ADMISSIONS CHART:

1. A pass at the high school level is required for each subject counted for admission (unless otherwise specified).

2. To count for admission a subject must be taken at the Grade 12 "academic" level" (N.B. level 2) unless otherwise specified; level 1, French Immersion, and advanced courses are satisfactory substitutes (where they exist). Courses taken at the "general" or "open" levels will not be accepted for admission purposes.

3. Students intending to enter the Science program (BSc), programs offered concurrently with the Science program (BA/BSc, BCS/BSc), the Bachelor of Medical Laboratory Science program (BMLS), the Bachelor of Arts and Sciences program (BASc), the Engineering programs (BScE and BScFE), and the Bachelor of Computer Science/Engineering concurrent program (BCS/BScE) should note that two years each of high school Chemistry and Physics will normally be required. Students who do not meet these requirements may be given special consideration.

4. Students whose first language is French may offer French in place of English in the required subjects and may then offer English as an elective.

5. Meeting the minimum requirements does not guarantee admission to any program.

6. The faculties of Arts and Science (Fredericton) or Science, Applied Science & Engineering (Saint John) offer a number of combined programs. These faculties offer a concurrent BA/BSc program (5 years of study lead to both a BA and a BSc degree), and a BASc (4 years of study lead to a Bachelor of Arts and Sciences degree). See Admission Chart for admission requirements for these programs.

7. The Faculty of Arts (Fredericton) offers the Bachelor of Applied Arts (Craft and Design) (BAA). This degree program is designed for students who wish to combine practical work in craft and design with elements of the Bachelor of Arts academic program. Students will complete two years at each of the University of New Brunswick and the New Brunswick College of Craft and Design. Students must be recommended for admission to the BAA program by the New Brunswick College of Craft and Design following an interview with the College. Students must also meet the admission requirements as listed in the Admissions chart. For further information, contact the Admissions Office.

8. The Faculty of Science offers a Bachelor of Medical Laboratory Science (BMLS). This program consists of courses offered at UNB (Fredericton and Saint John) and at the New Brunswick Community College. Admission requirements are as for the BSc program.

9. A concurrent program in Arts and Computer Science is available on the Fredericton campus in which both a Bachelor of Arts and a Bachelor of Computer Science degree can be completed in 5 years.

10. A concurrent program in Computer Science and Science (BCS/BSc) is available on the Fredericton campus in which both a Bachelor of Computer Science and a Bachelor of Science degree can be completed in 5 years. Admission requirements are the same as the BSc program, with the additional qualification of a mark of 60% or higher in senior-year Mathematics.

11. A concurrent program in Computer Science and Engineering (BCS/BScE) is available on the Fredericton campus in which both a Bachelor of Computer Science and a Bachelor of Science in Engineering (Geodesy & Geomatics) can be completed. This concurrent program requires at least 6 years of study. Admission requirements are the same as the Bachelor of Science in Engineering program, with the additional qualification of a mark of 60% or higher in senior-year Mathematics.

12. Students intending to enroll in MATH 1003, Introduction to Calculus I, must take a Placement Test which will be administered during Orientation week in September. Materials to prepare for this test are available on the web at http://math.unb.ca/ready as well as from the Mathematics Departments in New Brunswick High Schools and UNB. Based on their test scores, and the regulations set out by the Mathematics Departments, students will be required to take a Pre-Calculus course (Math 0863 UNBF or Math 1863 UNBSJ) or a special section of Math 1003 that covers the material of the course over two semesters, or a regular (one semester) section of Math 1003.

13. Ontario applicants presenting 3A and 4A courses from the old curriculum should contact the Registrar's Office for clarification regarding specific program requirements.

14. Science 122 is an approved Group 1 elective but it wlll not be accepted as a substitute for Chemistry 122 or Physics 122 for admission to programs requiring either of these courses.

15. New Brunswick students applying for the 2004 intake should present the following Mathematics courses:
    a. For programs not requiring calculus (Arts and Nursing), UNB will require Geometry and Applications in Mathematics 111/112 PLUS Functions and Relations 111/112 with a minimum pass mark of 60% in both courses. The grade achieved in Functions and Relations 111/112 will be used to determine the admission average.
    b. For programs requiring a calculus course (including Business Administration), UNB will require Trigonometry and 3-space 121/122 PLUS Advanced Mathematics with an Introduction to Calculus 120 with a minimum pass mark of 60% in both courses. The grades earned in both courses will be used to determine the admission average.

16. FOR UNITED STATES APPLICANTS ONLY

    If you are applying from the U.S., you must submit a high school transcript, Guidance Councelor's or Principal's report, and your SAT 1 or ACT scores. You must offer a grade of "B" in courses used for admission, a B-average or better, a rank in the upper half of your class, and a combined SAT 1 score of 1100 (higher standards required in restricted enrolment programs).

17. Information about admission to the Faculty of Education, Faculty of Law, Bachelor of Integrated Studies, Bachelor of Applied Management in Accounting, Bachelor of Applied Management in Electronic Commerce, and the Bachelor of Health Sciences programs are in appropriate sections of the Calendar. Please consult the Table of Contents for page numbers.

TABLE OF ELECTIVES

New Brunswick courses shown below; equivalent courses from other provinces and the United States will be accepted.
Please note: Ontario course HRT3M is an approved elective; HRE4M is not. SES4U, SNC4M and PSE4U are approved electives.

Group 1	Group 2	Group 3	Group 4	Group 5
Advanced Math 120	Intro. to Accounting 120	Art 110	Computer Assisted Drafting 110	Health & Physical Education 120
Atlantic Lit 120	Accounting 120 (Computer-ized)	Art 122	Computer Assisted Manufacturing 110	
Biology 120	Accounting 120	Communicatin 120	Intro. Electronics 110	
Calculus 120	Business Organization & Management 120	Communications 120 (Media Studies 120)	Micro Electronics 120	
Canadian Literature 120	Native Studies 120	Fl Techniques in		
Chemistry 122		Fine Arts 110		
Computer Education 110		Jazz Improvization 110		
or		Music 110 or Music 120		
Computer Education 120		Theatre Arts 120 (Drama 122,		
Co-op Education 120				
Economics 120				
Environmental Studies 112				
or				
Environmental Studies 122				
French 122				
Geography 110				
Geography 120				
Geology 120				
Geometry 120				
History 112				
History 122				
Latin 120				
Law 120				
Oceans 11				
Physics 122				
Political Science 120				
Reading Tutor 120				
Science 122				
Sociology 120				
World Issues 120				
Writing 110				

UNIVERSITY REGULATIONS & ADMISSION REQUIREMENTS
Table of Contents

I. ADMISSION FOR THE ACADEMIC YEAR 2005-2006	
Admission Requirements Table	20 - 27
A. General Information	28
B. Non Public-Schooled Applicants	28
C. Mature Applicants	28
D. Academic Probation for Transfer Students	29
E Admission from Community College	29
F. Admission with Advanced Standing	29
G. International Applicants	29
H. Applicant from the United States of America or from High Schools Using American - Based High School Curriculum	29
I. Bachelor of Education Concurrent Program	29
J. Bachelor of Education Consecutive Program	30
K. Bachelor of Philosophy Offered by Renaissance College	30
L. Bachelor of Integrated Studies	30 - 31
M. Certificate of Proficiency in French	31
N. New Brunswick Youth Apprenticeship Program	31
O. Re-Admissions	31
P. Requirements for a Second Undergraduate Bachelor Degree	31 - 32
Q. Transfer Students	32 - 33
R. Application Fraud or Misconduct	33
S. Challenge for Credit	33 - 34
T. Prior Learning Assessment	34
U. Procedure for Dealing with Student Gifts	34
II. CONFIDENTIALITY, SECURITY AND RELEASE OF STUDENT ACADEMIC RECORDS	35 - 36
III. FRENCH LANGUAGE POLICY - FREDERICTON	36
IV. FRENCH LANGUAGE POLICY - SAINT JOHN	36
V. MINOR PROGRAMS	36
VI. ACADEMIC REGULATIONS	
A. Class Attendance	37
B. Classroom, Lab, Clinical and Fieldwork Safety and Decorum	37
C. Adding Courses	37
D. Dropping Courses	37 - 38
E. Final Course Grades	38
F. Other Regulations	38
G. Permission to Study Off Campus at Another University or Other Post-Secondary Institution	38 - 39
VII. OFFICIAL WITHDRAWAL (VOLUNTARY) FROM UNIVERSITY	39
VIII. EXAMINATION, STANDING AND PROMOTION	
A. General Information	39 - 40
B. Competence in English	40
C. Dean's List Criteria	40
D. Deferred Examinations	41
E. Grading System and Classification	41 - 42
F. Calculation of Grade Point Averages	42
G. Standing and Promotion Requirements	42
H. Review of Grades	43 - 44
I. Repeating Courses	44
J. Language of Examination	44
K. Supplemental Examinations	44
IX. ACADEMIC OFFENCES	
A. Plagiarism	44 - 45
B. Other Academic Offences	45 - 46
C. General	46
X. RIGHT OF APPEAL	46 - 47
XI. GENERAL REGULATIONS ON CONDUCT	47 - 48
XII. LISTING OF GRADUATES	48 - 49
XIII. ACADEMIC DRESS	49

I. ADMISSION REGULATIONS FOR THE ACADEMIC YEAR 2005-2006

A. General Information

2. Applicants may obtain information or application forms from the Admissions Office, University of New Brunswick, P.O. Box 4400, Fredericton, N.B. E3B 5A3 (call (506) 453-4865, or fax (506) 453-5016), or the Admissions Office, UNB Saint John, P.O. Box 5050, Saint John, NB E2L 4L5, (call (506) 648-5671, or fax (506) 648-5691).

   Applicants are also encouraged to consult UNB's Home Page on the Internet (http://www.unb.ca) for up-to-date developments, including an on-line application.

3. A student applying for entrance to the University of New Brunswick (UNB) must complete an application form and forward it to the Admissions Office together with the application processing fee of $35. A a non-refundable tuition confirmation deposit of $100 is required from all applicants after they have been accepted.

4. The final date for application, including required supporting documentation, for the 2005-2006 session is 31 March 2005 (31 January for BEd programs). Applications received after that date may be considered, provided that space is available, but late applicants are cautioned that their applications will not be processed until the earlier applications are dealt with, and that they may not necessarily be accepted for the campus or Faculty of their choice. This closing date does not apply to applications for Graduate Studies. It is recommended that applications for programs with enrollment limits, i.e. Bachelor of Arts, Bachelor of Business Administration, Bachelor of Education, Bachelor of Computer Science, Bachelor of Nursing, Bachelor of Science in Engineering, Bachelor of Science in Forestry, Bachelor of Science in Forest Engineering and Bachelor of Science in Kinesiology, and Bachelor of Recreation and Sports Studies programs be submitted early.

5. Applicants for University scholarships must complete the Scholarships Section of the application.

6. Given the lead time required for processing of visas, international students are encouraged to apply early; UNB expedites the processing of such applications, which includes offering to fax acceptances and rendering early decisions as soon as applications become complete. Offers of admission can be made throughout the year, until such time as competitions are declared closed.

7. Meeting the minimum requirements does not guarantee admission to any program. For example there are limitations on enrollment in the Bachelor of Arts, Bachelor of Business Administration, Bachelor of Education, Bachelor of Computer Science, Bachelor of Nursing, Bachelor of Science in Forestry, Bachelor of Science in Engineering, Bachelor of Science in Forest Engineering and Bachelor of Science in Kinesiology, and Bachelor of Recreation and Sports Studies programs.

8. Students will normally follow the regulations in the Calendar for the year of their admission.

B. Non Public-Schooled Applicants

Applicants in this category may have been home-schooled or may have attended a private school that does not follow a regular provincial curriculum. These applicants must provide the following:

1. A complete Application for Admission form with the application processing fee.

2. A letter identifying the applicant's "non public-schooled" status and including a transcript detailing grade 11 and grade 12 courses. Course outline, syllabus, evaluation criteria, and a list of resource materials should be provided for each course.

3. Evidence of a minimum score of 1100 in the SAT 1.

4. For programs requiring specific grades in particular courses, evidence of achievement can be provided as follows:
   a. Complete a SAT 2 test in required courses and achieve a minimum of 550 out of 800, or
   b. Complete the Grade 12 Adult High School Certification Provincial exam for that subject and achieve the grade specified in the program pre-requisite (e.g. a minimum grade of 60% is required in English 122 for admission to the Faculty of Arts), or
   c. Achieve a minimum grade of 4 in an approved Advanced Placement (AP) course.

4. Submit evidence of achievement as outlined above by having official documents (transcripts/statements of results) sent directly from the testing agency to the Admissions Office. (Documents will not be accepted from applicants).

C. Mature Applicants

1. Canadian citizens and permanent residents who do not meet the usual entrance requirements and who are 21 years of age or older by the session for which acceptance is sought may be considered for admission. In addition to the documentation normally requested, such applicants are encouraged to submit a letter indicating why they feel they are likely to profit from a university education.

2. Normally admission to an undergraduate program will be assessed after a mature applicant has completed UNB courses on a part-time basis approved for the purpose; high school graduates, adult high school diploma recipients and holders of high school equivalency certificates (GED) may be exempted from this requirement. Since some Faculties specifically require certain courses in Mathematics and Science, qualifying course work may also be required; proof of successful completion in the specified course, as offered by the N.B. Department of Advanced Education & Labour and/or the NBCC network, is acceptable. All applicants should consult the Registrar's Office before registering.

3. Applicants who have attended another college or university but who have been away from formal education for a minimum of five years may make application under this regulation. However, clear evidence of ability to handle university-level studies, or of extenuating circumstances, will be required. In select cases, qualifying course work may not be required.

4. The University reserves the right to refuse admission.

D. Academic Probation for Transfer Students

1. When students transferring from another Faculty, University or post-secondary institution are admitted on Academic Probation, that placement on Academic Probation will be considered to be the one allowable placement under these regulations.

E. Admission from Community College

Graduates from Community College Programs and students who have successfully completed study in community college programs should request that official transcripts of their work be forwarded to the Registrar's Office.

1. Such transcripts will be considered for transfer credit provided that:
   a. the courses being considered for credit satisfy the program requirements at the University of New Brunswick;
   b. the courses being considered meet the standard of grade required within the program at the University of New Brunswick

F. Admission with Advanced Standing

1. An admitted applicant who has taken recognized OAC credits may be considered for transfer credit in appropriate courses. Normally a mark of 65% will be required in each subject for which credit is sought. In some subjects a higher grade may be required.
2. Credit may be given for appropriate courses if an applicant has completed at least one full year of CEGEP. Normally a minimum mark of 65% will be required in each subject for which credit is sought.
3. The maximum amount of transfer credit which may be allowed under 1 or 2 above will not be more than the normal number of credit hours in first year of the program to which the student is admitted.
4. Applicants from overseas who already possess entrance requirements as stated on GCE 'O' level or its equivalent may be considered for transfer credit, for appropriate courses in the program they propose to enter, on the basis of GCE 'A' level passes with at least a grade of 'C'.

G. International Applicants

1. For applicants from Great Britain and countries with GCE equivalent examinations, GCE "O" level at "B" or grade three level in English, Mathematics, and four academic options is required.
2. Applicants from other countries should consult the UNB web page for detailed admission requirements that can differ between countries.
3. International students and landed immigrants whose native language is not English must submit the results of an English language proficiency test: TOEFL, MELAB (Michigan Test), and IELTS (University of Cambridge) and CAEL (Canadian Academic English Language Assessment) have been approved for this purpose. This requirement may be waived in cases where the applicant has been in Canada for three or more years. In all cases, the University reserves the right to require proof of language proficiency before permission will be granted to register in academic courses.

H. Applicant from the United States of America or from High Schools Using American - Based High School Curriculum

1. Applicants from Grade 12 of an accredited American-based high school curriculum must offer a rigorous program of required university preparatory courses and receive a favourable recommendation from the high school principal. Criteria such as academic standing, rank in class, and SAT score will also be used to determine a candidate's admissibility.
2. Normally students will be required to offer an average of B- or better, a rank in the upper half of the graduating university preparatory class, and offer a total SAT I score of at least 1100. Significantly higher standards may be required of those requesting admission to restricted enrollment programs.

I. Bachelor of Education Concurrent Program

Admission is granted in consultation with the Faculty of Education. The number of places available in the program is limited and admission is competitive.

Criteria for Admissions

Minimum requirements for admission to the Faculty of Education Concurrent Degree Program are:

1. successful completion of a minimum of 30 credit hours or equivalent of undergraduate studies from a recognized university, college or other post-secondary institution;
2. good academic standing; and
3. eligibility to register in another undergraduate program at UNB.

   Note: Although students may be admitted after completing only 30 credit hours of undergraduate studies, they must fulfill one of the following requirements before the BEd will be awarded:

   a. In the Early Years program, students must complete at least 30 credit hours of course work in teachable subjects involving courses in at least four different teachable subjects.
   b. In the Middle or Young Adult programs, students must complete a major of at least 30 credit hours in one teachable subject and 18 credit hours in another teachable subject, or a double minor of at least 24 credit hours in each of two different teachable subjects.

Significant weight will be given to the academic record. Consideration will also be given to the applicant's suitability for and interest in education. Individual interviews may be conducted as required.

Required Documentation

The following documents must be submitted by January 31st of the academic year for which the applicant is seeking admission:

1. Application form and education supplementary forms, which include evidence of experience and education indicating a suitability for and an interest in education, and a personal statement of intent and purpose.
2. Official transcript(s) of academic record to date, other than University of New Brunswick transcripts. Applicants must arrange for an official transcript at each university, college, or other post-secondary institution attended to be sent

directly to the Admissions Office by the academic records department of the institution. Applicants must also arrange for an official transcript of all grades received after the time of application to be sent directly to the Admissions Office as soon as it becomes available. The Admissions Office cannot accept the applicant's copy of any transcript.

3. Two references, submitted directly to the Admissions Office, by persons able to comment on matters relevant to the criteria for admission.

Internal and external applicants will follow the same admissions procedures.

J. Bachelor of Education Consecutive Program

Admission is granted in consultation with the Faculty of Education. The number of places available in the program is limited and admission is competitive.

Criteria for Admissions

Minimum requirement for admission to the Faculty of Education Consecutive Degree Program is the successful completion of an undergraduate degree with teachable subjects from a recognized university, college or other post-secondary institution.

To be admitted to the Consecutive BEd Early Years Program, students must have at least 30 credit hours of course work in teachable subjects involving courses in at least four different teachable subjects.

To be admitted to the Consecutive BEd Middle or Young Adult Programs, students must have a major of 30 credit hours in one teachable subject and 18 credit hours in another teachable subject, or a double minor of 24 credit hours in two different teachable subjects.

Significant weight will be given to the academic record. Consideration will also be given to the applicant's suitability for and interest in education. Individual interviews may be conducted as required.

Required Documentation

The following documents must be submitted by January 31st prior to beginning of the academic year for which the applicant is seeking admission:

1. Application form, and education supplementary forms which includes evidence of experience and education indicating a suitability for and an interest in education, and a personal statement of intent and purpose.
2. Official transcript(s) of academic record to date, other than University of New Brunswick transcripts. Applicants must arrange for an official transcript at each university, college, or other post-secondary institution attended to be sent directly to the Admissions Office by the academic records department of the institution. Applicants must also arrange for an official transcript of all grades received after the time of application to be sent directly to the Admissions Office as soon as it becomes available. The Admissions Office cannot accept the applicant's copy of any transcript.

Two references, submitted directly to the Admissions Office by persons able to comment on matters relevant to the criteria for admission.

K. Bachelor of Philosophy Offered by Renaissance College

In order to meet learning objectives and to provide the planned experiential learning and mentorship components, the program will have a limited enrollment.

Criteria for Admissions

1. High School applicants must meet admission requirements as specified in the chart of First Year Required Academic Subjects and accompanying notes found in Section B of the UNB Academic Calendar.
2. The UNB regulations applicable to transfer students and Mature students are outlined in Section B of the UNB Academic Calendar. Normally, a minimum assessment grade point average of 3.0 (or equivalent) is required for a student to be considered for transfer to Renaissance College.
3. All applicants must also submit to the Admissions Office a resume which clearly and concisely outlines the applicant's educational and career goals, volunteer activities, prior learning experiences, diversity of background, and skills (such as but not limited to: artistic, musical, athletic, cultural, linguistic), and leadership experience. Typically, this information can be communicated well in two or three pages. No specific forms or formats are required.
4. Transfer credit toward required RCLP courses will be given on the basis of evidence provided by the student for demonstrated competence in the learning outcomes associated with each Renaissance College course.

Admissions Committee

An Admissions Committee of faculty members, in cooperation with the Office of the UNB Registrars, will review the applications. In admitting students, the Admissions Committee will strive to assemble a diverse cohort of highly capable learners and match the student to the program by determining what the College can contribute to the individual, what the individual can contribute to the College, and what the individuals can contribute to each other.

L. Bachelor of Integrated Studies

Criteria for Admission

Normally, applicants to the Bachelor of Integrated Studies program without a prior degree must meet the following requirements:

1. Minimum of 25 years of age
2. Complete an interview with the Bachelor of Integrated Studies program advisor to assess their suitability for the program.
3. Have completed a minimum of 30 credit hours of transferable credit (or the equivalent through prior learning assessment) of post-secondary study.

Potential applicants with a degree should refer to existing regulations in the UNB Calendar regarding second degrees and should consult the BIS Coordinator.

Other Special Requirements

Personal Learning Portfolio:

As part of the application process, the applicant will begin development of a personal learning portfolio that will be

used as the basis for the assessment of prior learning. The portfolio will continue to be developed throughout the course of study through a Renaissance College portfolio course and will be submitted as a graduation requirement for the program.

The BIS portfolio documents formative understanding of how and to what degree students achieve the learning outcomes. It is a meta-analysis where students engage in a reflective critique that, when written, conveys development and competency in each of the BIS outcomes. Examples from experiences that were not part of BIS courses or other academic courses such as workplace or community activities should also be included where appropriate. The portfolio is not merely a list of things done, but things done and how the student has grown and developed as a result.

M. Certificate of Proficiency in French

Successful completion of New Brunswick Grade XII French, or the equivalent, is the minimum requirement for admission. Appropriate oral and/or written tests may be given to place students at the proper level.

N. New Brunswick Youth Apprenticeship Program

The following action has been approved for this group of applicants:

1. The University of New Brunswick guarantees successful New Brunswick Youth Apprenticeship students access to relevant undergraduate programs, which are accessible directly from high school, provided all minimum requirements for admission are met and enrollments are not limited;
2. An application deadline of 15 February has been created for such applicants and where it appears that the level of interest shown by student apprentices exceeds 5% of anticipated enrollment, a competition will be established to stay within this target;
3. Such applicants are required to submit a Youth Apprenticeship Program progress report in addition to the normal admission documentation to provide verification of participation and to provide background information should the need arise to open a competition;
4. Such students may be referred to the Challenge for Credit regulations in the event that they have acquired by the work experience and occupational training within the Apprenticeship Program, a high level of competence in certain areas closely related to UNB courses.

O. Re-Admissions

1. Students who have been absent from study for a period of at least 12 consecutive months since their last attendance are required to seek re-admission. Students re-admitted to the original or another program of study following an absence from study, or re-admitted since being required to withdraw, will normally follow the calendar for the year study resumes. Individual faculties may have established additional conditions. Students should refer below for further information concerning re-admission since being required to withdraw.
2. Students who have been required to withdraw from this university or any other university or college will not be accepted, under any circumstances, in the following academic year. Such students may be considered for readmission or admission after they have spent some time (at least 12 months) away from university and can provide a satisfactory personal letter outlining why they feel they will now be successful as well as a satisfactory letter of recommendation from employers and/or others. The admitting faculty or the Admissions Committee may require evidence, such as successful completion of designated courses, that applicants are likely to be successful in further studies.
3. A student readmitted since being required to withdraw from this university or any other university, will automatically be on academic probation. Failure to meet the normal academic regulations at the next time of assessment will result in final dismissal from the program. Further applications for readmission to the program will not be considered.

P. Requirements for a Second Undergraduate Bachelor Degree

Graduates of UNB may apply for admission to and follow a program towards a second different undergraduate bachelor degree and in limited cases a second same undergraduate bachelor degree under the following regulations:

Second Different Undergraduate Bachelor Degree

1. The general regulations of the University and the regulations of the degree program concerned must be satisfied. Refer to the appropriate section of this calendar for the regulations of the degree program.
2. Degree and departmental regulations concerning option, concentration, Major or Honours must be satisfied.*
3. * Throughout these regulations, the use of terms "option", "concentration", "major", and "honours" vary by faculty. All these terms denote some degree of specialization.
4. The minimum number of credit hours, or courses, which must be successfully completed beyond the work required for the previous degree must not be less than the normal load of the final academic year in the degree program concerned. More than the minimum number of credit hours, or courses, may be required.
5. The courses taken must be approved by the Dean and the Department, or Departments, under which the option, concentration, Major, or Honours, falls.
6. In Faculties where the credit system is used, at least half the credits for a degree, diploma or certificate must be taken at this University; in Faculties where the year-system is used, two years must be taken at this University. It is normally expected that the final year of study be completed at this University.
7. Candidates for a second different degree may not normally choose the same major, honours, option or concentration as in the first undergraduate degree.
8. Students must make specific application to the Associate Registrar/Admissions for entry to the second different degree program.
9. Only in special circumstances will students be admitted to a third different undergraduate degree program.

10. The final decision on the course work requirements for a second different undergraduate bachelor degree shall be a matter of agreement between the Registrar and the Dean, after consultation with the Chairs of Departments concerned.

Second Same Undergraduate Bachelor Degree

1. A second same degree is permitted in limited cases. The general regulations of the University and the regulations of the degree program concerned must be satisfied. Refer to the appropriate section of this calendar for the regulations of the degree program.
   a. At this time on the Fredericton campus, only the Faculty of Science will permit a second same Undergraduate Bachelor degree.
   b. At this time on the Saint John campus only the Faculty of Arts and the Faculty of Science, Applied Science and Engineering will permit a second same undergraduate Bachelor degree.
2. Degree and departmental regulations concerning option, concentration, Major or Honours must be satisfied.*

   * Throughout these regulations, the use of terms "option", "concentration", "major", and "honours" vary by faculty. All these terms denote some degree of specialization.
3. The minimum number of credit hours, or courses, which must be successfully completed beyond the work required for the previous degree must not be less than the normal load of the final academic year in the degree program concerned. More than the minimum number of credit hours, or courses, may be required.
4. The courses taken must be approved by the Dean and the Department, or Departments, under which the option, concentration, Major, or Honours, falls.
5. In Faculties where the credit system is used, at least half the credits for a degree, diploma or certificate must be taken at this University; in Faculties where the year-system is used, two years must be taken at this University. It is normally expected that the final year of study be completed at this University.
6. Candidates for a second degree may not normally choose the same major, honours, option or concentration as in the first undergraduate degree.

   Student may be permitted to upgrade a Minor or a Major from the first degree under the following conditions:
   a. A Minor from the first degree may be upgraded to a Major or Honours after completion of the first degree.
   b. A Major from the first degree may be upgraded to an Honours after completion of the first degree.
   c. In either case, a notation only will be included on the student record and a second degree will not be awarded.

   Students will not be permitted to include a Minor in the second degree.
7. Students must make specific application to the Associate Registrar/Admissions for entry to the second degree program.
8. Only in special circumstances will students be admitted to a third undergraduate degree program.
9. The final decision on the course work requirements for a second different undergraduate bachelor degree shall be a matter of agreement between the Registrar and the Dean, after consultation with the Chairs of Departments concerned.

Graduates of other universities are not eligible to apply under these regulations. Applications from such candidates will be considered for possible acceptance and advanced standing on receipt of official transcripts submitted to the Associate Registrar/Admissions.

Students who desire to complete requirements for two different Bachelor Degrees at the same time will be granted such permission provided approval from both Faculties concerned has been granted. If permission is granted, students must be admitted to the second program by the Admissions Office. Requirements for each degree program are determined by each Faculty. This arrangement is separate from the Concurrent Degree Programs offered by the University.

Q. Transfer Students

University of New Brunswick Students

University of New Brunswick students wishing to transfer to another degree program must complete a Transfer Request form, preferably before March 31st (January 31st for BEd applicants). Applications received after that date will be considered, provided that space is available. It is recommended that transfer applications for degree programs requiring special forms, i.e. BN and Kinesiology, be submitted in January or February (November or December for BEd). Applications to transfer are available at the Registrar's Office on both campuses. The record to date will be assessed by the Registrar in consultation with the administrative head of the degree program concerned. If the transfer is accepted, a statement of the student's position in the new program, including the credit hours permitted towards the new degree program, will be made.

Students wishing to transfer to another degree program for a winter term (beginning in January of the academic year) must complete a Transfer Request form before November 15th.

Students will normally be required to have completed at least one full year of academic work before applying to transfer.

Students from other Universities or Post Secondary Institutions

A student wishing to transfer from a recognized university or college to UNB will be considered for admission subject to the following University of New Brunswick regulations:

1. Students should apply in writing by March 31 (January 31st for BEd applicants). Applications received after that date will be considered, provided that space is available.
2. Students who for academic reasons are not eligible for readmission to the university at which they last registered will not be admitted to UNB.
3. A transfer student eligible to continue at the university last attended will be considered on the same basis as UNB students. Note: The Faculty of Law is excluded from these regulations.

4. Courses for which credit has been awarded at the transferring institution will be accepted provided that:
   a. the courses being considered for credit satisfy the program requirements at the University of New Brunswick.
   b. the courses being considered meet the standard of grade required within the program at the University of New Brunswick.
5. Official records will be evaluated and notification will be forwarded from the Registrar's Office concerning the student's position in the program at the University of New Brunswick, including the number of transfer credits awarded.

   Applications for transfer to UNB must be submitted to the Admissions Office. They will be reviewed by the Dean of the Faculty concerned who, together with appropriate University authorities, will determine the position of the applicant.

   In Faculties where the credit system is used, at least half the credits for a degree, diploma or certificate must be taken at this University; in Faculties where the year-system is used, two years must be taken at this University. It is normally expected that the final year of study be completed at this University.

   Applicants wishing to transfer to UNB are advised to address their request to the Admissions Office.
6. A student accepted as a transfer student from another AUCC recognized university or post-secondary institution may be given credit hours towards a degree for acceptable previous courses, but the cumulative grade point average, will be based only on courses taken at this University (i.e. those listed in the UNB Undergraduate Calendar, including certain approved St. Thomas University courses).
7. Students who transfer from another post-secondary institution to a Concurrent Degree program at UNB must complete at least half the total credit hours for that concurrent program and at least half of the credit hours normally required for each included program at this University.
8. Current university regulations governing the number of credits that must be taken at the University of New Brunswick apply.
9. From time to time and in special circumstances, Faculties may recommend that credits in addition to the normal 50 per cent of the degree program be transferred. Such recommendation will be considered by the Registrar. In situations where approval is denied, and at the request of the Faculty, the matter will be referred to the Senate Admissions Committee for resolution.

R. Application Fraud or Misconduct

1. Undergraduate students who at the time of application fail to provide required information regarding attendance at another post-secondary institution will normally be required to withdraw from the University for a period of at least twelve months. Where a student is required to withdraw,
   a. work taken during the period after the failure to disclose will be considered for credit only if the student is readmitted and after consultation with the Faculty concerned; and
   b. the notation "Required to Withdraw" will be a permanent statement on the student's transcript of record.
2. Where the Registrar has reason to believe that a student failed at the time of application to disclose attendance at another post-secondary institution as required, the Registrar, where possible, shall discuss the matter with the student. Where the Registrar determines that the student failed to disclose such information as required, the Registrar shall impose such penalty as considered appropriate in the circumstances. By registered mail, the Registrar shall:
   a. notify the student of the decision and the penalty imposed;
   b. provide the student with the basis and reasons for the decision;
   c. advise the student of the right to appeal to the appropriate Senate Admissions Committee; and
   d. in the event of an appeal, request that the student submit a written statement regarding the case within three weeks, and encourage the student to be present when the case is heard.
3. The regulations with respect to a student's right to appeal on academic matters shall apply with any necessary modifications to a case referred to the Committee involving a failure to disclose attendance at another post-secondary institution.

S. Challenge for Credit

A significant number of students are entering university having acquired, by work experience and/or forms of study other than attendance at university, a high level of competence in certain areas closely related to courses offered at this University. The Challenge for Credit scheme makes it possible for the University to give recognition to such attainment.

The regulations which follow provide a mechanism for Departments to offer Challenge for Credit examinations in courses which they consider appropriate.

Regulations

The Challenge for Credit scheme does not apply to the School of Graduate Studies or the Faculty of Law or the Faculty of Education.

1. (a) Only students who have been admitted to a degree, diploma or certificate program at the University of New Brunswick may challenge for credit.
   (b) The result of Challenge examinations will be recorded subsequent to registration.
2. Normally, a request for challenge for credit will not be considered after one year from the date of the student's first registration in a degree, diploma or certificate program at UNB.
3. A student may receive credit by Challenge only when registered in a formal degree, diploma or certificate program, i.e. no credit for students in "no degree", "visiting" or "qualifying" programs.
4. A student shall not be allowed to challenge for credit more than once in any course.
5. No student may challenge for credit in a course for which

the student has previously registered (including registration for audit) either at UNB or any other university or equivalent institution.

6. (a) The maximum credit which a student may obtain by challenge is whichever is the lesser of 30 credit hours or 25% of the requirements of the program. (Please note certain Faculties may have a more restrictive policy.) (b) Students must still complete at least 50% of the program at UNB excluding credits obtained by Challenge.
7. A student on "academic probation" or "required to withdraw" may not challenge for credit.
8. A student may not challenge for credit in a course of a lower level than one already attempted.
9. Courses challenged will be identified as such on the student's transcript and will be shown as "Credit" (CR), or "No Credit" (NCR). A grade of 'C' must be obtained for credit to be allowed.
10. The challenge for credit will normally be in the form of a comprehensive examination. In some cases additional proof of expertise, such as evidence of laboratory experience, will be required.
11. The Department or faculty member concerned will determine the content and form of the challenge for credit examination.
12. Applications must be approved by the department concerned which should be satisfied that there is a reasonable basis for requesting a challenge, such as previous work or educational experience.
13. (a) Challenge for credit examinations will be held only on the campuses of the University of New Brunswick.

    (b) Normally, challenge examinations will be held during the first week of lectures in the Fall Term or, in the case of a student admitted to start in January, during the first week of lectures in the second or Winter Term. Application to challenge for credit must be made 30 days in advance of these examination periods. At the discretion of the department concerned and with the agreement of the Registrar, this period may be shortened (e.g. if an examination paper suitable for challenge for credit is already available).

Applications must be accompanied by the appropriate fee in full. (See Section C.)

Application forms are available at the Registrar's Office.

T. Prior Learning Assessment

Prior Learning Assessment (PLA) refers to the systematic evaluation of learning which an individual has achieved through work, life and educational experiences, and the relating of that learning to the expected learning outcomes of courses and programs in which the individual is enrolled at UNB for the purpose of granting credit where appropriate. PLA is not the granting of credit for experience but rather for learning. The validity of PLA is based on the recognition that learning takes place in a variety of settings and through a variety of experiences, and that students who bring university-level learning upon entrance to a UNB degree, diploma or certificate program should receive credit for what they already know or can do, as assessed against the expected outcomes of that program.

If credit is approved, then a grade of "transfer credit" (TR) will be shown on the transcript of record.

Specific course/s for which credit has been approved through prior learning assessment will be identified as such on the student's record.

Unassigned credit to be applied to a student's program will be identified as such on the student record.

Partial course credit as a result of prior learning assessment will not be shown on the student transcript of record. Such a result will form part of a student's computer record if possible in any student information system the University is using and will be held on file in the student's program Faculty and the Registrar's Office.

The result of a PLA evaluation will be recorded subsequent to registration.

For further information, please contact the Dean of your Faculty or the Director, PLA Services.

U. Procedure for Dealing with Student Gifts

As a matter of principle, the University discourages the practice of students giving gifts to faculty members. However, from time-to-time faculty members may be presented with a gift from one or more students or an entire class that expresses appreciation. Such gifts may range from flowers to items of considerable value. In some cases the offering of a gift may reflect a cultural custom on the part of the students(s) concerned. Faculty members should use their professional judgement to decide whether or not to accept such gifts from students, and may wish to consider the following alternatives, especially when only one or two gift givers are involved:

a. Students offering gifts of money could be encouraged to make a donation to a University scholarship, bursary or prize fund, or some other University purpose. The gift could be designated in appreciation of Professor xxxxx, and sent directly, or through the faculty members Dean, to the Development Office on the Fredericton Campus, or the Office of Advancement, Communications, and Recognition on the Saint John campus. (The student would receive a tax receipt for a charitable donation.)

b. Students offering gifts in kind which are inappropriate or have a significant monetary value could be referred to the faculty members Dean, the Development Office on the Fredericton Campus, or the Office of Advancement, Communications, and Recognition on the Saint John campus.

c. In lieu of gifts of money or in kind, students who wish to express thanks or appreciation to a faculty member could be encouraged to:

    i. Nominate the faculty member for a Faculty or University teaching award

    ii. Write a letter of appreciation to the faculty members Dean or the Vice-President

    iii. Send a card or note of thanks to the faculty member.

Under any circumstances, faculty members should avoid accepting gifts from students prior to submission of final grades for those students, or completion of supervision.

II. CONFIDENTIALITY, SECURITY AND RELEASE OF STUDENT ACADEMIC RECORDS

The term "official academic record" when used in these policies means the information concerning admission and academic performance of students as it is contained in any record of information however recorded or stored.

A. The official academic records of students are the property of the University.

B. The Registrars and any designated officer, where applicable, shall retain the custody of the official student academic records, however recorded or stored, in the Office of the Registrar, the School of Graduate Studies, the Department of Integrated Technology Services, and the Faculty of Law, all of the University of New Brunswick Fredericton and Saint John ("the University"), and shall be responsible for their security and maintenance.

C. Students desiring to have their names changed on their official student record be it by means of alteration, deletion, substitution or addition must submit appropriate supporting documentation.

D. RELEASE OF INFORMATION

1. Except as provided herein, official academic records are confidential and shall not be divulged to any third party, including parents or guardians, except as noted in this statement, without the written consent of the student concerned.

2. Students have the right to official copies of their University of New Brunswick transcripts of record. Official transcripts issued to students are indicated as such on the transcript. Any requests should be submitted to the appropriate Registrar's office with the required fee. Transcripts and degree parchments will be withheld for students, including former students, who have failed to meet their financial obligations to the University. Students have the right to access their transcripts of record as held in the computerized files and to print unofficial copies of their transcripts of record.

3. Partial transcripts will not be issued.

4. Transcripts shall only be released or personal information contained in the official student records released in accordance with University policy:

   a. Where the person to whom the information relates has identified that information in particular and has consented to its disclosure;

   b. For the purpose for which it was obtained or compiled or for a purpose consistent therewith;

   c. To an officer or employee of the University who needs the record in the performance of his or her duties;

   d. For the purpose of complying with a requirement to provide information lawfully imposed upon the University by a federal/provincial government authority;

   e. Where disclosure is necessary to aid in the investigation of allegations that individuals have made false statements or engaged in other misleading conduct concerning their attendance or performance or status within or completion of an academic program of the University;

   f. In compelling circumstances affecting the health or safety of an individual, if, upon disclosure, notification thereof is mailed to the last known address of the individual to whom the information relates;

   g. In compassionate circumstances, to facilitate contact with the next of kin or a friend of an individual who is injured, ill or deceased; or

   h. To a person who has been authorized by the individual to whom the information related to make an enquiry on that individual's behalf or, where that individual is incapacitated, has been authorized by the next of kin or legal representative of that individual.

5. The Campus Registrar may authorize access to academic records for the purpose of research. Students of the University may examine their personal official academic records held in paper files, with the exception of letters of reference provided to the University in confidence. A member of the Registrar's Office or a designated officer on the campus where the record is held will be present during such an inspection. Students may examine letters of reference or other information provided to the University in confidence only with the written permission of the referee or writer being first obtained and received by the appropriate Registrar or designated officer holding the file.

6. The Office of the Registrar will not normally provide students or third parties, except as noted below, with copies of documents on file, such as transcripts from other institutions, or correspondence provided to the University in confidence. In the case of a request for copies of documents made to a Campus Registrar's office, an exception may be made in severe situations such as where an international student is unable to obtain copies of original documents. If the request is approved, the Registrar will authorize copies of such documents be forwarded to another institution marked "copy of original documents on file."

7. The University considers certain information, that is, a student's name, dates of university attendance, verification of degrees obtained, to be public information. Such information may be disclosed by the Campus Registrar or designated officer without the consent of the student. Students who object to the release of such information shall notify the Registrar of the campus where the information is held, in writing, giving the specific objection or objections. The Registrar shall then determine what action, if any, will be taken and advise the student and the designated Officer where necessary.

8. The University routinely releases student e-mail identifiers while the student is enrolled at the University. Students who object to such release must notify the Campus Registrar.

9. The University routinely provides, through secure on-line access, a digitized image of the student identification photograph to individual instructors during the period the student is registered in the instructors course. The Deans or their designates, Associate and Assistant Deans where specifically authorized by the Dean, the Director of the College of Extended Learning, Directors of Student

Services, the Director, Associate and Assistant Directors of Residential Life, and the Universitys security personnel also will have access to such images. Students who object to such access to their student identification photograph should notify the Campus Registrar.

10. a. Deans, Associate/Assistant Deans, faculty Student Advisors and the Director of the College of Extended Learning shall have unrestricted electronic access to academic student records.

    b. Full time faculty members shall have electronic access to academic student records of students registered or formally seeking registration in their courses as may be required in the performance of the faculty members duties.

    i Stipendiary part-time faculty members may be granted electronic access to academic student records of students registered or formally seeking registration in their courses required in the performance of the faculty members duties as authorized by the Dean or Director of the College of Extended Learning.

    ii Normally, part-time faculty members who are also students at UNB, should not have access to student academic records.

    iii Access is provided during the period the student is registered or formally seeking registration in the faculty members course and for 45 days following the end of term in which the course is scheduled.

11. Other Faculty and College personnel may be granted electronic access to academic student records required in the performance of their duties as authorized by the Dean or Director of the College of Extended Learning on such specific terms as the Dean or Director shall determine.

12. Members of administrative and other academic units may be granted electronic access to academic student records required in the performance of their duties upon request to and as authorized by the Campus Registrar or designate on such specific terms as the Registrar or designate shall determine.

13. Access is provided on the explicit condition that such information in the electronic academic student records shall not be released to others except as may be permitted in accordance with these regulations.

III. FRENCH LANGUAGE POLICY - FREDERICTON

The University undertakes to meet the needs of undergraduate students with respect to French:

1. By providing French language courses at a level and of a type appropriate for graduates of French immersion programs in the public schools of New Brunswick;

2. By providing students in all faculties who are not bilingual with more information, encouragement and opportunity for the study of French. (See Certificate of Proficiency in French in Section G.)

IV. FRENCH LANGUAGE POLICY - SAINT JOHN

The Saint John Campus of the University of New Brunswick intends to meet the needs of its undergraduate students with respect to French by providing (where feasible) French Language courses at a level and of a type appropriate for graduates of French immersion programs in the public schools of New Brunswick, and by providing students in all programs who are not bilingual with more information, encouragement and opportunity for the study of French.

Cette politique s'adresse aux étudiant(e)s anglophones. Les étudiante(e)s francophones sont également encouragé(e)s à suivre des cours au niveau approprié dans la discipline de français.

V. MINOR PROGRAMS

The University offers students an opportunity to broaden and complement their programs of study by completing the requirements for a Minor. A complete list of approved Minor Programs is available in the Registrar's Office. A Minor program can be a University interdisciplinary Minor or one offered through a faculty or department.

1. Students interested in pursuing a Minor Program should consult with their program advisor to determine if a Minor will be permitted and to discuss its relation to their program of study. Advice and course approval must then be obtained from the coordinator, committee or individual responsible for the Minor. Normally, a student must declare a Minor on or before registration for final year. A student may declare a Minor after this date only with the approval of the Registrar, with the concurrence of the Department(s) concerned.

2. A Minor can be taken only in conjunction with a degree program and must be completed while the student is qualifying for the degree. Successful completion of the Minor will be recorded on the student's transcript of record. The same procedure must be followed for each successive Minor.

3. A Minor shall consist of eight term courses or the equivalent (a minimum of 24 credit hours) and shall be selected to form a coherent set or sequence of courses. The student must achieve a grade of "C" or better in each course for it to be counted as part of the Minor. Compulsory or required courses in a student's degree program normally may not form part of the Minor.

4. A student who has completed a Minor located in one degree program may apply to and, if admitted, enter a second degree program to obtain a second bachelor's degree. Such a student could obtain the Majors or Honours designation in the same field as the Minor if the requirements are completed successfully under the regulations governing a "Second Undergraduate Bachelor's Degree.

5. Students interested in pursuing more than one minor program must have permission from their faculty advisor. All above regulations apply.

VI. ACADEMIC REGULATIONS

A. Class Attendance

1. Students are expected to attend all classes, laboratories, tutorials, or other class meetings officially designated for a particular course. They are expected, also, to complete all assignments. Departments, or individual instructors, may make specific requirements about attendance and class participation. An instructor may assign a final grade of F in the course to a student who fails to meet any one of these requirements, including failure to maintain the stipulated attendance policy. Such requirements must be communicated in writing to students within the first two weeks of the course (see item A(4) under Examination, Standing and Promotion). It is the responsibility of a student who is absent during the first two weeks to ascertain the requirements of the course.
2. Students are advised to check course restrictions to determine the policy in effect concerning class attendance during the first week of lectures. In some courses, for example, those with limited enrollment, failure to attend during the first week or to make arrangements with the instructor may result in the cancellation of the registration. Approval of the Departmental Chair, or the Dean in Faculties where there is no Chair, is required.
3. It is expected that most problems caused by a student's absence from classes,including absence from mid-term tests, can be resolved with the instructor concerned. If through sickness or other unavoidable cause, a student is absent from classes, the student must advise the instructors immediately upon return to classes. The instructor may request suitable documentation if such confirmation is considered necessary. Health certificates will be accepted for consideration only from the health care professional who attended the student during the period of absence.

B. Classroom, Lab, Clinical and Fieldwork Safety and Decorum

Consistent with the General Regulations on Conduct as set out in the **Undergraduate Calendar**, faculty, staff, and students are entitled to a classroom, laboratory, clinical, practicum and fieldwork environment which affords respect and dignity to those in attendance, and is free from threats to personal safety, discrimination, harassment, intimidation and behaviour which is destructive, disruptive, disorderly and offensive. The instructor may enforce standards of decorum within the classroom, laboratory, clinical, practicum or fieldwork setting which are consistent with these regulations and has authority to ensure that all health and safety policies are observed in these settings. The instructor is encouraged to refer students to the relevant regulations and policies, including this regulation.

Where a student engages in behaviour which is inconsistent with the General Regulations on Conduct or University health and safety policies, the instructor may take reasonable steps to deal with the situation including the immediate removal of the student from the classroom, laboratory, clinical, practicum or fieldwork setting. Should it prove necessary, the instructor may call Campus Security to assist with removing a student.

Following such removal, the instructor, in consultation with the Dean and Registrar, will determine whether further action should be taken, including the possible compulsory withdrawal of the student from the course, consideration of an academic offence, or disciplinary action pursuant to the General Regulations on Conduct. Any further action will be conducted in accordance with the normal procedural provisions under the applicable University regulation.

C. Adding Courses

A period of two weeks is allowed from the commencement (first day of lectures)of fall term for addition of fall term and full year courses and from the commencement of winter term for addition of winter term courses. A student adding a course is responsible for ascertaining the requirements of the course and for completing them.

D. Dropping Courses

i. Students may drop term or full-year courses up to two weeks following the commencement of classes in those courses and those courses will be deleted from the students record.

ii. Students may withdraw from term or full-year courses after the first two weeks of classes in accordance with the regulations set out below.

iii. a. Students are entitled to make decisions to withdraw from courses after the first two weeks of classes on an informed basis. An informed basis means that the students shall have a reasonable opportunity to assess their progress in each course and to receive feedback on their performance in each course before making a decision. Students have the responsibility to seek information on which to make their decisions to withdraw.

d. In courses where the final grade is based in part on term work such as, but not limited to, essays, reports, assignments, projects including group work, problem solving, tests including mid-term examinations, seminar presentation and/or participation, attendance, students are entitled to receive feedback on the portion of this work completed prior to the deadline for withdrawal from courses without academic penalty. Such feedback normally will include, but is not limited to, the instructors evaluation of the students work. Students also are entitled to consult with the course instructor and/or their advisor to obtain feedback on their performance in a course and are encouraged to do so before withdrawing from a course after the first two weeks of classes.

iv. After the first two weeks of classes, students may withdraw from courses without academic penalty at any time up to and including the deadlines as set out in the Calendar of Academic Dates approved annually by the Senates and found in the Undergraduate Calendar. Normally these deadlines shall be as follows:

Fall term courses: ten (10) calendar days after the last date to withdraw from Fall term courses with a pro-rated refund;

Full year courses: fourteen (14) calendar days after the start of classes in Winter term;

Winter term courses: ten (10) calendar days after the last date to withdraw from Winter term courses with a pro-rated refund;

v. Withdrawal from courses after the first two weeks of classes and no later than the deadlines indicated in iv above will carry no academic penalty and will be shown as ìWî on the transcript.

vi. Withdrawal from courses after the deadlines indicated in iv above will be recorded as ìWFî on the transcript and a grade of zero (0) will be carried into the calculation of the GPA.

vii. a. Notwithstanding the above, a student may petition the Chair, or in the case of Faculties without departments, the Dean or Deans designate, of the Department/ Faculty which offers the course, to withdraw from a course without academic penalty after the applicable deadline in iv and before the last date of classes for that course. No petition regarding withdrawal shall be considered after the submission of the final grade for the course.

b. The grounds for this petition are restricted to:

i. the student made reasonable efforts to obtain feedback on his/her performance in the course prior to the deadline for withdrawal in iv, but was unable to do so;

ii. compassionate, health-related or extenuating circumstances beyond the control of the student demonstrably had a direct impact on the academic performance of the student in the course.

c. The student shall submit the petition in writing no later than the last date of classes in the course, explaining the grounds on which the petition is based. It is the students responsibility to provide documentation in support of the petition which demonstrates the grounds cited. The Chair, Dean or Deans designate, as the case may be, has the option, but is not required, to meet with the student. It is expected that a decision on the petition will be made expeditiously.

d. The Chair, Dean or Deans designate, as the case may be, shall have the sole and only discretion to grant the petition, and, where satisfied that the student has established either grounds as set out in b), normally will grant the petition.

e. Where the decision of the Chair, Dean or Deans designate is to grant the petition, the course in question will be shown as W on the transcript.

f. The decision of the Chair, Dean or Deans designate on the petition is final and not subject to appeal. However, students may have recourse to appeal to the relevant appeals committee on related matters as set out elsewhere in these regulations (see for example the section headed Right of Appeal).

E. Final Course Grades

1. The term work in a course (excluding any work given in lieu of a final examination, see Examination, Standing and Promotion regulations, item A(6)) must be submitted by the last day of lectures or earlier as required by the instructor. The instructor must submit a final grade based on the work submitted by the student, including term work and examination, as determined by the instructor.

2. Once a grade has been submitted a student is not permitted to do work extra or additional to that required of other students in a course in order to gain a better grade in the course.

3. A request to change a recorded grade in a course is to be made to the Registrar via the instructors secure web grade change form. An explanation of the reason/s for the change must be included at the time of the submission.

F. Other Regulations

1. The last date to withdraw without academic penalty from courses of duration shorter or longer than the usual one term or full-year period is the point where approximately three quarters of the course time has elapsed.

2. With the approval of their faculty advisor, a student may specify that a course is "extra" to the program and should not be included in their grade point average. Such a notation must be requested by the mid point of the term.

3. (a) It is the function of the instructor to evaluate and assess a student's work in a course, and to award interim and final course grades.

(b) The decisions made by the instructor as to the content of the course syllabus are not appealable. Decisions made by the instructor as to the weighting of tests, assignments and examinations, are not subject to appeal unless demonstrably unfair in the circumstances.

(c) Regulations governing review or appeal of a grade assigned are found in the Review of Grades section of this Calendar.

4. Academic probation constitutes notice of unsatisfactory performance and is a warning that the student must improve to meet the grade point average requirements of the program in order to avoid being required to withdraw from the University.

G. Permission to Study Off Campus at Another University or Other Post-Secondary Institution

1. All transfer of credits from other universities or other post-secondary institutions must be approved by the Registrar. A student at UNB who wishes to take courses at another university for credit towards the degree program at UNB must obtain a letter of permission, in advance, from the Registrar at UNB. A letter of permission will not be granted to a student required to withdraw and normally will not be granted to a student on academic probation.

2. Courses taken with permission at other universities or post-secondary institutions will be considered for transfer credit if credit is granted at the transferring institution, provided that the standard of grade required within the student's UNB program is met. Students will be notified in writing at the time permission is given of the specific minimum grade which must be achieved.

3. In Faculties where the credit hour system is used, at least half of the credit hours for a degree must be taken at this University. In Faculties where the year-system is used, two years, including the final year, must be taken at this University. These provisions may be waived by the Registrar in consultation with the Faculty concerned in extraordinary circumstances.

4. Students entering a concurrent degree program are advised

that at least one half of the requirements for each degree must be UNB credits.

5. Faculties may impose an academic decision based on the student's performance while studying at another university or post-secondary institution.
6. Grades of C - earned at the other institution normally will not be accepted if a minimum grade of "C" in the course is required in the student's program of study. Special requests for consideration of transfer should be made in writing to the Registrar. A decision will be made in consultation with the Faculty concerned.

VII. OFFICIAL WITHDRAWAL (VOLUNTARY) FROM UNIVERSITY

A student who is considering withdrawing from study is strongly advised to consult with his or her faculty advisor. If the student decides to withdraw from University, the Registrar's Office must be notified in writing and the necessary process on the computerized registration system must be completed to avoid failing grades. The official date of withdrawal will be the date written communication is received in the Registrar's Office or the date recorded on the computerized system. Notifying instructors or ceasing to attend lectures does not constitute official withdrawal.

VIII.EXAMINATION, STANDING AND PROMOTION

A. General Information

1. The method of examination in a course is determined by the instructor.
2. The final standing of each student, in each course, is assessed on the final examination, if one is held, and term work (essays, reports, tests, including mid-course examinations, attendance requirements, etc.).
3. Final examinations, if any, for fall term courses and mid-course examinations, are held in December. Final examinations are normally held in April and May for all year courses (two terms) and all winter term courses.
4. Within two weeks of the first day of lectures the instructor must provide the students attending the course with a full explanation of the basis on which the final grade will be calculated, that is: the weighting of tests, examinations, assignments, attendance requirements, and any other work which contributes to the final grade. Such notification shall be in writing distributed to the class in a regular class period. Email notification is satisfactory where email has been established as a common method of communication within the course. Notification on the Internet for courses taught electronically is satisfactory.
5. Instructors must notify students, preferably within the first two weeks of lectures but by the mid-point of a course, if the final examination is to be a take-home examination or one that is to be included in the University's official examination schedule. Students must be informed if the final examination is an open or closed book format by the mid-point of the course. Such notification shall be in writing distributed to the class in a regular class period. Email notification is satisfactory where email has been established as a common method of communication within the course. Notification on the Internet for courses taught electronically is also satisfactory.
6. The final examination in any course may be waived by the instructor. Notice that an examination has been waived must be communicated to the students attending the course within two weeks of the first lecture.
7. a. No examination or test may be held in the last 10 lecture days of any term or during the reading period, but see d) below.
   b. All term work is due not later than the last day of lectures.
   c. A paper, assignment or take-home examination given in lieu of a final examination is due the last day of the examination schedule.
   d. The following may be exceptions to the regulations (a) and (c):
      i courses with regular, usually weekly, tests;
      ii courses requiring laboratory examinations of a practical nature;
      iii courses in which oral examinations are given. In such cases a mutually agreeable time may be arranged between the student and the instructor.

   In the case of the exceptions i) and ii) the tests or examinations must be held during the regular class period.

   A student or faculty member reports instances of contravention of this regulation to the Registrar.
8. Normally, tests held during the regular lecture period (other than final examinations scheduled by the Registrar) are to be conducted during a regularly scheduled class time. In exceptional circumstances and with the approval of the Dean, an instructor may schedule a test for another time. Such a test is to replace, rather than add to, the regularly scheduled class periods for the course and it must not interrupt other regularly scheduled classes or tests for students.
9. Permission to write early examinations is almost never granted. Students may apply to the Registrar's Office to write a deferred examination on the basis of documented extenuating circumstances (See Item D., Deferred Examinations). Students who, because of documented extenuating circumstances, wish to write a final examination before the date of the examination on the official University schedule should request such an arrangement with the instructor of the course involved. Instructors have no obligation to permit a student to write an examination ahead of the scheduled date.
10. A student who is scheduled to write three examinations in one 24-hour period during the formal examination period may apply to the Registrar to write one of the examinations at another time during the examination period.
11. Instructors must notify students, in writing, as soon as possible and no later than two weeks prior to the end of classes, of the specific items, other than normal writing instruments (such as pens, pencils, rulers and erasers), they may use in the examination room. These include tables, formulae, memoranda, other electronic or mechanical aids.

12. UNB does not permit the use of personal communication devices during test or exam periods - in particular, devices that could potentially be used to communicate with others while writing an exam, or play back prerecorded video, sound or text during an exam. Such devices include, but are not limited to, cell phones, pagers, text messaging devices, personal recording devices, PDAs, personal computers including laptops, certain types of calculators and electronic translators. Using such devices during exams will be considered an academic offense as per Section IX of the University Regulations. Exemptions may be made by a professor if a particular device is required in order to complete the exam. See: Academic Calendar, Academic Section, VIII.A.11
13. a. Students admitted without having passed the appropriate high school or equivalent English course, or who were not required to demonstrate on admission an acceptable level of English usage on an approved English test, may, at the discretion of the instructor in consultation with the Registrar, be given special consideration in writing examinations, tests and assignments. Such special consideration may include oral examinations and/or extension of the time to write an examination. Consideration will not be granted after two years at UNB or any other English speaking institution.
    b. Students with disabilities may request reasonable accommodations to enable them to complete academic requirements. The student may be required to provide the University with professional reports which contain specific recommended accommodations which are necessary for the student to achieve course, examination and program completion. The University will respond to requests for reasonable accommodations as its resources permit. For more information see the Policy and Guideline Handbook for Students with Disabilities.
    c. Students who wish to be considered under the provisions in a) or b) must make the request to the instructor no later than the mid point of the term.
14. The University recognizes that there may be dates of religious significance other than those identified in the UNB Calendar of Academic Dates. Students whose religious beliefs would prevent them from attending classes or writing tests or final examinations due to their observance of those dates, should contact their instructor(s) at the beginning of the term to request accommodation. Deadlines for assignments that fall on dates of religious observance must still be met unless alternate arrangements have been agreed to by the instructor and/or the Registrar, as the case may require. Instructors will make reasonable efforts to accommodate such requests. Instructors reserve the right to request verification of dates of religious observance.
15. Students may see their own examinations and papers, by arrangement with the instructor, after the grades have been released.

B. Competence in English

The University places great importance on its students achieving competence in English. To this end, students are required to complete successfully with a mark of C or above a minimum of 12 ch of courses that contain a significant amount of writing in English. Students should consult their Faculty advisors to determine which courses satisfy this requirement. The courses which satisfy this requirement are identified by **(W)**.

C. Dean's List Criteria

The Faculties of the University publicly recognize superior academic performance of their students by publishing Dean's lists. Such distinction is also noted on the transcript of record. Criteria for inclusion on a Dean's list are as follows:

1. Decisions for full-time and part-time students are based on assessment grade point averages which are calculated in May of each year provided at least 24 credit hours have been attempted since the last assessment grade point average was recorded.
2. In all Faculties an assessment grade point average of 3.7 or higher must be achieved, except in the Faculty of Law where the minimum assessment grade point average for inclusion on the Dean's list is 3.3 and the student stands among the top 10 percent of his or her class.
3. Courses, including practicum courses, with final evaluations of credit/no credit rather than a letter grade will be included as part of the 24 credit hours required in the grade point average assessment.
4. Students who in their final year of study do not have any assessment grade point calculation will be included on a Dean's list provided such a distinction was earned on the last assessment and provided a letter grade of "B" or higher was achieved in all courses taken. At least 12 credit hours of work must have been undertaken to have Dean's list status under this provision.
5. Co-op students will be subject to these regulations:
    a. one work term in the assessment period - at least 24 credit hours required
    b. two work terms in the assessment period - at least 15 credit hours required
    c. December program completion - at least 15 credit hours from September 1 - December 31
    d. Second year co-op students with a January work term - at least 15 credit hours required
6. Students on a professional experience program (PEP) must have successfully completed the work term and have completed at least 15 credit hours in one term during the assessment grade point average period.
7. Course work done off-campus with permission will not form part of the assessment grade point average and subsequent decision concerning inclusion on a Dean's list. The Dean has the right to add such students to the Dean's List where deemed appropriate.
8. Students must be enrolled in a degree, diploma or certificate program to be included on a Dean's list.
9. Students enrolled in a concurrent or joint degree program will be considered for the Dean's list in both Faculties represented.

D. Deferred Examinations

1. Students who by reason of illness or extenuating circumstances are unable to write final examinations at the specified times may apply to the Registrar for permission to write deferred examinations. For examinations to be written on campus, the student must contact the instructor in the course to determine the time and place. The Registrar makes arrangements with the students for deferred examinations written off campus. Deferred examinations take the place of the final examinations which the student was unable to write. Applications for such deferred examinations, supported by health certificates or other evidence, must reach the Registrar within two weeks of the final examinations which the student was unable to write.
2. Students who become ill and withdraw for this reason during a final examination, or who feel that their performance was affected seriously by illness, even if they do not withdraw, must, if they wish to be eligible for a deferred examination, notify their instructor or an invigilator before leaving the examination room. They should then go immediately to be examined medically. They may then apply to the Registrar within two weeks of the final examinations they were unable to write for a deferred examination.
3. Application for a deferred examination on grounds not considered acceptable by the Registrar may be referred to the appropriate Senate Committee. The student must make such request to the Registrar within two weeks from the date of the Registrar's letter of notification of this decision.
4. Students are responsible for all charges incurred for deferred examinations written off-campus.
5. The designation Incomplete (INC) is recorded for courses in which deferred examinations are to be written. Refer to the regulations on Incompletes for a further explanation of "INC" grades.

E. Grading System and Classification

Courses

Courses in the University are offered in a classroom setting, laboratory setting or through some method of distance education. The regular academic session year is September - April. Within this session, there are two terms, 15 weeks each (including the examination period) September - December and January - April. In addition, there is an intersession on the Fredericton Campus, May - June, a spring session, May - August, on the Saint John Campus and a summer session, July - August, on both campuses. All courses offered by the University are referred to as term courses or full-year courses.

- **Full-Year Courses**: Those courses that are normally completed over the two terms associated with the regular academic session year.
- **Term Courses**: Those courses that are normally completed in one term during the regular academic session year.

Credit Hours

1. Each Faculty is responsible for assigning credit values to courses within its jurisdiction. These credit values are approved by the appropriate University Senate. Credit hour values may range from - 18 although the typical term course has a 3 credit hour weight and a typical full-year course has a 6 credit hour weight.

   Students should consult the Financial Information Section of this calendar for information on tuition charges and full-time/ part-time status based on the credit value of courses taken.
2. Most Faculties, in their own regulations, state the minimum number of credit hours which must be successfully completed for graduation in each degree program. Credit hour requirements for degree programs in Saint John are given in Section E, and in Fredericton are given in Section G.
3. Students accumulate credit hours, as assigned, for courses completed with a grade of D or better (See below).
4. Faculties may consider courses offered by other Faculties to have satisfied a half-course (normally 3 credit hours) or a full course (normally 6 credit hours) regardless of the credit hours attached to the course in the calendar and recorded on the student's transcript of record. Students should consult the relevant sections of this calendar for Faculty policies.

Grades

With the exception of the School of Graduate Studies and Faculty of Law, a candidate's final standing in a course is indicated by the following letter grades:

A+		4.3 grade points
A	excellent performance	4.0 grade points
A-		3.7 grade points
B+		3.3 grade points
B	good performance	3.0 grade points
B-		2.7 grade points
C+		2.3 grade points
C	satisfactory performance	2.0 grade points
D	less than satisfactory performance	1.0 grade point
F	failure	0.0 grade points
WF	failure	0.0 grade points

- A grade of D will be considered for program credit only in certain circumstances. See Faculty regulations and refer to program descriptions in this calendar.
- Departments have the right to decide whether or not a D meets prerequisite or Major requirements. See appropriate degree and departmental listings.
- Credit hours for courses with an "F" or "WF" grade may not be counted towards graduation, but will be used as credit hours attempted in assessing grade point average.
- Courses taken at St. Thomas University as part of a student's regular course load in which the final grade is C- will normally not be accepted for credit if a grade of at least C in the course in question is required in the student's program of study.

Notations

1. **INC (Incomplete)**

   Issued on the recommendation of the instructor and approved by the Registrar, in situations where students present written evidence of medical or extenuating circumstances which prevent completion of the work within the stated time period. It is expected that the work will be completed within two months after the final date for classes in the course. A grade of F will normally be assigned if the work is not completed. The period for completion may be

extended upon recommendation of the instructor and with the approval of the Registrar. It is the responsibility of the student to seek such an extension before the expiration of the two month period. Evidence of medical or compassionate grounds to substantiate such a request must be submitted to the Registrar.

The designation incomplete (INC) is recorded for courses in which deferred examinations are to be written.

2. **Aegrotat (AEG) Standing**

   Used rarely. The student has been unable to complete the course because of a serious illness or a compassionate situation but has been given pass standing on the basis of previous work. Requests should be addressed to the Registrar.

3. **AUD (Audit)**

   A student wishing to attend classes in a given degree credit course without being assigned a grade may register to "audit" the course, subject to the following regulations:

   a. Registrations for audit will not be accepted without permission of the course instructor.
   b. The degree of class participation allowed an auditor is at the discretion of the course instructor. No grade is assigned for the course and such a course is not a credit.
   c. The normal regulations and deadlines regarding course adds and drops apply.
   d. A 'credit registration' in a course may not normally be changed to an 'audit' after the first two weeks of the term. Similarly a registration for 'audit' may be changed to a 'credit registration' only with the support of the faculty, and with the permission of the Registrar.
   e. In courses with enrollment requirements and/or restrictions, priority for registration will be given to individuals taking the courses as full fee-paying registrants.
   f. For a part-time student the audit fee will be one-half of the regular course fee (see Fees, Section C).

   The following actions may also appear on the student transcript in lieu of or adjacent to the grade:

4. **CR** (credit) **NCR** (no credit)
5. **X** (Extra)
   Extra course, not credited to the program the student is enrolled in during that session and the grade is not include in the calculation of grade point averages. Such a notation must be requested by the mid-point of the term.
6. **#** On the basis of an appeal, the grade shown but not included in grade point average calculations.
7. **W** (Withdraw without academic penalty)
8. **CTN** (Course continues in next term)

F. Calculation of Grade Point Averages

Grade point averages are calculated by dividing the total number of grade points obtained (credit hours x grade point weight) by the number of credit hours attempted during the period in question in the program. Grade point averages are shown to one decimal place. The University calculates two grade point averages, which form part of the student's official record: the Assessment Grade Point Average; and the Cumulative Grade Point Average.

Assessment GPA:
For all students, the assessment GPA is calculated at the end of the assessment period, May - April, provided that 24 credit hours or more have been attempted in the program since the last assessment in that program. All work attempted toward the current program of study (including the no degree program) is included in the assessment with the exception of courses designated with the "W", "#" or "X" notation.

Cumulative GPA:
Is based on all work taken toward a degree program. The cumulative grade point average is used to determine the student's divisional standing at graduation.

Scholarship GPA:
In addition, for the purpose of awarding scholarships a Scholarship GPA is calculated at the end of the assessment year (May to April) provided that 24 credit hours or more have been attempted, regardless of program. For students involved in work placement programs such as Co-op or PEP, the scholarship average is calculated using the Dean's List criteria. This GPA is held internally and is not displayed on the student's transcript of record.

G. Standing and Promotion Requirements

1. In order to continue in good academic standing a student must achieve an assessment g.p.a. of at least 2.0 for the assessment period. A transcript notation "In good academic standing"; appears at the end of the term record.

   a. A student whose assessment g.p.a. falls below 2.0 but above 1.0 in an assessment period is placed on academic probation. A student is allowed to go on academic probation only once in a program.
   b. A student who has previously been placed on academic probation and whose g.p.a. in any subsequent assessment period falls below 2.0 is, subject to review by the Faculty concerned, required to withdraw from the University for at least 12 months. If such a student is readmitted, it is normally on academic probation.
   c. A student whose g.p.a falls to 1.0 or below in any assessment period is required to withdraw from the University for at least 12 months. If such a student is readmitted, it is normally on academic probation.

   Note: No credit is granted for courses taken during the 12 month period during which a student is required to withdraw.

2. Students whose g.p.a. on assessment is such that they would normally be placed on academic probation, or be required to withdraw from the University, will be allowed to graduate if all other requirements of the program have been completed at that time. Law students should refer to the Faculty regulation in the Faculty of Law Calendar.
3. If, at the end of the term in which a student has completed all the other requirements of the program, the student has not reached the end of an assessment interval, the student will be allowed to graduate without reference to the g.p.a. in that session.

H. Review of Grades

1. Review of Grade on an Individual Piece of Work

a. Students may discuss with the course instructor the mark on any piece of work regardless of its value. For a course that is not the responsibility of a single academic unit, the co-ordinator of the course will replace the role of the Department Chair.

b. For purposes of the formal review process, an individual piece of work refers to: Term tests, major term papers, essays, book reports, etc. worth at least 25 per cent in the calculation of the final grade in the course.

c. Students have the right to request a formal review of marked material according to the above list. The grounds are restricted to: the overall assessment of the evaluation is demonstrably unfair; the evaluation was not consistent within the class; there was a miscalculation of the grade.

d. There are two steps to follow for the formal review process:

   i. The piece of work must be discussed with the instructor involved within two weeks of the receipt of the grade for the individual item.

   ii. After this first step and if requested by the student in writing to the Chair of the Department, or Dean of the Faculty if there is no Department or Chair, a review will be conducted with such Chair, the instructor and the student. If desired, a student has the right to meet with the Chair without the instructor present prior to this review. The review must be conducted within 7 days after the review with the instructor. The decision of this review is final and the reasons for the decision will be provided to the student in writing by the Chair.

   iii. A student who has not requested a grade review of an individual piece of work that is reviewable, or who has requested a grade review of an individual piece of work and was not satisfied with the result, may not ask for a review of a final grade on the basis of that individual piece of work.

2. Group Projects

Evaluations on material which is the product of two or more students may be reviewed at the request of one or more of the participants. The above regulations will apply. The instructor has the right to change the grade awarded to each student if the grade is to be altered.

3. Practicum and Co-op Courses

The grades assigned in practicum and co-op courses are also subject to review.

4. Reviews in Courses with Computerized Testing

Students in courses with computerized testing should consult with their instructors if they feel a review is warranted. The instructor will determine that: the response sheet was not lost, that valid answers were not missed, imperfect erasures not excluded and that the computer generated grade was correct, the computer grade was transferred correctly and that essay, lab and other additional credits were included.

5. Review in Courses with Oral Tests and/or Final Examinations

Students in courses that have oral tests and/or final examinations, should consult with the instructor if they have concerns about the grade awarded.

6. General Information

a. In all reviews, it is expected that the process will be carried out expeditiously by the reviewer/s.

b. Marked materials held by the instructor must be retained for twelve months after the end of the term. Students are expected to have returned graded assignments available for review by the reviewers. Such assignments cannot have been altered (please refer to the section on university regulations governing academic offences).

c. Work will be reviewed, as requested, in a manner that ensures that all concerns raised by the student have been properly addressed taking into account the course outline and that the totaling of the marks and other items contributing to the grade were done accurately. In instances where consistency in grading is being considered, a minimum of three other pieces of class work completed by other students will be examined by the reviewer(s).

d. The grade originally assigned may be raised, remain the same or be lowered as a result of the review.

7. Review of Final Course Grade

a. Students have the right to request a review of the official final grade received in a course on the proper form available in the Registrar's Office. Such requests must be received by the Registrar, in writing, within 90 days after the end of the examination period. A fee of $15.00 must accompany the request. The fee will be refunded if the grade is subsequently raised. The student should clearly outline the reasons for the request to review the final grade. Normally, the grounds are restricted to: the overall assessment of the final grade or of the final examination evaluation is demonstrably unfair; the evaluation of the final examination was not consistent within the class; the final grade was not calculated on all the work completed; there was a miscalculation of the final grade.

b. The Chair of the Department involved, or the Dean if there is no Chair or Department, will discuss the matter with the instructor of the course to determine if a change in the final grade is warranted. The student will be advised of the result of this review by the Registrar. If the student is not satisfied with the outcome of the review conducted by the Chair and the Instructor, he/she may request the Registrar to have the Chair of the Department involved, or the Dean or a delegate if there is no Chair or Department, select three individuals normally from the Department or Faculty if there is no Department: including the instructor, or one alternate designated by the instructor, one selected by the student and one selected by the Chair, or the Dean if there is no Chair or Department. In the event that the student or instructor is unable to select a member for this review committee, the Dean will select. If it is a

class action request the students will select one member of the Committee. If more than one instructor, the instructors involved in the teaching of the course will select.

c. The student or instructor may forfeit the right to select one of the Committee members and should so advise the Registrar at the time the request is made. The Chair or Dean will select the member/s to serve on the Committee in such cases. The Committee may interview the instructor if not part of the Committee and/ or the student. All materials submitted during the first review will be made available to the Committee.

d. The decision of the Committee will be forwarded to the Registrar. The reasons for the decision must be given and the student will be so notified.

e. Students who intend to appeal the results of a review of a final course grade must do so within 4 weeks after the date of notification from the Registrar's Office. The procedures for filing an appeal must be followed and reasons for the basis of the appeal are to be clearly outlined.

I. Repeating Courses

Students may without special permission register for a course already taken in order to meet a prerequisite or other degree requirement, or in order to improve their grade point average. However, both the original grade and the new grade will each be counted separately towards a grade point average. Students should note that while the credit hours of a repeated course will be used each time in calculating a grade point average and in the totals of courses attempted and passed, they can only be counted once towards the minimum number of credit hours required for a degree.

A student may attempt a course a maximum of three times (including withdrawals but excluding course attempts designated with the # notation). Beyond that, the student must obtain the permission of the Dean of the student's Faculty to register again in the repeated course

J. Language of Examination

Students who wish to write their examinations in French rather than English must apply in writing to the Registrar one month in advance of the examination date. Permission may be denied in certain courses, particularly in courses where language is part of the course content.

K. Supplemental Examinations

Supplemental examinations are not offered in any Faculty of the University, except the Faculty of Law.

IX. ACADEMIC OFFENCES

Note: Consideration of a request to withdraw from a course or courses involved in an academic offence will not be given until the case is resolved

Academic offences include, but are not limited to, the following:

A. PLAGIARISM

Plagiarism includes:

1. quoting verbatim or almost verbatim from a source (such as copyrighted material, notes, letters, business entries, computer materials, etc.) without acknowledgment;
2. adopting someone else's line of thought, argument, arrangement, or supporting evidence (such as, for example, statistics, bibliographies, etc.) without indicating such dependence;
3. submitting someone else's work, in whatever form (film, workbook, artwork, computer materials, etc.) without acknowledgment;
4. knowingly representing as one's own work any idea of another.

NOTE: In courses which include group work, the instructor must define and warn against plagiarism in group work. Unless an act of plagiarism is identified clearly with an individual student or students, a penalty may be imposed on all members of the group.

Procedures

In the case of plagiarism, the instructor must make every reasonable effort to discuss the case with the student or group and follow one of two courses of action.

1. If the instructor is satisfied that the plagiarism was the result of a genuine misunderstanding, the instructor shall submit the student's name to the Registrar who shall advise the appropriate Dean, and the Chair of the student's program or Department where applicable. The Registrar shall notify the student by registered letter of the regulations governing plagiarism, the possible consequences, the student's right to appeal, the right to appear before the appropriate Appeals Committee, and the procedures involved. While a case of genuine misunderstanding will not be considered a student's first offence, a second plea of ignorance by the student will be so considered. A student appealing the instructor's decision must do so in writing within three weeks of the date of the Registrar's notification. The student is urged to submit to the appropriate Appeals Committee a written statement regarding the case.

   In the case of plagiarism resulting from genuine misunderstanding, the instructor may permit the student to submit a genuine piece of work to be graded in place of the one plagiarized. If the student does not appeal, the time allowed for submission of work is three weeks from the date of the Registrar's letter of notification. In the case of an appeal, where the instructor's decision is upheld, the period of time allowed for submission is as determined by the appropriate Appeals Committee.

2. If the instructor decides that the plagiarism was deliberate, the instructor shall submit the student's name and relevant evidence to the Registrar, who will advise the Dean, and the Chair of the student's program or department where applicable. The Registrar shall notify the student by registered letter of the regulations, the right to appeal, the right to appear before the appropriate Appeals Committee, and the procedures involved. The student is urged to submit to the Committee a written statement regarding the case. A student appealing the instructor's decision, must do so in writing within three weeks of the date of the Registrar's letter of notification. At the discretion of the Registrar, cases may be referred to the appropriate Committee for review and action. The Registrar shall inform the student by registered letter of the referral to the Committee, and the wish of the Committee that the student be present when the case is heard.

Penalties For Deliberate Plagiarism

In a case of deliberate plagiarism, the penalties are:

First Offence: If the student does not appeal, or if, on appeal, the Committee upholds the instructor's decision:

1. A notation will be placed on the student's transcript of academic record concerning the academic offence. The length of time the notation appears on the student's transcript of academic record is to be decided when the penalty is imposed and will depend on the severity of the offence.
2. The student may be required to submit a satisfactory and genuine piece of work to replace the one involving plagiarism. If the assignment is not resubmitted or is unsatisfactory, the student will receive a grade of F(zero) in the course. **Note**: If this penalty is assessed, the period of time allowed for the submission of the work will be determined by the Registrar in consultation with the faculty member making the charge, and, where appropriate, the Committee.
3. The student will receive a grade of F (zero) on the piece of work and, depending on the severity of the offence, may receive a grade of F for the course.
4. Other penalties as outlined in penalties for Other Academic Offences may be imposed.

Subsequent Offence:In cases where the Committee considers that the student has plagiarized again:

1. the student will receive a grade of F in the course and a notation of the academic offence will appear on the student's transcript of record. The length of time the notation appears on the student's transcript of academic record is to be decided when the penalty is imposed.
2. Other penalties as outlined in penalties for Other Academic Offences may be imposed.

B. OTHER ACADEMIC OFFENCES

1. Cheating on examinations, tests, assignments or reports.
2. Impersonating a candidate at an examination or test or in connection with any assignment in a course or availing oneself of the results of impersonation.
3. Obtaining, through theft, bribery, collusion, purchase or other improper manner,
   a. an examination or test paper prior to the date and time for writing the examination or test;
   b. academic materials belonging to another person, e.g. laboratory reports, assignments, papers, computer materials, datasets.
4. Falsifying or knowingly submitting false assignments or credentials, records, transcripts, or other academic documents.
5. Submitting a false health or other certificate.
6. Submitting identical or substantially similar work for one course or program of study, which has been or is being submitted for another course or program of study, without the prior express knowledge and approval of the instructors.
7. Interfering with the right of other students to pursue their studies.
8. Knowingly aiding or abetting any of the above offences.
9. Tampering with, or altering, in any deceptive way, work subsequently presented for a review of the grade awarded.

Procedures

The instructor, invigilator or other appropriate person shall, where practical, discuss the matter with the student concerned. An instructor, invigilator or other person satisfied that an academic offence has been committed shall report that finding to the Registrar, who shall report it to the Chair of the Department and the Dean of the Faculty concerned. Each case will be referred by the Registrar to the appropriate Committee for review and appropriate action. The Registrar shall inform the student by registered letter of the referral to the Committee, the student's right to appeal and the wish of the Committee that the student be present when the case is heard. The student is urged to submit to the Committee a written statement regarding the case. A student appealing the decision, shall do so in writing within three weeks of the date of the Registrar's letter of notification.

Penalties

A student who is found guilty of an academic offence will have two penalties imposed:

1. Notation on the student's transcript of academic record concerning the academic offence. The length of time the notation appears on the student's transcript of academic record is to be decided when the penalty is imposed.
2. A failing grade in an examination, test or course.

One of the following penalties may also be imposed:

3. Recommendation to the President for suspension for a specified period. The recommendation is to include the length of time the notation is to appear on the student's transcript of academic record.

4. Recommendation to the President for expulsion from the University. If the student is expelled a permanent notation will appear on the student's transcript of academic record.

C. GENERAL

1. Consideration of a request to withdraw from a course or courses involved in an academic offence will not be given until the case is resolved.
2. Students on the Fredericton Campus will submit appeals to the Senate Student Standings and Promotions Committee; on the Saint John Campus, appeals will be submitted to the Student Appeals Committee.

X. RIGHT OF APPEAL

Students on the Fredericton Campus will submit appeals to the Senate Student Standings and Promotions Committee; on the Saint John Campus, appeals will be submitted to the Student Appeals Committee

1. Entitlement And Jurisdiction

1. Student appeals will not normally be considered by the appropriate campus Senate Appeals Committee if one year or more has elapsed since the academic decision in question was made.
2. Student appeals on the Fredericton Campus are considered by the Senate Committee on Student Standings and Promotions, and on the Saint John Campus by the Senate Appeals Committee. Appeals pertaining to admissions are heard on the Fredericton Campus by the Senate Admissions Committee and by the Senate Student Appeals Committee on the Saint John Campus.
3. The University reserves the right to withhold notification of an academic decision if a student has not satisfied financial obligations. The Senate Student Standings and Promotions Committee in Fredericton, or the Appeals Committee in Saint John, may refuse to hear appeals submitted after the deadline because the notification of an academic decison was witheld for failure to satisfy financial obligations or because notification of an academic decision was not received as a result of a failure to provide the University with an accurate mailing address.
4. Subject to the following regulations, students may appeal academic decisions.

NOTE: Most reviews concerning grades assigned for individual pieces of work or final grades are subject to the Grade Review Process. An appeal to the appropriate Appeals Committee is permissible only if the review was conducted without due regard to proper procedure or in a manner which is unfair in all of the circumstances. Students may appeal final grades only after all steps of the grade review process have been completed.

2. Grounds for Appeal

1. The appropriate Appeals Committee may grant an exemption from the application of a University Regulation or from the effect of an academic decision, on the grounds of compassion, health, or other extenuating circumstances beyond the control of the student. A student requesting such an exemption must state the grounds on which the request is based and provide documentation to support the grounds cited.
2. The Committee may grant relief on the ground that an academic decision has been made without due regard to proper procedure, or in such a manner which is unfair in all of the circumstances. A student requesting such relief on appeal must state the grounds on which the request is based and provide any pertinent material.

3. Settlement Process

It is understood that appeals of academic decisions such as being required to withdraw or being placed on academic probation, and appeals involving academic offences, are made directly to the appropriate Appeals Committee.

Where practicable, in other instances, students should attempt to settle the matter prior to submitting an appeal by:

1. discussing the matter with the instructor;
2. if unresolved, discussing the matter with the instructor and the Chair of the appropriate Department, or the Dean if there is no Chair;
3. if still not resolved, discussing the matter with the instructor, the Chair and the Dean of the appropriate Faculty.

4. Appeals Procedure

1. A student is entitled to seek the advice of the Director of Student Affairs and Services (for Fredericton appeals) or the Director of Student Life and Support Services (for Saint John appeals), concerning the right of Appeal.
2. Where so requested in writing by a student, the Director of Student Affairs and Services (for Fredericton appeals) or the Director of Student Life and Support Services (for Saint John appeals), shall act on behalf of the student.
3. Appeals are to be made in writing, addressed to Secretary of the Student Standings and Promotions Committee.
4. Appeals pertaining to academic status at the end of an assessment period must be filed on or before July 15 of that year. Where circumstances warrant, the Committee may consider student appeals which do not meet the normal deadline requirement.
5. Appeals shall state the grounds on which the Appeal is based, provide supporting documentary evidence and state whether the student will attend the hearing and whether the Director of Student Affairs and Services (Fredericton appeals) or the Director of Student Life and Support Services (Saint John appeals) will represent the student at the hearing.
6. The Committee may receive documentation in support of an Appeal after the July 15th deadline set for the filing of the appeal itself. The late filing of such supporting documentation may result in delay in the determination of the case. Where the student's subsequent registration in a course or program is dependent on the determination of the case, and where that determination is made after the registration period in the following academic year has expired, a late registration fee will be charged (see Fees Section C).
7. After receiving an appeal, the Secretary of the

Committee shall:

a. make a reasonable attempt to give notice to the student, or the person acting on the student's behalf, of the time, place and manner in which the Committee will proceed, and further shall give access to the student or the person acting on the student's behalf to the materials relevant to the Appeal;
b. give notice to the instructor, Chair of the Department and Dean of the Faculty concerned of the time, place and manner in which the Committee will proceed, and request that any written materials relevant to the Appeal be filed with the Committee in a manner such that the right of access provided for in a.) will be facilitated.

8. The Committee hears and determines the matter. The decision of the Committee, which is provided to the student in writing, is final (see below). No re-appeal of the decision will be heard by the Committee unless new evidence is presented and deemed by the Committee to be of sufficient importance to justify clearly the reopening of the case.

5. Senate Review

A student may request that the relevant Senate review a decision of the appropriate Appeals Committee.

The only grounds for such a request are:

a. The decision was made without due regard to proper procedures, such that the student was materially disadvantaged; and/or
b. The decision was made in a manner which is not fair in all of the circumstances.

Advice and Assistance

A student is entitled to seek the advice of the Director of Student Affairs and Services (Fredericton appeals) or the Director of Student Services (Saint John appeals) with respect to an application for Senate Review.Where so requested in writing by a student, the Director of Student Affairs and Services (Fredericton) or the Director of Student Services (Saint John) shall act on behalf of the student to the extent requested in the application for Review.

Procedures

An Application for Senate Review shall:

a. be filed in the Office of the Secretary of Senate within thirty (30) days of the date of the letter of notification of the decision of the Appeals Committee made under the provisions of the Appeal Procedure,
b. be made in writing, addressed to the Secretary of Senate, and state the grounds on which the application is based.

On filing of an Application for Senate Review, the Secretary of Senate shall:

a. notify the student or the person acting on the student's behalf, of the time, place and manner in which the Review will proceed, and further shall ensure access by the student, or the person acting on the student's behalf, to the materials relevant to the application;
b. give notice to the appropriate Appeals Committee of the time, place and manner in which the Review will proceed and request that any written material relevant to the application be filed with Senate in such a manner as that the right of access stipulated in 1) will be facilitated;
c. ask the Senate Nominating Committee and the President to establish a Review Committee

XI. GENERAL REGULATIONS ON CONDUCT

The following general regulations have been approved by the Board of Governors of the University and are now in effect until such time as they may be revised by the Board.

A. The University of New Brunswick is a community of faculty, staff, students and administrators involved in teaching, learning, research and related activities. The University assumes that students come to the University for a serious purpose and accept responsibilities as members of the University community.

B. In accordance with the commitment set out in the University's Mission Statement to provide an environment conducive to the development of the whole person, all members of the University community - staff, faculty, students and administrators - have the right to work and/or study in an environment which affords them respect and dignity, and is free from danger, discrimination, harassment, intimidation, and behaviour which is destructive, disruptive, or unlawful.

C. The University recognizes students' freedom to manage their personal lives, behaviour and interpersonal relations in a manner consistent with the above principles, with the laws of Canada and New Brunswick, and with University regulations. In exercising their entitlement to participate in University programs and activities, students are expected to:

1. abide by University regulations;
2. respect the integrity of University programs and activities;
3. acknowledge the diversity of the University community and the freedom of all members to participate in University programs and activities;
4. promote the peaceful and safe enjoyment of University facilities by other members of the University and public;
5. conduct themselves at all times in a manner that will reflect credit on themselves and the University.

D. The University has defined standards of student behaviour and made provisions for student discipline when they engage in conduct that is inconsistent with the foregoing principles. It shall be deemed, and the Board considers, that each of the following types of conduct is a breach of University regulations, and is grounds for consideration of discipline up to and including suspension or expulsion. As the types of misconduct are stated in general terms, students are advised to familiarize themselves in greater depth with University regulations, and to consult with University officials where they have any doubt about the propriety of an intended action or behaviour.

Unacceptable types of behaviour include, but are not limited to:

1. violence, harm or threat of harm to any person or the person's property;
2. unnecessarily endangering the health or safety of other persons;
3. possession of a firearm or other weapon on University premises without specific University permission;
4. acting or speaking in a disruptive, disorderly, indecent or offensive manner, or in a way that might reasonably cause fear;
5. unauthorized infringement or prevention of access by others to University classes services, events, facilities and property;
6. disruption or obstruction of any authorized activity, event, class or service of the University, or interference with any person's rights to carry out legitimate activities, speak or associate with others;
7. refusal to comply with a reasonable request by authorized University officials including Security and the Student Campus Police;
8. failure to provide identification to authorized University officials when asked, or providing false identification or information;
9. obstruction of Security or Student Campus Police in the performance of their duties;
10. unauthorized use or occupation of any University property;
11. conduct that results directly or indirectly in damage, misuse, defacing, or theft of University property;
12. improper use or consumption of alcoholic beverages, restricted drugs, or intoxication or impairment in a public place;
13. other conduct that is prohibited or proscribed by University rule, regulation or policy;
14. contravention of any provision of any federal, provincial or municipal statute on University premises or while engaged in University authorized events or activities.

E. The University of New Brunswick Act provides broad authority for dealing with non-academic student conduct. For example:

1. the President has broad discretionary disciplinary powers including suspension for dealing with academic and non-academic disciplinary matters;
2. the Board of Deans has jurisdiction for matters of student discipline;
3. the Board of Governors may approve the expulsion of a student from the University;
4. the Board of Governors may make rules and regulations for the discipline of students and the imposition of fines and other penalties and sanctions; the Student Disciplinary Code and the Internal Residence Discipline Policy are examples.

F. As a general principle, the various authorities for dealing with student discipline shall be exercised so as to avoid the imposition of punishment by more than one authority for the same or an included offence.

This principle shall not preclude University authority being exercised to suspend a student from the University, or to suspend or evict a student from a University residence, pending or following the imposition of discipline, where such action is deemed to be in the best interests of the University community.

This principle is not intended to preclude a student organization from taking action against a student in accordance with its constitution and bylaws on the same facts giving rise to disciplinary action under University authority.

G. Information regarding University disciplinary regulations and procedures is available from the offices of the Director of Student Affairs and Services, the Director of Security and Traffic, the Chief of Student Campus Police, and the Commissioner of Student Discipline on the UNBF campus and from the Director of Student Services and the Manager of Safety and Security on the UNBSJ campus.

When students believe that a member of the University community has violated the principles stated in B above in relation to them, or where students are uncertain about whether behaviour they are contemplating may violate University regulations, they should consult the Chair of their Department, or the Dean of their Faculty, or the Director of Student Affairs and Services (UNBF), or the Director of Student Services (UNBSJ), or the Director of Security and Traffic (UNBF) or the Manager of Safety and Security (UNBSJ), or the Chief of Student Campus Police, or the Commissioner of Student Discipline, as appropriate.

XII. LISTING OF GRADUATES

A. **APPLICATION TO GRADUATE**

1. Students must make application to graduate by 1 March, for May graduation and 1 September for October graduation. Such application is done either by submitting an electronic "Application to Graduate" form available from the UNB Hompage (www.unb.ca) or by completing an "Application to Graduate" card available from the Registrar's Office.
2. Courses that are attached to a distinct session that ends after the January - April session are not counted in the assessment for May graduation eligibility.

B. Candidates for all undergraduate degrees, except candidates for the degree of Bachelor of Laws, shall be listed in the graduation program alphabetically by First Division, and General Standing, based on the cumulative grade point average of all UNB courses (including certain approved Saint Thomas courses) attempted in the program. Candidates with Honours and Distinction standing will be listed separately.

Candidates for the degree of Bachelor of Laws are listed alphabetically without divisions.

C. Divisional standing will be recorded in the student's transcript based on the cumulative grade point average as follows:

First division	3.5 or better
Second division	2.5 or better but less than 3.5
Third division	Less than 2.5

D. A student who has received a bachelor's degree from UNB may return and complete the requirements of the honours program in the same field as in the original degree or the

requirements in another major or honours field in the same degree. Such a student will not receive the degree again but a record of the completion of the second requirements will be carried on the student's transcript. A second same degree is permitted in limited cases. Refer to Section P, Requirements for a Second Undergraduate Bachelor Degree in the Admissions section of this Calendar.

E. Students are not permitted to graduate at a ceremony during spring Encaenia other than the one for which they are scheduled, except in special circumstances at the discretion of the Registrar.

XIII. ACADEMIC DRESS

A. GOWNS

Undergraduates	Plain black stuff material, sleeveless.
Bachelors	Black stuff gown falling below knee, with full sleeves reaching to the wrist and terminating in a point.
Masters	Black silk or stuff gown, falling below knees, with long sleeve with semi- circular cut bottom.
Doctors	A scarlet cloth robe, faced with silk of the same colour as the lining of the hood worn.

B. HOODS

Each degree has its distinctive hood as follows:

BA	Black stuff bordered with white fur.
BAA	Black stuff lined with ivory silk bordered with white fur.
BASc	Black stuff bordered with white fur and scarlet band.
BSc	Black stuff lined with scarlet silk bordered with white fur.
BSc (Applied)	Black stuff lined with green silk bordered with white fur.
BCS	Black stuff lined with green silk bordered with white fur.
LLB	Pale blue silk bordered with white fur.
BBA	Black stuff lined with light brown silk bordered with white fur.
BPE	Black stuff lined with claret silk bordered with white fur.
BKin	Black stuff lined with claret silk bordered with white fur.
BScKin	Black stuff lined with claret silk bordered with white fur with a dark green band.
BRLS	Black stuff lined with claret silk bordered with white fur with a navy band.
BN	Black stuff lined with peach bordered with white fur.
BEd	Black stuff lined with blue grey silk bordered with white fur.
BOM	Black stuff lined with pale yellow silk bordered with white fur.
BAM	Black stuff lined with gold silk bordered with white fur.
BHS, BMLS	Black stuff lined with teal silk bordered with white fur.
BPhil	Black stuff lined with dark blue silk bordered with white fur.
MA	Black stuff lined with crimson silk.
MSc, MCS	Black silk lined with white silk bordered with scarlet.
MSc (Applied)	Black silk lined with white silk bordered with green.
MScE, MScF, MEng and MFor	Black silk lined with white silk bordered with green.
MEd	Black silk lined with blue grey silk bordered with crimson.
MPE, MSc (KIN), MA (KIN)	Black silk lined with white silk bordered with claret.
MN	Black silk lined with white silk bordered with peach.
MPA	Black silk lined with grey silk bordered with light brown.
MPhil	Black silk lined with white silk bordered with dark blue.
MBA	Black silk lined with white silk bordered with light brown.
MAHSR	Black silk lined with white silk bordered with powder blue.
M (Interdisciplinary)	Black silk lined with white silk bordered with gold.
PhD	Scarlet cloth with dark blue silk lining.
LLD	Scarlet cloth with pale pink silk lining.
DSC	Scarlet cloth with white corded silk lining.
DCL	Scarlet cloth with pale blue silk lining.
DLitt	Scarlet cloth with grey silk lining.

UNDERGRADUATE FEES AND FINANCIAL INFORMATION 2005-2006

Although all dates below are the appropriate dates for the Academic year of 2005-2006, the University reserves the right to make changes, without notice, in its published rates of tuition, residence and other fees including regulations for the payment thereof.

Please Note:

- Complete fee schedules are available online at: www.unb.ca/services/financialservices/students/
- Fees are applicable to both Fredericton and Saint John Campuses.
- The University will waive tuition fees for both full and part time students that are considered by the CNIB as legally blind.
- For graduate fees, see School of Graduate Studies Calendar, or the Graduate School website at http://www.unb.ca/gradschl .

FEE PAYMENT INFORMATION FOR UNB STUDENTS

WHEN CAN FEES BE PAID?

Payment of fees can be made at any time during the months of May, June, July, August and until September 8, 2005 for Fall term and January 13, 2006 for Winter term. Students who have not paid or made satisfactory arrangements with Financial Services by the due date will have their course selections and IT services cancelled. Such students will be required to register again once fees have been paid. There is a $25 administration fee to have you added back in your courses after payment has been made. **To avoid line ups you are encouraged to settle your account as early as possible using one of the options below.**

For All Students:

1. **Telephone banking:** You may now pay your fees using telephone banking at the Bank of Montreal, CIBC, TD Canada Trust, Royal Bank, Scotiabank and HSBC. Allow 3-4 business days for the payment to be posted to the student account.
2. Arrangements may be made for the **direct transfer of funds** to the Universitys bank account through the Bank of Montreal. Please use the Bank of Montreal Transfer Form available from the Bank of Montreal or from our Web site (http://www.unb.ca/students/fees/) click Student Forms, then Bank Transfer Form). Allow 3-4 business days for the payment to be posted to the student account.
3. **Payment by mail** can be made by cheque, money order, VISA, MasterCard or American Express. You must include your name and student number with your payment. Please make cheques/money orders payable to the University of New Brunswick and mail to:

   Fredericton Campus:
   University of New Brunswick
   c/o Student Accounts & Receivable Services
   P.O. Box 4400,
   8 Bailey Drive
   Fredericton, N.B., E3B 5A3

   Saint John Campus:
   University of New Brunswick
   c/o Financial Services/Student Accounts
   P.O. Box 5050
   Saint John, N.B.
   E2L 4L5

4. **Fredericton students payment in person** can be made by debit card, cash, VISA, MasterCard, American Express, money order or by cheque at UNB Financial Services, c/o Student Accounts & Receivable Services, IUC Building, 8 Bailey Drive, Fredericton, N.B. Payment may also be made in person at the Marshall DAvray (South) Gym at times to be announced later. Please refer to the UNB Financial Services website for updates. www.unb.ca/services/financialservices/students/
5. **Saint John students payment in person** can be made by debit card, cash, VISA, MasterCard, American Express, money order or by cheque at UNB Saint John, c/o Financial Services/Student Accounts, Oland Hall, Room 119, Saint John, NB E2L 4L5.
6. **Payment by phone or fax** can be made using VISA, MasterCard or American Express by calling:
   Fredericton Campus:
   (506) 453-4624 press 2 for Student Accounts and then 1 for payment of fees or fax the information to: (506) 453-4572.
   Saint John Campus: (506) 648-5543, fax # (506) 648-5714
7. **Federal and Provincial Student Loans:** For 2005-2006 there may be revisions to both the Canada Student Loan and the Provincial Student Loan and Bursary programs. For further information regarding your government loan application, contact the UNB Financial Aid Office at (506) 453-4796 for assistance.

   Canada Student Loans for New Brunswick students on the Fredericton campus will be available at the UNB Financial Services Office; IUC Building, Room 001 beginning mid-August. Canada Student Loans for New Brunswick students on the Saint John campus will be available at the UNB Saint John Business Office; Oland Hall, Room 119 beginning mid-August. Registration process MUST be completed & picture identification presented before loans can be released.

   STUDENTS TAKE NOTE: Where loans have not been received by the day of registration, students must provide proof of loan status and/or a down payment. Otherwise, fees must be paid from private resources or temporary borrowing. It will NOT be possible to defer payment and postdated cheques will NOT be accepted. Failure to negotiate your loan in a timely manner with the appropriate bank/lender will result in IT Services being cancelled and course selections deleted. It is the responsibility of the student to follow up with the appropriate bank/lender to ensure that tuition funds are released to the University.
8. **Scholarships:** Scholarships, awarded by the University, will be applied to the students account as a credit, in equal amounts, by the term. Any student paying fees by the term should reduce the amount paid at Registration by half the value of the scholarship.

UNB Fredericton
Undergraduate Tuition & Student Fees effective September 1, 2005 to August 31, 2006

Tuition & Residence Fees Must Be Paid By September 8, 2005 to avoid cancellation of course registration. Course charges will be incurred up to the official withdrawal date. Please see Section C of the calendar for the UNB Refund Policy.

All Full Time Undergraduates attending both Fall and Winter terms making one payment by September 8, 2005 *The definition of a full-time student: A student registered in the equivalent of 4 courses(or more) per term.*			
	FALL	**WINTER**	**TOTAL**
Tuition	$2504.00	$2504.00	$5,008.00
Student Union Fee	$44.50	$44.50	$89.00
"The Brunswickan"	$5.00	$5.00	$10.00
CHSR Radio	$7.50	$7.50	$15.00
Student Health Insurance (single rate-see notes* for family rates)	$137.00	$0	$137.00
Optional Dental Insurance (single rate-see notes* for family rates)	$112.00	$0	$112.00
SUB Expansion Fee	$12.50	$12.50	$25.00
Technology Fee - to find out more see http://www.unbf.ca/its/students/techfee/	$25.00	$25.00	$50.00
Facilities Improvement Fee	$87.50	$87.50	$175.00
TOTAL FEES	**$2,935.00**	**$2,686.00**	**$5,621.00**
Supplemental Fees			
International Differential Fee	$2,565.00	$2,565.00	$5,130.00
International Health Insurance**	$573.00	$0	$573.00
Faculty of Law	$1,156.00	$1,156.00	$2,312.00
Faculty of Law: (students registered prior to September 2004)	$631.00	$631.00	$1,262.00
Engineering Endowment Fund (All full time engineering students)	$25.00	$25.00	$50.00

All Full Time Undergraduates attending both terms and making two payments (installment plan). *When fees are paid in two installments, an administrative fee of $30.00 will be added to the Fall.*				
	Canadian Students Sept. 8/05	**Canadian Students Jan. 13/06**	**International Students Sept. 8/05****	**International Students Jan. 13/06****
Engineering	$2,990	$2,711	$6,128	$5,276
Law	$4,121	$3,842	$7,259	$6,407
Law (students registered prior to Sept 2004)	$3,596	$3,317	$6,734	$5,882
All Other Fredericton Programs	$2,965	$2,686	$6,103	$5,251

*Health & Dental Insurance Opt Out must be done at UNB Student Union (Room 126 SUB) by **September 23, 2005.** Family health $163 and Family optional dental $168.

** Health insurance rates for international students are based on the 12 month single rate of $573.00. Please refer to the International Health Insurance Table for family and other rate options. An opt-out must be completed at Financial Services by **September 23, 2005** for Fall term or **January 20, 2006** for Winter term. An International Health Application form must be completed each year and forwarded to Financial Services, Fredericton, IUC Physics & Administration Building, 8 Bailey Drive, Room 001.

All Full Time Undergraduates attending EITHER Fall or Winter term *The definition of a full-time student: A student registered in the equivalent of 4 courses(or more) per term .*		
	FALL	**WINTER**
Tuition	$2,504.00	$2,504.00
Student Union Fee	$44.50	$44.50
"The Brunswickan"	$5.00	$5.00
CHSR Radio	$7.50	$7.50
Student Health Insurance (single rate-see notes* for family rates)	$137.00	$91.00
Optional Dental Insurance (single rate-see notes* for family rates)	$112.00	$112.00
SUB Expansion Fee	$12.50	$12.50
Technology Fee - to find out more see http://www.unbf.ca/its/students/techfee/	$25.00	$25.00
Facilities Improvement Fee	$87.50	$87.50
TOTAL FEES	**$2,935.00**	**$2,889.00**
Supplemental Fees		
International Differential Fee	$2,565.00	$2,565.00
International Health Insurance** (based on 4 months only)	$191.00	$191.00
Faculty of Law	$1,156.00	$1,156.00
Faculty of Law: (students registered prior to September 2004)	$631.00	$631.00
Engineering Endowment Fund (All full time engineering students)	$25.00	$25.00

NURSING PROGRAM (Bathurst and Moncton campuses) - attending both Fall and Winter terms. *When fees are paid in two installments, an administrative fee of $ 30.00 will be added to the Fall.*			
	FALL	**WINTER**	**TOTAL**
Tuition	$2,504.00	$2,504.00	$5,008.00
Student Union Fee	$22.25	$22.25	$44.50
Student Health Insurance (single rate-see notes* for family rates)	$137.00	$0	$137.00
Optional Dental Insurance (single rate-see notes* for family rates)	$112.00	$0	$112.00
Technology Fee- to find out more see http://www.unbf.ca/its/students/techfee/	$25.00	$25.00	$50.00
TOTAL FEES	**$2,800.25**	**$2,551.25**	**$5,351.50**

CO-OP or PEP Work Term (EITHER Fall or Winter term)		
	FALL	**WINTER**
Tuition	$730.00	$730.00
Student Health Insurance (single rate-see notes * for family rates)	$137.00	$0
Optional Dental Insurance (single rate-see notes* for family rates)	$112.00	$0
SUB Expansion Fee	$12.50	$12.50
Technology Fee - to find out more see http://www.unbf.ca/its/students/techfee/	$25.00	$25.00
Facilities Improvement Fee	$87.50	$87.50
TOTAL CO-OP FEES	**$1,104.00**	**$855.00**
Engineering Endowment Fund	$25.00	$25.00
TOTAL PEP FEES	**$1,129.00**	**$880.00**
Supplemental Fees		
International Health Insurance	$573.00	$0

PART TIME STUDENTS (The equivalent of 3 courses or less per term)		
	Per Term Course (0-5 credit hours)	**Per Year Course (6-11 credit hours)**
Tuition	$500.00	$1,000.00
Part Time Student Fee	$10.00	$20.00
Technology Fee	$5.00	$10.00
Facilities Improvement Fee	$17.50	$35.00
TOTAL COURSE FEE	**$532.50**	**$1,065.00**
Supplemental Fees		
International Differential Fee	$513.00	$1,026.00
International Health Insurance	$573.00	$0
Faculty of Law	$232.00	$464.00
Faculty of Law: (students registered prior to September 2004)	$127.00	$254.00
PART TIME STUDENTS MUST PAY FEES IN FULL AT THE TIME OF REGISTRATION BY: CASH, CHEQUE, MONEY ORDER, VISA, MASTER-CARD, AMERICAN EXPRESS OR DEBIT CARD.		

2005-2006 INTERNATIONAL HEALTH INSURANCE			
	12 Months	**8 Months**	**4 Months**
Single	$573	$382	$191
Couple	$1,146	$764	$382
Couple with 1 Child	$1,669	$1,112	$556
Couple with 2 or more Children	$2,231	$1,487	$744
Single Parent with 1 Child	$1,146	$764	$382
Single Parent with 2 Children	$1,669	$1,112	$556
Single Parent with 3 or more Children	$2,231	$1,487	$744
International Students must take Medicare equivalent health coverage or provide evidence of coverage. Please refer to UNB's Policies Regarding International Health Insurance at http://www.unb.ca/services/financialservices/students/interhealthinfo.htm			

CANADA STUDENT LOANS

Canada Student Loans for New Brunswick students will be available at Financial Services beginning mid August. Registration process MUST be completed and picture identification presented before loans can be released.

If a loan has not been received by the fee due date, the student must provide an assessment notice and/or a down payment to avoid losing IT Access and course deletion.

SCHOLARSHIPS

Scholarships, awarded by the University, will be applied to the student's account as a credit, in equal amounts, by the term. Any student paying fees by the term should reduce the amount paid at Registration by half the amount of the scholarship

FREDERICTON RESIDENCE FEES

FREDERICTON RESIDENCE FEES
FOR A SIGNED DOUBLE TERM AGREEMENT

	Room Type	Deposits			Due Sept 8/05	Due Jan 13/06	Total
		Room	Damage	Keys			
		Due May 31/05	Due July 31/05	Due Sept 8/05			
Applies to:	**Aitken, Bridges, Harrison, Jones, McLeod, Neill, Neville, Lady Dunn, Kidd, and Tibbits**						
19 Meal Traditional Plan (with $140 cash)**	Suite +	$300	$100	$30	$4,891	$3,599	$8,920
	Special Single*	$300	$100	$30	$4,607	$3,409	$8,446
	Single	$300	$100	$30	$4,313	$3,214	$7,957
	Special Double^	$300	$100	$30	$3,776	$2,855	$7,061
	Double	$300	$100	$30	$3,600	$2,738	$6,768
	Multiple	$300	$100	$30	$3,517	$2,683	$6,630
14 Meal Traditional Plan (with $140 cash)**	Suite +	$300	$100	$30	$4,811	$3,519	$8,760
	Special Single*	$300	$100	$30	$4,527	$3,329	$8,286
	Single	$300	$100	$30	$4,233	$3,134	$7,797
	Special Double^	$300	$100	$30	$3,696	$2,775	$6,901
	Double	$300	$100	$30	$3,520	$2,658	$6,608
	Multiple	$300	$100	$30	$3,437	$2,603	$6,470
12 Meal Hybrid Plan (with $375 cash)**	Suite +	$300	$100	$30	$5,014	$3,486	$8,930
	Special Single*	$300	$100	$30	$4,729	$3,296	$8,456
	Single	$300	$100	$30	$4,436	$3,101	$7,967
	Special Double^	$300	$100	$30	$3,898	$2,742	$7,071
	Double	$300	$100	$30	$3,722	$2,625	$6,778
	Multiple	300	$100	$30	$3,640	$2,570	$6,640
10 Meal Hybrid Plan (with $500 cash)**	Suite +	$300	$100	$30	$5,111	$3,459	$9,000
	Special Single*	$300	$100	$30	$4,827	$3,269	$8,526
	Single	$300	$100	$30	$4,533	$3,074	$8,037
	Special Double^	$300	$100	$30	$3,996	$2,715	$7,141
	Double	$300	$100	$30	$3,820	$2,598	$6,848
	Multiple	$300	$100	$30	$3,737	$2,543	$6,710
200 Meal Plan ** (with $300 cash)	Suite +	$300	$100	$30	$4,976	$3,524	$8,930
	Special Single*	$300	$100	$30	$4,692	$3,334	$8,456
	Single	$300	$100	$30	$4,398	$3,139	$7,967
	Special Double^	$300	$100	$30	$3,861	$2,780	$7,071
	Double	$300	$100	$30	$3,685	$2,663	$6,778
	Multiple	$300	$100	$30	$3,602	$2,608	$6,640
Applies to:	**Maggie Jean**						
Without Meals	Single	$300	$100	$30	$3,128	$2,097	$5,655
	Special Double^	$300	$100	$30	$2,570	$1,725	$4,725
	Double	$300	$100	$30	$2,396	$1,609	$4,435

- **For LBR** - Deduct $40 for September and $25 for January payments as there is RESNET but no Cable and no RESNET lab.
- **For MacKenzie** - Deduct $30 for September and $20 for January payments as there is no cable TV in rooms.

+ Double sized single room with bathroom.
* Special rate applies to a single room with bath and single occupancy of a double room.
^ Double room with bathroom
** Meal cards do not include Christmas and March breaks.

Proctors	Deposits			Due Sept 8/05	Due Jan 13/06	Total
	Room	Damage	Key			
	Due May 31/05	Due July 31/05	Due Sept 8/05			
19 Meal Plan	$300	$100	$30	$1,315	$1,415	$3,160
14 Meal Plan	$300	$100	$30	$1,235	$1,335	$3,000
12 Meal Plan	$300	$100	$30	$1,438	$1,302	$3,170
10 Meal Plan	$300	$100	$30	$1,535	$1,275	$3,240
200 Meal Plan	$300	$100	$30	$1,400	$1,340	$3,170

- Proctors are exempt from the "Room Charge" portion of the Residence fees, but are required to pay all applicable house fees, including meals, house dues, resnet, damage and key deposit. The $300 Room Deposit paid, is deducted from the fall portion of the meal charges.
- All houses except LBR, MacKenzie and Maggie Jean have Full RESNET.
- **For LBR** - Deduct $40 from September and $25 from January payments as RESNET but no Cable in rooms and no RESNET Lab.
- **For MacKenzie** - Deduct $30 from September and $20 from January payments as Full RESNET but no Cable TV in Rooms.

FREDERICTON RESIDENCE FEES
FOR A SIGNED SINGLE TERM AGREEMENT FOR FALL 2005

	Room Type	Deposits			Due Sept 8/05	Due Jan 13/06
		Room	Damage	Keys		
		Due May 31/05	Due July 31/05	Due Sept 8/05		
Applies to:	**Aitken, Bridges, Harrison, Jones, McLeod, Neill, Neville, Lady Dunn, Kidd, and Tibbits**					
19 Meals Traditional Plan (with $70 cash)**	Suite +	$300	$100	$30	$4,951	$5,381
	Special Single*	$300	$100	$30	$4,667	$5,097
	Single	$300	$100	$30	$4,373	$4,803
	Special Double^	$300	$100	$30	$3,836	$4,266
	Double	$300	$100	$30	$3,660	$4,090
	Multiple	$300	$100	$30	$3,577	$4,007
14 Meal Traditional Plan (with $70 cash)**	Suite +	$300	$100	$30	$4,861	$5,291
	Special Single*	$300	$100	$30	$4,577	$5,007
	Single	$300	$100	$30	$4,283	$4,713
	Special Double^	$300	$100	$30	$3,746	$4,176
	Double	$300	$100	$30	$3,570	$4,000
	Multiple	$300	$100	$30	$3,487	$3,917
12 Meal Hybrid Plan (with $190 cash)**	Suite +	$300	$100	$30	$4,946	$5,376
	Special Single*	$300	$100	$30	$4,662	$5,092
	Single	$300	$100	$30	$4,368	$4,798
	Special Double^	$300	$100	$30	$3,831	$4,261
	Double	$300	$100	$30	$3,655	$4,085
	Multiple	$300	$100	$30	$3,572	$4,002
10 Meal Hybrid Plan (with $250 cash)**	Suite +	$300	$100	$30	$4,976	$5,406
	Special Single*	$300	$100	$30	$4,692	$5,122
	Single	$300	$100	$30	$4,398	$4,828
	Special Double^	$300	$100	$30	$3,861	$4,291
	Double	$300	$100	$30	$3,685	$4,115
	Multiple	$300	$100	$30	$3,602	$4,032
200 Meal Plan (with $150 cash)**	Suite +	$300	$100	$30	$4,946	$5,376
	Special Single*	$300	$100	$30	$4,661	$5,091
	Single	$300	$100	$30	$4,368	$4,798
	Special Double^	$300	$100	$30	$3,830	$4,260
	Double	$300	$100	$30	$3,654	$4,084
	Multiple	$300	$100	$30	$3,572	$4,002
Applies to:	**Maggie Jean**					
Without Meals	Single	$300	$100	$30	$3,128	$3,558
	Special Double^	$300	$100	$30	$2,570	$3,000
	Double	$300	$100	$30	$2,396	$2,826

- **For LBR** - Deduct $40 for September payment as there is RESNET but no Cable and no RESNET Labs.
- **For MacKenzie** - Deduct $30 for September payment as there is no cable TV in rooms.

+ Double sized single room with bathroom.
* Special rate applies to a single room with bath and single occupancy of a double room.
^ Double room with bathroom

** Meal cards do not include Christmas and March breaks.

Proctors	Deposits			Due Sept 8/05	Total
	Room	Damage	Key		
	Due May 31/05	Due July 31/05	Due Sept 8/05		
19 Meal Plan	$300	$100	$30	$1,375	$1,805
14 Meal Plan	$300	$100	$30	$1,285	$1,715
12 Meal Plan	$300	$100	$30	$1,370	$1,800
10 Meal Plan	$300	$100	$30	$1,400	$1,830
200 Meal Plan	$300	$100	$30	$1,370	$1,800

FREDERICTON RESIDENCE FEES
FOR A SIGNED SINGLE TERM AGREEMENT FOR WINTER 2006

	Room Type	Deposits			Due Jan 13/06	Total
		Room	Damage	Keys		
		Due Nov 30/05	Due Nov 30/05	Due Jan 13/06		
Applies to:	**Aitken, Bridges, Harrison, Jones, McLeod, Neill, Neville, Lady Dunn, Kidd, and Tibbits**					
19 Meals Traditional Plan (with $70 cash)**	Suite +	$300	$100	$30	$3,799	$4,229
	Special Single*	$300	$100	$30	$3,609	$4,039
	Single	$300	$100	$30	$3,414	$3,844
	Special Double^	$300	$100	$30	$3,055	$3,485
	Double	$300	$100	$30	$2,938	$3,368
	Multiple	$300	$100	$30	$2,883	$3,313
14 Meal Traditional Plan (with $70 cash)**	Suite +	$300	$100	$30	$3,709	$4,139
	Special Single*	$300	$100	$30	$3,519	$3,949
	Single	$300	$100	$30	$3,324	$3,754
	Special Double^	$300	$100	$30	$2,965	$3,395
	Double	$300	$100	$30	$2,848	$3,278
	Multiple	$300	$100	$30	$2,793	$3,223
12 Meal Hybrid Plan (with $190 cash)**	Suite +	$300	$100	$30	$3,794	$4,224
	Special Single*	$300	$100	$30	$3,605	$4,035
	Single	$300	$100	$30	$3,409	$3,839
	Special Double^	$300	$100	$30	$3,051	$3,481
	Double	$300	$100	$30	$2,933	$3,363
	Multiple	$300	$100	$30	$2,878	$3,308
10 Meal Hybrid Plan (with $250 cash)**	Suite +	$300	$100	$30	$3,824	$4,254
	Special Single*	$300	$100	$30	$3,634	$4,064
	Single	$300	$100	$30	$3,439	$3,869
	Special Double^	$300	$100	$30	$3,080	$3,510
	Double	$300	$100	$30	$2,963	$3,393
	Multiple	$300	$100	$30	$2,908	$3,338
200 Meal Plan (with $150 cash)**	Suite +	$300	$100	$30	$3,794	$4,224
	Special Single*	$300	$100	$30	$3,604	$4,034
	Single	$300	$100	$30	$3,408	$3,838
	Special Double^	$300	$100	$30	$3,050	$3,480
	Double	$300	$100	$30	$2,933	$3,363
	Multiple	$300	$100	$30	$2,878	$3,308
Applies to:	**Maggie Jean**					
Without Meals	Single	$300	$100	$30	$2,097	$2,527
	Special Double^	$300	$100	$30	$1,725	$2,155
	Double	$300	$100	$30	$1,609	$2,039

- **For LBR** - Deduct $25 for January payment as there is RESNET but no Cable and no RESNET Labs.
- **For MacKenzie** - Deduct $20 for January payment as there is no cable TV in rooms.

+ Double sized single room with bathroom.
* Special rate applies to a single room with bath and single occupancy of a double room.
^ Double room with bathroom

*Meal cards do not include Christmas and March breaks.

Proctors	Deposits			Due Jan 13/06	Total
	Room	Damage	Key		
	Due Nov 30/05	Due Nov 30/05	Due Jan 13/06		
19 Meal Plan	$300	$100	$30	$1,315	$1,745
14 Meal Plan	$300	$100	$30	$1,225	$1,655
12 Meal Plan	$300	$100	$30	$1,310	$1,740
10 Meal Plan	$300	$100	$30	$1,340	$1,770
200 Meal Plan	$300	$100	$30	$1,310	$1,740

UNB SAINT JOHN

Undergraduate Tuition & Student Fees effective September 1, 2005 to August 31, 2006

Tuition & Residence Fees Must Be Paid By September 8, 2005 to avoid cancellation of course registration. Course charges will be incurred up to the official withdrawal date. Please see Section C of the calendar for the UNB Refund Policy.

All Full Time Undergraduates attending both Fall and Winter terms making one payment by September 8, 2005 *The definition of a full-time student: A student registered in the equivalent of 4 courses(or more) per term.*			
	FALL	**WINTER**	**TOTAL**
Tuition	$2504.00	$2504.00	$5,008.00
Student Representative Council Fee	$55.00	$55.00	$110.00
"The Baron"	$7.50	$7.50	$15.00
CFMH Radio	$7.50	$7.50	$15.00
Student Health Insurance (single rate-see notes* for family rates)	$137.00	$0	$137.00
Optional Dental Insurance (single rate-see notes* for family rates)	$112.00	$0	$112.00
Technology Fee - to find out more see http://www.unbf.ca/its/students/techfee/	$25.00	$25.00	$50.00
Facilities Improvement Fee	$87.50	$87.50	$175.00
TOTAL FEES	**$2,935.50**	**$2,686.50**	**$5,622.00**
Supplemental Fees			
International Differential Fee	$2,565.00	$2,565.00	$5,130.00
International Health Insurance**	$573.00	$0	$573.00

All Full Time Undergraduates attending both terms and making two payments (installment plan). *When fees are paid in two installments, an administrative fee of $30.00 will be added to the Fall.*				
	Canadian Students Sept. 8/05	**Canadian Students Jan. 13/06**	**International Students Sept. 8/05****	**International Students Jan. 13/06****
All Programs	$2,965.50	$2,686.50	$6,103.50	$5,251.50

* Health & Dental Insurance Opt Out must be done at UNBSJ SRC Office, (Thomas J. Condon Student Centre, room 213) by **September 23, 2005**. Family health $163 and family optional dental $168.

* *Health insurance rates for international students are based on a 12 month single rate of $573.00. Please refer to the International Health Insurance Table for family and other rate options. An opt-out must be completed at Financial Services by **September 23, 2005** for Fall term or **January 20, 2006** for Winter term.

CO-OP Work Term (EITHER Fall or Winter term)		
	FALL	**WINTER**
Tuition	$730.00	$730.00
Student Health Insurance (single rate-see notes * for family rates)	$137.00	$0
Optional Dental Insurance (single rate-see notes* for family rates)	$112.00	$0
Technology Fee - to find out more see http://www.unbf.ca/its/students/techfee/	$25.00	$25.00
Facilities Improvement Fee	$87.50	$87.50
TOTAL CO-OP FEES	**$1,091.50**	**$842.50**
Supplemental Fees		
International Health Insurance	$573.00	$0

PART TIME STUDENTS (The equivalent of 3 courses or less per term)		
	Per Term Course (0-5 credit hours)	**Per Year Course (6-11 credit hours)**
Tuition	$500.00	$1,000.00
Part Time Student Fee	$12.50	$25.00
Technology Fee	$5.00	$10.00
Facilities Improvement Fee	$17.50	$35.00
TOTAL COURSE FEE	**$535.00**	**$1,070.00**
Supplemental Fees		
International Differential Fee	$513.00	$1,026.00
International Health Insurance	$573.00	$0
PART TIME STUDENTS MUST PAY FEES IN FULL AT THE TIME OF REGISTRATION BY: CASH, CHEQUE, MONEY ORDER, VISA, MASTER-CARD, AMERICAN EXPRESS OR DEBIT CARD.		

2005-2006 INTERNATIONAL HEALTH INSURANCE			
	12 Months	8 Months	4 Months
Single	$573	$382	$191
Couple	$1,146	$764	$382
Couple with 1 Child	$1,669	$1,112	$556
Couple with 2 or more Children	$2,231	$1,487	$744
Single Parent with 1 Child	$1,146	$764	$382
Single Parent with 2 Children	$1,669	$1,112	$556
Single Parent with 3 or more Children	$2,231	$1,487	$744
International Students must take Medicare equivalent health coverage or provide evidence of coverage. Please refer to UNB's Policies Regarding International Health Insurance at http://www.unb.ca/services/financialservices/students/interhealthinfo.htm			

CANADA STUDENT LOANS

Canada Student Loans for New Brunswick students will be available at UNB Saint John Financial Services/Student Accounts;Oland Hall, Room 119 beginning mid August. Registration process MUST be completed and picture identification presented before loans can be released.

If a loan has not been received by the fee due date, the student must provide an assessment notice and/or a down payment to avoid losing IT Access and course deletion.

SCHOLARSHIPS

Scholarships, awarded by the University, will be applied to the student's account as a credit, in equal amounts, by the term. Any student paying fees by the term should reduce the amount paid at Registration by half the amount of the scholarship

SAINT JOHN RESIDENCE FEES 2005-2006

PLEASE NOTE: SEPTEMBER & JANUARY PAYMENTS INCLUDE $25 HOUSE DUES.

Sir James Dunn Residence					
MEAL PLAN	ROOM TYPE	ADVANCE DUE MAY 31/05	DUE SEPT 8/05	DUE JAN 13/06	TOTAL
Plan 1 (10 meals)	Large-Single	$300	$3,251.50	$2,708.50	$6,260
	Single	$300	$3,053.50	$2,576.50	$5,930
	Double	$300	$2,603.50	$2,276.50	$5,180
Plan 2 (14 meals)	Large-Single	$300	$3,356.50	$2,813.50	$6,470
	Single	$300	$3,158.50	$2,681.50	$6,140
	Double	$300	$2,708.50	$2,381.50	$5,390
Plan 3 (19 meals)	Large-Single	$300	$3,461.50	$2,918.50	$6,680
	Single	$300	$3,263.50	$2,786.50	$6,350
	Double	$300	$2,813.50	$2,486.50	$5,600
New Residence					
	2 Bedroom Suite	$300	$2,489.20	$1,917.80	$4,707

***NOTE:**

Additional buy-ins to meal cards are available at any time, at a minimum level of $25.00.

Students entering residence in January 2006 must pay fees by January 13, 2006.

GOVERNMENTAL STUDENT LOANS 2005/2006

Applications, for the current academic year, are available through most Provincial Student Loan Departments anytime after March/April. For information on Government Student Loans please visit the following website: http://www.canlearn.ca.

For information on Government Loan Assistance for the Province of New Brunswick, please contact Student Financial Services, Department of Education, P.O. Box 6000, 548 York Street, Fredericton, New Brunswick, E3B 5H1, Toll-Free: 1-800-667-5626/Fax (506) 444-4333,
Web site: http://www.studentaid.gnb.ca

Provincial and Territorial Student Assistance applications can also be obtained through UNB's Financial Aid (FA) Office located in Room 3, Alumni Memorial Building. ***Please contact the FA office at (506) 453-4796 to verify availability of Provincial Loan applications.***

NOTES TO FEES TABLES:

OTHER ACADEMIC FEES	
Application Fee (all faculties) - non-refundable	$45.00
Admission Deposit - non-refundable (by certified cheque or money order)	$100.00
Incomplete Registration Fee	$25.00
Challenge for Credit Examinations	25% of Normal Course Fees
Review of Final Course Grade (by certified cheque or money order)	$15.00
Transcript Fee (Note: $5.00 for the 1st transcript, $3.00 for each additional transcript ordered at the same time)	$5.00
Graduation Fee (Note: A deposit of $60 is required for the use if graduation regalia. Upon return of the regalia, $25.00 is refunded)	$35.00

Tuition Fees cover all the normal costs of the University for registration, libraries, creative arts, athletics and regular examinations during a full academic year. Part-time students may pay fees by the course, to a maximum of three courses per term. (see Definition of Full-time and Part-time Student below)

Definition of Full-time and Part-time Student. Determination of a student's status as full-time in a term will be based on the following criteria:

1. A student carrying the equivalent of four or more courses in a term is a full-time student:
2. A student carrying less than the equivalent of four courses in a term is a part-time student:

The "**equivalent number of courses**" carried by a student in a term is determined as follows:

a. a term course, weighted at 0-5 credit hours, is the equivalent of one course;
b. a term course, weighted at 6-11 credit hours, is the equivalent of two courses;
c. a term course, weighted at 12 or more credit hours, is the equivalent of four courses;
d. a full-year course, weighted at 0-5 credit hours, is the equivalent of one-half course in each of the two terms;
e. a full-year course, weighted at 6-11 credit hours, is the equivalent of one course in each of the two terms;
f. a full-year course, weighted at 12-17 credit hours, is the equivalent of two courses in each of the two terms;
g. a full-year course, weighted at 18 or more credit hours, is the equivalent of three courses in each of the two terms;
h. an audited course is one-half the course equivalent of the same course taken for credit.

Audit. Part-time students may audit courses with registration and payment of 50% of the undergraduate tuition fees unless auditing with enrolment restrictions. (Where priority is given to the student wanting to take the course for credit.)

Differential Fees. Full-time students who are not Canadian citizens or landed immigrants will be required to pay a fee differential of $5,130. Part-time non-Canadian or non-resident students must pay a fee of $513 per term course payable in full at registration.

Work Term Fees . Students participating in a Co-op Program or Professional Experience Program (Engineering) will be required to register and pay work term fees. Participants will be required to pay the student health insurance fee ($249) and the SUB Expansion Fee ($12.50 per term), at the time of registration. In addition, students participating in the Professional Engineering Program (Engineering) will be required to pay the Engineering Endowment Fee ($25 per term). The PEP work term fee and Co-op work term fee are due at the end of the second month. Payments for both work terms received after the applicable date will be subject to interest charges.

Faculty of Education Out-of-Province Internship. The Faculty of Education may make arrangements for students seeking out-of-province Field Studies practicums. Students undertaking out-of-province placements will be assessed an out-of-province intern differential fee of $500.00. Further information is available from the Chair of Student Teaching.

Application Fee. An application fee of $35 must accompany all applications. This fee is non-refundable.

Admission Deposit. A non-refundable admission deposit ($100) in the form of a certified cheque, money order, Visa, Master Card or American Express is payable to the Admissions Office, UNB, as a confirmation of acceptance. The first term tuition payment can be reduced as a result of this advance payment.

Incomplete Registration Fee. Registration may be cancelled if a student fails to negotiate his/her student loan within the required time period, makes a cheque or credit card payment which is returned by the bank (for any reason), or simply does not pay fees in full. The Incomplete Registration Fee ($25) will be applied if the student makes payment and re-registers.

Health and Accident Insurance. Students should refer to "Section D - Accomodation and Services" of this calendar for details of available health and dental coverage.

Student Organization Fees . Full-time undergraduate students in Fredericton and Saint John will pay student association fees for 2005-2006, in the amounts of $69.50 per term and $70 per term, respectively. Part-time students in Fredericton will be represented by ALPS (Adult Learners and Part-time Students). The compulsory fee for all Fredericton part-time students will be $10 per term course (Max. $30 per term). The compulsory fee for all Saint John part-time students will be $12.50 per term course (Max. $37.50 per term).

Residence Fees - Fredericton The Fredericton Residence Fees include both room and dining (various dining plans including structured mealsand some discretionary dining cash) and cover a period from the day the residences open in the fall (date differs for new and returning students) until the day after the student's last regularly scheduled examination in December, and from the day before classes start in January until the day after the student's last regularly scheduled examination in the spring. Residential meals are served (in one dining hall only) during Thanksgiving Weekend in the first term or during the March Break in the second term. A limited number of rooms are available off campus. (rooms only, no meals)

The University has a limited number of 1, 2 and 3 bedroom apartments restricted to full-time UNB and St. Thomas students. All tenants are required to sign a lease, pay a damage deposit, and issue post-dated cheques for the monthly rent. Interested persons should contact the Residential Life & Conference Services, UNB, P.O. Box 4400, 20 Bailey Dr., Fredericton, N.B., E3B 5A3.

Residence Fees - Saint John The Saint John Residence fees includes a declining balance food plan and covers the period from Labour Day until the day after the students last examination in December, and the day before classes start in January until the day after the students last regularly scheduled examination in the Spring. All holidays during each term will follow the weekend hourly meal schedule. There is no meal plan food service over the Christmas Break. During March Break the students who remain in residence may continue to use their meal card during the operational hours of food service.

REGULATIONS FOR PAYMENT OF UNIVERSITY FEES

Payment of Fees: Tuition, Health Insurance, Student Organization fees, Residence fees, applicable Differential fees and Health Insurance fees are payable on or before the first day of classes for all Fredericton and Saint John Undergraduate Students. Full Time Students may pay in two installments. When such option is exercised, a $30 installment fee will be charged. The balance will be payable January 13, 2006. Refer to http://www.unb.ca/services/financialservices/students/ or the enclosed fee schedule for installment payments.

Cancellation of IT Services & Courses: Registration is not complete until all fees have been paid or satisfactory arrangements have been made with Financial Services. Any student who fails to pay the required fees or to make satisfactory arrangements by the specified dates will have his/her IT Access frozen and course selections cancelled; such students will be required to register again once fees have been paid. The Incomplete Registration Fee of $25 will apply.

Interest on Student Accounts: Interest is calculated at an annual rate of 12.0%. Interest may be incurred anytime after the charge due date. Interest is calculated based on the daily account balance and charged monthly. Accounts that have a zero dollar balance on the last day of the month will not be charged interest (regardless of balance activity during the month.) If the balance is paid to zero during the month but is not zero on the last day of the month, (i.e. charges are subsequently incurred) interest will be calculated based on the daily balance activity of the entire month.

Delinquent Accounts: Degrees, grades and transcripts will be withheld for students and former students who have failed to meet their financial obligations. Such students will not be permitted to register again until all overdue accounts have been paid. At the discretion of Financial Services, delinquent student accounts will be referred to a collection agency.

Scholarships: University awards and scholarships will be applied to the student's account as a credit, in equal amounts, by the term. The full dollar value of awards and scholarships may be used by students paying the entire year's fees in the first term. Any scholarship amount greater than the fees due will be refunded.

Government Student Loans: Loan Certificates will be processed by Financial Services on or after August 20, 2005. This date may vary depending on when the loans are released by Provincial Student Aid Agencies. Students must appear in person with identification at Financial Services (Fredericton campus) or the Financial Services/Student Accounts (Saint John campus) to sign the loan certificate. To negotiate a loan, a Social Insurance Card is required. Outstanding fees must be paid from the proceeds of the loan and will be deducted from the loan proceeds by the University.

A student who fails to negotiate a loan with the appropriate administrator (Edulinx, Canada Post Retail Outlet, CIBC etc) is subject to losing IT Access and course deletion. It is the students responsibility to follow up with the appropriate administrator to ensure that tuition funds are released to the University.

Students are encouraged to check their web statements regularly in order to monitor that tuition is paid.

If a loan has not been received by the fee due date, the student must provide an assessment notice and/or a down payment to avoid losing IT Access and course deletion.

Tax Receipts: For tax purposes, Revenue Canada Tuition and Education Credit Certificates (T2202A) will be available through the student web portal before the end of February. T2202As will only be mailed to those students who do not have an active PIN.

UNIVERSITY REFUND POLICY

A student who wishes to withdraw from a course/s must do so on-line or notify the Registrar in writing. Ceasing to attend lectures or notifying the instructor does not constitute official withdrawal. The effective date will be the on-line withdrawal date or the approved date as indicated by the Registrar. Students will be charged the appropriate pro-rated fee up to the drop date as outlined below.

The minimum administrative charge for all refunds will be $25 for full-time students and $10 per three-credit hour course, to a maximum of $25 for part-time students.

Students may drop and add courses up to the last day to add for the term without being charged a pro-rated fee. Courses dropped after the last day to add will be subject to pro-rated fees from the first week of classes up to the withdrawal date indicated by the Registrars Office.

Students who are funded by government student loans should be aware that dropping courses may impact loan funding. Students are advised to check with the Provincial Student Aid Office, UNB Financial Aid Office or UNB Financial Services for more information.

Refunds will not be issued if the effective withdrawal date is after:

- October 24, 2005 for Fall (first) term courses
- January 17, 2006 for full-year courses
- February 24, 2006 for Winter (second) term courses

Requests for adjustments or refunds for a previous term will not be considered after September 1 of the following year.

REGULATIONS FOR THE PAYMENT OF RESIDENCE FEES

FREDERICTON

1. To reserve a room, all students will be required to pay a deposit of $300, by cheque, money order, MasterCard, American Express or Visa. Students who have paid a deposit but send written notice of cancellation to Residential Life & Conference Services receive refunds as follows:
   - a refund of $150 if the written notice is received on or before July 31. The balance of $150 is not refundable.
   - a refund of $50 if the written notice is received after July 31 but on or before August 21. The balance of $250 is not refundable.
   - no refund if the written notice is received after August 21. The entire deposit is forfeited if the student cancels after August 21, fails to take up the reserved accommodation or enters and then subsequently withdraws from residence.
2. On or before the 1st day of classes in September all students in residence will be required to pay the applicable residence fee (please refer to the UNB Financial website for an updated fee schedule in May), plus $300 advance deposit. The balance will be payable by January 13, 2006. Interest will be added to overdue accounts at the rate of 12.0% per annum or 1.00% per month.

3. Any student who occupies their room late for any reason, with a room reservation and the deposit paid, will be responsible for full Fall Term payment.
4. Except as in 3 above, residence fees for students moving into residence 10 or more days after the beginning of the Fall Term will be the advance deposit plus the amount due on September 8, 2005, less the appropriate per diem from the 1st day to the date of occupancy. This is due in full before moving into residence.
5. Residence fees for students who enter residence in the Fall Term and are permitted to withdraw from residence before the end of the Fall Term will be the advance deposit plus the residence charges resulting from the Residence Refund Policy being applied as of the date of withdrawal.
6. Residence fees for students who enter residence in the Fall Term and are permitted to withdraw from residence during the Winter Term will be the advance deposit plus the amount due September 8, 2005, plus the Winter Term residence charges resulting from the Residence Refund Policy being applied as of the date of withdrawal.
7. 7. Residence fees for students who enter residence in the Fall Term who request and are granted permission to leave residence at Christmas will be the advance deposit plus the amount due September 8, 2005. Students wanting such permission should apply in writing no later than December 1, 2005 and, if their request is approved, leave residence no later than December 22, 2005. Failure to do so will result in residence fees being charged based upon a Winter Term withdrawal (Section 6 above).
8. Students who leave residence during either term, but who continue as students at the university, may be liable for the room rent portion of the residence fees for the remainder of the term.
9. The full Residence Refund Policy may be seen at UNB Financial Services or Residential Life & Conference Services but some approximate examples are shown below. Please note that refunds are applied to fees exclusive of the forfeited $300 residence deposit.

Date Leaving	Sep.30	Oct.31	End of Fall Term	Jan.01	Jan.31	Feb.28	End of Winter Term
Refund	75%	50%	After Nov.15: 40%	30%	17%	5%	After Mar.15: 0%

SAINT JOHN

1. To reserve a room, all students will be required to pay a deposit of $300, in the form of a certified cheque, money order, MasterCard, American Express or Visa. Students who have paid a deposit but send written notice of cancellation to Housing & Food Services receive refunds as follows:
   - A refund of $100 if the written notice is received on or before June 15. The balance of $200 is not refundable.
   - After June 15 the entire deposit is non-refundable.
2. On or before the 1st day of classes in September all students in residence will be required to pay their first term fees plus $300 advance deposit. The balance will be payable by January 13, 2006. Interest will be added to overdue accounts at the rate of 12.0% per annum or 1.00% per month.
3. The date of occupancy will normally be Labour Day. There will be no residence fee adjustments for late arrivals.
4. For students without a room reservation and advance deposit prepaid, there will be no adjustments of fees for arrivals up to 10 days after Labour Day. Residence fees for students moving into residence 11 days or more after Labour Day will be the advance deposit plus the appropriate per diem from the date of occupancy. This is due in full and payable at Financial Services/Student Accounts.
5. Residence fees for students who enter residence in the fall term and withdraw from university before the end of the fall term will be the advance deposit plus the appropriate per diem rate from the date of occupancy to the date of withdrawal.
6. Residence fees for students who enter residence in the fall term and withdraw from university during the winter term will be the advance deposit plus the amount due in September, plus the appropriate per diem rate room the beginning of the winter term to the date of withdrawal.
7. Residence fees for students who enter residence in the fall term who request and are granted permission to leave residence at Christmas will be the advance deposit plus the amount due in September. No adjustment to the residence fee will be made. Students wanting such permission should apply in writing no later than December 1, 2005. Failure to do so will result in a $100 surcharge in addition to the above described Fall Term Residence fees if student is given permission to leave residence. Permission is usually granted if the student is required to be away from campus for a co-op work term outside the city limits, or they complete their academic program and leave the university, or they withdraw from university as well as residence.

8 Students who leave residence during either term, but who continue as students at the University, may be liable for the room rent portion of the residence fees for the remainder of the term.

ESTIMATE OF COSTS

The following may be used as a guideline for students attending UNB and is based on the academic year from September to April. The item "General Living" listed below is an estimated minimum cost for clothing, laundry, transportation, and personal expenses.

Tuition Fees	$5,008
Student Union Fees (Fredericton) Fees	$114
SUB Expansion Fees (Fredericton) Fees	$ 25
Student Representative Council Fees (Saint John)	$140
Technology Fee	$ 50
Facilities Improvement Fee	$175
Health and Dental	$249
Books and Supplies	$1,000 to $1,500
Room and Meals	$6,768
Travel Home	$800 to $1,200
General Living	$1,266
Total	**$15,455 to $16,355**

SCHOLARSHIPS, PRIZES AND AWARDS

Regulations and General Information

- All medals, prizes, scholarships and bursaries that are awarded by the University are approved by both Senates. Unless otherwise specified, awards are tenable at the Fredericton and Saint John campuses of the University of New Brunswick.
- The University reserves the right not to make an award should there be no suitable candidate.
- The University assumes liability for the payment of scholarships, bursaries and prizes only to the extent that gifts from donors, or returns from particular investments for these purposes, will permit. Thus, the stated values and numbers of certain awards may vary.
- Since the Calendar is published a considerable time before the opening of the academic session, the University reserves the right to make whatever changes circumstances may require, including the cancellation of awards.
- The Undergraduate Awards Office administers scholarships and bursaries for students enrolled in a minimum of 12 credit hours or 4 courses of undergraduate courses each study term.
- Limited scholarship support is available from the College of Extended Learning for Fredericton campus students who attend Intersession or Summer Session or who attend UNB on a part-time basis. For Saint John campus students, who attend Spring and/or Summer Session, or who attend UNB on a part-time basis, Student Life and Support Services can provide limited scholarship support.
- Scholarships are awarded by the Undergraduate Awards Office to students attending UNB to help them with the financial costs of attending university. The scholarship is paid to the recipient in the form of a credit against the student's UNB tuition and other compulsory fees. Normally, one-half of the scholarship's annual value is credited to the student's UNB fees for the Fall and Winter terms, to a maximum of two terms per year (May to April).
- Normally, a student can hold an undergraduate scholarship or bursary as long as s/he is registered in and has paid for four courses, or at least 12 credit hours, during the Fall and Winter terms at UNB and has given satisfactory evidence of merit.
- If a scholarship recipient attends only one term during the year (May to April), s/he will receive half the annual value of the scholarship as long as s/he has enrolled in 12 credit hours or 4 courses during the one term.
- Effective 2004-05, Co-op and PEP work terms qualify as eligible terms for scholarship support.
- Students who intend to graduate from an undergraduate degree program in the upcoming year and are attending UNB, but will not be registered in at least 12 credit hours or 4 courses each term, may be able to retain their scholarship as long as confirmation is received from the Faculty that the student will qualify for the degree at the end of the present registration. These students are encouraged to contact the Undergraduate Awards Office for consideration.
- In the event that the award exceeds the compulsory fees for the study term, the recipient can request a refund cheque from Financial Services.
- Unless otherwise specified in the scholarship description, students who are admitted to UNB on a basis OTHER THAN their high school marks (such as transfer students, degree holders, mature students, etc.) may be considered for scholarship support when they have completed 24 credit hours at UNB.
- To determine whether or not a student is in financial need, consideration is given to family income, number of dependents supported by the family income, number of dependents attending university in the upcoming year, spouse's income, number of student's dependents, student loan and/or other pertinent financial details provided by the student.
- Students studying at another institution on a Letter of Permission from UNB normally are not permitted to retain their scholarship.
- Students holding renewable awards are expected to maintain the academic standing specified in the recipient's original awarding letter. Failure to do so will normally result in the loss of the scholarship. One year of a renewable scholarship may be postponed while the recipient is studying at another post-secondary institution, as long as the recipient returns to UNB as a student in an undergraduate degree program. Unless otherwise stated, renewable scholarships are awarded for a maximum of eight terms.
- Students who withdraw from UNB after the refund date will retain their scholarship for the term in question, up to the tuition and compulsory fees owed by the student.
- Each recipient will be notified of the terms and conditions of the award. If additional information is required, recipients are encouraged to contact the Assistant Registrar, Undergraduate Awards, University of New Brunswick, at (506) 453-4894 or email: awards@unb.ca.

Scholarships Open to High School Students

The University of New Brunswick provides scholarships to high school students with superior academic standings who are admitted to a UNB undergraduate degree program on the basis of their high school marks and who have not attended another post-secondary institution prior to coming to UNB.

High school students with high averages are encouraged to submit their scholarship applications by February 15th. **The one application form covers the majority of UNB scholarships on both campuses for students applying to UNB directly from high school.**

High school students should also visit www.unb.ca/scholarships to download the application forms for the **Blake-Kirkpatrick Scholarships** and the
H. Harrison McCain Bursaries. On the same webpage, additional information on external scholarships can also be found.

The scholarship application form attached to the general application for admission to the University is for **high school applicants only**. The application form is also available on the UNB website (www.unb.ca/application/) or can be obtained from the Registrar's Office, UNB Fredericton and UNB Saint John.

UNB's Scholarship Guarantee Program

All students who have been admitted to a UNB degree program on the basis of their high school marks and have Scholarship Averages of 80% or higher will receive a scholarship offer from UNB. UNB guarantees students with Scholarship Averages -

- between 80% and 84.9% - $500.
- between 85% and 89.9% - $1,000.
- 90% or higher - at least $1,500 in total scholarship support

This scholarship support may come in the form of one or more scholarships that are combined to provide the student with the guaranteed amount.

UNB calculates a Scholarship Average which is the Admission Average plus bonus points for enriched courses. Bonus points are added directly to the Scholarship Average, as long as a mark of 75% or higher is achieved in the course.

- one bonus point for 1 to 3 enriched courses;
- a maximum of two bonus points for 4 to 6 enriched courses;
- a maximum of three bonus points for 7 to 9 enriched courses, and
- a maximum of four bonus points for 10 or more enriched courses.

The Scholarship Average is not rounded. The Scholarship Average may be recalculated using Grade 12 final marks, upon request only.

International students are considered on an indvidual basis. The Guaranteed Scholarships are provided on the basis of a recommendation from the Registrar's Office for the admitting campus, to International students who are beginning an undergraduate degree program at UNB directly from high school.

International students who begin their degree courses in the Winter term will have the full value of their scholarship applied to that term.

International students who must undertake English language training before beginning an undergraduate degree program must be re-evaluated for the guaranteed scholarship by the Registrar's Office for the admitting campus, upon the successful completion of the English language training program.

Scholarships Open to Continuing UNB Students

The University of New Brunswick provides scholarships to continuing UNB students who have completed at least 24 credit hours of undergraduate courses at UNB in the previous year and are planning to return to full-time study at UNB.

Preference is given to Deans List students, or students who have at least a 3.7 Scholarship GPA, enrolled in an undergraduate degree program. Part-time students who plan to attend on a full-time basis may be considered for scholarship support based on their last 24 credit hours of UNB courses.

For the purposes of awarding scholarships, a Scholarship GPA is calculated at the end of the assessment year (May to April) provided that 24 credit hours or more have been attempted, regardless of program. For students involved in work placement programs, such as Co-op or PEP, the scholarship GPA is calculated using the Deans List criteria. For PEP, Articulated Degree students or students on an official exchange program, who have been away from UNB from May to April in the previous year as part of their degree program, the Scholarship GPA will be based on their most recent work at UNB. This GPA is held internally and is not displayed on the students transcript of record.

Students currently enrolled at UNB in an undergraduate degree program are encouraged to apply for scholarship support each year between January 15th and April 15th, using the application form found on the UNB website, through My UNB E-Services, under the Academic tab.

Unless otherwise specified, the online scholarship application covers all scholarships open to continuing UNB students on both campuses awarded by the University. Successful recipients are notified during the summer.

Students Enrolled in Articulated Degree Programs

Students who begin an articulated degree program at UNB directly from high school are considered for Scholarships Open to High School Students. Students who are enrolled in articulated degree programs at UNB and attend the partnering institution (and not enrolled in 12 ch or 4 courses at UNB) may be considered for scholarships as follows

Eligibility

- The student must begin the programme of study at UNB.
- The student must have completed at least 24 credit hours at UNB (for assessment purposes).
- The student attending the partnering institution for one year of full-time study will be eligible for scholarship support based on the previous years work at UNB.
- If the program requires a second year of study at a partnering institution, consideration for scholarship will be given on the basis of a recommendation from the Faculty.
- Upon the students return to UNB, consideration for scholarship will be given on the basis of a recommendation from the Faculty.
- Consideration will be given to the level of support by the partnering institution in the final decision of UNB scholarship support provided to the student.

Funding

- These students will not be eligible to retain donor-funded scholarships for the year that they are at the partnering institution, unless the scholarship is open to the articulated degree program.
- Scholarships for students who are enrolled in articulated degree programs, but attending the partnering institution (and not enrolled in 12 ch or 4 courses at UNB) will be available using scholarship funds budgeted by the University and awarded using the scale approved by the Scholarship Committee each year.
- Donorfunded scholarships for these specific programs will be established using new monies. The scholarship description will contain a sentence indicating that, The recipient may retain this scholarship while enrolled in a UNB articulated degree program and attending the partnering institution.
- Students must apply to be considered for scholarship support.

Scholarships for Part-Time Students

Part-time students are encouraged to contact the College of Extended Learning UNB Fredericton or Student Life and Support Services, UNB Saint John, for scholarship applications.

Prizes and Awards

Prizes are awarded for specific academic achievement. Normally, they are awarded by the Registrars' Offices on behalf of the University and are based on the recommendation of the appropriate Department or Faculty.

A selected group of University-level and Faculty-level prizes are presented to the recipients at Encaenia or Convocation, as appropriate. These include:

- Lieutenant-Governors Medals
- Governor Generals Academic Medal
- Governor Generals Gold Medal
- Douglas Gold Medal

The presentation of the remaining prizes is at the discretion of the Faculties involved. Many Faculties organize award ceremonies to make these presentations. However, if the Faculty does not choose to present the prize at an award ceremony, the prize is sent to the recipient along with a congratulatory letter.

All prizes are listed in the appropriate prize ceremony bulletins. All graduation prizes are listed in the appropriate programs at either Convocation or Encaenia.

The RHB McLaughlin Trust

Established through the generosity of Robert H.B. McLaughlin, long-time professor of Civil Engineering, former President of the UNB Associated Alumni and graduate of the Class of 1943, this Trust annually supports the R.H.B. McLaughlin Prize in Civil Engineering, the R.H.B. McLaughlin Graduate Fellowship in Civil Engineering, the Beaverbrook Scholars Award, and the R.H.B. McLaughlin Athletic Recognition Fund.

SCHOLARSHIPS, PRIZES AND AWARDS

Regulations and General Information

- All medals, prizes, scholarships and bursaries that are awarded by the University are approved by both Senates. Unless otherwise specified, awards are tenable at the Fredericton and Saint John campuses of the University of New Brunswick.
- The University reserves the right not to make an award should there be no suitable candidate.
- The University assumes liability for the payment of scholarships, bursaries and prizes only to the extent that gifts from donors, or returns from particular investments for these purposes, will permit. Thus, the stated values and numbers of certain awards may vary.
- Since the Calendar is published a considerable time before the opening of the academic session, the University reserves the right to make whatever changes circumstances may require, including the cancellation of awards.
- The Undergraduate Awards Office administers scholarships and bursaries for students enrolled in a minimum of 12 credit hours or 4 courses of undergraduate courses each study term.
- Limited scholarship support is available from the College of Extended Learning for Fredericton campus students who attend Intersession or Summer Session or who attend UNB on a part-time basis. For Saint John campus students, who attend Spring and/or Summer Session, or who attend UNB on a part-time basis, Student Life and Support Services can provide limited scholarship support.
- Scholarships are awarded by the Undergraduate Awards Office to students attending UNB to help them with the financial costs of attending university. The scholarship is paid to the recipient in the form of a credit against the student's UNB tuition and other compulsory fees. Normally, one-half of the scholarship's annual value is credited to the student's UNB fees for the Fall and Winter terms, to a maximum of two terms per year (May to April).
- Normally, a student can hold an undergraduate scholarship or bursary as long as s/he is registered in and has paid for four courses, or at least 12 credit hours, during the Fall and Winter terms at UNB and has given satisfactory evidence of merit.
- If a scholarship recipient attends only one term during the year (May to April), s/he will receive half the annual value of the scholarship as long as s/he has enrolled in 12 credit hours or 4 courses during the one term.
- Effective 2004-05, Co-op and PEP work terms qualify as eligible terms for scholarship support.
- Students who intend to graduate from an undergraduate degree program in the upcoming year and are attending UNB, but will not be registered in at least 12 credit hours or 4 courses each term, may be able to retain their scholarship as long as confirmation is received from the Faculty that the student will qualify for the degree at the end of the present registration. These students are encouraged to contact the Undergraduate Awards Office for consideration.
- In the event that the award exceeds the compulsory fees for the study term, the recipient can request a refund cheque from Financial Services.
- Unless otherwise specified in the scholarship description, students who are admitted to UNB on a basis OTHER THAN their high school marks (such as transfer students, degree holders, mature students, etc.) may be considered for scholarship support when they have completed 24 credit hours at UNB.
- To determine whether or not a student is in financial need, consideration is given to family income, number of dependents supported by the family income, number of dependents attending university in the upcoming year, spouse's income, number of student's dependents, student loan and/or other pertinent financial details provided by the student.
- Students studying at another institution on a Letter of Permission from UNB normally are not permitted to retain their scholarship.
- Students holding renewable awards are expected to maintain the academic standing specified in the recipient's original awarding letter. Failure to do so will normally result in the loss of the scholarship. One year of a renewable scholarship may be postponed while the recipient is studying at another post-secondary institution, as long as the recipient returns to UNB as a student in an undergraduate degree program. Unless otherwise stated, renewable scholarships are awarded for a maximum of eight terms.
- Students who withdraw from UNB after the refund date will retain their scholarship for the term in question, up to the tuition and compulsory fees owed by the student.
- Each recipient will be notified of the terms and conditions of the award. If additional information is required, recipients are encouraged to contact the Assistant Registrar, Undergraduate Awards, University of New Brunswick, at (506) 453-4894 or email: awards@unb.ca.

Scholarships Open to High School Students

The University of New Brunswick provides scholarships to high school students with superior academic standings who are admitted to a UNB undergraduate degree program on the basis of their high school marks and who have not attended another post-secondary institution prior to coming to UNB.

High school students with high averages are encouraged to submit their scholarship applications by February 15th. **The one application form covers the majority of UNB scholarships on both campuses for students applying to UNB directly from high school.**

High school students should also visit www.unb.ca/scholarships to download the application forms for the **Blake-Kirkpatrick Scholarships** and the
H. Harrison McCain Bursaries. On the same webpage, additional information on external scholarships can also be found.

The scholarship application form attached to the general application for admission to the University is for **high school applicants only**. The application form is also available on the UNB website (www.unb.ca/application/) or can be obtained from the Registrar's Office, UNB Fredericton and UNB Saint John.

UNB's Scholarship Guarantee Program

All students who have been admitted to a UNB degree program on the basis of their high school marks and have Scholarship Averages of 80% or higher will receive a scholarship offer from UNB. UNB guarantees students with Scholarship Averages -

- between 80% and 84.9% - $500.
- between 85% and 89.9% - $1,000.
- 90% or higher - at least $1,500 in total scholarship support

This scholarship support may come in the form of one or more scholarships that are combined to provide the student with the guaranteed amount.

UNB calculates a Scholarship Average which is the Admission Average plus bonus points for enriched courses. Bonus points are added directly to the Scholarship Average, as long as a mark of 75% or higher is achieved in the course.

- one bonus point for 1 to 3 enriched courses;
- a maximum of two bonus points for 4 to 6 enriched courses;
- a maximum of three bonus points for 7 to 9 enriched courses, and
- a maximum of four bonus points for 10 or more enriched courses.

The Scholarship Average is not rounded. The Scholarship Average may be recalculated using Grade 12 final marks, upon request only.

International students are considered on an indvidual basis. The Guaranteed Scholarships are provided on the basis of a recommendation from the Registrar's Office for the admitting campus, to International students who are beginning an undergraduate degree program at UNB directly from high school.

International students who begin their degree courses in the Winter term will have the full value of their scholarship applied to that term.

International students who must undertake English language training before beginning an undergraduate degree program must be re-evaluated for the guaranteed scholarship by the Registrar's Office for the admitting campus, upon the successful completion of the English language training program.

Scholarships Open to Continuing UNB Students

The University of New Brunswick provides scholarships to continuing UNB students who have completed at least 24 credit hours of undergraduate courses at UNB in the previous year and are planning to return to full-time study at UNB.

Preference is given to Deans List students, or students who have at least a 3.7 Scholarship GPA, enrolled in an undergraduate degree program. Part-time students who plan to attend on a full-time basis may be considered for scholarship support based on their last 24 credit hours of UNB courses.

For the purposes of awarding scholarships, a Scholarship GPA is calculated at the end of the assessment year (May to April) provided that 24 credit hours or more have been attempted, regardless of program. For students involved in work placement programs, such as Co-op or PEP, the scholarship GPA is calculated using the Deans List criteria. For PEP, Articulated Degree students or students on an official exchange program, who have been away from UNB from May to April in the previous year as part of their degree program, the Scholarship GPA will be based on their most recent work at UNB. This GPA is held internally and is not displayed on the students transcript of record.

Students currently enrolled at UNB in an undergraduate degree program are encouraged to apply for scholarship support each year between January 15th and April 15th, using the application form found on the UNB website, through My UNB E-Services, under the Academic tab.

Unless otherwise specified, the online scholarship application covers all scholarships open to continuing UNB students on both campuses awarded by the University. Successful recipients are notified during the summer.

Students Enrolled in Articulated Degree Programs

Students who begin an articulated degree program at UNB directly from high school are considered for Scholarships Open to High School Students. Students who are enrolled in articulated degree programs at UNB and attend the partnering institution (and not enrolled in 12 ch or 4 courses at UNB) may be considered for scholarships as follows

Eligibility

- The student must begin the programme of study at UNB.
- The student must have completed at least 24 credit hours at UNB (for assessment purposes).
- The student attending the partnering institution for one year of full-time study will be eligible for scholarship support based on the previous years work at UNB.
- If the program requires a second year of study at a partnering institution, consideration for scholarship will be given on the basis of a recommendation from the Faculty.
- Upon the students return to UNB, consideration for scholarship will be given on the basis of a recommendation from the Faculty.
- Consideration will be given to the level of support by the partnering institution in the final decision of UNB scholarship support provided to the student.

Funding

- These students will not be eligible to retain donor-funded scholarships for the year that they are at the partnering institution, unless the scholarship is open to the articulated degree program.
- Scholarships for students who are enrolled in articulated degree programs, but attending the partnering institution (and not enrolled in 12 ch or 4 courses at UNB) will be available using scholarship funds budgeted by the University and awarded using the scale approved by the Scholarship Committee each year.
- Donorfunded scholarships for these specific programs will be established using new monies. The scholarship description will contain a sentence indicating that, The recipient may retain this scholarship while enrolled in a UNB articulated degree program and attending the partnering institution.
- Students must apply to be considered for scholarship support.

Scholarships for Part-Time Students

Part-time students are encouraged to contact the College of Extended Learning UNB Fredericton or Student Life and Support Services, UNB Saint John, for scholarship applications.

Prizes and Awards

Prizes are awarded for specific academic achievement. Normally, they are awarded by the Registrars' Offices on behalf of the University and are based on the recommendation of the appropriate Department or Faculty.

A selected group of University-level and Faculty-level prizes are presented to the recipients at Encaenia or Convocation, as appropriate. These include:

- Lieutenant-Governors Medals
- Governor Generals Academic Medal
- Governor Generals Gold Medal
- Douglas Gold Medal

The presentation of the remaining prizes is at the discretion of the Faculties involved. Many Faculties organize award ceremonies to make these presentations. However, if the Faculty does not choose to present the prize at an award ceremony, the prize is sent to the recipient along with a congratulatory letter.

All prizes are listed in the appropriate prize ceremony bulletins. All graduation prizes are listed in the appropriate programs at either Convocation or Encaenia.

The RHB McLaughlin Trust

Established through the generosity of Robert H.B. McLaughlin, long-time professor of Civil Engineering, former President of the UNB Associated Alumni and graduate of the Class of 1943, this Trust annually supports the R.H.B. McLaughlin Prize in Civil Engineering, the R.H.B. McLaughlin Graduate Fellowship in Civil Engineering, the Beaverbrook Scholars Award, and the R.H.B. McLaughlin Athletic Recognition Fund.

SCHOLARSHIPS OPEN TO HIGH SCHOOL STUDENTS

For regulations and general Information please refer to the Financial Information Section/Scholarships, Prizes and Awards.

75th Anniversary Scholarship in Forestry
field: Forestry or Forest Engineering. ***value:*** Approximately $3,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student beginning an undergraduate degree program in Forestry or Forest Engineering who has graduated from high school with a high academic standing and who has demonstrated scholastic achievement in math and science. ***donor:*** Alumni of the Faculty of Forestry and Environmental Management.

Alumnae Entrance Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Women students beginning an undergraduate degree program. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Associated Alumnae.

Alumni Entrance Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Students beginning an undergraduate degree program. Awarded primarily on the basis of scholastic attainment. Financial need may be considered. ***donor:*** Associated Alumni.

APEGNB Entrance Scholarship
field: Engineering. ***value:*** $2000. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Open to students entering the Engineering or Geoscience degree program directly from a New Brunswick high school. Selections are made on the basis of scholastic attainment and financial need. ***awarding agency:*** The University, on the recommendation of the Faculty of Engineering. ***donor:*** The Association of Professional Engineers and Geoscientists of New Brunswick Foundation for Education.

APEGNB Saint John Branch Scholarship
field: Engineering. ***value:*** $200. ***number:*** 5. ***duration:*** 1 year. ***conditions:*** Open to Saint John campus students entering the Engineering degree program directly from a high school within in the APEGNB Saint John Branch district, who has not received another major award. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** The Association of Professional Engineers and Geoscientists of New Brunswick - Saint John Branch and the New Brunswick University Opportunities Fund.

Richard Bagley Memorial Bursary
field: Unrestricted. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a graduate of Fredericton High School, Oromocto High School, Leo Hayes High School, or Ecole Sainte-Anne, beginning an undergraduate degree program at UNB. Selection is made on the basis of financial need to students who have demonstrated successful academic performance. ***donor:*** Friends and family of Richard Bagley, BA'72, MA '79 and the New Brunswick University Opportunities Fund.

Otty L. Barbour Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable ***duration:*** up to 4 years ***conditions:*** Residents of New Brunswick who have shown marked promise in their high school course and who need financial assistance. ***donor:*** The late Otty L. Barbour.

Ira Beattie/ADI Scholarship
field: Civil Engineering. ***value:*** $2,500 ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student from the Atlantic Provinces who is beginning the Bachelor of Science in Engineering (Civil Engineering) degree program. Selection be based on scholastic attainment and financial need. ***donor:*** ADI Group Inc.

Beaverbrook Scholars Award
field: Unrestricted. *value:* $9,000 per annum. *number:* 3. *duration:* 4 years. *conditions:* Awarded to an outstanding graduate of a New Brunswick high school who is beginning an undergraduate degree program at UNB. Selections are made on the basis of scholastic attainment and financial need. Consideration may be given to participation in extra-curricular activities. ***awarding agency:*** The University with the approval of the Beaverbrook Scholar's Award Committee. *donor:* Lord Beaverbrook Scholars.

Lord Beaverbrook Scholarship
field: Unrestricted. ***value:*** $6,500 per annum. ***number:*** 6 ***duration:*** 4 years. ***conditions:*** Open to men and women residents of New Brunswick and tenable at UNB. Selections are made on basis of scholastic attainment, moral character, industrious habits and financial need. ***donor:*** The University.

Bicentennial Entrance Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of scholastic attainment to students beginning an undergraduate degree program. ***donor:*** The University.

P. William Bishop Memorial Scholarship
field: Engineering ***value:*** Variable ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded on the basis of scholastic attainment and financial need to a student who has graduated from a high school in Canada, and is entering the Engineering degree program. ***donor:*** Mrs. Bethia G. Bishop and family in memory of her husband and their father, Mr. P. William Bishop, BSc.Eng.CE 42, recipient of the Ketchum Medal 42.

Blake-Kirkpatrick Undergraduate Scholarship
field: Unrestricted (not Engineering) ***value:*** Total - $45,000; $15,000 in year 1; $12,000, $10,000 and $8,000 in each succeeding year. ***number:*** Up to 4. ***duration:*** 4 years. ***conditions:*** Awarded to students beginning a degree program other than Engineering upon the graduation from a high school in any of the four Atlantic Provinces. The scholarships are intended to support the education of future leaders. The applicants are therefore asked to submit an essay (not less than 250 words) giving the Selection Committee an indication of their leadership capabilities to date, including (but not limited to) school and extra-curricular activities. Required in the essay is evidence of overcoming barriers or difficult situations. ***apply:*** http://www.unb.ca/scholarships/ ***awarding agency:*** The University, on the recommendations of the Blake-Kirkpatrick Selection Committee. *donor:* Richard James Currie, O.C., M.B.A, L.L.D, P.Eng. installed as Chancellor of the University of New Brunswick in May 2003, in memory of his two grandmothers, Ida Mae Blake, who married James Adam Johnstone and Jannet Kirkpatrick, who married James Henderson Currie. ***deadline:*** March 1.

Blake-Kirkpatrick Undergraduate Scholarship in Engineering
field: Engineering. ***value:*** Total - $55,000; $15,000 in year 1; $12,000, $10,000, $10,000 and $8,000 in each succeeding year. ***number:*** Up to 4. ***duration:*** 5 years. ***conditions:*** Awarded to students beginning a Bachelor of Engineering degree program upon the graduation from a high school in any of the four Atlantic Provinces. The scholarships are intended to support the education of future leaders. The applicants are therefore asked to submit an essay (not less than 250 words) giving the Selection Committee an indication of their leadership capabilities to date, including (but not limited to) school and extra-curricular activities. Required in the essay is evidence of overcoming barriers or difficult situations. ***apply:*** http://www.unb.ca/scholarships/ ***awarding agency:*** The University, on the recommendations of the Blake-Kirkpatrick Selection Committee. ***donor:*** Richard James Currie, O.C., M.B.A, L.L.D., P.Eng. installed as Chancellor of the University of New Brunswick in May 2003, in memory of his two grandmothers, Ida Mae Blake, who married James Adam Johnstone and Jannet Kirkpatrick, who married James Henderson Currie. ***deadline:*** March 1.

H. S. Bridges Memorial Scholarship
field: Unrestricted. ***value:*** Approximately $1600. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** To a graduate of Saint John High School, who has high academic qualifications and is in need of financial assistance. ***donor:*** Dr. Colin B. Mackay, Rothesay, N.B. and the New Brunswick University Opportunities Fund.

Doris A. Campbell Memorial Scholarship
field: Unrestricted. ***value:*** $400. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a student entering UNB from Chipman High School. Selection is made on the basis of scholastic attainment with particular emphasis on English and financial need. ***donor:*** Mr. James S. Campbell.

Carleton & York Regimental Association Memorial Scholarship

field: Unrestricted. ***value:*** $2500 ***number:*** 2 ***duration:*** 1 year. ***conditions:*** Preference to children or grandchildren of an overseas veteran of the Carleton and York Regiment in World War II irrespective of residence, and secondly to children or grandchildren of any overseas veteran of World War II, the said veteran being or having been a resident of New Brunswick and irrespective of where the child or grandchild resides. Failing to find a suitable candidate, the scholarship shall be open to any child or grandchild of any other veteran, being or having been a resident of New Brunswick and irrespective of where the child or grandchild currently resides. Failing a suitable applicant or candidate in this third class, the Scholarship shall be open to any applicant residing in New Brunswick. Under this final class of suitability consideration shall be given to those who have served or are serving or whose parents served in the Land Reserve and particularly First Battalion Royal New Brunswick Regiment. ***donor:*** The Carleton and York Regiment Association of Saint John.

Governor Thomas Carleton Scholarship

field: Unrestricted ***value:*** $1000 ***number:*** Variable ***duration:*** 1 year ***conditions:*** Awarded on the basis of academic achievement to students entering a degree program at UNB. ***donor:*** The University.

Ward Chipman Founder's Scholarship

field: Unrestricted ***value:*** $500 ***number:*** Variable ***duration:*** 1 year ***conditions:*** Awarded on the basis of academic achievement to students entering a degree program at UNB. ***donor:*** The University.

Class of 1941 Scholarship

field: Unrestricted. ***value:*** $4,100 per year. ***number:*** 1 ***duration:*** 4 years. ***conditions:*** Awarded to a student beginning an undergraduate degree program on the Fredericton campus. The recipient must be a Canadian citizen or a Landed Immigrant. Selection is made on the basis of financial need and academic performance. One scholarship is awarded every four years. ***donor:*** UNB Class of 1941.

Julia Buchanan Coburn Memorial Scholarship

field: Unrestricted but preference for an entering student in the Faculty of Education ***value:*** Approximately $1600. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** A student from York County entering the University with preference given to students from the Keswick-Mactaquac area. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Friends of the late Mrs. Julia Buchanan Coburn and the New Brunswick University Opportunities Fund.

Computer Science Alumni Entrance Scholarship

field: Computer Science. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to full-time students who are entering the Bachelor of Computer Science (BCS) degree program or one of the BCS concurrent degree programs on the Fredericton campus. Selections are made on the basis of scholastic attainment; financial need may be taken into consideration. ***awarding agency:*** The University, on the recommendation of the Faculty of Computer Science. ***donor:*** Computer Science Alumni.

Randolph E. Cox Scholarship

field: Science. ***value:*** $2,500. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Worthy student beginning the undergraduate program leading to a Bachelor of Science degree. Academic merit and need will be considered. ***donor:*** The late Randolph E. Cox.

Dr. Ivan H. Crowell Scholarship in Forestry

field: Forestry. ***value:*** Variable. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has graduated from a New Brunswick high school and is beginning a Forestry degree program at UNB. Selection is based on scholastic attainment and financial need. ***donor:*** The estate of the late Dr. Ivan H. Crowell and Mrs. Mildred A. Crowell and the New Brunswick University Opportunities Fund.

Jayanta Datta Memorial Scholarship

field: Arts. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a beginning undergraduate student enrolled in the Faculty of Arts program on the Fredericton campus. Selection is made primarily on the basis of scholastic attainment. ***donor:*** Professor Arun Datta, friends and family of Jayanti Datta.

John R. Dean ADI Scholarship

field: Engineering. ***value:*** $4,000. ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a student, who has graduated from a New Brunswick high school, and is beginning an undergraduate degree program in Engineering on the Fredericton campus. Selection is made with consideration to scholastic attainment and financial need. The recipient may not hold additional scholarships which in total value exceed $1,000. ***donor:*** The family of the late John R. Dean, B.Sc., M.Sc., D.Sc., P.Eng., and ADI Group Inc. and the New Brunswick University Opportunities Fund.

Mary Lou Duff Memorial Scholarship

field: Unrestricted. ***value:*** $250. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a deserving student entering university on the Saint John campus. Selection is made on the basis of financial need and scholastic attainment. ***donor:*** Friends of the late Mary Lou Duff.

Catherine Earle and her parents Dr. Thomas and his wife Mary (West) Earle Scholarship for Full-time Students

field: Arts and Science. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who is a graduate of a New Brunswick high school. Selection is made on the basis of scholastic attainment and financial need. The profile of the recipient must indicate that the recipient is hard working, and consideration may be given to the recipient's participation in extracurricular activities. ***donor:*** Friend of Catherine Earle and the New Brunswick University Opportunities Fund.

James F. and Gertrude L. (Currie) Edwards Memorial Bursary

field: Unrestricted. ***value:*** Approximately $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a student beginning an undergraduate degree program who has attended either Nackawic High School or Keswick Ridge School and has demonstrated successful academic performance. ***donor:*** Joan Edwards and the New Brunswick University Opportunities Fund.

Faculty of Arts Entrance Scholarship

field: Arts. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to students who are entering the Bachelor of Arts degree program on the Fredericton campus. Selections are made on the basis of scholastic attainment; financial need may be taken into consideration. ***awarding agency:*** The University, on the recommendation of the Faculty of Arts. ***donor:*** Proceeds from UNB Faculty-Staff Campaign.

J.K. Flemming Scholarship

field: Unrestricted. ***value:*** $400. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Student from the County of Carleton or the County of Victoria. Award is made on the basis of academic performance and financial need. ***donor:*** The late Hon. J.K. Flemming.

Fredericton Community Foundation Scholarship

field: Unrestricted. ***value:*** $2,000 over life of award; Year 1-$1,000, Year 2-$600, Year 3 - $300, Year 4 - $100 ***number:*** 1 ***duration:*** 4 years. ***conditions:*** Awarded to a Fredericton campus student who is a graduate of Harvey High School, Stanley High School, Oromocto High School, Leo Hayes High School, Fredericton High School or Ecole Ste Anne and is beginning a degree program at UNB. Selections are made primarily on the basis of scholastic attainment and financial need. Consideration will be given to the student's contribution in extra-curricular activities. ***donor:*** The Fredericton Community Foundation.

Arthur D. Ganong Scholarship

field: Business Administration. ***value:*** $2,000 per year. ***number:*** 1 ***duration:*** 4 years. ***conditions:*** Awarded to an outstanding graduate of a New Brunswick high school who is beginning an undergraduate Business Administration degree program at UNB. Preference will be given to students who graduate from a Charlotte County high school. Selection is made on the basis of academic performance and financial need. The applicants must compose a short essay on Arthur D. Ganong to accompany the application. One scholarship awarded every 4 years. ***donor:*** Arthur D. Ganong Foundation and the New Brunswick University Opportunities Fund.

Eric C. Garland Scholarship
field: Civil Engineering. ***value:*** $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Canadian student beginning the Bachelor of Science in Engineering (Civil) degree program. Selection will be made primarily on the basis of the student's demonstrated leadership and community involvement during high school and secondarily on the basis of the students scholastic achievement and financial need. ***donor:*** Marilyn Garland, widow of Dr. Eric Garland.

M. Patrick Gillin Ottawa Engineering Scholarships
field: Engineering ***value:*** $4,000 for year one; $3,000 for year two, $2000 for year three; $1,000 for year 4; to be reviewed in year 5. ***number:*** 5. ***duration:*** Up to 5 years. ***conditions:*** Awarded to students enrolled in the Engineering degree program who have graduated from an Ottawa-area high school. Selection will be made on the basis of scholastic achievement. Financial need may be taken into consideration. ***donor:*** M. Patrick Gillin, P.Eng., BScEng. '49, D.Sc. '81

Gordon J. Glencross Scholarship
field: Generally unrestricted, but preference may be given to Science and Engineering. ***value:*** $500. ***number:*** Minimum 1 ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of academic performance and financial need, to a student beginning an undergraduate degree program, who is a graduate of Bonar Law Memorial High School, Rexton, NB. ***donor:*** Mr. Gordon J. Glencross, BScCE, UNB 1950, Clairville, Kent County. NB.

Lorna (Belyea) Glencross Scholarship
field: Unrestricted, but preference to Education or Nursing ***value:*** $500. ***number:*** Minimum 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of academic performance and financial need, to a student beginning an undergraduate degree program, who is a graduate of Saint John High School. ***donor:*** Mrs. Lorna (Belyea) Glencross, Saint John High School 1941 and Mr. Gordon J. Glencross, BScCE, UNB, 1950.

Hamilton-Roberts Entrance Scholarship in Geomatics Engineering
field: Geomatics Engineering ***value:*** Approximately $2,500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to a Fredericton campus student from the Maritime provinces entering Geomatics Engineering. Selection is made on the basis of scholastic attainment and financial need. ***awarding agency:*** The University on the recommendation of the Department of Geodesy and Geomatics Engineering. ***donor:*** The Hamilton-Roberts Scholarship Fund and members of the Department of Geodesy and Geomatics Engineering.

I.O.D.E. Valcartier Chapter of Saint John Bursary
field: Unrestricted. ***value:*** $300. ***number:*** 1 ***duration:*** 1 year (may be renewed). ***conditions:*** Awarded to a student (from Saint John or Kings Counties) entering UNBSJ who shows academic promise and needs financial assistance. ***donor:*** I.O.D.E. Valcartier Chapter and the New Brunswick University Opportunities Fund.

Indo-Canadian Scholarship
field: Unrestricted. ***value:*** Variable (Minimum $500). ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to students beginning an undergraduate degree program on the Saint John campus. Selection is based on scholastic attainment and financial need. ***donor:*** The Indo-Canadian Society of Saint John.

Carrie Ethel Ingersoll Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to graduates of Grand Manan High School. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** The late Mr. John Robertson.

Leadership Development Award
field: Business. ***value:*** $550. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Saint John campus student entering the Business Administration degree program. Selection will be based on academic achievement and significant involvement in extra-curricular activities at high school and/or in the community. This award is to be given to a student who will continue to make a positive contribution to the life and spirit of the university and community. ***donor:*** Faculty, staff and friends of the Faculty of Business.

Claudine LeBlanc Memorial Bursary
field: Unrestricted. ***value:*** $1000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a graduate of St. Malachy's High School. Preference will be given to a student who is involved in basketball or other sports and who is entering a degree program at on the Saint John campus, but a Fredericton campus student may be considered. ***donor:*** Friends and family of the late Claudine LeBlanc and the New Brunswick University Opportunities Fund.

Ottis Logue/ADI Scholarship
field: Civil Engineering. ***value:*** $2,500 ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student from the Atlantic Provinces who is beginning the Bachelor of Science in Engineering (Civil Engineering) degree program. Selection will be based on scholastic attainment and financial need. ***donor:*** ADI Group Inc.

William H. A. Long Memorial Scholarship
field: Unrestricted. ***value:*** Up to $1,000 per annum. ***number:*** 1 ***duration:*** 4 years. ***conditions:*** Male student whose home is in the County of York, but not in the City of Fredericton, and who appears most deserving of financial assistance. The student so selected shall be chosen from those beginning an undergraduate degree program. One scholarship awarded every 4 years. ***donor:*** The late William Henry Allison Long.

J. Stephen MacLellan Scholarship
field: Business Administration preferred. ***value:*** $500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of academic performance and financial need to a student who is a graduate of Riverview High School and is entering the Business Administration degree program at UNB. Should no candidate of this description exist in any given year, the Scholarship may be awarded to a graduate of Riverview High School who is entering any degree program at UNB, or failing that, a graduate of other New Brunswick high schools, with preference to Moncton area schools. ***donor:*** Mr. J. Stephen MacLellan.

Dr. Bernice L. MacNaughton Memorial Alumnae Scholarship
field: Unrestricted. ***value:*** $500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Students beginning an undergraduate degree program who have graduated from a high school in Moncton, New Brunswick. Selection is made on the basis of scholastic attainment and financial need. ***donor:*** The Associated Alumnae.

William MacNeil Scholarship
field: Forestry or Forest Engineering. ***value:*** $440. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** A student with high academic standing who is beginning a program leading either to the degree of Bachelor of Science in Forestry or Bachelor of Science in Forest Engineering. ***donor:*** The late William MacNeill.

Jeff Matchett Memorial Scholarship
field: Unrestricted. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student beginning their undergraduate degree program at UNB who is a graduate of a high school in Northumberland County. Preference will be given to a student graduating from North and South Esk Regional High School. Selection will be based upon scholastics attainment and financial need. ***donor:*** Roussel Toyota and the New Brunswick University Opportunities Fund.

Peter Maynes Memorial Scholarship
field: Nursing. ***value:*** $500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a student beginning an undergraduate degree program in the Faculty of Nursing, who is a graduate of a New Brunswick high school. ***donor:*** Mrs. Elizabeth Maynes in memory of her late husband, Mr. Peter Maynes.

Dr. W. Allan G. And Constance Young McAndrew Scholarship
field: Arts. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has graduated from a Gloucester County high school and is beginning an Arts degree program at UNB. Preference may be given to a student who has demonstrated scholastic achievement in French. ***donor:*** Mrs. Constance Young McAndrew in memory of her husband, Dr. W. Allan G. McAndrew.

Andrew H. McCain Scholarship
field: Unrestricted. ***value:*** $4,000 for first year, $3,000 for next three years. ***number:*** 1. ***duration:*** 4 years ***conditions:*** Awarded to a Fredericton campus student, with preference to a student who is a graduate of a high school in Carleton County or Victoria County, NB. Selection is made on the basis of scholastic attainment and financial need. ***donor:*** The family of the late Andrew H. McCain, member of the Class of 1943 and the New Brunswick University Opportunities Fund.

Eugene & Verna McCarthy Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment to a student entering an undergraduate degree program at UNB, who has graduated from a New Brunswick high school. ***donor:*** Mrs. Verna McCarthy.

Maureen McCarthy Memorial Bursary
field: Business Administration. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Fredericton campus student from Westmorland County who is beginning the Bachelor of Business Administration degree program. The recipient must demonstrate successful academic performance. ***donor:*** Family and friends of Maureen McCarthy and the New Brunswick University Opportunities Fund.

Dr. Marie M. McKnight, Michael S. Whitford & Family Scholarship
field: Unrestricted. ***value:*** $2,000. ***number:*** 1. ***duration:*** Up to 5 years. ***conditions:*** Awarded to a student who is beginning a degree program and is a graduate of St. Stephen High School. Selection is based on scholastic achievement and extracurricular involvement in such activities as athletics and drama. There will be one scholarship awarded every 4 or 5 years. The original $2000 scholarship will be renewed as follows: If the recipient achieves between 3.50 and 3.70 scholarship gpa, the value will be $1000; if the recipient achieves between 3.71 and 4.00 scholarship gpa, the value will be $2000; if the recipient achieves a 4.01 scholarship gpa or higher, the value will be $3000; if the recipient achieves less than a 3.50 scholarship gpa, then the scholarship is awarded to a new candidate. ***donor:*** Dr. Marie M. McKnight and Michael S. Whitford.

A.W. McLaughlin Entrance Scholarship in Geomatics Engineering
field: Geomatics Engineering. ***value:*** Approximately $1,700. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to a Fredericton campus student entering the Geomatics Engineering program, who is a graduate of a New Brunswick high school. Selection is made on the basis of scholastic attainment, professional promise and financial need. ***awarding agency:*** The University on the recommendation of the Department of Geodesy and Geomatics Engineering. ***donor:*** Family, friends and professional colleagues of the late A.W. McLaughlin and the New Brunswick University Opportunities Fund.

Edith G. McLeod Memorial Scholarship
field: Unrestricted. ***value:*** Approximately $1,400. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of academic performance to a student entering first year at UNB, who is a graduate of a Kent County or Saint John County high school. ***donor:*** Dr. Colin B. Mackay.

W.K. McMenamon Memorial Scholarship
field: Unrestricted. ***value:*** Variable ***number:*** Variable ***duration:*** 1 year ***conditions:*** Awarded to students who have graduated from a New Brunswick high school and are beginning an undergraduate degree program. ***donor:*** The late W. K. McMenamon.

Mr. & Mrs. Willard McMulkin Memorial Bursary
field: Unrestricted. ***value:*** $875. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a student entering the University from either Queens or Sunbury Counties with the preference given to a student from the Gagetown area. Selection made on the basis of financial need and scholastic attainment. ***donor:*** Family of the late Mr. & Mrs. Willard McMulkin.

Meloche Monnex Entrance Scholarship
field: Unrestricted. ***value:*** $1,000. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded to students beginning their first undergraduate degree program. Selections are made on the basis of scholastic attainment. ***donor:*** Monnex Insurance Brokers Limited.

Donald P. Mersereau Memorial Scholarship
field: Unrestricted. ***value:*** $500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to a student beginning an undergraduate degree program at UNB. ***donor:*** The family of the late Mr. Donald P. Mersereau, a former UNB employee.

Carolyn Crawford Nagle Memorial Scholarship
field: Unrestricted. ***value:*** Approximately $300. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a deserving student entering university on the Saint John campus. Selection is made on the basis of scholastic attainment and financial need. ***donor:*** Friends of the late Carolyn Nagle.

Nashwaak 1784-1984 Bicentennial Association Scholarship
field: Unrestricted. ***value:*** Approximately $500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a student from the Nashwaak Valley region entering either the Fredericton or the Saint John campus of UNB. Selections are made on the basis of scholastic attainment. The scholarship is in memory of the first settlers of the Nashwaak Valley. ***donor:*** 1784-1984 Nashwaak Bicentennial Association.

National Bank/National Bank Financial Entrance Scholarship
field: Unrestricted ***value:*** $5000 ***number:*** 3 ***duration:*** 1 year ***conditions:*** Awarded to students who have graduated from a high school in the Atlantic Provinces, and are beginning an undergraduate degree program. Selections are made on the basis of scholastic attainment, with consideration given to participation in extracurricular activities. At least one recipient from each campus must be represented. ***donor:*** National Bank/National Bank Financial.

New Brunswick Provincial Oratorical Contest Award
field: Unrestricted. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to the New Brunswick High School student achieving 1st place in the Senior Division of the New Brunswick Provincial Oratorical Contest, who enrolls in a degree program at the University of New Brunswick the following fall. Selection will be made by the New Brunswick Oratorical Organizing Committee. ***donor:*** UNB Associated Alumni.

New Brunswick Provincial Science Fair Merit Award
field: Unrestricted. ***value:*** $500. ***number:*** 1 (awarded each year) ***duration:*** 1 year. ***conditions:*** Awarded to an outstanding Grade XII participant in the N.B. Provincial Science Fair who registers in a degree program at UNB the following fall. Selection made by the Dean of Science, based on recommendations by the N.B. Provincial Science Fair Committee. ***donor:*** UNB Associated Alumni.

Charlotte Frances Otty Scholarship
field: Unrestricted. ***value:*** $340. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a young woman having the highest standing on entering the University from the County of Queens. Should there be no candidate in any given year, the interest shall accumulate from year to year until the next Queens County woman enters the University. ***donor:*** The late Marianne Grey Otty.

Norval Hallett Otty Scholarship
field: Civil Engineering or Forestry. ***value:*** $400. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a young man having highest standing on entering UNB from the County of Kings. Should there be no candidate in any given year, the interest shall accumulate from year to year until the next Kings County man enters the University. ***donor:*** The late Marianne Grey Otty.

William and Lois Paine Founder's Scholarship
field: Unrestricted ***value:*** $1500 ***number:*** Variable ***duration:*** 1 year ***conditions:*** Awarded on the basis of academic achievement to students entering a degree program at UNB. ***donor:*** The University.

Fletcher Peacock Memorial Scholarship
field: Preference to those enrolling or enrolled in Business Administration, Engineering or Forestry. ***value:*** Approximately $650. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Tenable at UNBSJ. Awarded on the basis of financial need to students whose record shows they may benefit from a university education. Open to any New Brunswick student. ***donor:*** Dr. G. Forbes Elliot, Former Vice-President, UNBSJ.

Hazel Birdena Pendleton Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment to a student from eastern Charlotte County (preference to residents or children of residents of Deer Island) who has graduated from one of the following high schools in this order of preference: Fundy High, Campbello Island Consolidated School, or Grand Manan High School. ***donor:*** Family of the late Hazel Birdena Pendleton.

Pepsi-Cola UNB Fredericton Entrance Scholarship
field: Unrestricted. ***value:*** $2,500. ***number:*** 6 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of academic performance to graduates of New Brunswick high schools beginning studies in an undergraduate degree program at UNB Fredericton. ***donor:*** Pepsi-Cola Canada Ltd.

Pepsi-Cola UNB Saint John Entrance Scholarship
field: Unrestricted. ***value:*** $2,500 ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of academic performance to graduates of New Brunswick high schools beginning studies in an undergraduate degree program at UNB Saint John. ***donor:*** Pepsi-Cola Canada Ltd.

W.A. Perkins Scholarship
field: Unrestricted. ***value:*** $2,100 ($525 per annum). ***number:*** 1 ***duration:*** 4 years. ***conditions:*** Male high school graduate who is a resident of the City of Fredericton or the County of York. One scholarship awarded every 4 years. ***donor:*** The late William A. Perkins.

Phillips Hager & North Investment Management Scholarship
field: Unrestricted. ***value:*** $2,500. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of academic performance to students beginning studies in an undergraduate degree program at UNB in Fredericton. ***donor:*** Phillips Hager & North Investment Management Limited

Margaret Wallace Porter Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** One. ***duration:*** 1 year. ***conditions:*** Awarded to a deserving student beginning an undergraduate degree program. Selection is made mainly on the basis of scholastic attainment. ***donor:*** The late Margaret Wallace Porter.

President's Scholarship
field: unrestricted ***value:*** $5,000 for 4 years ***number:*** variable ***duration:*** 4 years ***conditions:*** Open to all students beginning an undergraduate degree program at UNB. Selections will be based on scholastic attainment. ***donor:*** The University.

Residence Leadership Awards
field: Unrestricted. ***value:*** $1500 discount on Residence Fees. ***number:*** 5. ***duration:*** 1 year. ***conditions:*** Awarded to students with a minimum average of 85% who are entering the first year of an undergraduate degree program on the Fredericton campus, and have proven leadership in extracurricular activities or non-academic activities. Recipients must live in the UNB Residence community. ***awarding agency:*** The University in consultation with the Associate Director, Residential Life. ***donor:*** The University.

Hon C.D. Richards Scholarship
field: Forestry or Forest Engineering. ***value:*** $1,000. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a needy and deserving student beginning a program leading either to the degree of Bachelor of Science in Forestry or the degree of Bachelor of Science in Forest Engineering. ***donor:*** The late Hon. C.D. Richards.

Bernardo & Giovanna Rocca Bursary
field: Unrestricted. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a student entering first year of a degree program on the Saint John campus. The recipient must have demonstrated successful academic performance. ***donor:*** Mr. Bernardo Rocca.

Ivan F. Ronalds Engineering Scholarship
field: Engineering. ***value:*** Minimum $535. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** To be awarded annually to a graduate of Bathurst High School who is beginning an engineering undergraduate degree program. Selection is made on the basis of scholastic attainment and financial need. Consideration will be given to participation in extracurricular activities. ***donor:*** Mr. Ivan F. Ronalds in memory of his mother.

Etta L. Ross Memorial Scholarship
field: Unrestricted. ***value:*** Approximately $2,200. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a student who has demonstrated successful academic performance, with preference given to a student from Kings County. ***donor:*** Dr. James F. Ross.

Florence Ross Memorial Award
field: Unrestricted. ***value:*** Approx. $150 ***number:*** 1. ***duration:*** Up to 4 years. ***conditions:*** An award of approximately $150 per year, and renewable for up to three years, to be made on the recommendation of Vice-President (Saint John) to a student of the black race, entering a degree program on the Saint John campus, with the highest admission average from Saint John County. Renewal of the award is contingent upon the student continuing at UNB Saint John. ***awarding agency:*** The University, on the recommendation of the Vice-President (Saint John). ***donor:*** The late Florence Ross.

Michael Shanks Memorial Scholarship
field: Unrestricted. ***value:*** Approximately $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who has graduated from a New Brunswick high school and is beginning an undergraduate degree program on the Fredericton campus. Selection is made on the basis of scholastic attainment and financial need. ***donor:*** Colleagues and friends of the late Michael Shanks, former Associate Registrar, UNB Fredericton and the New Brunswick University Opportunities Fund.

Sharpe Family Scholarship
field: Unrestricted ***value:*** $10,000 per annum ***number:*** 1 ***duration:*** 4-5 yrs (degree program) ***conditions:*** Awarded on the basis of scholastic attainment to a student entering a degree program at UNB on the Fredericton campus. Consideration will be given to the students involvement in extracurricular activities and to financial need. The scholarship will be awarded every 4 to 5 years. ***donor:*** Dawn Sharpe (CE'64) and Susan Sharpe of Calgary, Alberta.

Nina Fairchild Simon Memorial Scholarship
field: Preference may be given to students entering Science. ***value:*** Variable. ***number:*** Variable ***duration:*** Up to 4 years. ***conditions:*** Selections are made on the basis of scholastic attainment and financial need. The Scholarship is restricted to students attending UNB Saint John. ***donor:*** The late William John Simon.

Gertrude Winnifred Smith Scholarship
field: Unrestricted. ***value:*** $6,000 ($1,500 per annum). ***number:*** 1 ***duration:*** 4 years. ***conditions:*** A woman from Charlotte County of good moral character, who is unable to pay her own expenses. One scholarship awarded every 4 years. ***donor:*** The late Gertrude Winnifred Smith.

Steeves Albert County Scholarship
field: Arts. ***value:*** $2,000 per annum. ***number:*** 1 ***duration:*** 4 years. ***conditions:*** Male student from the County of Albert taking the BA course at the University, who received high academic standing. One scholarship awarded every 4 years. ***donor:*** The late Dr. Charles Peck Steeves.

Gerald Thompson Sutherland Bursary
field: Unrestricted. ***value:*** $2,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a student on the Fredericton campus who is a graduate of a high school in central New Brunswick, and has demonstrated successful academic performance. ***donor:*** Mr. Gerald Thompson Sutherland and the New Brunswick University Opportunities Fund.

Mary Anne Thomas Scholarship in Nursing
field: Nursing. ***value:*** Variable. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has graduated from a New Brunswick high school and is beginning a Nursing degree program at UNB. Selection is based on scholastic attainment and financial need. ***donor:*** The estate of the late Dr. Ivan H. Crowell and Mrs. Mildred A. Crowell and the New Brunswick University Opportunities Fund.

Brock A. Turner Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a student who is a graduate of Sussex High School and is beginning an undergraduate degree program at UNB. ***donor:*** Mrs. Brock A. Turner.

UNB Leadership Scholarship
field: Unrestricted. ***value:*** $2,500. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Open to students beginning a degree program directly from high school who have demonstrated successful academic achievement. Candidates must have played a leadership role in extracurricular activities such as community service, student government, athletics or the visual or performing arts. ***donor:*** The University of New Brunswick.

UNB Recognition Scholarship (Shad Valley, International Baccalaureate, Duke of Edinburgh Award)
field: Unrestricted. ***value:*** $2,500. ***number:*** 6 ***duration:*** 1 year. ***conditions:*** Awarded to students beginning a degree program directly from high school who have participated in programs such as Shad Valley, International Baccalaureate, Duke of Edinburgh, etc. Selection will be based on scholastic attainment. ***donor:*** The University of New Brunswick.

University Faculty & Staff Entrance Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple ***duration:*** 1 year. ***conditions:*** Students beginning an undergraduate degree program. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Contributors to the University Faculty/Staff Fund.

University of New Brunswick Saint John Primrose Scholarship
field: Unrestricted ***value:*** $5,000 or greater ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded annually to a first year student on the Saint John campus. Selection is based on academic achievement, and community/ athletic leadership. Also, applicants are required to write a 500 word essay on a topic of their choice. ***apply:*** The Registrar, UNBSJ. ***awarding agency:*** The University on the recommendation of the Vice-President (Saint John). ***donor:*** Proceeds from the May 4th, 1999 University of New Brunswick Scholarship dinner.

Allen Barry Van Stone Memorial Bursary
field: Business Administration. ***value:*** $500. ***number:*** 1. ***duration:*** 4 years. ***conditions:*** Awarded on the basis of financial need to a Fredericton campus student who is beginning the Bachelor of Business Administration degree program and is a graduate of a New Brunswick high school. One scholarship will be awarded every 4 years. ***donor:*** Bruce Van Stone and the New Brunswick University Opportunities Fund.

Marilyn Van Stone Memorial Bursary
field: Unrestricted. ***value:*** $2500. ***number:*** 1. ***duration:*** 4 years. ***conditions:*** Awarded on the basis of financial need to a Fredericton campus student who is beginning a degree program and is a graduate of a New Brunswick high school. Preference will be given to a student who has lost a parent to cancer within the past five years. One scholarship will be awarded every 4 years. ***donor:*** Marilyn Van Stone Cancer Care Foundation and the New Brunswick University Opportunities Fund.

Mary Eileen Washburn Memorial Scholarship
field: Science. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a student beginning a Bachelor of Science degree program on the Fredericton campus, who is a graduate of a Fredericton high school. Selection is made on the basis of scholastic attainment and financial need. ***donor:*** Family and friends of the late Mary Eileen Washburn, B.Sc., UNB 1989 and the New Brunswick University Opportunities Fund.

Mark Way Memorial Scholarship in Forestry & Environmental Management
field: Forestry and Environmental Management. ***value:*** Variable. ***number:*** 1 ***duration:*** 5 years. ***conditions:*** Awarded every five years, on the basis of scholastic attainment and financial need, to a student on the Fredericton campus in the faculty of Forestry and Environmental Management . ***donor:*** The late Mark Way, BA, UNB 1972.

Irene Weaver Memorial Entrance Scholarship
field: Nursing ***value:*** $500 ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a deserving student entering the Nursing Program on the Saint John campus. Selection is made on the basis of financial need and scholastic attainment. ***donor:*** The late Irene Weaver.

Andrew H. Williams Insurance Bursary
field: Unrestricted. ***value:*** $2,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a graduate of Leo Hayes High School who is entering a degree program on the UNB Fredericton campus. The candidate must demonstrate successful academic performance. Consideration will be given to the candidate's involvement in athletics as well as within the community. ***donor:*** Andrew H. Williams State Farm Insurance and the New Brunswick University Opportunities Fund.

L. A. Wilmot Scholarship
field: Unrestricted. ***value:*** $375. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Male student of exceptional moral character and of good mental ability. His circumstances must be such as to render pecuniary aid necessary towards obtaining a university education. The scholarship has been assigned in competition among pupils in Saint John. ***donor:*** The late Mrs. L.A. Wilmot.

Beatrice Small Wilson Bursary
field: Any course at UNBSJ. ***value:*** $1,000. ***number:*** 4 ***duration:*** 1 year. ***conditions:*** Awarded to students who show academic promise and need financial assistance, from Saint John, Albert, Kings, or Charlotte Counties, and who do not hold any other major bursaries or scholarships. ***donor:*** The Charles Wilson Charitable Foundation Inc.

SCHOLARSHIPS OPEN TO HIGH SCHOOL AND CONTINUING UNB STUDENTS

A number of scholarships are open to both high school and continuing UNB students. The scholarship application completed by the high school student or continuing UNB student covers these scholarships as well.

For regulations and general Information please refer to the Financial Information Section / Scholarships, Prizes and Awards.

William & Edward Akerley Memorial Scholarship
field: Civil Engineering. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of scholastic attainment to Fredericton campus Civil Engineering students. ***donor:*** Mrs. B.E. Akerley and family, in memory of her late husband, William (BScCE'32), and his late brother, Edward (BScCE'23)

Anonymous Donor Scholarship
field: Unrestricted. ***value:*** $275. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** A needy and deserving student of UNB. ***donor:*** Anonymous.

Aquila Tours Scholarship
field: BAMHT ***value:*** $500 ***number:*** 2 ***duration:*** 1 year ***conditions:*** One scholarship will be awarded to a student who has completed a two-year diploma at an articulated Community College and is entering the BAMHT degree program at UNB Saint John. The other scholarship will be awarded to a high school student starting the BAMHT program at UNB Saint John. Selection will be made by on the basis of scholastic attainment and financial need. ***awarding agency:*** The University on the recommendation of Director, BAMHT. ***donor:*** Aquila Tours, Inc.

David and Marion Bassett Scholarship
field: Unrestricted. ***value:*** Approximately $5,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who is a resident of the Bahamas. Selection will be based on scholastic attainment. Transfer students may also be considered. ***donor:*** David and Marion Bassett.

John F. Bassett Memorial Scholarship
field: Unrestricted. ***value:*** Minimum $2,000. ***number:*** Two per year. ***duration:*** 1 year. ***conditions:*** Open to graduates of any high school in Ontario. Awarded primarily for scholastic attainment, but extracurricular activities, sports achievement and need may also be taken into account. ***donor:*** Dr. Fredrik S. Eaton.

Fannie Chandler Bell Scholarship
field: Unrestricted. ***value:*** Up to $2,500. ***number:*** Variable ***duration:*** Up to 2 years. ***conditions:*** Students who show academic promise and need financial assistance. ***donor:*** The late Fannie Chandler Bell.

Bermuda Alumni Scholarship
field: Unrestricted ***value:*** Variable ***number:*** Variable ***duration:*** 1 year ***conditions:*** Awarded on the basis of scholastic attainment to students from Bermuda enrolled in a degree program at UNB. ***donor:*** Bermuda Alumni.

Iris Bliss Scholarship
field: Kinesiology or Science. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who is enrolled in the Bachelor of Science in Kinesiology or the Bachelor of Science degree program and is a graduate of Fredericton High School. Selection will be based on academic achievement and financial need with consideration given to participation in sport/dance or involvement in school or local community activities. In the event that there are no Fredericton High School graduates considered as eligible for this scholarship, then Leo Hayes High School graduates will be considered. ***donor:*** Iris E. C. Bliss and the New Brunswick University Opportunities Fund.

Boyer Scholarship
field: Unrestricted. ***value:*** $850. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to students who are residents of Carleton County, New Brunswick, and who are children of veterans of active service in either First or Second World Wars. ***donor:*** The late Miss Bertha Boyer.

Dr. G. F. Gregory Bridges Scholarship
field: Unrestricted. ***value:*** Minimum $500. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Selections are made on the basis of scholastic attainment and financial need. ***donor:*** The late Dr. G.F. Gregory Bridges.

N. Myles Brown Natural Science Scholarship
field: Any field of science/applied science concerned with ecology. ***value:*** Variable. ***number:*** 1. ***duration:*** Awarded for 1 year ***conditions:*** Students who are either beginning an undergraduate degree program at UNB or have completed the normal requirements for the first year of the program in which they are registered. Applicants must intend to pursue their studies in any field of science/applied science concerned with ecology. Selections are made on the basis of scholastic and other attainments and financial need. ***donor:*** The Woodstock Museum Inc.

Buckingham Family Leadership Award
field: Unrestricted ***value:*** $1,500 ***number:*** 2 ***duration:*** 1 year ***conditions:*** Awarded to Fredericton campus students who have demonstrated successful academic achievement (2.5 assessment year GPA for returning students, and an 80% scholarship average for entering students), special athletic ability in the sport of men's varsity hockey, and leadership abilities in the community. One award will be presented to a defenceman and one to a forward. This award is open to transfer students. ***awarding agency:*** The University on the recommendation of the Faculty of Kinesiology/Director of Athletics. ***donor:*** The Buckingham Family.

Business Administration 25th Anniversary Scholarship
field: Business Administration. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to Fredericton campus students in the BBA program. ***donor:*** Contributions by graduates, faculty, staff, business firms and individuals in recognition of the 25th anniversary of the first BBA graduates from UNB.

Gerald A. Campbell Memorial Scholarship
field: Science, Engineering, Forestry, and Forest Engineering. ***value:*** Variable ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded to students at UNB on the basis of scholastic attainment and financial need. Preference may be given to graduates of New Brunswick high schools. ***donor:*** The late Gerald A. Campbell and the New Brunswick University Opportunities Fund.

Marmie Campbell Memorial Bursary
field: BAMHT ***value:*** $500 ***number:*** 1 ***duration:*** 1 year ***conditions:*** Open to students who are entering the BAMHT degree program at UNB Sant John directly from high school as well as those students who have completed a two-year diploma at an articulated Community College and are entering the BAMHT degree program at UNB Saint John. Selection is based on volunteerism and community involvement related to tourism. The candidate must demonstrate successful academic performance. ***awarding agency:*** The University, on the recommendation of the Director of the BAMHT Program. ***donor:*** Hospitality Saint John.

Vivian and David Campbell Family Foundation Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to students on the basis of scholastic attainment and financial need. ***donor:*** The Vivian and David Campbell Family Foundation

Carlton C. Covey Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** Up to 4 years. ***conditions:*** Open to Fredericton campus students who have graduated from a New Brunswick high school. Selection will be based on scholastic achievement and financial need. ***donor:*** The estate of Lillian E. Covey and the New Brunswick University Opportunities Fund.

Maggie Jean Chestnut Scholarship
field: Arts or Science. ***value:*** Variable. ***duration:*** Up to 4 years. ***conditions:*** Women students registered in either the Faculty of Arts or the Faculty of Science. Students in Home Economics or similar courses are not eligible. Preference will be given to students in residence at the Maggie Jean Chestnut House. Scholarship is also open to Fredericton women living at home. Selection will be made on the basis of good academic standing with consideration being given to financial need. ***donor:*** The late Mrs. Annie T. Chestnut.

Ernest deWitt Chipman Memorial Scholarship
field: Bach. of Philosophy in Interdisciplinary Leadership or Bach. of Arts (International Development) ***value:*** Approximately $700. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who is a graduate of a New Brunswick High School and is enrolled in the Bachelor of Philosophy in Interdisciplinary Leadership or majoring in International Development Studies in the Bachelor of Arts on the Fredericton campus or International Studies on the Saint John campus. Selection will be based on academic attainment and financial need. Preference will be given to a student involved in extra-curricular activities. ***donor:*** A.M. Chipman, his father; Peter and Patricia Chipman, his brother and wife; family & friends and the New Brunswick University Opportunities Fund.

Enid Hager Clarke Memorial Bursary - UNB Fredericton
field: Unrestricted. ***value:*** Approximately $500. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to students on the Fredericton campus who have graduated from a high school in Saint John County or Kings County, New Brunswick, and have achieved successful academic performance. ***donor:*** The late Enid Hager Clarke.

Enid Hager Clarke Memorial Bursary - UNB Saint John
field: Unrestricted. ***value:*** Approximately $500. ***number:*** Multiple ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to students on the Saint John campus who have graduated from a high school in Saint John County or Kings County, New Brunswick and have achieved successful academic performance. ***donor:*** The late Enid Hager Clarke and the New Brunswick University Opportunities Fund.

Class of 1936 Scholarship
field: Unrestricted. ***value:*** $500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Selections are made on the basis of scholastic attainment and financial need. ***donor:*** The Class of 1936.

Robert Maynard Coburn Memorial Scholarship
field: Unrestricted. ***value:*** Approximately $1,500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student entering an undergraduate degree program on the Fredericton campus, who is a graduate of a high school located in the province of New Brunswick, and is a resident of Queens or Sunbury County. Selection is made on the basis of scholastic attainment and financial need. ***donor:*** Allan Greene and his wife, the late Helen Greene, in loving memory of Helen's brother, Bobby.

Florence Julia Colpitts Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to students who are graduates of a rural New Brunswick high school located outside any of New Brunswick's incorporated cities. Selections are made on the basis of financial need and satisfactory academic performance. ***donor:*** The estate of Philip Colpitts and the New Brunswick University Opportunities Fund.

Howard Copp Memorial Bursary
field: Forestry, Nursing or Education. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Fredericton campus student who is enrolled in the Bachelor of Science in Forestry, Bachelor of Nursing or Bachelor of Education (Concurrent or Consecutive) degree program and has demonstrated successful academic performance. Preference will be given first to graduates of North and South Esk Regional High School, then to graduates of Miramichi Valley High School. ***donor:*** The late Lillian Copp, in memory of her father, Howard Copp.

Crown Life Entrance Scholarship
field: Unrestricted. ***value:*** Maximum $2,500. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Open to students who have graduated from a Saskatchewan high school and are enrolled in an undergraduate degree program at the University of New Brunswick. Selections are made primarily on the basis of scholastic attainment. This scholarship is open to transfer students. ***donor:*** The Crown Life Insurance Company.

Dr. John Z. & Helen M. Currie Memorial Scholarship
field: Unrestricted. ***value:*** $300. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Student with high scholastic standing who needs financial help. ***donor:*** The late John Bayard Currie.

Dr. Everett Chalmers Hospital Auxiliary Scholarship for Mature Nursing Students
field: Nursing ***value:*** Variable ***number:*** Variable ***duration:*** 1 year ***conditions:*** Awarded to entering or continuing mature students who are graduates of a high school in Health Region 3 (New Brunswick) enrolled in either the Basic or Post RN Nursing Program. ***awarding agency:*** The University, on the recommendation of the Faculty of Nursing. ***donor:*** Dr. Everett Chalmers Hospital Auxiliary and the New Brunswick University Opportunities Fund.

John A. H. Duffie Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of scholastic attainment. ***donor:*** The late John A.H. Duffie.

Kenneth Joseph Dunn / Allan McInerney Memorial Scholarship
field: Unrestricted. ***value:*** $300. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need. ***donor:*** Friends of the late Kenneth Joseph Dunn and Allan McInerney .

Malcolm Early Award
field: Unrestricted ***value:*** Variable ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a male student on the Fredericton campus who has demonstrated high academic achievement (3.0 assessment year GPA for returning students, and 80% average for entering students), special athletic ability in the sport of men's varsity volleyball as well as leadership abilities in his surrounding community. This award is open to transfer students. ***awarding agency:*** The University, on the recommendation of the Faculty of Kinesiology in consultation with the Director of Athletics. ***donor:*** UNB Volleyball Alumni.

George Cedric Ferguson Memorial Engineering Bursary
field: Chemical, Civil, Electrical and Mechanical Engineering. ***value:*** Variable. ***number:*** Minimum 1. ***duration:*** Up to 5 years. ***conditions:*** Awarded on the basis of financial need with consideration given to scholastic attainment to students entering the Chemical, Civil, Electrical or Mechanical Engineering degree program. Preference is given to students from the Tracadie-Sheila area. ***donor:*** The late George Cedric Ferguson.

Karl Land Fiddes BA 1962 Memorial Scholarship in Arts
field: Arts. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to students in the undergraduate Bachelor of Arts degree program. ***donor:*** The late Karl Land Fiddes

Karl Land Fiddes BA. 1962 Memorial Scholarship in Science
field: Science. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to students in the undergraduate Bachelor of Science degree program. ***donor:*** The late Karl Land Fiddes.

Forestry Staff & Alumni Scholarship
field: Forestry and Forest Engineering. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of scholastic attainment to Fredericton campus Forestry or Forest Engineering students. ***donor:*** UNB Forestry and Forest Engineering staff and UNB alumni members.

Sir George E. Foster Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple ***duration:*** Up to 4 years. ***conditions:*** Men and women who show scholastic promise and who need financial assistance to attend university. Open to students from all parts of Canada.

Friends of the Varsity Reds
field: Unrestricted ***value:*** Not to exceed tuition and compulsory fees ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded to Fredericton campus undergraduate or graduate students who have demonstrated talent in the field of varsity athletics. Recipients must have achieved a 2.5 grade point average for continuing students or an 80% average for high school students. This award is open to transfer students as well as students who are enrolled in a minimum of 9 credit hours, as required by the CIS. ***awarding agency:*** The University on the recommendation of the Director of Athletics. ***donor:*** Alumni and friends of the Varsity Reds.

Gale Memorial Scholarship
field: Unrestricted. ***value:*** Approximately $1,600. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student on the Saint John campus of UNB. Financial need is an important consideration in the awarding of the scholarship, as is successful academic performance. ***donor:*** The late Miss Catherine B. Gale, in memory of Harry Garfield Gale and Alberta Ballentine Gale.

Ganong Bros. Ltd. Scholarship
field: Business Administration. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Open to graduates of a New Brunswick high school. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Ganong Bros. Limited.

Dr. Eric Garland Memorial Scholarship
field: Unrestricted ***value:*** Variable ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a student on the Fredericton campus who is registered in an undergraduate degree program. Selection is made on the basis of scholastic attainment and financial need with consideration given to students who have shown leadership qualities and community skills. ***donor:*** Family and friends of the late Dr. Eric C. Garland

Susanna Gerow Scholarship
field: Unrestricted. ***value:*** Approximately $600. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** A deserving student from the Counties of Queens or York, in New Brunswick who is in need of financial assistance. ***donor:*** The late Areta B. and Lenora M. Gerow.

William Godfrey Scholarship
field: Engineering. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who has graduated from a New Brunswick High School and is enrolled in the Bachelor of Science in Engineering degree program. Selection will be made on the basis of scholastic attainment and financial need. ***donor:*** William Godfrey and the New Brunswick University Opportunities Fund.

Greenblatt Shore Memorial Bursary
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to students who have demonstrated successful academic performance. ***donor:*** The late Ilsa Janice Shore, the first woman Chair of UNB's Board of Governors, and her friends and family.

Greenblatt Shore Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to undergraduate students primarily on the basis of scholastic attainment. ***donor:*** The late Ilsa Janice Shore, the first woman Chair of UNB's Board of Governors, and her friends and family.

J. Fraser Gregory Scholarship
field: Preference to Science and Engineering. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of academic performance to students on the Saint John campus. ***donor:*** The late H. Olivia Spurling.

Thomas J. Hammett Memorial Award
field: Business Administration. ***value:*** Variable. ***number:*** 2 ***duration:*** 1 year ***conditions:*** Awarded each year to one full-time student in the Business Administration degree program at UNBF, and one in Business Administration at UNBSJ. Recipients should have graduated from a high school in the Atlantic Provinces, have a minimum scholarship admission average of 85% or a minimum Assessment GPA of 3.7, have financial need, and proven athletic ability and current athletic interests. One scholarship is awarded at the entrance level and one at the undergraduate level. ***donor:*** The Estate of Mr. Thomas J. Hammett.

Fred, Elsie, Brian & Robert Hanson Family Scholarship
field: Unrestricted ***value:*** Variable ***number:*** Variable ***duration:*** up to 4 yrs ***conditions:*** Awarded on the basis of scholastic attainment to students from China enrolled in a degree program at UNB. ***donor:*** The Estate of G. Robert Hanson.

Norris Hayward Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Open to students who are graduates of a Carleton County high school, with preference given to children or descendants of Carleton County war veterans. ***donor:*** The late Judge Marvin Hayward.

Steadman Bucknell Henderson Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to undergraduate students primarily on the basis of scholastic attainment. ***donor:*** The late Kathleen Rachel Henderson in memory of her son, Steadman Bucknell Henderson.

Tom & Parker Hickey Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** Variable. ***conditions:*** Male student entering the University subject to the following conditions: (1) Born in Restigouche, Gloucester, Northumberland, or Kent Counties; (2) One branch of the candidate's family must have been settled in one of these counties prior to 1873; (3) Some of the forebears of the candidate must have earned part of their living by working in the forests, sawmills, or pulp mills in those counties between the years 1878 and 1900. Male descendants of clergymen and doctors who settled in these counties prior to 1878 are also eligible; (4) Candidate may have obtained his preparatory education elsewhere than in these counties. ***donor:*** The late W. Parker Hickey.

Harry Hindmarsh Memorial Bursary
field: Unrestricted ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a UNB Fredericton campus student, on the basis of financial need and satisfactory academic performance. ***donor:*** The Class of 1965 in memory of their late classmate, Harry Hindmarsh.

Thomas E. Hoben Scholarship
field: Unrestricted. ***value:*** $200. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Worthy student requiring financial assistance who is either beginning an undergraduate degree program or has completed the normal requirements for the first year of the program in which the student is registered. ***donor:*** The late Dr. Allan T. Hoben.

Alleyne Hubbard Memorial Scholarship
field: Science, Engineering, Forestry, Computer Science. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to students who have graduated from an NB high school and have enrolled in the following degree programs: Science, Engineering, Forestry or Computer Science. Selection will be based on academic achievement and financial need. Preference will be given to students involved in extracurricular activities and athletics ***donor:*** Marion (Hubbard) Logie, Lucy & Frederick Hubbard, in memory of their brother, Alleyne (Al) Russell Hubbard (BScF '37), Lieutenant, killed in action during World War II at Nymegen, Holland on November 20th 1944. He served with Unit No. 15, Canadian Forestry Corps. The New Brunswick University Opportunities Fund also contributes to this scholarship.

Catherine Leslie Ircha Bursary in Nursing
field: Nursing. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Fredericton campus student enrolled in the Bachelor of Nursing degree program. ***donor:*** Dr. Michael C. Ircha, in memory of his mother.

Edwin Jacob Special University Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** Up to 4 years. ***conditions:*** Awarded to students based on academic achievement. Consideration may be given to financial need and/or extracurricular activities. Students transferring from other institutions may be considered.

Dr. Willard Miles Jenkins Scholarship
field: Nursing and Science with preference to pre-medicine ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a UNB student from Queens, Kings or Sunbury Counties, with preference given to a student from Queens County. Selections are made on the basis of scholastic attainment. ***donor:*** The Jenkins' family, Women's Institute and friends.

Welsford R. Jenkins Bursary for Business Administration
field: Business Administration. ***value:*** Approximately $1100. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of academic performance and financial need to a student in the Business Administration degree program on the Saint John campus. ***donor:*** Mr. Welsford R. Jenkins.

Colby H. & Bessie J. Jones Scholarship in Arts
field: Arts. ***value:*** Minimum $500. ***number:*** Minimum 1. ***duration:*** 1 year. ***conditions:*** Open to students in the Bachelor of Arts degree program at UNB who are graduates of a high school in Kings or Queens Counties, New Brunswick. ***donor:*** The Late Mrs. Bessie J. Jones.

Colby H. & Bessie J. Jones Scholarship in Forestry
field: Forestry. ***value:*** Minimum $500. ***number:*** Minimum 1 ***duration:*** 1 year. ***conditions:*** Open to students in the Faculty of Forestry and Environmental Management at UNB who are graduates of a high school in Kings or Queens Counties, New Brunswick. ***donor:*** The Late Mrs. Bessie J. Jones.

Karnes Scholarship in Business Administration
field: Business Administration. ***value:*** Variable. (1 or more recipients). ***number:*** 1 or more. ***duration:*** 1 year. ***conditions:*** Open to graduates of a New Brunswick high school. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Karnes Kitchen Ltd. and the New Brunswick University Opportunities Fund.

Khaki University & Y.M.C.A. Scholarship
field: Unrestricted. ***value:*** $400. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** One scholarship to a member of the Freshman class and a scholarship to a member of the Sophomore class under the following conditions and in order named: (1) Sons and daughters of those who served in the Armed Forces during the war of 1914-18. (2) Sons and daughters of those who served in the Armed Forces during the War of 1939-45. (3) Those who served in the Armed Forces during the War of 1939-45. Scholarships are awarded on consideration of financial need and academic success.

M. J. Lloyd Memorial Scholarship
field: Nursing. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of academic performance and financial need to students in either the Basic or Post RN Nursing program. ***donor:*** Mrs. Erie Yvonne Bamford.

Richard B. Logie Memorial Scholarship
field: Engineering. ***value:*** $2,500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Open to a student who is a graduate of a New Brunswick High School who is either entering or has completed at least the normal requirements for the first year of Engineering at UNB, with preference given to an entering student. Selection is made on the basis of scholastic attainment and financial need. ***donor:*** William & Marion Logie and the New Brunswick University Opportunities Fund.

William MacIntosh Memorial Scholarship
field: Preference to those enrolling or enrolled in Mathematics or Natural Science. ***value:*** Approximately $800. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Tenable at UNBSJ. Awarded on the basis of financial need to students whose record shows they may benefit from a university education. Open to any New Brunswick student. ***donor:*** Dr. G. Forbes Elliot, Former Vice-President, UNBSJ and the New Brunswick University Opportunities Fund.

Gail MacKinnon Memorial Award
field: Unrestricted ***value:*** Variable ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a female student on the Fredericton campus who has demonstrated high academic achievement (3.0 assessment year GPA for returning students, and 80% average for entering students), special athletic ability in the sport of womens varsity volleyball as well as leadership abilities in the surrounding community. This award is open to transfer students. ***awarding agency:*** The University, on the recommendation of the Faculty of Kinesiology in consultation with the Director of Athletics ***donor:*** UNB Volleyball Alumni.

MacLauchlan McKenzie Scholarship in Computer Science
field: Computer Science. ***value:*** $1,500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student enrolled in the Bachelor of Computer Science degree program. Selection is made on the basis of scholastic attainment and financial need. ***awarding agency:*** The University on the recommendation of the Faculty of Computer Science. ***donor:*** Julia MacLauchlan and Warren McKenzie.

Ruth H. MacMillan Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to students who are graduates of Upper Miramichi Regional High School, and who are beginning an undergraduate degree program at UNB, or have completed at least the normal requirements for the first year of the program in which they are registered at the University. ***donor:*** Mr. A. Clair MacMillan and the New Brunswick University Opportunities Fund.

H. Harrison McCain Bursary
field: Unrestricted ***value:*** $5,000, $3,500, $2,500, $2,500 ***number:*** variable ***duration:*** 1 to 4 years ***conditions:*** Awarded to students, who have graduated from any high school in Canada. Selection criteria include financial need, scholastic attainment, leadership qualities, and a demonstrated initiative on the part of the student in funding his/her own education. Recipients may also accept other scholarships, bursaries and awards, but not to exceed a total of $7,500 in year one and a total of $6,700 in each of the following years of study. The bursaries are renewed based on the recipient maintaining an overall academic average of 2.5 in year one, 2.75 in year two and 3.0 in year three and year four. ***apply:*** http://www.unb.ca/scholarships/ ***donor:*** H. Harrison McCain Foundation. ***deadline:*** March 1.

Laura B. McCain Memorial Scholarship
field: Unrestricted. ***value:*** Variable ***number:*** 2 ***duration:*** 1 year. ***conditions:*** Awarded to students from Carleton County. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** The late Laura B. McCain.

Donald G. McCrossan Scholarship
field: Unrestricted ***value:*** $1000 ***number:*** 1 ***duration:*** 1 year ***conditions:*** Open to Fredericton campus students who are Canadian citizens (or landed immigrants). Awarded on the basis of scholastic attainment and financial need with consideration given to participation in extracurricular activities. ***donor:*** Donald G. McCrossan.

Martha Fraser McIntosh Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of scholastic attainment. ***donor:*** The late Martha Fraser McIntosh.

Clarence McIntyre Bursary
field: Unrestricted. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a UNB student of the black race who is a graduate of a Saint John area high school, has demonstrated successful academic performance, and is registered in an undergraduate degree program. ***donor:*** Family and friends of the late Clarence McIntyre.

McIntyre-McMonagle Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to students on the basis of scholastic attainment and financial need. Consideration may be given to students' participation in extracurricular activities. ***donor:*** The family of Annie (McIntyre) and Walter McMonagle-James Roach McMonagle, Maude (McMongle) Jowsey, A. Ellizabeth McMonagle, S. Muriel McMonagle, in memory of our brothers Hugh McIntyre McMonagle & Walter Neil McMonagle.

Robert F. & Irene McMulkin Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to a student from Queens County. Selection is made on the basis of scholastic attainment and financial need. ***donor:*** Mr. and Mrs. Robert F. McMulkin and the New Brunswick University Opportunities Fund.

Norman Brougham Miller Scholarship
field: Unrestricted ***value:*** Variable ***number:*** Variable ***duration:*** 1 year ***conditions:*** Open to students who are graduates of a New Brunswick high school. Selections are made on the basis of scholastic attainment. ***donor:*** The late Norman Brougham Miller BA, BEd '60.

Juan Montalvo Memorial Bursary
field: Unrestricted. ***value:*** Approximately $850. ***number:*** Minimum 1. ***duration:*** 1 year (may be renewed). ***conditions:*** Awarded to undergraduate students at the University of New Brunswick from Latin America or Mexico. Preference will be given to new immigrants of Canada, or their children, who have Landed Immigrant status, and are in need of financial assistance. ***apply:*** Director, International Student Advisor's Office ***awarding agency:*** The University on the recommendation of the International Student Advisor's Office. ***donor:*** Family and friends of the late Juan Montalvo, a man who cared deeply about the welfare of newly arrived immigrants to Canada from Latin America.

Mr. Sub Scholarship
field: Business Administration or Applied Management. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student enrolled in the Bachelor of Business Administration degree program or a Bachelor of Applied Management degree program. Selection will be based on scholastic achievement and community involvement. ***donor:*** Mr. Sub.

Anne Murray Alumni Scholarship
field: Unrestricted. ***value:*** Approximately $600. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Associated Alumni.

NBTel Centennial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 2 ***duration:*** 1 year. ***conditions:*** A scholarship will be awarded to a student on the Fredericton campus; the second scholarship will be awarded to a student on the Saint John campus. Open to students who are either entering or have completed at least the normal requirements for the first year of a degree program at UNB. Selection is made on the basis of scholastic attainment with consideration given to financial need. ***donor:*** The New Brunswick Telephone Company Limited, to mark the Company's Centennial in 1988.

Don Nelson Leadership Award
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has demonstrated high academic achievement (3.0 assessment year GPA for returning students, and 80% average for entering students), special athletic ability in the sport of men's varsity basketball, as well as leadership abilities in his surrounding community. This award is open to transfer students. ***awarding agency:*** The University, on the recommendation of the Faculty of Kinesiology in consultation with the Director of Athletics and the Men's Basketball Coach. ***donor:*** Men's Basketball Alumni.

New Brunswick Society of Retired Teachers Saint John Branch Scholarship
field: Any course at UNBSJ. ***value:*** Approximately $1,100. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Tenable at UNBSJ. Awarded on the basis of academic ability and financial need to a student of School District #20. ***donor:*** New Brunswick Society of Retired Teachers, Saint John Branch and the New Brunswick University Opportunities Fund.

New Brunswick Students Scholarships
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded to students who are residents of New Brunswick, according to the Student Financial Services guidelines. Selection will be based on scholastic achievement and financial need. ***donor:*** Funds raised through UNB's Annual Giving Program and the New Brunswick University Opportunities Fund.

New Brunswick Students Scholarships UNBF
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded to Fredericton campus students who are residents of New Brunswick, according to the Student Financial Services guidelines. Selection will be based on scholastic achievement and financial need. ***donor:*** Funds raised through UNB's Annual Giving Program and the New Brunswick University Opportunities Fund.

New Brunswick Students Scholarships UNBSJ
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded to Saint John campus students who are residents of New Brunswick, according to the Student Financial Services guidelines. Selection will be based on scholastic achievement and financial need. ***donor:*** Funds raised through UNB's Annual Giving Program and the New Brunswick University Opportunities Fund.

NOVA Scholarships for Women and/or Aboriginal Students in Business
field: Business Administration. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded with consideration of scholastic attainment, to female students, as well as to male or female aboriginal students in the Business Administration degree program. ***donor:*** NOVA Corporation Charitable Foundation

Dr. W. Blair Orser Scholarship in Science
field: Science. ***value:*** Based on funds available and may vary in amounts from $100 to full annual tuition. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to students entering Science at UNB who are graduates of Bathurst High School, École Secondaire Nepisiguit, Hartland High School or Carleton North High School and intend to follow a pre-medical program of studies. Priority is given to students entering 1st year Science at UNB with renewals being subject to available funds. ***awarding agency:*** The University on the recommendation of the Dean of Science - UNBF, in consultation with the Dean of Science, Applied Science & Engineering - UNBSJ, as appropriate. ***donor:*** Dr. W. Blair Orser.

Mr. & Mrs. Conrad J. Osman Scholarship
field: Any course with preference to Forestry and Agriculture ***value:*** Variable. ***number:*** Multiple ***duration:*** 1-5 years. ***conditions:*** Scholarships will be awarded at the discretion of the governing body of the University, but worthy students residing in the County of Albert, in the Province of New Brunswick, applying for entrance to the University, and particularly those who propose to pursue an agricultural or forestry course, shall be shown preference when the scholarships are awarded. ***donor:*** The late Mrs. Gladys Marie Osman.

Alister R. Peach Memorial Scholarship
field: Unrestricted but preference to Geology. ***value:*** $500 ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student on the Fredericton campus from Cape Breton, Nova Scotia, with preference to a student in the Department of Geology. Selection is made on the basis of academic standing and strength of character. ***donor:*** Family and friends of the late Allister R. Peach.

Pepsi Athletic Award
field: Unrestricted ***value:*** Not to exceed tuition & compulsory fees ***number:*** Variable ***duration:*** 1 year ***conditions:*** Awarded to Fredericton campus undergraduate or graduate students who have demonstrated talent in the field of varsity athletics. Recipients must have achieved a 2.5 grade point average for continuing students or an 80% average for high school students. This award is open to transfer students who are enrolled in a minimum of 9 credit hours, as required by the CIS. ***awarding agency:*** The University, on the recommendation of the Director of Athletics. ***donor:*** Pepsi Canada Inc.

Emma Porter Perkins Scholarship
field: Unrestricted. ***value:*** $1,350. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of academic performance to a Protestant student, preferably from Carleton County. ***donor:*** The late Perry B. Perkins.

Frances M. Peters Scholarship
field: Unrestricted. ***value:*** $185. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Woman student attending the University who is in need of financial assistance. ***donor:*** The late Frances M. Peters.

H.G. & M.L. Pond Scholarship
field: Forestry/Forest Engineering and Nursing. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Open to students in the program leading to the degree of Bachelor of Science in Forestry/Forest Engineering or Nursing. Selections are made on the basis of scholastic attainment and financial need. Consideration will be given to participation in extracurricular activities. All qualified applicants will be considered including those from the three Prairie provinces. ***donor:*** Mr. & Mrs. H.G. Pond.

James E. Porter Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** Up to 4 years ***conditions:*** Awarded to graduates of Southern Victoria High School and Tobique Valley High School. Selections are made on the basis of scholastic attainment and financial need. Preference will be given to students enrolled in an undergraduate degree program. Graduate students as well as students enrolled in a no-degree program may be considered. ***donor:*** The late Mr. James E. Porter and the New Brunswick University Opportunities Fund.

Purdy MacDonald Scholarships & Bursaries
field: Unrestricted. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded to students who are graduates of a rural New Brunswick high school located outside any of New Brunswick's incorporated cities. Selections are made on the basis of financial need and satisfactory academic performance. ***donor:*** The late Mrs. Nellie Purdy.

Red Carpet Food Services Bursary
field: Unrestricted. ***value:*** Approximately $550. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Fredericton campus student who has demonstrated successful academic performance. ***donor:*** Red Carpet Food Services.

Renaissance College Scholarship
field: Bphil ***value:*** variable ***number:*** variable ***duration:*** 1 year. ***conditions:*** Awarded to entering or continuing students who are enrolled in the Bachelor of Philosophy (in Interdisciplinary Leadership Studies) degree program offered by UNB's Renaissance College. Selections are made on the basis of scholastic attainment, educational and career goals, volunteer activities, prior learning experience, diversity of background and skills (such as but not limited to artistic, musical, athletic, cultural, linguistic), and leadership experiences. Students transferring from other institutions may be considered. ***awarding agency:*** The University on the recommendation of the Dean of Renaissance College. ***donor:*** Renaissance College.

Rolf Riegger Bursary
field: Computer Science, Engineering and Data Analysis. ***value:*** $1,000. ***number:*** 3. ***duration:*** 1 year. ***conditions:*** Awarded to students who are Canadian citizens entering first or second year of a Computer Science, Data Analysis, or Engineering degree program on the Saint John campus of UNB. Selections are made primarily on the basis of financial need. Entering students must have a minimum scholarship admission average of 70%, and continuing students must have a minimum assessment year GPA of 2.7. ***donor:*** Sachiko and Rolf Riegger.

Robert (Bob) Spurway Memorial Scholarship - Class of 53
field: Unrestricted. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Selections are made on the basis of scholastic attainment and financial need. ***donor:*** The Class of 1953.

Francis Hugh Scovil Scholarship in Nursing
field: Nursing. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year (may be renewed) ***conditions:*** Awarded primarily on the basis of academic performance to students in either the Basic or Post-RN Nursing program. ***donor:*** The late Francis Hugh Scovil.

Alvin Shaw Memorial Scholarship in Theatre
field: Arts. ***value:*** $2,000. ***number:*** 1. ***duration:*** Up to 4 years. ***conditions:*** Awarded to a Fredericton campus student who will enrol in a Fine Arts Minor in Theatre or a Major in English (drama) under the Bachelor of Arts degree program. The recipient must enrol in English 2170: Drama Production during their first year at UNB. Theatre experience, grades and awards earned for work in drama will be the primary consideration in the selection of the recipient. The renewal of the scholarship is contingent on satisfactory academic performance and progress through the program. ***awarding agency:*** The University, on the recommendation of the Director of Drama. ***donor:*** Alvin Shaw.

Simms Scholarship
field: Business Administration. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Open to graduates of a New Brunswick high school. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** T.S. Simms & Company Ltd.

Hazen M. & Margaret A. Smith Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** Up to 4 years. ***conditions:*** Open to students who have graduated from a Charlotte County high school. Selections are made primarily on the basis of academic performance and financial need. ***donor:*** Margaret A. Smith and the New Brunswick University Opportunities Fund.

Dr. Malcolm M. Somerville Bursaries in Business
field: Business. ***value:*** $500. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to students, one male, one female, in the Faculty of Business on the Saint John campus from the greater Saint John area who have demonstrated successful academic performance. ***donor:*** The family of Malcolm M. Somerville, D.Litt.'96 and the New Brunswick University Opportunities Fund.

James Somerville Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded to Fredericton campus students based on academic achievement. Consideration may be given to financial need and/or extracurricular activities. Students transferring from other institutions may be considered. This scholarship was named in honour of President Somerville who presided over the College of New Brunswick, 1800-1829. ***donor:*** The University.

Sony Science Scholarship
field: Computer Science, Electrical Engineering or Computer Engineering. ***value:*** $1,500. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded to a student who is a graduate of a New Brunswick high school and is enrolled in the Bachelor of Computer Science, Bachelor of Science in Computer Science, Bachelor of Science in Engineering (Electrical) or Bachelor of Science in Engineering (Computer Engineering) programs. Selection will be based on academic achievement. ***donor:*** Sony of Canada Science Scholarship Foundation Inc.

Jean R. Stewart Memorial Scholarship
field: Physical Sciences or Engineering. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to female students studying one of the physical sciences or engineering at the University of New Brunswick. The student should have graduated in the top quarter of the high school graduation class and have a demonstrated need for financial assistance. ***donor:*** The late Jean R. Stewart.

Dr. Jed B. Sutherland Memorial Scholarship
field: Unrestricted. ***value:*** $2,500 per annum. ***number:*** Variable ***duration:*** 1 to 4 years ***conditions:*** Awarded to students who are graduates of a Carleton County high school. Selection is made on the basis of scholastic attainment, financial need and extracurricular activities. ***donor:*** The Family of Dr. Jed B. Sutherland, BA '39 and the New Brunswick University Opportunities Fund.

Colonel Henry Thomas Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to a student on the Saint John campus. ***donor:*** The late Fred S. Thomas, Class of 1906.

Laura Tilley Memorial Bursary
field: Education and Nursing. ***value:*** $400. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** A resident of York County and a graduate of a York County high school who is registered in a program at UNB leading to the degree of Bachelor of Education or Bachelor of Nursing. ***donor:*** Sir Leonard Tilley Chapter, I.O.D.E. and the New Brunswick University Opportunities Fund.

Clarence and Dorothy Tingley Leadership Award
field: Unrestricted. ***value:*** $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student on the Fredericton campus who has demonstrated high academic achievement (3.0 assessment year GPA for returning students, and 80% average for entering students), special athletic ability in men's or women's varsity basketball, as well as leadership abilities in the surrounding community. Preference is given to a student athlete who would be eligible to become an Academic All-Canadian. This award is open to transfer students. ***awarding agency:*** The University, on the recommendation of the Faculty of Kinesiology in consultation with the Director of Athletics. ***donor:*** The Tingley Family.

Toronto Alumni Chapter Fredrik S. Eaton Scholarship
field: Unrestricted. ***value:*** Approx. $2600. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student from the Toronto area. Selection is based on academic achievement and involvement in extra-curricular activities. ***donor:*** Toronto Chapter, UNB Associated Alumni.

Stanley Frank Trzop Sr. & Jr. Memorial Scholarship
field: Geology, Geological Engineering, Engineering, or Business. ***value:*** Variable - up to $3,000.00 /year. ***number:*** 1 or more. ***duration:*** For recipients in Geology or Geological Engineering a maximum of three years; for recipients in other degree programs, one year. The one year scholarship will be an entrance scholarship. ***conditions:*** Awarded to a student who is a graduate of Minto Memorial High School and entering a Geology or Geological Engineering degree program at UNB. It will be awarded based on the student's scholastic achievement; athletic ability and leadership in the school and community will also be considered. Should a qualified candidate not exist in Geology or Geological Engineering, consideration will then be given to a student in any other Engineering degree program, and failing that, consideration will be given to students entering a business program. ***donor:*** Stanley Frank Trzop Jr. in memory of his father Stanly Frank Trzop Sr., and Charles Day, the first Principal of Minto Memorial School.

UNB Engineering Alumni Scholarship
field: Engineering. ***value:*** $5,000. ***number:*** Up to 10. ***duration:*** Up to 4 years. ***conditions:*** Awarded to students in the Bachelor of Science in Engineering degree program. Selection will be based on scholastic attainment. This scholarship may be open to transfer students. ***awarding agency:*** The University, on the recommendation of the Faculty of Engineering. ***donor:*** UNB Engineering Advisory Board.

UNB Engineering Alumni Scholarship for NB Students
field: Engineering. ***value:*** Up to Tuition. ***number:*** Up to 10. ***duration:*** Up to 4 years. ***conditions:*** Awarded to students in the Bachelor of Science in Engineering degree program who are New Brunswick residents, as per the definition of NB Student Financial Services. Selection will be based on scholastic attainment and financial need. This scholarship may be open to transfer students. ***awarding agency:*** The University, on the recommendation of the Faculty of Engineering. ***donor:*** UNB Engineering Advisory Board and the New Brunswick University Opportunities Fund.

UNB Fredericton Registrar's Office Bursary
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Fredericton campus student who is a graduate of a New Brunswick high school and who has demonstrated successful academic performance. ***donor:*** Staff and friends of the Registrar's Office, UNB Fredericton and the New Brunswick University Opportunities Fund

UNB Saint John Campus Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded to Saint John campus students based on academic achievement. Consideration may be given to financial need and/or extracurricular activities. Students transferring from other institutions may be considered. ***donor:*** The University.

UNB Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable ***duration:*** Up to 4 years. ***conditions:*** Awarded primarily on the basis of scholastic attainment. ***donor:*** The University.

University of New Brunswick Alumni Merit Award
field: Unrestricted ***value:*** $500. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded to a student demonstrating a special talent and showing successful academic performance. The student will be expected to use this special talent to contribute to the University community. ***donor:*** The Associated Alumni of the University of New Brunswick

Punch Walker Memorial Award in Mens Hockey
field: Unrestricted. ***value:*** not to exceed tuition and compulsory fees ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to students in a degree program on the Fredericton campus who are, or will be, members of the University's varsity men's hockey team. Recipients must have demonstrated successful academic performance (minimum 80% admission average for an entering student or minimum 2.5 assessment year grade point average for a continuing student). Any requirements of Atlantic University Sport and CIS will also apply. This award is open to transfer students. ***awarding agency:*** The University, in consultation with David Hashey, Q.C. (or his appointee), the UNB hockey coach and the UNB Athletics Director. ***donor:*** The late A. Ross

George L. White Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** Up to 4 years. ***conditions:*** Awarded on the basis of academic achievement and financial need to graduates of NB high schools. ***donor:*** The estate of George L. White and the New Brunswick University Opportunities Fund.

Lawrence S. Willett Memorial Scholarship
field: Engineering ***value:*** $5000 ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a Fredericton campus student who is enrolled in the Bachelor of Engineering degree program. Selection will be based on scholastic attainment. ***donor:*** The estate of Frances M. Willett, in memory of her husband, Lawrence S. Willett, BScEng(CE) '50.

SCHOLARSHIPS OPEN TO CONTINUING UNB STUDENTS

For regulations and general Information please refer to the Financial Information Section / Scholarships, Prizes and Awards.

Academic Scholarship
field: Unrestricted ***value:*** Variable ***number:*** Variable ***duration:*** 1 year ***conditions:*** Awarded to Fredericton campus students who have completed the minimum requirements for the first year of their degree program. Selection is based on academic attainment. ***donor:*** Pepsi Canada Inc.

Toks Akpata Memorial Scholarship
field: Unrestricted ***value:*** variable ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a Fredericton campus student who completed at least the minimum requirements for the first year of the degree program in which the student is registered. Selection is based on academic attainment. The recipient must also be an active member of the UNB Rugby Football Club, demonstrate the attributes of the consummate team player and exhibit unselfish dedication to his teammates and to the Club. ***awarding agency:*** Assistant Registrar, Undergraduate Awards, on the recommendation of the Toks Akpata Memorial Scholarship Committee. ***donor:*** UNB Rugby Football Alumni.

Lorna Jenkins Alaffe Memorial Bursary
field: Business Administration. ***value:*** Approximately $1,100. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a student in the Business Administration degree program on the Saint John campus who has demonstrated successful academic performance. ***donor:*** Mr. W.R. Jenkins and Nabisco Brands Ltd.

Alberta Land Surveyors Association Academic Achievement Scholarship
field: Geodesy and Geomatics Engineering ***value:*** $2,500 ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a Geodesy and Geomatics Engineering student who has completed or has enrolled in two of the four cadastral surveying option courses: GGE5521 Survey Law; GGE5532 Land Economy and Administration; GGE5313 Urban Planning or CE5342 Site Planning. Selection will be based on academic achievement. ***awarding agency:*** The University, on the recommendation of the Faculty of Engineering. ***donor:*** Alberta Land Surveyors Association.

John and Elsie Alexander Memorial Scholarship
field: Unrestricted. ***value:*** Approximately $1,300. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Open to students who have completed at least the minimum requirements of the first year of the degree program. Selection will be made on scholastic attainment and financial need. Preference will be given to sons and daughters of Free Masons. ***donor:*** The estate of John B. Alexander.

Aliant Mobility Freedom Fund Scholarship
field: Unrestricted. ***value:*** $1,200. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded to New Brunswick students enrolled in studies working towards their first undergraduate degree - one to be awarded to a student at UNB Saint John, the other to a student at UNB Fredericton. Selection is made on the basis of academic performance, financial need and involvement in extra-curricular activities. ***donor:*** Aliant Mobility and the New Brunswick University Opportunities Fund.

John Aubrey Allan Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of academic performance and financial need to a student who has completed at least the normal requirements for the first year of the program in which the student is registered at UNB. ***donor:*** The late Ethel Hazen Allen.

Alumnae Undergraduate Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Young women entering the penultimate year of a degree program and having good scholastic standing and need for financial assistance. At least one scholarship is to be awarded to a student who has completed her first four terms at UNBSJ. ***awarding agency:*** The University, in consultation with the Associated Alumnae. ***donor:*** Associated Alumnae.

Alumni Undergraduate Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Open to students who have completed at least the normal requirements for the first year of the program in which they are registered. Awarded primarily on the basis of scholastic attainment. Financial need may be considered. ***donor:*** Associated Alumni.

A. George Anderson Scholarship
field: Business Administration. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has completed at least the requirements for the first year of the Bachelor of Business Administration degree program. Preference will be given to a student who has demonstrated excellence in Marketing courses. Selection will be based on scholastic attainment and financial need. ***donor:*** The estate of A. George Anderson.

Nels Anderson II Award
field: Civil Engineering. ***value:*** Approximately $1,500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** The student must have a good academic standing (GPA 3.0 or better) and have a demonstrated involvement in student activities at the University, Faculty of Engineering or community level. In making the award, consideration will be given to students considered to have potential for developing a successful career in engineering. Preference will be given to students who meet the criteria and do not hold another major award. Award to be given to a student who has completed six terms of the Civil Engineering program. ***awarding agency:*** The University on the recommendation of the Department of Civil Engineering. ***donor:*** Family, friends, classmates of the late Nels Anderson II.

W. Stafford Anderson Scholarship
field: Forestry and/or Forest Engineering. ***value:*** Variable. ***number:*** 1. ***conditions:*** Open to students who have completed at least the normal requirements for first year Forestry or Forest Engineering (40-46 ch) at UNB and are residents of Northumberland County. Selections made on the basis of scholastic attainment and financial need. ***donor:*** The Family of the late W. Stafford Anderson and the New Brunswick University Opportunities Fund.

Annual Eastern Canada Student Recreation Conference Award
field: Recreation & Sport Studies ***value:*** Variable ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a Recreation & Sport Studies student who has completed a minimum of 65 credit hours and all required first and second year courses in the Recreation & Sport Studies program and is returning to the junior or senior year. The recipient should have exhibited leadership ability, shown campus and/or community involvement in the field of recreation, and achieved a minimum 3.0 assessment year grade point average. ***awarding agency:*** The University on the recommendation of the Faculty of Kinesiology. ***donor:*** Planning Committee of the Annual Eastern Canada Recreation Conference.

Aramark Scholarship
field: Bachelor of Applied Management in Hospitality & Tourism ***value:*** $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who has completed an articulated two-year diploma at a Community College and is entering the BAMHT degree program at UNB Saint John. The recipient must have a demonstrated interest in the food service industry. Selection will be based on scholastic achievement and financial need. ***awarding agency:*** The University, on the recommendation of the Director of the Bachelor of Applied Management in Hospitality and Tourism degree program. ***donor:*** Aramark Inc.

Jean Campbell Argue Memorial Scholarship
field: Unrestricted. ***value:*** $3,000. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Young woman showing intellectual promise and in need of financial assistance who has completed the normal requirements for the second year and beginning her third year of the program in which she is registered. Tenable at Fredericton campus only. ***donor:*** Canadian Federation of University Women-Fredericton.

ASHRAE Scholarship
field: Mechanical Engineering. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a deserving Fredericton campus student of high academic standing in Mechanical Engineering from New Brunswick or Prince Edward Island who has completed at least 120 ch in the Mechanical Engineering degree program. Preference will be given to a student enrolled in either of Air Conditioning (ME 4453) or Electrical and Mechanical Equipment for Buildings (ME 4263). ***awarding agency:*** The University on the recommendation of the Department of Mechanical Engineering. ***donor:*** The New Brunswick Chapter of the American Society of Heating, Refrigerating and Air Conditioning Engineers.

Associated Alumnae Athletic Award
field: Unrestricted. ***value:*** $700. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a female student who has completed at least the requirements for the first year of her degree program and who has demonstrated high academic achievement (3.0 Scholarship GPA), special athletic ability in a varsity sport on the Fredericton campus, and leadership abilities in the surrounding community. ***awarding agency:*** The University on the recommendation of the Director of Athletics in consultation with the Associated Alumnae. ***donor:*** UNB Associated Alumnae.

Associated Alumnae Bursary
field: Unrestricted. ***value:*** $500. ***number:*** 3. ***duration:*** 1 year. ***conditions:*** Awarded to full-time undergraduate female students on the Fredericton campus who have dependent(s) and are experiencing financial need in relation to child care costs during the pursuit of their undergraduate degree program. Recipients must be Canadian citizens or landed immigrants, and have successfully completed a minimum of one full-time term of study at UNB with a grade point average of at least 2.0 or higher. ***donor:*** The Associated Alumnae.

Sharon L. W. Bachinski Memorial Scholarship
field: Geology. ***value:*** Approximately $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to students in Geology on the Fredericton campus. Selections are made on the basis of scholastic attainment. ***awarding agency:*** The University, on the recommendation of the Department of Geology. ***donor:*** Friends and family of the late Dr. S.L.W. Bachinski, Professor of Geology, UNB.

Dr. A. Foster Baird Alumni Scholarship
field: Engineering. ***value:*** $250. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded annually to an Engineering student entering the final year of a bachelor's program. Major consideration for this award shall be given to the student's interest and participation in student activities. The student's scholastic achievement and financial need will be the other factors considered. ***donor:*** The Associated Alumni.

Muriel Farris Baird Alumnae Scholarship
field: Education. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to a female Fredericton campus student who is enrolled in the Concurrent or Consecutive Education degree program. Selection will be based on academic achievement and financial need. ***awarding agency:*** The University, in consultation with the Associated Alumnae. ***donor:*** Associated Alumnae.

Dr. R. Balasubramanian Memorial Scholarship
field: Electrical Engineering. ***value:*** $2,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to a student in Electrical Engineering who has completed at least 35 ch in the Electrical Engineering program. The recipient will be selected on the basis of academic achievement and financial need. ***awarding agency:*** The University, upon the recommendation of the Department of Electrical Engineering. ***donor:*** Friends of the late Dr. Balasubramanian.

Shaila Bari Memorial Scholarship
field: Business Administration. ***value:*** $2,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a female International student on the Fredericton campus who has completed at least the minimum requirements for the first year of the Bachelor of Business Administration degree program. Selection will be based on academic achievement (minimum 3.0 gpa) and financial need. ***donor:*** The Faculty of Administration and friends and family of the late Shaila Bari.

Tanya V. M. Barrett Memorial Scholarship
field: Education. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to students in the concurrent or consecutive Bachelor of Education degree program. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Family of the late Tanya V.M. Barrett, BSc 1978, Bed 1984, UNB.

William L. Barrett Engineering Undergraduate Scholarship
field: Engineering. ***value:*** $1000. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** To be awarded annually to a student in the Engineering program at UNB on the Fredericton campus who has successfully completed one year of study (a minimum of 35 ch) leading to the degree of Bachelor of Science in Engineering. Preference will be given to students who have graduated from a high school within the City of Fredericton. ***donor:*** APEGNB Fredericton Branch

Stanley E. Bateman Memorial Bursary
field: Education. ***value:*** Approximately $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a student who is enrolled in the Bachelor of Education degree program. Preference will be given to a student in the Bachelor of Education concurrent degree program who has declared a major in English. The recipient must be a New Brunswick resident, according to NB Student Financial Services guidelines. ***donor:*** Friends and Family of Stanley Bateman, a dedicated teacher for over 40 years, UNB Faculty of Education 1973-1976, and the New Brunswick University Opportunities Fund.

BBA Graduates (1954-1959) Bursary
field: Business Administration. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a student continuing beyond first year (30 credit hours) in the BBA program on the Fredericton Campus. The recipient must have a satisfactory academic record as determined by the Faculty of Administration. ***awarding agency:*** The University upon the recommendation of the Faculty of Administration. ***donor:*** BBA graduates from 1954-1959.

Dr. David Beebe Memorial Scholarship
field: Business Education, Office Management. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Open to undergraduate students who have completed 30 ch in the Bachelor of Education (Business Education) degree program on the Fredericton campus. Preference will be given to students who have demonstrated academic excellence. Financial need will also be a consideration in making the award. ***donor:*** Colleagues and friends of the late Dr. David Beebe.

Alan David Bell Memorial Scholarship
field: Chemical Engineering or Science. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Open to Fredericton campus students who are graduates of a New Brunswick high school and are starting the second year of the Engineering or Science degree program at UNB. Preference is given to a candidate in Chemical Engineering or a candidate in Science with a major in Chemistry. Selection is made on the basis of scholastic attainment and financial need. ***donor:*** Family and friends of the late Alan David Bell, a first year Chemical Engineering scholarship student at UNB and 1992 FHS graduate and the New Brunswick University Opportunities Fund.

Dr. J.A.M. Bell Memorial Scholarship
field: Nursing, Science or Arts. ***value:*** Subject to need. ***number:*** Variable. ***duration:*** 1 year (students may reapply). ***conditions:*** Available to Nursing students who have successfully completed the requirements for the first year of the Nursing program (42-47 ch) or who are entering either the penultimate (having completed 89-94 ch) or final (having completed 131-136 ch) years in Nursing. Available also to students entering their penultimate or final year in Science or Arts who intend to study medicine. Awards will be made in the following order of priority: (1) North and South Esk; (2) Newcastle area; (3) Miramichi area; (4) New Brunswick. ***donor:*** Friends of the late Dr. J. Alex M. Bell.

Charles S. Bennett Memorial Scholarship
field: Civil Engineering. ***value:*** Variable. ***number:*** 3 (of equal value). ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to three students in Civil Engineering who have just completed the first year of the program at UNB (a minimum of 30 credit hours). ***donor:*** Mrs. Helen A. Bennett.

Lt. Governor Wallace S. Bird Memorial Scholarship
field: Business Administration, Engineering or Forestry. ***value:*** Approximately $1300. ***number:*** 3 ***duration:*** 1 year. ***conditions:*** Deserving students entering their second year. Students must be native of New Brunswick, Nova Scotia, Prince Edward Island, or Newfoundland or have resided in any of these four provinces for at least ten years preceding the award. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** M.T.M. Holdings Limited.

Birks Family Foundation Bursaries
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** The Birks Family Foundation has established a plan of annual contributions to the student aid fund of recognized Canadian universities for the creation of The Birks Family Foundation Bursaries. The bursaries are awarded by the Foundation on the recommendation of the University Scholarship Committee and are not restricted to faculty or year, and may be renewed. The number and amount of such awards may vary annually, depending upon the funds available for the purpose from the Foundation. Candidates for the bursaries must apply to the university of their choice on the university's student aid bursary application form no later than the closing date for such applications. In consultation with the Foundation, the University will make the award of the bursaries. ***donor:*** The Birks Family Foundation.

Katharine E. Black Memorial Bursary
field: Nursing. ***value:*** $300. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Given annually to a student from New Brunswick who has completed the requirements for the first year in the Faculty of Nursing and who requires financial assistance. ***donor:*** Sir Howard Douglas Chapter, I.O.D.E., Fredericton and the New Brunswick University Opportunities Fund.

George Frederick Boyer Memorial Bursaries
field: Science (Biology). ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need and academic performance to students in the Science degree program to enable them to attend, or continue to attend UNB and pursue the study of Biology. ***donor:*** The late Alberta Boyer.

Joseph Braithwaite Memorial Scholarship
field: Geomatics Engineering. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to a student in the Geomatics Engineering degree program. ***donor:*** The Surveying Engineering Class of 1989, and friends of the late Joseph Braithwaite.

Michael Christian Branscombe Memorial Scholarship
field: Science (Biology). ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to Fredericton campus students in the Faculty of Science who are majoring in Biology and who have graduated from a New Brunswick high school. The scholarship is intended to assist students whose career plans have the potential to ease the suffering of human beings. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Family and friends of the late Michael Christian Branscombe, a former UNB Science student and the New Brunswick University Opportunities Fund.

C. Gerard Breau Memorial Scholarship
field: Engineering. ***value:*** Minimum $2,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student enrolled in a Bachelor of Science in Engineering degree program who has successfully completed the minimum credit hour requirement for two complete years of study. Preference will be given to an undergraduate student who is registered in the Electrical Engineering degree program. Selection will be made on the basis of scholastic attainment and financial need. ***donor:*** Mrs. Jacqueline Breau in memory of her husband, C. Gerard Breau.

Winston A. Bronnum Memorial Scholarship
field: Art Education or Applied Arts ***value:*** $1500 ***number:*** 1 ***duration:*** 1 year. (may be renewed.) ***conditions:*** Open to Fredericton campus students enrolled in the concurrent or consecutive Bachelor of Education (Art Education) degree program or the Bachelor of Applied Arts degree program. Selection will be made on scholastic attainment. If not renewed, the scholarship will alternate between an art education student and a BAA student. ***donor:*** The Estate and Family of the New Brunswick artist, Winston A. Bronnum.

Dax Brown Memorial Scholarship
field: Kinesiology ***value:*** Approximately $1,200. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** To be awarded to a student who has successfully completed three years of the Bachelor of Kinesiology program (minimum 101 ch) and who demonstrates academic excellence, qualities of leadership and professional promise. ***apply:*** Dax Brown Memorial Scholarship Committee, c/o Assistant Registrar of Undergraduate Awards, University of New Brunswick. ***awarding agency:*** The University on the recommendation of the Faculty of Kinesiology. ***donor:*** Anonymous.

N. Myles Brown Undergraduate Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple ***duration:*** 1 year. ***conditions:*** Open to students who have completed at least the normal requirements for the first year of the program in which they are registered. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** The Woodstock Museum Inc.

Michael J. Bruhm Memorial Scholarship in Silviculture
field: Forestry. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Open to students who have completed approximately 90 - 100 ch in the UNB Bachelor of Science in Forestry degree program. Selection is made on the basis of financial need, satisfactory academic performance and consideration of extracurricular activities. Recipients must have demonstrated excellence in Silviculture courses and an interest in the area of Silviculture. ***awarding agency:*** The University on the recommendation of the Faculty of Forestry and Environmental Management. ***donor:*** Friends, relatives and colleagues of Michael J. Bruhm across Canada, including colleagues in the British Columbia Ministry of Forests, the Forest Industry, and the Association of British Columbia Professional Foresters.

M. Louise Burbidge Memorial Scholarship
field: Education. ***value:*** Variable ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Open to a student in the Consecutive or Concurrent program in Education who is a graduate of a NB high school. Awarded on the basis of academic performance and financial need ***donor:*** Margaret Burbidge.

Elizabeth Burton Bursary
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to students who have completed at least the normal requirements for the first year of the program in which they are registered and have demonstrated successful academic performance. ***donor:*** Mrs. Elizabeth Burton.

William S. Butler Memorial Scholarship
field: Forestry, Forest Engineering, Renaissance College. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has graduated from a Canadian high school and who has completed either the minimum requirements for one year of study in the Bachelor of Forestry or Bachelor of Forest Engineering degree programs, or two years of study at Renaissance College. The Renaissance College candidate must be pursuing the science option. Selection is based on scholastic achievement. ***donor:*** Friends and family of the late William S. Butler.

Ian R. Cameron Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to a student entering second year of studies in any program on the Saint John campus who has completed the first year of studies (minimum 30 ch) with high academic standing. Financial need will be taken into consideration. ***donor:*** Ian & Heather Cameron and friends. Dr. Cameron is a Professor Emeritus in Physics and a retired former Dean of Faculty.

Camp Brûlé Scholarship
field: Forestry. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who is interested in completing a senior individual project, FOR or FE 5990, on the relationship between Atlantic Salmon habitat, Salmo salar, and forestry issues (road construction, silviculture, etc.). Selection is made on the basis of scholastic achievement, and the judgment of the project advisor and the Faculty Scholarship Committee. ***awarding agency:*** The University, on the recommendation of the Faculty of Forestry and Environmental Management. ***donor:*** Camp Brûlé Enr.

Canadian Council for Public Affairs Advancement (CCPAA) Scholarship
field: Unrestricted. ***value:*** $500. ***number:*** 2 ***duration:*** 1 year ***conditions:*** Awarded to UNB Saint John students who are enrolled in the third year of any degree program and are active members of the Golden Key International Honour Society. Selections are made on scholastic attainment and leadership in community service organizations or campus politics, such as student government. ***awarding agency:*** The University, on the recommendation of the Faculty Advisor for the Golden Key International Honours Society. ***donor:*** Dr. Craig S. Fleisher, on behalf of the Canadian Council for Public Affairs Advancement (CCPAA).

Canadian Federation of University Women - Fredericton Scholarship
field: Unrestricted. ***value:*** $2,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a mature female Fredericton campus student with a minimum sessional grade point average of 3.0 who has completed at least the normal requirements for the first year of the program in which the student is registered at the University. The recipient must be a New Brunswick resident, as defined by Student Financial Services. Financial need is an important consideration. ***awarding agency:*** The University, in consultation with the CFUW-Fredericton. ***donor:*** Canadian Federation of University Women-Fredericton and the New Brunswick University Opportunities Fund.

Canadian Process Control Association Scholarship
field: Engineering - Instrumentation and Control. ***value:*** Up to $3,000 per year ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a undergraduate Fredericton campus Engineering student, with consideration to scholastic attainment and financial need, who is entering the final two years (normal ch. range) of the UNB Engineering degree program, and has selected the option of Instrumentation and Control. The recipient must be a Canadian citizen or a Landed Immigrant. Summer employment may be offered. ***apply:*** Dean of Engineering, and the Assistant Registrar, Undergraduate Awards, University of New Brunswick. ***awarding agency:*** The University on the recommendation of the Chairs of Instrumentation & Control, in consultation with CPCA. ***donor:*** Canadian Process Control Association (CPCA).

Bliss Carman Memorial Scholarship in English Literature
field: Arts. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Open to students in the Faculty of Arts who have completed at least the normal requirements for the first year of the Arts degree program at UNB. Preference will be given to students who have demonstrated excellence in at least 12 ch in English Literature. ***donor:*** The late Dr. Lorne Pierce.

Captain Royal A. Carrick and Marjorie Oatey Carrick Memorial Scholarship
field: Arts. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to students majoring in English Literature, who have taken at least one course in poetry, prose, or music writing. Selection is made on the basis of scholastic achievement. ***donor:*** Estate of Royal Alexander Carrick.

David J. Cartwright Memorial Scholarship
field: Forestry (Wildlife Option) or Science - Biology (with a strong demonstrated interest in wildlife). ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to students on the Fredericton campus entering the final year of Forestry (Wildlife Option) or Science (Biology Option). Potential candidates should have combined scholastic ability with a demonstrated interest in wildlife management. ***awarding agency:*** The University on the recommendation of the Faculty of Forestry and Environmental Management and the Faculty of Science. ***donor:*** The Atlantic Society of Fish and Wildlife Biologists.

Frederick J. Cashwell Memorial Scholarship
field: Business. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Saint John campus student from the greater Saint John area who has completed the normal requirements for the first year of the Bachelor of Business Administration degree program. Selection will be based on scholastic attainment and financial need. ***donor:*** Edith Maye Cashwell and Gold Star Window Cleaning Co. Ltd., established in 1942 by Frederick J. Cashwell.

Stanley B. Cassidy Memorial Engineering Undergraduate Scholarship
field: Engineering. ***value:*** $1000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** To be awarded annually to a student in the Engineering program at UNB on the Fredericton campus, who has successfully completed at least one year of study (a minimum of 35 ch) leading to the degree of Bachelor of Science in Engineering. Preference will be given to students who have graduated from a high school within the APENB Fredericton Branch District (i.e. comprising York, Carleton, Sunbury, and Queens Counties). ***donor:*** APEGNB Fredericton Branch.

Michael Cavanagh Memorial Award
field: Unrestricted. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student on UNBs Fredericton campus who has completed at least the normal requirements for the first year of the degree program in which the student is registered. The recipient must have demonstrated a special athletic ability in the sport of mens varsity hockey at UNB, successful academic performance (minimum 2.5 assessment year grade point average), and, in keeping with the character of Michael Cavanagh, the capacity to experience life to its fullest. This award is open to transfer students. ***awarding agency:*** The University on the recommendation of the Faculty of Kinesiology and the Director of Athletics. ***donor:*** Friends of Michael Cavanagh.

Dr. Everett Chalmers Hospital Auxiliary Bursaries
field: Nursing - Undergraduate program. ***value:*** Variable. ***number:*** Multiple ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to Nursing students who are graduates of a high school in Health Region 3 (New Brunswick) and who have successfully completed a minimum of one academic year at UNB in either the Basic or Post RN Nursing program. ***donor:*** Dr. Everett Chalmers Hospital Auxiliary and the New Brunswick University Opportunities Fund.

Ellen S. Chambers Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded to students who have completed at least the requirements for the first year of an undergraduate degree program. Selection will be based on academic achievement. ***donor:*** The late Ms. Ellen Sanders Chambers.

Chinese New Year Scholarship
field: Unrestricted. ***value:*** $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a UNB Saint John international student from the Peoples Republic of China with the highest standing entering fourth year. ***donor:*** Proceeds from the Chinese New Year Celebration.

Christian-Birmingham Memorial Scholarship
field: Science ***value:*** Maximum $200. ***number:*** 1 ***duration:*** 1 year (may be renewed). ***conditions:*** Awarded to a student on the Fredericton campus who has completed at least the normal requirements for the first year of the Science degree program. Selection is made on the basis of scholastic attainment. Scholarships will be awarded to graduates of a Carleton County and a York County high school, with preference given to a graduate of a Carleton County high school. ***donor:*** Howard J. Christian and his wife Amy Beatrice (Birmingham) Christian.

Margaret B. Christie Memorial Scholarship
field: Nursing. ***value:*** $1000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who has completed the requirements for the first year of the Bachelor of Nursing degree program. Preference will be given to a student who has demonstrated interest in palliative care. Selection will be based on scholastic attainment. ***awarding agency:*** The University, on the recommendation of the Faculty of Nursing. ***donor:*** Friends and family of the late Margaret B. Christie.

Alden R. Clark Scholarship (IODE)
field: Unrestricted. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Open to Fredericton campus students who have completed at least the normal requirements for the second year of a degree program in which they are registered, and are graduates of a New Brunswick High School. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** IODE Clark House Trust Fund and the New Brunswick University Opportunities Fund.

Ralph B. Clark Memorial Scholarship
field: Arts. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of scholastic attainment to students who are entering the penultimate year (completed a minimum of 60-66 ch) of the Arts degree program at UNB. ***donor:*** The late Mrs. Georgie Alberta Ryan Clark.

Class of 1935 Scholarship
field: Unrestricted. ***value:*** Minimum of $1,000. ***number:*** 1 or more ***duration:*** 1 year. ***conditions:*** Awarded to students on the basis of scholastic attainment and financial need, with consideration given to participation in extracurricular activities. ***donor:*** The Class of 1935.

Class of 1939 Scholarship
field: Arts, Engineering, Science or Forestry. ***value:*** $1,000 (minimum) ***number:*** 2 or more. ***duration:*** 1 year. ***conditions:*** Awarded to UNB students who are registered in either the Bachelor of Arts, Science, Engineering or Forestry degree programs and who have completed at least the normal requirements for the first year. Selection is made on the basis of scholastic attainment and financial need. ***donor:*** The Class of 1939.

Class of 1942 War Memorial Scholarship
field: Unrestricted. ***value:*** Minimum $1,500. ***number:*** 1 or more. ***duration:*** 1 year. ***conditions:*** Awarded to Fredericton campus students who have just completed the normal requirements for the first year of the degree program in which they are registered at UNB. Selections are made primarily on the basis of scholastic attainment. ***donor:*** Members of the Class of 1942, on the occasion of their 50th reunion, in memory of those classmates killed in the Second World War.

Class of 1945 Scholarship
field: Unrestricted ***value:*** Variable ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a student who is entering the second year of studies at the University of New Brunswick with preference given to a student attending the Fredericton campus. Selection is made on the basis of scholastic attainment and financial need. ***donor:*** The Class of 1945.

Class of 1948 Red n'Black Revue Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who has completed the requirements for the first year of his/her degree program. Selection will be based on academic achievement, financial need and participation in extra-curricular activities. Preference will be given to a student who is involved in UNBs Red n Black Revue. ***donor:*** The Class of 48, originators of the Red n Black Revue.

Class of 1992 Scholarship
field: Unrestricted. ***value:*** Approximately $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who is entering the final year of a degree program. Selection will be based on scholastic attainment with consideration given to financial need. ***donor:*** The Class of 1992.

Clayton-Wilkinson Scholarship
field: Science ***value:*** Variable ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student from New Brunswick who has completed the normal requirements for the first year of the Bachelor of Science degree program. Preference will be given to students majoring in Chemistry. Selection will be made on scholastic attainment and financial need. ***donor:*** Mrs. Jane Clayton Morissey.

Maurice L. Collins Memorial Scholarship in Philosophy
field: Philosophy. ***value:*** Approximately $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to an undergraduate or graduate student, alternating each year between the Fredericton campus and the Saint John campus. The student must have completed the requirements for at least the second year of a Bachelor of Arts degree program. Selection will be made on the basis of academic achievement. Preference will be given to the students who demonstrate an aptitude in the field of Philosophy, have declared a major in Philosophy or have decided to do postgraduate work in Philosophy, preferably in the area of contemporary European philosophy or ancient Greek philosophy. ***awarding agency:*** The University, on the recommendation of the Department of Philosophy, UNB Fredericton and the Department of Humanities and Languages, UNB Saint John, as appropriate. ***donor:*** Family of Maurice L. Collins.

Colter Family Bursary
field: Athletics, Nursing, Engineering or Business Administration. ***value:*** $500. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to students who have demonstrated successful academic performance and have graduated from a New Brunswick high school. Candidates must have completed at least the requirements for the first year of the Bachelor of Nursing, Bachelor of Science in Engineering or Bachelor of Business Administration degree program or have completed the requirements for the first year of an undergraduate degree program and have demonstrated excellence in varsity athletics. ***donor:*** The Colter Family.

Colter/Aviva Group Canada Scholarship
field: Civil Engineering. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to Fredericton campus Civil Engineering students who have graduated from a high school in the Atlantic provinces. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Colter/Aviva Canada, in honour of their 50-year business relationship with Diamond Construction.

Computer Engineering Scholarship
field: Computer Engineering. ***value:*** $1,170. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has completed at least one year of study (a minimum of 35 credit hours) leading to the degree of Bachelor of Science in Engineering (Computer). Selection will be based on scholastic achievement. Preference will be given to students who have graduated from a high school within the City of Fredericton. ***donor:*** Anonymous.

Computer Science & Applied Statistics Scholarship
field: Computer Science. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Saint John campus student who has completed the minimum requirements for the first year of the BSc(CS), BDA, BCS or a concurrent program involving one of these. Selection will be based on academic achievement. ***donor:*** Janet Light Thompson.

Dr. Thomas Condon University in the Community Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Saint John campus student who has graduated from a Saint John area high school and has completed at least the requirements of the second year of his/her degree program. Selection will be based on academic achievement, financial need and a demonstrated involvement in extracurricular activities benefiting student life and/or the surrounding community. ***awarding agency:*** The University, on the recommendation of the Vice President, UNB Saint John, in consultation with the UNB Saint John Registrar. ***donor:*** Proceeds from the evening of appreciation, Hats off to Tom, held May 14, 2003 at the Saint John Trade and Convention Centre and the New Brunswick University Opportunities Fund.

Thomas J. Condon International Scholarship
field: Unrestricted. ***value:*** Approximately $350. ***number:*** 1 ***duration:*** Spring/Summer Session or 1 year. ***conditions:*** Open to international visa students on the Saint John campus who have completed at least the normal requirements for the first year of the degree program in which they are registered at UNB. Selections are made primarily on the basis of scholastic attainment. ***donor:*** Proceeds from Thomas J. Condon Scholarship Dinner October 1996.

Connolly Bursary in Nursing
field: Nursing. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a New Brunswick student who has completed at least the minimum requirements for the first year of the Bachelor of Nursing degree program and has demonstrated successful academic performance. Preference will be given to graduates of Minto High School. The bursary is available to Nursing students at UNB Fredericton, Bathurst and Moncton. ***donor:*** Anonymous and the New Brunswick University Opportunities Fund.

Cook Family Bursary
field: Arts. ***value:*** $2,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Saint John campus student who is enrolled in the Bachelor of Arts degree program, and has declared a major in English. The recipient must be a graduate of a high school in the Greater Saint John area, have demonstrated successful academic performance and a love for English. ***donor:*** The Cook Family Fund, a permanently endowed fund of the Greater Saint John Community Foundation.

Mildred Alice Crowell Scholarship
field: Nursing. ***value:*** Approximately $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a female student who is a graduate of Leo Hayes High School, Fredericton High School or Ecole Ste Anne, has just completed the requirements of the first year of the Bachelor of Nursing degree program on the Fredericton campus and is beginning the second year of the program. Selection will be based on scholastic attainment and financial need. ***donor:*** The Fredericton Community Foundation Inc. and the New Brunswick University Opportunities Fund.

Albert J. and T. Ferne O. Currie Memorial Scholarship
field: Science or Nursing ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who has graduated from a New Brunswick high school and has completed at least the minimum requirements for the first year of a degree program. Preference will be given to the student who intends to pursue a career in health care. Selection will be based on scholastic attainment and financial need. ***donor:*** The family of Albert & Ferne Currie and the New Brunswick University Opportunities Fund.

Wellington B. Cuthbertson Memorial Scholarship in Electrical Engineering
field: Electrical Engineering. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to undergraduate students in the Electrical Engineering degree program who have graduated from a high school in New Brunswick. Selections are made on the basis of scholastic attainment and financial need, with consideration given to the recipients' qualities of leadership. ***donor:*** Mrs. Marion C. Cuthbertson.

Cutler Nursing Scholarship
field: Nursing - Mental Health Nursing. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year (may be renewed) ***conditions:*** Open to registered nurses enrolled on a full or part-time basis in the BN/RN program or the Masters program in the Faculty of Nursing who are working, or have previously worked, in the Mental Health Nursing field. Scholastic attainment is an important consideration. Applicants should intend to work in the Mental Health Nursing field in the future. ***awarding agency:*** The University in consultation with the Faculty of Nursing. ***donor:*** The late Professor Ryllys Cutler in memory of Mr. & Mrs. R.O. Cutler and Dr. & Mrs. N.L. Cutler.

Glenn & Mary Daugharty Forestry Scholarship
field: Forestry and Forest Engineering. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded annually to a continuing student who has completed at least the first year of the BScFE (44 credit hours) or BScF (36 credit hours). ***awarding agency:*** The University in consultation with the Faculty of Forestry and Environmental Management. ***donor:*** Glenn & Mary Daugharty with matching funds from Northern Telecom.

Ralph Daughney Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to worthy UNB students. ***donor:*** Friends and family of the late Mr. Ralph Daughney.

Margot MacLauchlan Dawson Memorial Scholarship
field: Spanish. ***value:*** $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to Fredericton campus students majoring in Spanish who have completed at UNB at least 45 ch in Arts. Selections are made on the basis of scholastic attainment and financial need. ***awarding agency:*** The University on the recommendation of the Department of Culture and Language Studies. ***donor:*** Julia MacLauchlan and Warren McKenzie.

Louis and Montoura Debly Undergraduate Scholarship
field: Civil Engineering ***value:*** Min $1000 ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who is entering the final year of the Bachelor of Engineering (Civil Eng) degree program and who has shown a high level of achievement in the structural engineering courses. Selection is based on scholastic attainment. ***awarding agency:*** The University, on the recommendation of the Department of Civil Engineering. ***donor:*** Louis Debly (CE'47).

Lorraine Dee Memorial Scholarship
field: Radiography. ***value:*** Approximately $500. ***number:*** 3. ***duration:*** 1 year. ***conditions:*** Open to Saint John campus students who are graduates of a New Brunswick high school and have completed at least the minimum requirements for the first year of the Bachelor of Health Sciences (Radiography) degree program. Selection is based on scholastic attainment and financial need. ***donor:*** Dr. Gerry Clayden and the New Brunswick University Opportunities Fund.

Deloitte & Touche Scholarship in Accounting
field: Business Administration. ***value:*** $3,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** One scholarship to be awarded on either the Fredericton or the Saint John Campus who is entering the final year of the Business Administration degree program with a minimum of 81 ch UNBSJ, 93 ch UNBF, and who has expressed an interest in entering the chartered accountancy profession. ***awarding agency:*** The University on the joint recommendation of the Faculty of Administration and the Faculty of Business. ***donor:*** Deloitte & Touche Chartered Accountants.

Department of Civil Engineering Venture Scholarship
field: Civil Engineering. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has completed at least the requirements of the first year of the Bachelor of Science in Engineering (Civil) degree program. Selection will be based on academic achievement and financial need. ***awarding agency:*** The University on the recommendation of the Department of Civil Engineering. ***donor:*** Faculty members and friends of the Department of Civil Engineering UNB Fredericton.

Department of Humanities & Languages Scholarship
field: Preference to those enrolled in any majors program ***value:*** $1,650. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** To be awarded on the basis of scholastic attainment and financial need to a student enrolled in any majors program of the Department of Humanities and Languages. ***donor:*** The Department of Humanities and Languages.

Department of Humanities and Languages Scholarship (Certificate of Proficiency in French Levels I and II)
field: Certificate of Proficiency in French Program ***value:*** $200 ***number:*** 3 ***duration:*** 1 year ***conditions:*** To be awarded on the basis of scholastic excellence in a French course which is part of the Certificate of Proficiency in French program on the Saint John campus to a student or students who enroll in a further French course on the Saint John campus. The scholarship(s) will be withdrawn if the student(s) withdraw(s) from the course. Apply: Chair, Department of Humanities and Languages, Saint John campus. ***awarding agency:*** Department of Humanities and Languages (French Section) ***donor:*** Department of Humanities and Languages.

Dietze-Turner Bursary in Vocational Adult Education
field: B.Ed. (Vocational) Adult Education Pattern. ***value:*** $250. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a student in the B.Ed. (Vocational) Adult Education Pattern. ***donor:*** Beverlie A. Dietze and Agnes E. Turner.

Dr. Walter J. Dohaney Memorial Scholarship
field: Civil Engineering. ***value:*** $700-$1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to Civil Engineering students from the Province of New Brunswick who have completed at least 90 ch in the Civil Engineering program. The recipient will be selected on the basis of involvement in student affairs and/or athletics. Financial need will be a consideration and the student must have maintained an academic standing at or above a B average. ***awarding agency:*** The University, upon the recommendation of the Department of Civil Engineering. ***donor:*** Family and friends of the late Walter J. Dohaney, Assistant Dean of Engineering 1981-1985 and the New Brunswick University Opportunities Fund.

Walter V. Donahue Memorial Scholarship
field: Unrestricted. ***value:*** $350. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** A deserving student from the County of York, N.B. ***donor:*** Mrs. Agnes C. Donahue.

Jennifer Douglass Memorial Bursary
field: Unrestricted. ***value:*** Approximately $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Fredericton campus student who has graduated from a New Brunswick high school. The recipient should have just completed the requirements for the first or second year of his/her degree program and has demonstrated successful academic performance. Preference will be given to a student who has demonstrated humanitarian qualities. ***donor:*** Family and friends of the late Jennifer Douglass, a former employee of the MicMac Maliseet Institute, Faculty of Education.

Asa Dow Scholarship
field: Bachelor of Education or Bachelor of Teaching. ***value:*** $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to male students who hold a New Brunswick teacher's license and who need financial assistance in order to complete their education. To be eligible, a student must have completed at least the normal requirements for the first year of his university course. No one is eligible who can reside at home while attending university. ***donor:*** The late Asa Dow.

Thomas D. Doyle Award
field: Engineering. ***value:*** Variable, minimum $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who is a graduate of a New Brunswick high school and has completed at least the first-year of the Engineering degree program on the Fredericton campus. Awarded on the basis of active involvement in the Engineering Undergraduate Society, scholastic attainment and financial need. ***awarding agency:*** The University on the recommendation of the Faculty of Engineering. ***donor:*** Trans Mountain Pipe Line Company in honour of Thomas D. Doyle, BSc Engineering, 1960, and the New Brunswick University Opportunities Fund.

Karen Duffy Memorial Scholarship
field: Preference to Education. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student from Blackville High School who is beginning an undergraduate degree program on the Fredericton campus. Preference will be given to a student entering the Bachelor of Education program. ***donor:*** Family and friends of the late Karen Duffy.

Duke Energy Scholarship in Engineering
field: Civil, Chemical or Mechanical Engineering. ***value:*** $5000. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded to students who have completed at least the requirements for the first year of the Civil, Chemical or Mechanical Engineering degree program. Selection will be based on academic achievement. ***donor:*** Duke Energy Inc.

Muriel & Percy Dunlap Bursary
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of need to a mature Fredericton campus student who has completed at UNB at least the normal requirements for the first year of a degree program and has demonstrated successful academic performance. ***donor:*** Family of Muriel and Percy Dunlap.

Electronic Commerce Centre Awards
field: Business ***value:*** $500. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Two awards of $500 each to be awarded annually on the recommendation of the Electronic Commerce Centre at the Faculty of Business on the Saint John campus. Applicants will be judged on papers written in Electronic Commerce courses and interviews. To be eligible, applicants must be entering the final year of the major in Electronic Commerce. ***apply:*** Dean of Business, UNB Saint John. ***awarding agency:*** The University, on the recommendation of the Faculty of Business, UNB Saint John. ***donor:*** The Electronic Commerce Centre

Faculty of Administration Undergraduate Bursary
field: Business Administration. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a student or students continuing beyond the first year (30 ch) in the BBA program on the Fredericton campus. The recipient must have at least an average academic record (minimum assessment year GPA 2.5). ***awarding agency:*** The University on the recommendation of the Faculty of Administration. ***donor:*** Faculty, staff and friends of the Faculty of Administration.

Anton Feicht Scholarship
field: Chemistry. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Saint John campus student who is entering the second year of the Bachelor of Science in Engineering (Chemical) degree program or the Bachelor of Science (Chemistry, Biology-Psychology) degree program and is a graduate of a New Brunswick high school. Selection will be based on scholastic achievement and financial need. This cannot be held in conjunction with another scholarship. Only students with scholarship gpas between 3.0 and 3.6 will be considered. ***awarding agency:*** The University on the recommendation of the Department of Chemistry. ***donor:*** Dr. Anton Feicht and the New Brunswick University Opportunities Fund.

Ralph L. Finley Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of academic performance and financial need to students who have completed at least the normal requirements for the first year of the program in which they are registered at UNB. ***donor:*** The late Ralph L. Finley.

Fisher Foundation Scholarship
field: Business Administration. ***value:*** $500. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded to Saint John campus students who have graduated from a southern New Brunswick high school and are enrolled in the Bachelor of Business Administration degree program. Selection is based on superior academic performance and financial need. One scholarship will be awarded to a student who has just completed the first year of the BBA program and one scholarship will be provided to a student who has just completed the third year of the BBA program. ***donor:*** The Fisher Foundation and the New Brunswick University Opportunities Fund.

Jean Crawford Flemming Memorial Scholarship
field: Computer Science ***value:*** $500 ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a Saint John campus student who has completed the minimum requirements for the first year of the BSc(CS), BDA, BCS or a concurrent program involving one of these. Selection will be based on academic achievement in Computer Science, Mathematics and Statistics courses. ***awarding agency:*** The University on the recommendation of the Department of Computer Science and Applied Statistics. ***donor:*** J. Archie Flemming, former Professor of Mathematics and Statistics at UNB Saint John.

B. W. Barney Flieger Memorial Scholarship in Forest Engineering
field: Forest Engineering. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Open to outstanding Forest Engineering students who have completed the normal requirements for the first two years of the Forest Engineering degree program (80-100 ch). ***donor:*** The late Mrs. Margaret Flieger.

Focus Corporation Ltd. Scholarship
field: Geodesy and Geomatics Engineering. ***value:*** $2,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has completed the requirements for the third year and is beginning the fourth year of the Bachelor of Engineering (Geodesy and Geomatics) degree program. Selection is based on academic achievement and financial need. ***donor:*** The Focus Corporation Ltd.

Forestry Special Award
field: Forestry. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** A student in Forestry or Forest Engineering who is a graduate of the Maritime Forest Ranger School. ***apply:*** The Dean of Forestry and Environmental Management. ***donor:*** Friends of the late B.W. Flieger.

Blanche Botsford Fowler Nursing Bursary
field: Nursing. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to Fredericton campus students who have completed at least the minimum requirements for the first year of the Bachelor of Nursing degree program and have demonstrated successful academic performance. The scholarship is available to Nursing students at Fredericton, Bathurst and Moncton sites. ***donor:*** Estate of Bernice Nesbitt.

Donald & Margaret Fraser Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to students on the Fredericton campus who have completed at least the normal requirements for the first year of the program in which they are registered at the University. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Donald Fraser and Margaret Fraser Lambert.

Nancy M. Fraser & Clara R. Stone Fraser Scholarship
field: Nursing. ***value:*** Approximately $200. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Deserving Fredericton campus student having a high scholastic standing who requires financial assistance. ***awarding agency:*** The University, on the recommendation of the Faculty of Nursing. ***donor:*** The late Norman S. Fraser.

Fredericton Community Foundation Tuition Bursary
field: Unrestricted. ***value:*** Tuition plus Student Union Fee. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Fredericton campus student who is a graduate of Harvey High School, Stanley High School, Oromocto High School, Leo Hayes High School, Fredericton High School or Ecole Ste Anne, and is entering the third year of a degree program. The recipient must have demonstrated successful academic performance. ***donor:*** The Fredericton Community Foundation.

French Spanish German Scholarship
field: French, Spanish or German. ***value:*** Up to $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to first, second and third year full- and part-time students enrolled at the Saint John campus of the University of New Brunswick who plan to continue their studies in French, Spanish or German. The scholarship is available for study at an appropriate University overseas or at Laval University. ***awarding agency:*** The University on the recommendation of the Faculty members in the disciplines of French, Spanish and German at the University of New Brunswick in Saint John. ***donor:*** Professors Celine Arabackyj, David Jory, Rosi Jory, Fatma Loutfi, Leslie Marcus, Suzanne Pons-Ridler and the Modern Languages Centre.

Dorothy C. (Dann) Friars Scholarship
field: BN/RN Degree Program at UNBSJ. ***value:*** Approx. $250. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to part-time and full-time students who are enrolled in the BN/RN program at UNB Saint John. Selections are made on the basis of scholastic attainment with consideration of financial need. ***apply:*** Student Services, University of New Brunswick in Saint John, P. O. Box 5050, Saint John, N.B., E2L 4L5. ***awarding agency:*** The University on the recommendation of the BN/RN faculty members at UNB Saint John. ***donor:*** G. W. & Dorothy C. Friars.

John H. Fulton Memorial Scholarship in Electrical Engineering
field: Electrical Engineering. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of academic performance to students who have successfully completed at least one year of study (a minimum of 35 ch) in the Electrical Engineering program at UNB. ***donor:*** The late John H. Fulton.

Fundy Environmental Scholarship
field: Environmental Studies. ***value:*** $1,000. ***number:*** 2. ***duration:*** 1 year (may be renewed) ***conditions:*** Awarded to two students on the Saint John campus who reside in the South Bay to Welsford to Brown's Flat area, and who are graduates of a high school in the Saint John region. One scholarship is awarded to a student who has just completed the normal requirements for the first year of an undergraduate degree program, and the second scholarship is awarded to a student who has just completed the normal requirements for the second year of an undergraduate degree program. Students must have a demonstrated interest in the area of Environmental Studies. ***apply:*** Dean of the Faculty of Science, Applied Science and Engineering, UNBSJ. ***awarding agency:*** The University on the recommendation of the Dean of the Faculty of Science, Applied Science and Engineering, UNBSJ. ***donor:*** Fundy Future Environment and Benefits Council.

Geological Association of Canada - Mineralogical Association of Canada Fredericton 85
field: Geology. ***value:*** Approximately $750. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to undergraduate students majoring in Geology. Selection to be made on the basis of scholastic achievement, financial need and extracurricular activities. ***awarding agency:*** The University on the recommendation from the Geology Department. ***donor:*** The Geological Association of Canada and the Mineralogical Association of Canada.

R. W. Gilbert Memorial Scholarship
field: Engineering, including Computer Science, Forestry and/or Forest Engineering. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** A deserving student in the Faculties of Engineering, including Computer Science, or Forestry and/or Forest Engineering. ***donor:*** The late Mrs. R.W. Gilbert.

John Gilchrist Associated Alumni Engineering Scholarship
field: Engineering. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has completed at least the requirements for the first year of the Bachelor of Engineering degree program. The recipient must be a graduate of a New Brunswick high school. Selection is based on scholastic achievement and financial need. ***donor:*** The late John Gilchrist, BSc EE 1932 and the New Brunswick University Opportunities Fund.

M. Patrick Gillin Award in Engineering
field: Engineering Departments and Programs ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded to deserving undergraduate students who have completed their high school education in New Brunswick, have demonstrated involvement in the community, have achieved a satisfactory academic record and require financial assistance. ***awarding agency:*** The University in consultation with Alumni Awards Committee. ***donor:*** M. Patrick Gillin and the New Brunswick University Opportunities Fund.

Louis Joseph Godbout Memorial Scholarship
field: Geology or Geological Engineering. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a UNB student who has completed at least the normal requirements for first year of the Science or Geological Engineering degree program. Selection is made on the basis of scholastic attainment and financial need to a student who in a tangible way has demonstrated he/she will bring to the Geology profession a high degree of dedication and enthusiasm. ***donor:*** Co-workers at Utah Mines Ltd./Utah International Inc. and the Company.

Golden Jubilee Scholarship
field: Unrestricted. ***value:*** $5,000. ***number:*** 1. ***duration:*** 1year. ***conditions:*** Awarded to a student who has completed the third year of a four-year degree program, or the fourth year of a five-year degree program and is a New Brunswick resident, based on Student Financial Services guidelines for provincial residency. Selection will be based on academic excellence and financial need as defined by Student Financial Services. ***donor:*** The Province of New Brunswick established this scholarship in 2002 to commemorate the 50th anniversary of Queen Elizabeth's coronation.

Robin W. Gough Scholarship in Electrical Engineering
field: Electrical Engineering ***value:*** Variable ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a Fredericton campus student who has completed at UNB at least the normal requirements for th first year of the Bachelor of Science in Engineering (Electrical Engineering) degree program. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Robin W. Gough, BScEE'26, BScCE'32.

Robin W. Gough Scholarship in Forest Engineering
field: Forest Engineering ***value:*** Variable ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a Fredericton campus student who has completed at UNB at least the normal requirements for the first year of the Bachelor of Science in Forest Engineering degree program. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Robin W. Gough, BScEE'26, BScCE'32.

Graduates Award in Forestry
field: Forest Resources/Forest Engineering. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year (may be renewed) ***conditions:*** Open to students who have completed at least the normal requirements for the first year of the program in which they are registered. Selections are made on the basis of academic performance and financial need. ***donor:*** Forestry Alumni and Alumnae.

Grandy, Gibson, Holmes Memorial Scholarship
field: Engineering. ***value:*** $2,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** May be awarded to a student in Engineering, including Forest Engineering, at UNB who has demonstrated successful academic performance, has shown a potential for leadership in professional or civic affairs, and is entering the final year of the Engineering or Forest Engineering degree program. ***awarding agency:*** The University on the recommendation of the Faculty of Engineering and Geoscience. ***donor:*** Association of Professional Engineers and Geoscientists of New Brunswick Foundation for Education in memory of Norman Grandy, P.Eng., Andrew Gibson, P.Eng., and Neville Holmes, P.Eng.

Grant Thornton Scholarship
field: Business Administration. ***value:*** $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to Fredericton campus students who have completed the requirements for the second year of the Business Administration degree program. Selection is based on academic excellence, qualities of leadership, professional promise and career aspirations in the field of chartered accountancy. Preference will be given to a student in the Co-op program who has attained high academic standing in at least 3 credit hours of accounting electives. ***awarding agency:*** The University on the basis of a recommendation from the Faculty of Administration in consultation with Grant Thornton. ***donor:*** Grant Thornton LLP.

Earl J. Grant Memorial Scholarship
field: Civil Engineering. ***value:*** $1000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to Fredericton campus student who has completed the requirements for first year in the Bachelor of Science in Engineering (Civil Engineering) degree program and has a demonstrated interest in the area of structural engineering. Selection will be based on scholastic attainment; consideration may be given to financial need. ***awarding agency:*** The University on the recommendation of the Faculty of Engineering. ***donor:*** Family and friends of Earl J. Grant, P. Eng.54, a former Civil Engineering professor at UNB from 1958 until his untimely death in 1987.

Greater Saint John Community Foundation Travel Bursary
field: Unrestricted. ***value:*** $3,000. ***number:*** 1 per year until 2005. ***duration:*** 1 year. ***conditions:*** Awarded to a UNB Saint John student who has completed at least two years of the degree requirements for his/her program and has been accepted into another university as part of an exchange program with a UNB-approved institutional partner. Selection will be based on academic achievement and financial need. Preference to students residing in the Greater Saint John Community. ***apply:*** Student Abroad Office, UNB Saint John. ***awarding agency:*** The University, on the recommendation of the Director of the International Liaison Office, UNB Saint John ***donor:*** Greater Saint John Community Foundation and Scotiabank.

Agnes L. Green Memorial Bursary
field: Education. ***value:*** Variable. ***number:*** 1 or more ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need, to a student in the Faculty of Education on the Fredericton campus who has graduated from a New Brunswick high school. ***donor:*** The family of the late Agnes L. Green and the New Brunswick University Opportunities Fund.

Dorothy A. Gregg Memorial Bursary
field: Unrestricted. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a female student with preference given to a West Indian woman student who has completed at least the normal requirements for the first year of the program in which she is registered at UNB, and who shows scholastic promise. Financial need will be a consideration in making the award. ***donor:*** Friends of the late Dorothy A. Gregg, wife of the late Milton F. Gregg, V.C., some time President of the University.

Ernest H. Gunter Memorial Scholarship
field: Forestry and Environmental Management ***value:*** Variable ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment to Fredericton campus students who have completed at least 30 credit hours in the Faculty of Forestry and Environmental Management. ***awarding agency:*** The University on the recommendation of the Faculty of Forestry and Environmental Management. ***donor:*** The late Doris Gunter Bent.

Ben & Millie Guss Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has completed the requirements for the first year of his/her degree program and intends to pursue an interest in fine arts, including creative writing, theatre, film, music, visual arts, or multimedia studies. Selection will be based on scholastic achievement and financial need. ***awarding agency:*** The University, on the recommendation of the Office of the Dean of Arts. ***donor:*** Family of Ben and Millie Guss.

Eleanor Haines Memorial Scholarship
field: Education. ***value:*** Approximately $1200. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** A student of promise studying towards a degree in Education. ***donor:*** The late Hazel L. Haines.

William Haliburton Memorial Scholarship
field: Forestry. ***value:*** $2500. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded to Fredericton campus students who have completed at UNB at least the normal requirements for the first year of the Bachelor of Science in Forestry or Bachelor of Science in Forest Engineering degree programs. Selection is made on the basis of scholastic attainment. Preference will be given to students undertaking senior projects focussed on forestry in harmony with nature, and/or those who have personal integrity and a demonstrated commitment to the environment. ***awarding agency:*** The University, on the recommendation of the Faculty of Forestry and Environmental Management. ***donor:*** Family of the late William Haliburton.

Zula V. Hallett Alumnae Scholarship in Kinesiology
field: Kinesiology. ***value:*** $1000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a female Fredericton campus student who has completed the requirements for her second year of a Kinesiology degree program. Selection will be made on scholastic achievement and financial need. ***awarding agency:*** The University, in consultation with the Associated Alumnae. ***donor:*** The Associated Alumnae.

Zula V. Hallett Scholarship (Marysville)
field: Unrestricted. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to students who are permanent residents of Marysville, and have completed the normal requirements for the first year of the degree program in which they are registered at UNB. Selections are made on the basis of scholastic attainment and financial need. ***awarding agency:*** The University in consultation with the Associated Alumnae. ***donor:*** The late Miss Zula V. Hallett and the New Brunswick University Opportunities Fund.

Hafiz Hamdan Memorial Scholarship
field: Mathematics. ***value:*** $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Saint John campus student who has completed at least the requirements for the first year of the Bachelor of Science or the Bachelor of Arts degree program and has declared a major in Mathematics. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** The family of Hafiz Hamdan.

Rupert D. & Jack C. Hanson Memorial Scholarship
field: Unrestricted. ***value:*** $650. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Available to a deserving son of a returned male member of Canada's Armed Services or to a deserving son of a male member of Canada's Armed Service who lost his life in active service. ***donor:*** The late Mrs. Gussie P. Hanson.

Hart Family Scholarship in Geological Engineering
field: Geological Engineering. ***value:*** $2,500. ***number:*** 1. ***duration:*** 1 year with the possibility of renewal. ***conditions:*** Awarded to a Fredericton campus student who has completed at least the minimum requirements for the first year of the Bachelor of Science in Engineering (Geological) and has demonstrated a keen interest in making a career within the earth sciences. Selection is made on the basis of scholastic attainment and

financial need to a student who in a tangible way has demonstrated that s/he will bring to the Geological Engineering profession a high degree of dedication and enthusiasm. ***awarding agency:*** The University, on the recommendation of the Faculty of Engineering. ***donor:*** John Hart.

Hon. Richard Hatfield Undergraduate Scholarship in Political Science

field: Arts (Political Science) ***value:*** Min $500 ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a Fredericton campus student who has declared a major or honours in Political Science. Preference will be given to a student who graduated from a New Brunswick high school. Selection will be made on the basis of scholastic attainment, demonstrated leadership qualities and community skills. ***awarding agency:*** The University on the recommendation of the Chair, Dept. Of Political Science. ***donor:*** The Fredericton Soth Progressive Conservative Association.

D. King Hazen Scholarship

field: Arts. ***value:*** Variable. ***number:*** Multiple ***duration:*** 1 year. ***conditions:*** Open to students enrolled in a Bachelor of Arts program who have completed at least the normal requirements for the first year (30-36 ch) of their program at UNB. Preference will be given to students who have demonstrated excellence in at least six ch in English literature. Recipients should have a substantial interest in athletics. ***donor:*** The late D.E. Rosemary Hazen.

Hilton International Scholarship

field: Bachelor of Applied Management in Hospitality and Tourism. ***value:*** $1000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to students who have completed a two-year diploma at an articulated Community College and are entering the BAMHT degree program at UNB Saint John. Selection is based on scholastic achievement as well as interest and involvement in the accommodation sector. ***awarding agency:*** The University, on the recommendation of the Director of the BAMHT Program. ***donor:*** Hilton International.

Alleyne Hubbard Memorial Scholarship

field: Science, Engineering, Forestry, Comptuer Science ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to students who have graduated from an NB high school and have enrolled in the following degree programs: Science, Engineering, Forestry or Computer Science. Selection will be based on academic achievement and financial need. Preference will be given to students involved in extracurricular activities and athletics. ***donor:*** Marion (Hubbard) Logie, Lucy & Frederick Hubbard, in memory of their brother, Alleyne (Al) Russell Hubbard (BScF '37), Lieutenant, killed in action during World War II at Nymegen, Holland on November 20th 1944. He served with Unit No. 15, Canadian Forest

Allison Hubert Memorial Merit Award

field: Unrestricted. ***value:*** Minimum $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to Fredericton campus undergraduate students who have completed at UNB a minimum of 60 credit hours in their degree program. Preference is given to those who have made a contribution to the community and exhibited cross-cultural interests. Academic performance (minimum assessment year GPA 3.0) and financial need are considerations in the awarding of this merit award. ***awarding agency:*** The University, in consultation with the International Student Advisor. ***donor:*** Friends of the late Allison Hubert, BScF, Class of 1949.

Muriel E. Hunter Scholarship

field: Nursing. ***value:*** Variable. ***number:*** 1. ***duration:*** Up to 4 years. ***conditions:*** Open to BN and BN/RN students. Preference will be given to full-time students. Students will have demonstrated interest and competent practice in community health nursing within the program or in employment. Capacity to be innovative in practice is a criterion as well as good scholastic standing and financial need. There should be an intention to work in the community in New Brunswick after graduation. ***awarding agency:*** The University on the recommendation of the Nursing Faculty. ***donor:*** Family and friends of the late Muriel E. Hunter, a distinguished public health nurse.

I.O.D.E. Provincial Chapter of New Brunswick Bursary

field: Unrestricted. ***value:*** $200 ***number:*** 2 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a female student on each UNB campus who is entering her second year of studies and has demonstrated successful academic performance. ***donor:*** The Provincial Chapter of New Brunswick IODE.

I.O.D.E. Provincial Chapter of New Brunswick Nursing Bursary

field: Nursing. ***value:*** Minimum of $200. ***number:*** 5 ***duration:*** 1 year. ***conditions:*** Four bursaries awarded on the recommendation of the Nursing Faculty to female students who are entering their second year of the degree program at each of the four New Brunswick sites. One additional bursary to be awarded on the recommendation of the Nursing Faculty to a mature student in Nursing who has successfully completed four university courses. Financial need is a criterion in the awarding of all bursaries. ***awarding agency:*** The University on the recommendation of the Nursing Faculty. ***donor:*** The Provincial Chapter of New Brunswick, I.O.D.E.

Imperial Oil Outreach Merit Award

field: Engineering or Science ***value:*** Variable ***number:*** Variable ***duration:*** 1 year ***conditions:*** Awarded to Fredericton campus students who have contributed significantly to the Science, Technology, Engineering and Math (STEM) Outreach Program. ***awarding agency:*** The University, on the recommendation of the Faculty of Engineering, in consultation with the STEM Coordinator. ***donor:*** Imperial Oil.

Ken Ireland Memorial Scholarship

field: Unrestricted. ***value:*** $1000. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Open to Fredericton campus students who have successfully completed two years of a degree program at UNB. Selections are made on the basis of scholastic attainment and financial need. Preference will be given to students who have demonstrated excellence in mathematics and have completed at least 9 credit hours in mathematics. ***awarding agency:*** The University, in consultation with the Department of Mathematics and Statistics. ***donor:*** Family, friends and colleagues of the late Dr. Ken Ireland., Professor of Mathematics and Statistics.

Irish Canadian Cultural Association Scholarship

field: Unrestricted. ***value:*** $250. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to a student on the Saint John campus, with preference given to a student who has completed courses pertaining to Irish Studies. ***donor:*** The Irish Canadian Cultural Association, Saint John Chapter.

Sandra Irving Scholarship

field: Political Science ***value:*** Up to $5,000 ***number:*** 1 ***duration:*** One academic term. ***conditions:*** Awarded annually to a student on the Saint John campus who has completed a minimum of 45 ch. Majoring or intending to Major in Political Science. Selection is on the basis of academic attainment, and candidates' statement of the scholarship's value in reaching career goals. ***apply:*** The Chair, Department of History and Politics, UNBSJ. ***awarding agency:*** The University on the recommendation of the Vice-President (Saint John). ***donor:*** Sandra Irving.

Mark Jeffrey Memorial Merit Award

field: Unrestricted. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a student on the Fredericton campus who has completed at least the normal requirements at UNB for the first year of the degree program in which the student is registered and is returning to UNB. The recipient must have demonstrated a special athletic ability in the sport of hockey at UNB and demonstrated successful academic performance (minimum 2.5 assessment year grade point average). ***awarding agency:*** The University on the recommendation of the Faculty of Kinesiology in consultation with the Director of Athletics. ***donor:*** The Jeffrey family.

Donald & Patricia Jenkins Memorial Scholarship

field: Education. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student from Queens, Kings, or Sunbury Counties, with preference given to a student from Queens County. Awarded on the recommendation of the Faculty of Education to a student beginning the first year of the Concurrent program. ***donor:*** The Jenkins' family and friends.

Harold E. Kane Memorial - St. Patricks Society Bursary

field: Unrestricted. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a student at UNB Saint John who has completed at least the normal requirements for the first year of the degree program in which the student is registered and has demonstrated successful academic performance. An interest in Irish Studies may be a consideration in the awarding of the bursary. ***donor:*** H.E. Kane Agencies Ltd., and St. Patrick's Society

Walter Wray Williams Keirstead Bursary
field: Unrestricted. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a student on the Saint John campus who has demonstrated successful academic performance. ***donor:*** The late Walter Wray Williams Keirstead.

Dhanraj Persaud Khemraj Memorial Bursary
field: Unrestricted. ***value:*** Approximately $200. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to an international graduate or undergraduate student on the Fredericton campus who has completed at least the requirements for the first year of his/her degree program and has demonstrated successful academic performance. Selection will be based on financial need. ***awarding agency:*** The University, on the recommendation of the Director, International Student Advisor's Office. ***donor:*** Kay Nandlall, in memory of her father.

Joy Wells Kidd Bursary
field: Unrestricted. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Fredericton campus student who has completed at least the normal requirements for the first year of the degree program in which the student is registered and has demonstrated successful academic performance. ***donor:*** The late Joy Wells Kidd, former Dean of Women at UNB and friends of Mrs. Kidd.

King Nursing Scholarship
field: Nursing. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student in the Faculty of Nursing after the completion of at least one year of successful performance at UNB. The recipient is to demonstrate financial need as well as nursing excellence. ***awarding agency:*** The University, on the recommendation of the Faculty of Nursing. ***donor:*** Penny K. Ericson, BSN, MSN

Norman L. Kissick Memorial Scholarship
field: Forestry or Forest Engineering. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has completed 75 credit hours of the Bachelor of Science in Forestry degree program or 111 credit hours of the Bachelor of Science in Forest Engineering degree program and who has a demonstrated interest in forest resource management. Selection will be based on scholastic attainment and financial need. ***awarding agency:*** The University, on the recommendation of the Faculty of Forestry. ***donor:*** Family and friends of Norman Kissick.

Dorothy and Kenneth Langmaid Scholarship
field: Science. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who has graduated from a Charlotte County High School and has completed at least the requirements for the first year of the Bachelor of Science degree program, with preference given to a student who has a major in Biochemistry or Geology. Preference will also be given to a Sir James Dunn Academy graduate. Selection will be based on academic achievement with consideration given to financial need and the student's level of involvement in his/her community. ***donor:*** Fundy Community Foundation.

Gerald B. Lawson Memorial Scholarship
field: Business. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Open to students in the Faculty of Business on the Saint John Campus who have completed at least 30 credit hours in the Business degree program. The scholarship will be awarded at the end of the first 30-36 credit hours, or at the completion of a total of 60-69 credit hours in the Business degree program. Selections are made on the basis of scholastic attainment, financial need, and the contribution of the student to the university community, the Saint John community and/or the home community of the student. ***awarding agency:*** The University on the recommendation of the Faculty of Business. ***donor:*** Family of the late Mr. Gerald B. Lawson.

Oscar Z. LeBlanc Memorial Bursaries
field: Unrestricted. ***value:*** Approximately $1,875. ***number:*** 3 Fredericton Campus, 1 Saint John Campus. ***duration:*** 1 year. ***conditions:*** Four bursaries have been established to assist full-time undergraduate students who are experiencing financial difficulty in the pursuit of his/her undergraduate degree program. Recipients must be graduates of a New Brunswick high school and/or residents of the province of New Brunswick, as determined by provincial Student Aid guidelines, and have successfully completed at least one term of full-time study at UNB with a GPA of 2.0 or higher. ***awarding agency:*** Financial Aid Office (UNB Fredericton) and Student Life and Support Services (UNB Saint John). ***donor:*** The late Oscar Z. LeBlanc and the New Brunswick University Opportunities Fund.

Irene Leckie Scholarship in Nursing
field: Nursing. ***value:*** $1,000. ***number:*** 5. ***duration:*** 1 year. ***conditions:*** Open to Fredericton campus students who have completed the requirements for the first, second or third year of the Nursing degree program. Selection will be based on academic achievement, demonstrated excellence in clinical practice, and financial need. ***awarding agency:*** The University, on the recommendation of the Faculty of Nursing. ***donor:*** Irene Leckie, former Professor (1959-1983) and Dean of Nursing (1978-83).

Norman Leckie Memorial Scholarship
field: Nursing. ***value:*** Approximately $3,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** To be awarded annually to a student who has completed two years of study in the Faculty of Nursing (basic students, 95 ch). The award is to be based on competency in nursing practice, a good record of academic performance and financial need. ***awarding agency:*** The University in consultation with the Faculty of Nursing. ***donor:*** The Leckie Family.

Sany Leckie Memorial Bursary
field: Business Administration. ***value:*** Approximately $3,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded upon the recommendation of the Faculty of Administration, on the basis of financial need, to a student enrolled on a basis in the second year of the Business Administration program (BBA) on the Fredericton campus, who has demonstrated successful academic performance. ***awarding agency:*** The University, on the recommendation of the Faculty of Administration. ***donor:*** The Leckie family.

Dr. Y. C. Lee Memorial Scholarship
field: Geomatics. ***value:*** $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student enrolled in the Bachelor of Science in Engineering (Geomatics) degree program, who has shown special interest and promise in the study of Geographic Information Systems (GIS). ***awarding agency:*** The University on the recommendation of the Department of Geodesy and Geomatics Engineering. ***donor:*** Family and friends of the late Dr. Y. C. Lee, PhD, P.Eng, who was a faculty member of the Department of Geodesy and Geomatics Engineering.

Leica Geosystems Limited Scholarship
field: Surveying Engineering. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of academic performance, to a student entering the penultimate year (completed 90 ch) of the Surveying Engineering program at UNB. ***donor:*** Leica Geosystems Ltd.

Larry Levine Scholarship
field: Arts/Economics ***value:*** $900 ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded annually to the most deserving Fredericton campus student in the Major A program, or the Honours program. Selection will be made on the basis of scholastic attainment. ***awarding agency:*** The University, on the recommendation of the Chair of the Economics Dept., UNB Fredericton. ***donor:*** Faculty and friends of Dr. Larry Levine, Professor Emeritus of Economics at UNB Fredericton.

Dasho Lhaderla Award
field: Unrestricted. ***value:*** $2,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a UNB student from Bhutan. Selection will be based on academic achievement and financial need. ***donor:*** Ian Aitken.

Dr. Henry Llambias Memorial Scholarship
field: Arts. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to students in the Faculty of Arts on the Fredericton Campus who have completed at least the normal requirements at UNB for the first year of the Bachelor of Arts degree program, including those students who are registered in a concurrent BA degree program. Candidates must be members of the UNB Residence Community at the time of scholarship selection, and during the tenure of the scholarship. Selections are made on the basis of academic performance and financial need. ***donor:*** Family and friends of the late Dr. Henry Llambias, former Professor of Political Sciences, Dean of Men's Residence 1981-82 and Don of Jones House, 1982-1991.

Marjorie Barberie Logue CFUW Scholarship
field: Unrestricted. ***value:*** Approximately $3,000. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Open to female Fredericton campus students with a minimum Scholarship gpa of 3.7 who have completed at least the normal requirements for the first year of an undergraduate degree program in which the student is registered at the University. The recipients must be New Brunswick residents, as defined by Student Financial Services. Financial need is an important consideration. ***awarding agency:*** The University, in consultation with the CFUW-Fredericton. ***donor:*** Canadian Federation of University Women-Fredericton and the New Brunswick University Opportunities Fund.

Woodrow P. London Scholarship
field: Civil, Electrical and Mechanical Engineering. ***value:*** Approximately $1,650. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Selection is made on the basis of scholastic attainment and financial need. ***donor:*** W. P. London and Associates Limited, as well as friends, in honour of the late Mr. Woodrow P. London.

H. Douglas Long Memorial Scholarship
field: Forestry. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded to a student entering the penultimate or the final year of the program leading to the degree of Bachelor of Science in Forestry, who has shown special interest and promise in the silvicultural aspects of forest management. ***awarding agency:*** The University on the recommendation of the Faculty of Forestry and Environmental Management. ***donor:*** Contributors to the University Faculty Fund.

Louisbourg Investments Bursary
field: Business Administration. ***value:*** $1,000. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded to students who have completed at UNB the minimum requirements for the first year of the Business Administration degree program. Selection is made on the basis of financial need and satisfactory academic standing. ***donor:*** Louisbourg Investments Inc.

Dr. Ian R. Lowe Memorial Scholarship
field: Mechanical Engineering ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to a student who has completed at UNB the minimum requirements for the first year of the BScME degree program. Selection will be made on the basis of scholastic attainment. ***donor:*** Mrs. Joyce Lowe.

Stuart and Richard Lowerison Memorial Scholarship
field: Arts. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Open to undergraduate students on the Fredericton campus in the Faculty of Arts who have completed at least the normal requirements for first year of the Arts degree program at UNB and have demonstrated excellence in at least 6 ch in English, History or French. ***donor:*** The late Stuart Lowerison.

A. B. Lumsden Memorial Scholarship
field: Education. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a graduate of a New Brunswick high school who has been admitted to the Bachelor of Education (Business) program. Selections are made primarily on the basis of scholastic attainment. ***donor:*** Friends of the late A.B. Lumsden.

Dr. C. Lutze-Wallace Scholarship
field: Chemistry or interdisciplinary fields of Biology/Chemistry or Chemistry/Biology. ***value:*** Approximately $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has graduated from a New Brunswick high school and who has completed the normal requirements for the first year of the Bachelor of Science degree program. Selection will be made on scholastic attainment and financial need. ***awarding agency:*** The University, on the recommendation of the Faculty of Science. ***donor:*** Dr. Cyril Lutze-Wallace, BSc. '82, PhD '88 and the New Brunswick University Opportunities Fund.

E. Belle Lynds Scholarship
field: Education. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a student entering the penultimate year of the Concurrent program in the Faculty of Education. The recipient should be planning to pursue the study of communications, including such areas as media, speech, drama and creative writing, in the balance of the undergraduate degree program. ***awarding agency:*** The University on the recommendation of the Faculty of Education. ***donor:*** The late Margaret R. Lynds.

Hulda A. Lynds Memorial Scholarship
field: Education. ***value:*** $600. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** To a student who is a resident of Albert County and who is entering the Freshman year of the Bachelor of Education program. ***donor:*** The late Eleanor B. Lynds.

M5 Scholarship
field: BAMHT ***value:*** $1,000. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Open to students who have completed a two-year diploma at a Community College and are entering the Bachelor of Applied Management in Hospitality and Tourism degree program at UNBSJ. Selection will be made on the basis of scholastic attainment and involvement in the tourism industry. ***awarding agency:*** The University, on the recommendation of the Director of the BAMHT program, UNBSJ. ***donor:*** M5.

Verna MacDonald Scholarship
field: Education. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded to able and needy students in the penultimate and final years of the Faculty of Education enrolled in the undergraduate Bachelor of Education program. ***donor:*** The late Verna MacDonald.

Margaret Macdougall Bursary in Education
field: Education. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student in Education on the Fredericton campus, with preference given to a student in the BBA/BEd concurrent or consecutive degree program. Financial need is a consideration. ***awarding agency:*** The University on the recommendation of the Faculty of Education. ***donor:*** The Business Education Subject Council, in honour of Prof. Margaret Macdougall.

Donald MacFayden BScSE Memorial Scholarship
field: Geodesy and Geomatics Engineering. ***value:*** $700-$1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to a student from the Maritime Provinces who has completed 130 ch in the Geodesy and Geomatics Engineering Program. The recipient who has at least a B-average will be selected on the basis of financial need, involvement in student and community activities. ***awarding agency:*** The University on the recommendation of the Department of Geodesy and Geomatics Engineering. ***donor:*** Jean, Malcolm, family and friends of the late Donald McFadyen.

Helen MacFarlane Scholarship
field: Education. ***value:*** $1,200. ***number:*** 2 ***duration:*** 1 year. ***conditions:*** Open to a student in the Faculty of Education who is entering the 3rd or 4th year of the undergraduate Bachelor of Education degree program. Students who are enrolled in this program as a second undergraduate degree are eligible for consideration. To be eligible the student must a) have successfully completed six ch (or the equivalency) in Reading/ Language Arts, b) have demonstrated a high level of academic achievement, and c) pursue studies in Reading/Language Arts. ***awarding agency:*** The University on the recommendation of the Faculty of Education. ***donor:*** Friends of Helen MacFarlane in honor of her outstanding contribution to Education.

Dr. William MacIntosh Chapter I.O.D.E. Scholarship
field: Unrestricted. ***value:*** $500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of academic performance and financial need to a student who has successfully completed two years of study at the UNBSJ campus leading to a degree to be obtained at UNBSJ. ***donor:*** Dr. William MacIntosh Chapter IODE, Saint John, NB.

Hon. Elmer MacKay Scholarship in Forestry or Forest Engineering
field: Forestry or Forest Engineering. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment to a Fredericton campus student from the Atlantic provinces who has completed the normal requirements at UNB for the first year of the Forestry or Forest Engineering degree program (minimum 37 to 41 ch). ***awarding agency:*** The University on the recommendation of the Faculty of Forestry and Environmental Management. ***donor:*** Staff and friends of the Hon. Elmer MacKay.

Dr. Deborah A. MacKay-Mitton Memorial Scholarship
field: Science ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment to a UNB female student on the Saint John campus who has completed at UNB the minimum requirements for the first year of the Bachelor of Science degree program. Community involvement will be a consideration in the selection process. ***donor:*** The Saint John Branch of the Federation of Medical Women, Friends and Colleagues of the late Dr. Deborah McKay-Mitton.

Dr. Norman A. M. MacKenzie Scholarship
field: Unrestricted. ***value:*** $200. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Associated Alumni, University of New Brunswick and University of British Columbia Alumni Association.

MacLauchlan McKenzie Scholarship: Women in Technology
field: Computer Science. ***value:*** $1,500. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Open to Fredericton campus female students enrolled in the Computer Science degree program who have completed at least the normal requirements for the first year of the Computer Science degree and will attend the Fredericton campus during the tenure of the scholarship. Selections are made on the basis of scholastic attainment and financial need. ***awarding agency:*** The University on the recommendation of the Faculty of Computer Science. ***donor:*** Julia MacLauchlan and Warren McKenzie.

MacLauchlan McKenzie Student Leadership Scholarship
field: Unrestricted ***value:*** $1,000 ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Open to a Fredericton campus student enrolled in an undergraduate degree program who has completed at least the normal requirements for the first year of the degree program in which the student is registered and will attend the Fredericton campus during the tenure of the scholarship. Recipient must be a student in a leadership position in student organizations that would involve the entire student body, such as student government, The Brunswickan, CHSR, etc. The selection is made on the basis of scholastic attainment and financial need. ***donor:*** Julia MacLauchlan and Warren McKenzie.

Julianna K. MacLeod Scholarship
field: Nursing. ***value:*** Approximately $400. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Preference is given to a full time or part time student enrolled in the post RN Nursing degree program. Masters and Doctoral Nursing students are also eligible for consideration. Recipients must be registered with the Nurses Association of New Brunswick (NANB). ***awarding agency:*** The University on the recommendation of the Faculty of Nursing. ***donor:*** The New Brunswick Nurses Foundation.

Miss A.J. MacMaster School of Nursing Scholarship
field: Nursing. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded annually to a student entering the fourth year of the generic BN program at the Moncton Site who has demonstrated proficiency in nursing practice, scholastic attainment and has made a significant contribution to campus life. Financial need is a criterion. Preference will be given to a graduate of a New Brunswick high school. ***awarding agency:*** The University in consultation with the Nursing Faculty at the Moncton Site. ***donor:*** The Board of Trustees, The Miss A. J. MacMaster School of Nursing and the New Brunswick University Opportunities Fund.

E.D. Maher Scholarship
field: Business Administration. ***value:*** Approximately $1,700. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to a student continuing beyond first year (30 ch) in the BBA program. ***donor:*** Students, faculty, staff, graduates, organizations, and friends in recognition of E.D. Maher's many contributions to the University community and, in particular, to the undergraduate business program.

Margaree Scholarship in Geology
field: Geology. ***value:*** $2,500. ***number:*** 1. ***duration:*** 1 year with the possibility of renewal. ***conditions:*** Awarded to a Fredericton campus student who has completed at least the minimum requirements for the first year of the Bachelor of Science, has declared a major in Geology and has demonstrated a keen interest in making a career within the earth sciences. Selection is made on the basis of scholastic attainment and financial need to a student who in a tangible way has demonstrated that s/he will bring to the Geology profession a high degree of dedication and enthusiasm. Preference will be given to a student from Cape Breton Highland Academy. ***awarding agency:*** The University, on the recommendation of the Department of Geology. ***donor:*** John Hart.

A.L. McAllister Scholarship
field: Applied Geology. ***value:*** Approximately $2,500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to students entering their final year of the Undergraduate Geology degree program. Selection will be made on the basis of scholastic attainment and involvement in extracurricular activities. ***awarding agency:*** University on the recommendation of the Chair of the Geology Dept. ***donor:*** Friends, students, and colleagues of Dr. Arnie McAllister on the occasion of his retirement.

J. Nairn McCaffrey Memorial Scholarship
field: Civil Engineering ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to Civil Engineering students. ***donor:*** The late Catherine Phyllis McCaffrey.

John J. McCaffrey Scholarship
field: Science (Biology). ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of academic performance to students in the Science degree program who have demonstrated excellence in at least nine credit hours in Biology. ***donor:*** The late Catherine Phyllis McCaffrey.

Sheri Lynne McCordick Memorial Bursary
field: Education. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Fredericton campus student enrolled in the Bachelor of Education degree program. The recipient must demonstrate successful academic performance. ***donor:*** Family and friends of the late Sheri Lynne McCordick, a former UNB student.

Mary (Nee Outlet) McDougall Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who has a physical disability on the Fredericton campus on the basis of scholastic attainment and financial need. Preference given to Education students. ***donor:*** Family and friends of the late Mary McDougall, a former UNB Education student.

McElhanney Scholarship
field: Geodesy and Geomatics Engineering. ***value:*** $2,500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Geodesy and Geomatics Engineering student who has completed or has enrolled in two of the four cadastral surveying option courses: GGE5521 Survey Law; GGE5532 Land Economy and Administration; GGE5313 Urban Planning or CE5342 Site Planning. Selection will be based on academic achievement (minimum 3.2 scholarship gpa). Demonstrated leadership ability and innovative skills will also be taken into consideration in selecting the recipient for this award. ***awarding agency:*** The University, on the recommendation of the Faculty of Engineering. ***donor:*** McElhanney Land Surveys Ltd.

Peter McGahan Memorial Scholarship
field: Arts. ***value:*** Approximately $1000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a full-time or part-time student on the Saint John campus who is enrolled in the Faculty of Arts, and has achieved a high academic standing after 60 credit hours of study. The student should have demonstrated in his/her course selection a desire to explore as many disciplines as possible at the lower level. This reflects the philosophy of Peter McGahan that students in the first two years of a BA degree should diversify rather than specialize. ***awarding agency:*** The University on the recommendation of the Dean of Arts, UNB Saint John, in consultation with the departmental chairs in the Faculty of Arts. ***donor:*** Faculty, staff, family and friends of the late Peter McGahan.

Arlee Hoyt McGee Nursing History Scholarship
field: Nursing. ***value:*** Approximately $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to Nursing students at any of the four University of New Brunswick sites who are graduates of a New Brunswick high school and have completed at least the minimum requirements for the first year of a Nursing degree program. Selection will be based on academic achievement and financial need. Preference will be given to students who are registered in the NURS 4335 "Nursing and Nurses Images in the Media: Unintended Consequences." ***donor:*** Family and friends of the late Arlee Hoyt McGee and the New Brunswick University Opportunities Fund.

Rose May and Reta Mae McGee Memorial Scholarship
field: Arts. ***value:*** $2500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to Fredericton campus students enrolled in the Bachelor of Arts program. Preference will be given to a student enrolled in one or more subjects in the humanities and languages disciplines. Selection will be based on scholastic attainment and financial need. ***awarding agency:*** The University. ***donor:*** Robert Harley McGee.

Mary McKean English Major Scholarship
field: English ***value:*** $1000. ***number:*** 2. ***duration:*** Up to 2 years. ***conditions:*** Awarded to Saint John Campus students who are majoring in English, in either the honours, single majors, or double majors program, and who have completed 60ch and are entering their third year. Selection is made on the basis of scholastic attainment. ***awarding agency:*** The University, on the recommendation of the Coordinator of English, Department of Humanities and Languages, UNB Saint John. ***donor:*** The estate of Mary McKean.

Mary McKean English Student Award
field: English ***value:*** $300. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Saint John campus student who is majoring in English, in either honours, single majors or double majors and who, in addition to his or her academic achievement, has contributed to the life of the English discipline and has taken a leadership role among his or her peers in order to improve the general educational and arts experience of the student body. ***awarding agency:*** The University, on the recommendation of the Coordinator of English, Department of Humanities and Languages, UNB Saint John. ***donor:*** The estate of Mary McKean.

Mary McKean Scholarships for Upper Level Students in English
field: English ***value:*** $300. ***number:*** Up to 10. ***duration:*** 1 year. ***conditions:*** Awarded to Saint John campus students who are majoring in English, in either the honours, single majors, or double majors program, and who have completed 90 ch of their degree program. Part-time students may be considered for this award. Selection will be made on the basis of scholastic attainment. ***awarding agency:*** The University, on the recommendation of the Coordinator of English, Dept. of Humanities and Languages, UNB Saint John ***donor:*** The estate of Mary McKean.

Bryden De Blois Millidge Memorial Scholarship
field: Business Administration. ***value:*** Up to $1,000. ***number:*** 1. ***duration:*** 1 year (may be renewed). ***conditions:*** Awarded on the basis of scholastic attainment and financial need to a BBA student on the Fredericton campus who has completed at least one year (minimum 30 ch) of the Business degree program. ***donor:*** The late Mrs. Brydone deBlois Millidge.

Rachel Moffatt Memorial Scholarship
field: Nursing. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** To be given annually to a student who has completed a minimum of one academic year in the Nursing program. Demonstrated excellence in nursing practice, active participation in the Nursing Society, and financial need will be the criteria of the award. Preference will be given to students resident in New Brunswick. ***donor:*** The Nursing Society of the University of New Brunswick in memory of Rachel Moffatt who died March 16, 1979.

Kenneth D. Moore Memorial Scholarship
field: Business Administration. ***value:*** Approximately $500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded annually on the basis of academic performance and financial need to a student entering the second year (completed 30 ch) of the BBA degree program on the Fredericton campus. ***donor:*** Canadian Retail Shippers' Association.

Florence L. Murray Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Open to a student who has completed at least the normal requirements for the first year of the program in which he/she is registered at the University. ***donor:*** The late Alexander Ronald Murray.

Jack Murray Memorial Scholarship
field: Arts. ***value:*** Approximately $1,500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student who has completed a minimum of 60 credit hours at UNB in the Faculty of Arts degree program and has made a contribution to student life at the University. ***donor:*** Family and friends of the late Jack Murray.

Luz Murray Memorial Scholarship in Music Education
field: Music Education. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to students who are enrolled in the BEd program and who have demonstrated excellence in the study of music education at the University of New Brunswick. ***awarding agency:*** The University on the recommendation of the Faculty of Education. ***donor:*** Mr. Bruce Murray, in memory of his wife, Luz.

New Brunswick Telephone Company Limited Scholarship
field: Business Administration. ***value:*** $1,500. ***number:*** 2 ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of academic performance to students in the Business Administration degree program who have completed at least the normal requirements for the first year of the degree program. Eligible candidates must be residents of the Province of New Brunswick. ***donor:*** The New Brunswick Telephone Company Limited.

Nurses Association of New Brunswick Scholarship
field: Nursing. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Open to full time or part time nursing students with preference given to students in the Post RN Nursing degree program. Masters and Doctoral Nursing students are also eligible for consideration. Recipients must be registered with the Nurses Association of New Brunswick (NANB). ***apply:*** Dean of Nursing, UNBF and the Chairperson, Department of Nursing, UNBSJ. ***awarding agency:*** The University on the recommendation of the Faculty of Nursing. ***donor:*** The New Brunswick Nurses Foundation.

Nursing Alumni Scholarship
field: Nursing. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** To be given annually to a student entering the junior or senior year of the basic degree program in the Faculty of Nursing. Demonstrated leadership skills, scholastic attainment, and financial need will be the criteria of the award. ***awarding agency:*** The University on the recommendation of the Faculty of Nursing. ***donor:*** UNB Nursing Alumni.

OAO Technology Scholarship
field: Computer Science ***value:*** $4,000 ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Open to students who are graduates of a New Brunswick high school and are entering their final year in the Bachelor of Computer Science degree program or Bachelor of Science (Computer Science) on either campus. Selection will be based on scholastic attainment as well as the demonstration of sound business acumen. Candidates will provide evidence of suitability for work in the IT industry as well as a documented history of work, volunteer activities and/or community involvement. A 250-word essay will be requested of shortlisted candidates. Shortlisted candidates will be interviewed by OAO Technology. ***apply:*** Faculty of Computer Science, UNB. ***awarding agency:*** The University, on the recommendation of a committee comprised of representatives from OAO Technology and the Faculty of Computer Science, UNB. ***donor:*** OAO Technology Inc.

Ottawa Alumni Chapter Thomas Foulkes Sr. Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a student who has completed at least the normal requirements for the first year of the program in which the student is registered at the University. Eligible candidates must be residents from any point in Ontario east of a Deep River -Gananoque line, and areas of Quebec bordering the Ottawa River from Davidson to Grenville. Consideration will be given to participation in extracurricular activities. ***donor:*** Ottawa Chapter, UNB Alumni.

Pacific Regeneration Technologies Scholarship
field: Forestry & Environmental Management. ***value:*** $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student in the Forestry and Environmental Management Faculty entering the final year of the undergraduate program. The scholarship is intended to encourage pursuit of specialized study in silviculture, particularly issues dealing with regeneration. Selections are based on performance and potential of students exhibiting qualities and abilities associated with high levels of reflective professional practice. ***awarding agency:*** The University on the recommendation of the Faculty of Forestry and Environmental Management. ***donor:*** Pacific Regeneration Technologies.

Dr. Richard Papenhausen Bursary for English Students

field: English. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Saint John campus student who is a New Brunswick resident, according to the definition used by Student Financial Services. The recipient must have declared a major or honors in English and achieved at least a 2.5 scholarship grade point average in the previous year of study. ***donor:*** Friends and Family of the late Dr. Richard Papenhausen, Director of Student Life and Support Services UNBSJ from 1982 to 2003, and the New Brunswick University Opportunities Fund.

Mabel Parker Bursary

field: Education. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student enrolled in the Consecutive or Concurrent Education degree program who has demonstrated satisfactory academic performance. The recipient must have a demonstrated interest in dealing with children who have learning disabilities or who are mentally challenged. Preference will be given to graduates of a Charlotte County high school. ***awarding agency:*** The University, on the recommendation of the Faculty of Education ***donor:*** St. Stephen and District Association for Community Living.

Anthony C. Passaris Memorial Scholarship

field: Unrestricted. ***value:*** $500. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Open to international visa students attending UNB Fredericton who have completed, at UNB, at least the normal requirements for the first year of the program in which they are registered. Selections are made primarily on the basis of scholastic attainment. ***donor:*** Professor Constantine Passaris.

Mary Passaris Memorial Scholarship

field: Economics ***value:*** $500 ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Open to female Fredericton campus students majoring in economics who have completed their second or third year of studies (minimum 60 ch) and who have demonstrated academic accomplishment, and extra curricular involvement in the life of the University. ***awarding agency:*** The University, on the recommendation of the Department of Economics, UNB Fredericton ***donor:*** Professor Constantine E. Passaris.

David J.S. Patel Memorial Scholarship

field: Science. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Open to students in Science on the Saint John campus who have completed at least the normal requirements for the first year of the program in which they are registered. ***donor:*** Family and friends of the late David Patel.

Dr. & Mrs. Fletcher Peacock Scholarship in Education

field: Education. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to a student in the Faculty of Education, with preference to a student in Vocational Education, who is in the Bachelor of Education degree program, and who has successfully completed a minimum of six credit hours in the study of people who are Physically and/or Mentally Disabled. ***awarding agency:*** The University in consultation with the Faculty of Education. ***donor:*** Mrs. Jessie W. Sharpe.

Dr. Robert M. Pendrigh Scholarship

field: Nursing. ***value:*** Approximately $1,500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to a student entering the senior year in either the Basic or Post R.N. Nursing program, with high marks in Nursing courses for the previous two years of study. Financial need will be a criterion in making the award. ***awarding agency:*** The University in consultation with the Faculty of Nursing. ***donor:*** The late Dr. Robert M. Pendrigh.

Margaret Jean (Scott) Peters Memorial Scholarship

field: Nursing. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Open to students entering the sophomore (44-49 ch), junior (90-95 ch), or senior (131-135 ch) year in the Basic Nursing Program or students entering the junior (34-39 ch) or senior (68-73 ch) year of the Post RN Program. Awarded on the basis of scholastic attainment and demonstrated excellence in nursing practice. ***awarding agency:*** The University in consultation with the Faculty of Nursing. ***donor:*** Mr. Douglas B. Peters.

Ernest & Blanche LeBel Picot Scholarship

field: Education - French Second Language Program. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of program performance to students with a French Education (core or immersion) concentration who have completed a least 66 ch of their degree program. Candidates must have completed year two French courses, obtained a mark of B or higher on all French courses taken since the beginning of their program, and have a cumulative GPA of 3.0 or higher. ***apply:*** Assistant Registrar, Undergraduate Awards, and the Director of the Second Language Teacher Education Centre. ***awarding agency:*** The University on the recommendation of the UNB Director of the Second Language Teacher Education Centre. ***donor:*** The late Dr. J.E. Picot (and his family).

Dr. Douglas G. Pincock Electrical Engineering Scholarship

field: Electrical Engineering. ***value:*** $2500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who is entering the third or fourth year of study in the Bachelor of Engineering (Electrical) degree program. Selection will be based on academic achievement. Preference will be given to a student who is involved in extracurricular activities. ***donor:*** AMIRIX Systems Inc.

Fernando Poyatos Scholarship

field: Arts. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who is in the honours program in Anthropology, Psychology or Sociology. Selection will be based on academic attainment and financial need. ***donor:*** Fernando Poyatos, UNB Professor Emeritus, has donated his portion of the proceeds from the book "Impressions of Historic Fredericton" to establish this award.

Frank & Isa Pridham Memorial Scholarship

field: Unrestricted. ***value:*** Approximately $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to Fredericton campus students who have completed at least the normal requirements for the first year of the degree program in which they are registered at UNB. Preference may be given to residents of Fredericton, NB and to students in the Arts or Science degree programs. ***donor:*** Mrs. Doreen E. Estey and the Pridham Family, in memory of Frank and Isa Pridham.

Professional Foresters Scholarship

field: Forestry and/or Forest Engineering. ***value:*** $500. ***number:*** 3. ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of scholastic attainment to Fredericton campus students entering the third, fourth or fifth year of either the BScF or BScFE programs. Evidence of leadership, as demonstrated by involvement in extra-curricular activities, executive positions in student societies, etc., will also be a consideration. ***awarding agency:*** The University on the recommendation of the Faculty of Forestry and Environmental Management. ***donor:*** The Association of Registered Professional Foresters of New Brunswick.

Walker H. Rideout Scholarship

field: Science (Chemistry). ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to Fredericton campus students in the Science degree program who are entering the penultimate year (minimum 80 ch completed) in the Honours or Majors program in Chemistry. ***donor:*** Mr. Walker H. Rideout.

Pam & Ken Roberts Memorial Bursary

field: Science. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Saint John campus student who has completed at least the minimum requirements for the first year of the Bachelor of Science degree program and has demonstrated successful academic performance. The recipient must have been accepted to participate in the Student Abroad Program at Anglia Polytechnic, Cambridge Campus, in England. Preference will be given to a female undergraduate student. If no undergraduate students are eligible, then an MSc student may be considered. ***donor:*** Patricia DeBell.

Dr. B. W. Robertson Scholarship

field: Unrestricted. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year (students may reapply). ***conditions:*** A student from York County who has completed at least the normal requirements for the first year of the degree program in which registered at UNB. Preference will be given to students from the Mouth of Keswick postal area. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Family and friends of the late B.W. Robertson and the New Brunswick University Opportunities Fund.

Joan Rogers Science Educator Scholarship
field: Education. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton Campus student enrolled in the Bachelor of Education (Consecutive or Concurrent) degree program who has completed a Bachelor of Science degree or is enrolled in the Bachelor of Science/Bachelor of Education degree program. The student must be a New Brunswick resident, according to the Student Financial Services guidelines. Selection will be based on financial need and academic performance. ***awarding agency:*** The University, on the recommendation of the Faculty of Education. ***donor:*** Joan Rogers, Family, Friends and the New Brunswick University Opportunities Fund.

Marion Fleet Rogers Alumnae Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a female Saint John Student who has completed the minimum requirements for the first year of her degree program. Selection will be based on academic achievement and financial need. ***awarding agency:*** The University, in association with the Associated Alumnae. ***donor:*** The Associated Alumnae.

Rosetta Caroline Scholarship
field: Mathematics ***value:*** Up to $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a female student on the Saint John campus who is majoring in Mathematics. Selection will be based on academic achievement and financial need. . ***donor:*** Dr. Keith De'Bell in memory of his mother.

Royal Canadian Regiment Milton Fowler Gregg VC Memorial Bursary
field: Unrestricted. ***value:*** $800. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need and promise shown in areas of environmental management or international affairs. ***donor:*** The Royal Canadian Regiment.

ROYTEC/Faculty of Administration Scholarship
field: Business Administration. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to ROYTEC students who have been officially accepted to the UNB/BBA program and are attending the ROYTEC site. Selection is made on the basis of scholastic attainment and financial need. ***apply:*** ROYTEC Registrar. ***donor:*** UNB Faculty of Administration.

Saint John Chapter Nurses Association of New Brunswick Bursary
field: Nursing. ***value:*** Approximately $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Award is open only to students on the Saint John campus. Preference is given to a full time or part time student from the Saint John area enrolled in the post RN Nursing degree program. Masters and Doctoral Nursing students are also eligible. The recipient must be registered with the Nurses Association of New Brunswick (NANB). ***apply:*** Dean of Nursing, UNBF and the Chairperson, Department of Nursing, UNBSJ. ***awarding agency:*** The University on the recommendation of the Faculty of Nursing. ***donor:*** The New Brunswick Nurses Foundation.

David Bruce Ritchie Schousboe Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a student on the Fredericton campus who is a graduate of a Fredericton high school and has completed at least the normal requirements for the first year of the degree program in which registered. Selections are made on the basis of scholastic attainment, financial need and participation in extracurricular activities. ***donor:*** Friends of the late David Bruce Ritchie Schousboe, a former UNB student and the New Brunswick University Opportunities Fund.

Dr. Neil Scott Memorial Scholarship
field: Elementary Education ***value:*** $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a male student enrolled in the Bachelor of Education (consecutive or concurrent) degree program who has declared a concentration in elementary education. Selection will be based on scholastic attainment with consideration given to the student who demonstrates experience in volunteering or working with children. Preference will be given to male Saint John campus students. ***donor:*** Family and friends of the late Dr. Neil Scott.

Scoudouc River University Awards
field: Unrestricted. ***value:*** Variable. ***duration:*** 1 year. ***conditions:*** Tenable at a university in New Brunswick. May be held elsewhere if the program is not available in New Brunswick. Awards are open to those who have "signal promise" but are especially needy or handicapped in any way; or, to those with unusual direction or promise; or, to those of distinct interest not qualified for other regularly established scholarships. Nominees must be enrolled in undergraduate or graduate programs. At the time of nomination the nominee must be domiciled in the Province of New Brunswick. Candidates taking up a Scoudouc River University Award may not hold, during the tenure of that award, other major financial awards. Candidates will be approved by the President. ***donor:*** The late Dr. William L. Webster and the New Brunswick University Opportunities Fund.

Lewis Gregory Sears Memorial Scholarship
field: Mathematics. ***value:*** Variable. ***number:*** I or more. ***duration:*** 1 year. ***conditions:*** Open to students on the basis of scholastic attainment, who have completed at UNB at least the normal requirements for the first year of an undergraduate degree program, and have demonstrated excellence in a minimum of four term courses in Mathematics. ***donor:*** The late Marjorie Sears, in memory of Lewis Gregory Sears, B.A., Class of 1929.

Harold Sharp Undergraduate Bursary
field: Business Administration. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year (may be renewed). ***conditions:*** Awarded on the basis of financial need to a student or students continuing beyond the first year (30 credit hours) in the BBA program on the Fredericton campus. The recipient must have at least an average academic record (minimum 2.5 assessment year grade point average). ***awarding agency:*** The University on the recommendation of the Faculty of Administration. ***donor:*** Faculty, staff and friends of the Faculty of Administration.

Alvin Shaw Memorial Scholarship in Drama Production
field: Arts. ***value:*** $2000. ***number:*** 1. ***duration:*** Up to three years. ***conditions:*** Awarded to a Fredericton campus student who is enrolled in a Fine Arts Minor under the Bachelor of Arts degree program and who is judged to be a top performer in English 2170. Renewal of this scholarship is based on satisfactory performance and progress through the program. ***awarding agency:*** The University, on the recommendation of the Director of Drama. ***donor:*** Alvin Shaw.

Margaret C. Sheldrick Memorial Scholarship in Arts (Philosophy or Political Science)
field: Arts ***value:*** $ 525 ***number:*** 1 ***duration:*** 1 year ***conditions:*** Open to graduates of a New Brunswick high school, in the Faculty of Arts, who have completed at least the normal requirements for the first year of the Arts degree program at UNB. Preference will be given to students who have demonstrated excellence in at least one six credit hour course in Philosophy or Political Science. Financial need will be a consideration in making the award. ***donor:*** The late Col. (Ret'd) K. Douglas Sheldrick.

Margaret C. Sheldrick Memorial Scholarship in Arts (English)
field: Arts. ***value:*** $525. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to graduates of a New Brunswick high school, in the Faculty of Arts, who have completed at least the normal requirements for the first year of the Arts degree program at UNB. Preference will be given to students who have demonstrated excellence in at least one six credit hour course in English. Financial need will be a consideration in making the award. ***donor:*** The late Col. (Ret'd) K. Douglas Sheldrick.

Ross Silversides Memorial Scholarship in Forestry
field: Forestry and Environmental Management. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Canadian citizen or permanent resident who is a Fredericton Campus student in the faculty of Forestry and Environmental Management. Selection is made on the basis of academic achievement with consideration given to financial need. ***awarding agency:*** The University on the recommendation of the Faculty of Forestry and Environmental Management. ***donor:*** Bessie E. Silversides and friends of the late Ross Silversides.

Ram and Nirmal Singhal Bursary
field: unrestricted ***value:*** $500 ***number:*** 2 or more. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to Fredericton campus students who have completed the minimum requirements for the first year of the degree program in which they are registered at UNB. Preference will first be given to students from India, secondarily to other international students, and then to all Fredericton campus students. Recipients must have demonstrated successful academic performance. ***awarding agency:*** The University, on the recommendation of the International Student Advisor. ***donor:*** Dr. Ram Singhal, MSc '69, PhD '73, and Nirmal Singal, BBA '79.

F. Dorothy Skene Memorial Scholarship
field: Education. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to a student who is entering the third or fourth year of studies in the Concurrent program in the Faculty of Education and has shown potential for a high degree of professional ability as a teacher. ***donor:*** The Victor Hatheway Chapter of the I.O.D.E.

Judith Diane (McKay) Slipp Memorial Scholarship
field: Nursing. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student entering the final year of the Basic Nursing Program, with preference given to a graduate of a Fredericton area high school. Selection is made on the basis of scholastic attainment. ***awarding agency:*** The University on the recommendation of the Faculty of Nursing. ***donor:*** Family and friends of the late Judith Diane (McKay) Slipp, BN '67.

A.R. Mearle Smith Bursary
field: Engineering (preference Mechanical Engineering). ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Open to graduates of Bathurst High School requiring financial assistance who are currently enrolled in Engineering at UNB, and who have completed at least the normal requirements for the first year of the Engineering program at UNB. Preference will be given to Mechanical Engineering students. ***donor:*** The late A.R. Mearle Smith.

Dr. G.F.M. Smith Memorial Scholarship
field: Biological Sciences. ***value:*** Approximately $1,800. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a UNBF student in the Faculty of Science who has completed a minimum of 75 ch, who is majoring or honouring in Biology (including interdisciplinary programs) and who has good academic standing, high personal integrity and an apparent aptitude for research. ***awarding agency:*** The University on the recommendation of the Biology Department. ***donor:*** The family of the late G.F.M. Smith.

Sodexho Scholarship
field: Unrestricted. ***value:*** Unrestricted. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Open to Fredericton campus students who have completed at UNB at least the normal requirements for the first year of the degree program in which they are registered. Selections are made on the basis of scholastic attainment. ***donor:*** This scholarship was established by Sodexho.

Sr. Darrah/St. Josephs Hospital Alumni Scholarship
field: Nursing. ***value:*** Approximately $650. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Award is open only to students on the Saint John campus. Preference is given to a full time or part time student enrolled in the post RN Nursing degree. Masters and Doctoral Nursing students are also eligible. The recipient must be registered with the Nurses Association of New Brunswick (NANB). ***apply:*** Chairperson, Department of Nursing, UNBSJ. ***awarding agency:*** The University on the recommendation of the Department of Nursing, UNBSJ. ***donor:*** The New Brunswick Nurses Foundation.

Ste. Anne's Point Chapter I.O.D.E. Bursary
field: Unrestricted. ***value:*** Minimum $400. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of academic performance and financial need to a female Fredericton campus student who is entering her third year of an undergraduate degree program. ***donor:*** Ste. Anne's Point Chapter IODE.

Audrey Stevenson Memorial Scholarship
field: Education. ***value:*** $1,500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a New Brunswick student who has completed, with distinction at least the requirements for the first year of the Bachelor of Education (Consecutive or Concurrent) degree program. Selection will be based on scholastic attainment and financial need, with consideration given to demonstrated leadership qualities and community involvement. The recipient must meet NB residency requirements according to the definition used by Student Financial Services. ***donor:*** Donald R. Stevenson, in loving memory of his mother, and the New Brunswick University Opportunities Fund.

Murray F. Stewart Scholarship
field: Education-English Education. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a BEd (Consecutive) or BEd (Concurrent) student who has completed three years of study in an Arts degree with a major in English including courses in English composition and/or linguistics and who plans to pursue a concentration in literacy/language arts in Education. Selection is made on the basis of scholastic attainment with consideration of financial need. ***apply:*** Assistant Registrar, Undergraduate Awards and the Chair of the Department of Curriculum and Instruction. ***awarding agency:*** The University on the recommendation of the Faculty of Education. ***donor:*** Murray F. Stewart, former English education professor at UNB.

Stora Enso Port Hawkesbury Limited Scholarship
field: Forestry or Forest Engineering. ***value:*** Approximately $750. ***number:*** 3. ***duration:*** 1 year. ***conditions:*** Open to graduates of a Nova Scotia high school who have completed at least the requirements for the first year of the Forestry or Forest Engineering program at UNB. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Stora Enso Port Hawkesbury Limited.

Stora Enso Exchange Scholarship
field: Forestry or Forest Engineering ***value:*** $2,500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to Fredericton campus students participating in the exchange program with the Faculty of Forestry at the Swedish University of Agricultural Sciences. Selection is made on the basis of scholastic attainment; preference will be given to students from Nova Scotia. ***awarding agency:*** The University on the recommendation of the Faculty of Forestry and Environmental Management ***donor:*** Stora Enso Port Hawkesbury Limited.

Student Union Bursary
field: Unrestricted. ***value:*** Variable. ***number:*** 1 or more. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need, to a member of the Student Union (i.e. paid the student activity fee), who has completed the normal requirements for the first year of the program in which the student is registered. ***donor:*** The UNB Student Union.

Dr. Jed B. Sutherland Memorial Bursary
field: Nursing. ***value:*** Minimum $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a full or part-time student entering the 4th year of the baccalaureate Nursing degree program at UNB who, as recommended by faculty, has demonstrated caring and commitment in the care of older adults. ***apply:*** Dean of Nursing, University of New Brunswick. ***awarding agency:*** The University on the recommendation of the Faculty of Nursing. ***donor:*** Alzheimer Society of New Brunswick and family of the late Dr. Jed B. Sutherland, BA'39.

Sutton-Wilkinson Memorial Bursary
field: Engineering (preference to Civil Engineering). ***value:*** Approximately $500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Fredericton campus Engineering student, with preference given to a student in Civil Engineering. The recipient must have demonstrated successful academic performance. ***donor:*** Friends of the late Wade Sutton and the late Kevin Wilkinson.

H. Earle Swim Memorial Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** Awarded to students who have completed at least the minimum requirements for the first year of a degree program. Selection will be based on academic achievement. ***donor:*** The Estate of H. Earle Swim.

Anne D. Thorne Saint John School of Nursing Scholarship

field: Nursing. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to a graduate of the Saint John School of Nursing who is enrolled in Nursing on the Saint John campus on a full-time or part-time basis. Financial need will be a consideration in the selection process. In the event that the pool of former graduates of the Saint John School of Nursing furthering their education is deemed to be depleted, the scholarship will be awarded to a high school graduate from the Saint John area who is enrolled in Nursing at the University of New Brunswick on the Saint John campus on a basis. Financial need will remain a consideration in the awarding of the scholarship ***apply:*** Chairperson, Department of Nursing, UNB Saint John. ***awarding agency:*** The University on the recommendation of the Department of Nursing, UNB Saint John. ***donor:*** Saint John School of Nursing.

Paul C.C. Ting Memorial Scholarship

field: Electrical Engineering. ***value:*** Approximately $1,700. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to students who have completed the normal requirements for the first two years of the Electrical Engineering degree program and who have demonstrated outstanding performance in the study of electric circuits. ***awarding agency:*** The University on the recommendation of the Faculty of Engineering. ***donor:*** Family and friends of Paul Ting.

Tourism Synergy Ltd. Scholarship

field: Bachelor of Applied Management in Hospitality and Tourism. ***value:*** $1000/$500. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** One scholarship valued at $1000 will be awarded to a student who has completed a two-year diploma at an articulated Community College and is entering the BAMHT degree program at UNB Saint John. Selection will be based on scholastic achievement and experience in the hospitality and tourism industry. One scholarship valued at $500 will be awarded to a student entering the third year of the BAMHT degree program at UNB Saint John after completing the second year at the New Brunswick Community College in St. Andrews. Selection will be based on scholastic achievement. ***awarding agency:*** The University on the recommendation of the Director of the BAMHT degree program. ***donor:*** Tourism Synergy Ltd.

D. O. Turnbull Memorial Scholarship

field: Engineering. ***value:*** $2,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** May be awarded annually to a New Brunswick student who has completed his or her penultimate year of Engineering with high academic standing. ***donor:*** Association of Professional Engineers and Geoscientists Of New Brunswick Foundation for Education.

UNB Associated Alumni Leadership Award

field: Unrestricted. ***value:*** Approximately half tuition for the year. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to a student who has completed the normal requirements for at least the first year of an undergraduate degree program, with preference being given to a student entering his/her final year. Selection will be made on the basis of evidence of leadership experiences as demonstrated by involvement in extracurricular activities benefiting student life and the surrounding community which indicate the potential to advance the interests of the Associated Alumni after graduation, and successful academic achievement. ***awarding agency:*** The University, in consultation with the Associated Alumni. ***donor:*** UNB Associated Alumni.

UNB Hockey Nationals Legacy Award

field: Unrestricted. ***value:*** Not to exceed tuition and compulsory fees. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to Fredericton campus undergraduate or graduate students who have demonstrated talent in the field of varsity men's hockey. Recipients must have achieved a 2.5 grade point average for continuing students or an 80% average for high school students. This award is open to transfer students as well as students who are enrolled in a minimum of 9 credit hours, as required by the CIS. ***awarding agency:*** The University on the recommendation of the Director of Athletics. ***donor:*** Proceeds from the CIS Men's National Hockey Championship hosted by UNB in 2002-03 and 2003-04.

UNB Saint John 40th Anniversary Celebration Bursary

field: Unrestricted. ***value:*** Minimum of $500. ***number:*** Minimum of 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a Saint John campus student who has completed at least the minimum requirements of the first year of a degree program and has achieved a minimum cumulative grade point average of 2.5. Consideration will be given to campus and community involvement. ***awarding agency:*** The University, on the recommendation of Student Life and Support Services, UNB Saint John.

UNB Saint John Student Abroad Travel Bursary

field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded to a UNB Saint John student who has completed at least two years of the degree requirements for his/her program and has been accepted into another university as part of an exchange program with a UNB-approved institutional partner. Selection will be based on academic achievement and financial need. ***apply:*** Student Abroad Office, UNB Saint John. ***awarding agency:*** The University, on the recommendation of the Director of the International Liaison Office, UNB Saint John.

UNB Saint John Students' Representative Council Bursary

field: Unrestricted ***value:*** $500 ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a Saint John campus student who has completed at UNB Saint John at least the normal requirements for the first year of a degree program and has demonstrated successful academic performance. Selection will be made on the basis of financial need and involvement in extracurricular activities. ***donor:*** Students' Representative Council, UNB Saint John.

UNB Saint John Students' Representative Council Scholarship

field: Unrestricted ***value:*** $500 ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a Saint John campus student who has completed at UNB Saint John at least the normal requirements for the first year of a degree program. Selection will be made on the basis of scholastic attainment, financial need and involvement in extra-curricular activities. ***donor:*** Students' Representative Council, UNB Saint John.

UNB Third Century Fund Merit Award

field: Unrestricted. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded to student demonstrating a special talent and showing successful academic performance. ***donor:*** Contributors to the Third Century Fund.

UNB Third Century Fund Saint John Scholarship

field: Unrestricted. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of scholastic attainment and financial need to a student on the Saint John campus. ***donor:*** Contributors to the Third Century Fund.

UNB Third Century Fund Scholarship

field: Unrestricted. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded to students on the basis of scholastic attainment and financial need. ***donor:*** Contributors to the Third Century Fund.

University Faculty & Staff Undergraduate Scholarship

field: Unrestricted. ***value:*** Variable. ***number:*** Multiple ***duration:*** 1 year. ***conditions:*** Open to students who have completed at least the normal requirements for the first year of the program in which they are registered at the University. Selections are made on the basis of scholastic attainment and financial need. ***donor:*** Contributors to the University Faculty/Staff Fund.

University of New Brunswick-University of Maine Exchange Scholarship

field: Unrestricted. ***value:*** UNB Tuition +$500 ***number:*** 3. ***duration:*** 1 year. ***conditions:*** Scholarships available for the Junior Year at the University of Maine. The program selected at Maine must be approved by the respective Department at UNB. The scholarship is to cover tuition at the home university of the student (UNB). Students may hold other scholarships. Note: this award is available based on the parity of the exchange program between the University of New Brunswick and the University of Maine. ***apply:*** International Student Advisor. ***awarding agency:*** The University Exchange Committee. ***donor:*** The University.

Dirk van der Meijden Memorial Scholarship

field: Electrical Engineering. ***value:*** $7,200. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a female Fredericton campus student who is entering the third or fourth year of study in the Bachelor of Science in Engineering (Electrical) degree program. Selection will be based on academic achievement and financial need. ***donor:*** Denise van der Meijden.

Janet Lorraine and Bruce Allen Van Stone Bursary
field: Unrestricted. ***value:*** $500. ***number:*** 1. ***duration:*** Up to 4 years. ***conditions:*** Awarded on the basis of financial need to a full-time or part-time female Fredericton campus student who has a dependent child or children and who has completed at least the normal requirements of the first year of her degree program. The recipient must be a resident of New Brunswick. One scholarship will be awarded every 4 years. ***donor:*** Bruce Van Stone and the New Brunswick University Opportunities Fund.

Ken Vaughan Memorial Bursary
field: Civil Engineering. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Open to Civil Engineering students who have completed at least the normal requirements for the first year of the Civil Engineering degree program (minimum 40 ch). Selections are made on the basis of scholastic attainment and financial need. ***donor:*** The Moncton Motor Sport Club.

Dr. Bernie Vigod Memorial Scholarship
field: History. ***value:*** $1,000 per year. ***number:*** 1 each year. ***duration:*** 2 years. ***conditions:*** Awarded on the recommendation of the Department of History to an outstanding Fredericton campus student entering the Honours program in History. ***donor:*** Family and friends of the late Bernie Vigod.

Bakhshi Jawahar Vohra Scholarship
field: Engineering. ***value:*** Approximately $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has completed more than 38 credit hours and less than 111 credit hours in the Bachelor of Science in Engineering (Electrical or Computer) degree program. The scholarship will be awarded to a student who has a scholarship grade point average of 3.7 or higher (Dean's List) and has been involved with and contributed the most to activities of their local community. Preference will be given to the student who has shown a willingness to serve the needs of others while pursuing their course of academic study. ***awarding agency:*** The University, on the recommendation of the Faculty of Engineering. ***donor:*** Friends and family of BJ Vohra.

Jennifer Prosser Wade Scholarship
field: Interdisciplinary Leadership. ***value:*** Approximately $1,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has completed at least the requirements for the first year of the Bachelor of Philosophy in Interdisciplinary Leadership degree program offered by UNB's Renaissance College and who is a graduate of a New Brunswick high school. Selection will be based on academic achievement and financial need. ***donor:*** Dr. Jennifer A. Wade and the New Brunswick University Opportunities Fund.

Lorenzo N. Wadlin Scholarship
field: One in Mechanical Engineering and one unrestricted. ***value:*** Approximately $525. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** One scholarship to a student entering the fifth term of Mechanical Engineering, who is a native of Charlotte County, and who makes a grade of at least B in the final examination in Mathematics for the year in which the scholarship is given. In the event that in any one year there should not be in Mechanical Engineering a student from Charlotte County, then the scholarship shall be given to such student from any other county in the Province of New Brunswick who obtains a standing of B in Mathematics in the final examination for that year. The second scholarship is to be awarded to a student entering the third term in any faculty, who obtains high academic standing of B+ or more. ***apply:*** Mechanical Engineering Scholarship, Dean of Engineering, UNB. Second scholarship, Undergraduate Awards Office, UNB. ***donor:*** The late Lorenzo N. Wadlin.

Dr. Theodore Weiner Memorial Scholarship
field: Science and Engineering. ***value:*** Variable. ***number:*** 2. ***duration:*** 1 year. ***conditions:*** Awarded annually to students on the Fredericton campus, one in Science, giving preference to Physics, and one in Engineering. The recipients must have completed at least the normal requirements for the first year of their program at UNB. Selection is made on the basis of scholastic attainment and financial need. ***donor:*** Family, colleagues and friends of the late Dr. Theodore Weiner, Professor Emeritus of Physics, who taught at UNB from 1947-1975.

Roberta Wilson Weiner Scholarship
field: Arts. ***value:*** Approximately $1,000. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded annually to a student on the Fredericton campus who has successfully completed at least the first year of an Arts degree program on the Fredericton campus. Selection is to be made on the basis of academic achievement and financial need. Through this scholarship, the donor hopes to encourage students to enter such fields as library, archives, gallery or museum work. This scholarship is tenable at UNBF. ***donor:*** Mrs. R.W. Weiner.

Richard Laurence Weldon Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Awarded primarily on the basis of scholastic attainment. ***donor:*** The late Sylvia Thoresen Weldon.

Weyerhaeuser Community Education Scholarship
field: Forestry or Forest Engineering. ***value:*** $3,000. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student who has completed the minimum requirements for the first year of the Bachelor of Forestry or Bachelor of Forest Engineering degree program. Preference will be given to a student from a Weyerhaeuser community in Canada. Selection will be made on academic achievement. ***awarding agency:*** The University, on the recommendation of the Faculty of Forestry. ***donor:*** Weyerhaeuser Company Limited, through the Weyerhaeuser Community Education Awards Program.

Wheatley Memorial Bursary
field: Engineering. ***value:*** Minimum $500. ***number:*** 2 or more. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to students who have completed at least the minimum requirements for the first year of the Bachelor of Science in Engineering and have demonstrated successful performance. Preference maybe given to married students. ***apply:*** Assistant Registrar, Undergraduate Award***. awarding agency:*** The University. ***donor:*** Family of Professor Eric Wheatley, founder and long time head of the Mechanical Engineeriung Dept. & his wife Wenonah Wheatley, a member of the Faulty Women's Club and long-time supporter of the student wive's organization.

Frank McLeod Whelpley Scholarship
field: Unrestricted. ***value:*** $200. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Deserving young man who needs financial assistance to complete his university course. ***donor:*** Mrs. C.W. Whelpley.

Leah Whitton Graduate of A. J. MacMaster School of Nursing Memorial Bursary
field: Nursing. ***value:*** $250 ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need and successful academic performance, to a student, at the completion of the normal requirements for the first year of the Nursing degree program at the Moncton site. ***awarding agency:*** The University in consultation with the Nursing faculty at the Moncton Site. ***donor:*** Mr. Bill Whitton and Mrs. Edna Whitton, parents of the late Leah Whitton, a 1994 graduate of the A.J. MacMaster School of Nursing.

H. D. Woods Memorial Bursary
field: Business Administration. ***value:*** Approximately $700. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded on the basis of financial need to a student continuing beyond the first year (30 ch) in the BBA program on the Fredericton campus. The recipient must have at least an average academic record. This Bursary was established to recognize the outstanding contributions made by the late Professor H.D. Woods to industrial relations, and to the students and Faculty of Administration at UNB. ***awarding agency:*** The University on the recommendation of Faculty of Administration. ***donor:*** Friends and family of the late H.D.

Johann Wordel Scholarship
field: Civil Engineering. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year (may be renewed.) ***conditions:*** Awarded to Fredericton campus students who have completed at least 30 credit hours or one year of study in the Civil Engineering degree program and have achieved at least a B+ average (3.3 gpa). This scholarship is open to second and third year students in Civil Engineering and may be renewed through annual application procedures if the student maintains at least a B+ or 75% average (3.3 gpa). Recipients must have been born in New Brunswick or have resided in New Brunswick 10 months prior to attending UNB. ***awarding agency:*** The University on the recommendation of the Faculty of Engineering. ***donor:*** The late Johann Wordel.

Dr. Haider R. Zaidi Memorial Scholarship
field: Physics or Mathematics. ***value:*** Approximately $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a Fredericton campus student majoring in Physics or Mathematics who has successfully completed the minimum credit hour requirements for two years of study and a has achieved a minimum GPA of 3.7. Selection will be based on scholastic attainment and financial need. Preference will be given to Physics students. ***awarding agency:*** The University, on the recommendation of the Faculty of Science. ***donor:*** Family of the late Dr. Haider R. Zaidi.

PRIZES AND AWARDS

For regulations and general Information please refer to the Financial Information Section / Scholarships, Prizes and Awards.

Tom Acheson Prize in Art Education
conditions: A prize of $500 to be awarded annually on the recommendation of the Faculty of Education to a graduating student who has demonstrated outstanding talent in the field of Art Education. The recipient will have attained both a high overall academic standard and an acceptable level of competence in at least three Art Education courses. The prize has been sponsored by the Provincial Department of Education through the Fred Magee Fund.

Aesthetics Book Prize
conditions: A prize, normally a book, is awarded on the recommendation of the Department of Philosophy to a student with high standing in a course in Aesthetics offered by the Department at the Introductory or Intermediate Levels in the Regular Session on the Fredericton Campus. The prize has been funded by an anonymous donor.

Bernice Alderman Memorial Prize in Psychology
conditions: A prize of approximately $150 to be awarded to an outstanding student on the Saint John campus graduating in an honours program in Psychology. The prize is funded by friends of the late M. Bernice (Gorman) Alderman, an honours student.

Alumni Medal
conditions: A medal is offered each year by The Associated Alumni to the most outstanding Latin scholar among the undergraduates. The award is made by the Society upon the recommendation of the Department of Classics and Ancient History. No student may receive the medal twice.

Alumni Prize
conditions: Up to four prizes of $250 each awarded to the students on both campuses who make the highest grade point average on the examinations in the required subjects of the Freshman year. The prize is funded by the UNB Associated Alumni.

Ambassador of Austria's Prize I
conditions: A book prize to be awarded annually on the recommendation of the Department of German and Russian to the best student or students in German. The prize is donated by the Government of Austria.

Ambassador of Austria's Prize II
conditions: A book prize awarded annually on the recommendation of the Department of Humanities and Languages (German section) to a student on the Saint John campus, who has shown a high level of achievement and interest in the language and civilization of German-speaking countries. The prize has been funded by the Government of Austria.

Ambassador of France's Prize I
conditions: A book prize to be awarded annually on the recommendation of the Department of French to a graduating student who has shown a high level of achievement and interest in literature courses taken for upper year credit. The prize has been funded by the Government of France and is open to students on the Fredericton campus.

Ambassador of France's Prize II
conditions: A book prize awarded annually on the recommendation of the Department of Humanities and Languages (French Section) to a student who has shown a high level of achievement and interest in courses taken for upper year credit. The prize has been funded by the Government of France and is open to students on the Saint John campus.

Ambassador of Spain's Prize I
conditions: A book prize to be awarded annually on the recommendation of the Department of Culture and Language Studies to a student on the Fredericton campus who has demonstrated a high level of achievement and interest in first year Spanish. The prize has been funded by the Government of Spain.

Ambassador of Spain's Prize II
conditions: A book prize to be awarded annually on the recommendation of the Department Culture and Language Studies to a student on the Fredericton campus who has shown a high level of achievement and interest in advanced level language and literature courses. The prize has been funded by the Government of Spain.

Ambassador of Switzerland's Prize (French)
conditions: A book prize to be awarded annually on the recommendation of the Department of Humanities and Languages (French Section) to the Saint John campus student who has made the greatest progress in mastering the French language since entering the University. The prize has been funded by the Government of Switzerland.

Ambassador of Switzerland's Prize (German)
conditions: A book prize to be awarded annually on the recommendation of the Department of Humanities and Languages (German Section) to a Saint John campus student who has shown a high level of achievement in either German 1000 or German 2000. The prize has been funded by the Government of Switzerland.

Ambassador of Switzerland's Prizes
conditions: Two book prizes in French and German awarded annually on the recommendation of the Department Culture and Language Studies to the graduating students who have made the greatest progress in mastering the French or German language since entering the University. The prizes are open to students on the Fredericton campus, are funded by the Government of Switzerland.

Analytical Chemistry Prize UNBF
conditions: A prize of $200 to be awarded to a Fredericton campus student who achieves high standing in a Sophomore level course in Analytical Chemistry. The prize is funded by the Department of Chemistry.

Analytical Chemistry Prize UNBSJ
conditions: A prize of $200 to be awarded to a Saint John campus student who achieves high standing in a Sophomore level course in Analytical Chemistry. The prize is funded by the Saint John Labratory Services.

Marion Anderson Memorial Prize
conditions: A $1,500 prize awarded annually to the most promising student entering the Junior level (61-90 ch) Honours program in English Literature. awarding agency: The University on the recommendation of the Department of English. The prize is funded by Ethel Anderson.

Nels Anderson Prize in Sociology
conditions: A prize of $125 to be awarded annually on the recommendation of the Department of Sociology to the student majoring or honouring in Sociology on the Fredericton campus entering final year (completed 90 to 96 ch) with the highest standing in Sociology courses (minimum 24 ch which must include the 3rd year required courses). The prize has been funded by faculty members in the Department of Sociology.

Andrin-Mathis Prize in Management
conditions: A $250 prize to be awarded annually on the recommendation of the Faculty of Engineering to the student who has successfully completed the Technology Management and Entrepreneurship Diploma program who demonstrates repeated leadership skills in the area of conflict resolution and situational management amongst their peers during the TME diploma program. Graduate students as well as undergraduate students may be considered for this prize. The prize is funded by George Andrin, BScEng (Mechanical), Class of 58 with matching funds from 3M, Mathis Instruments and others.

Anthropology Book Prize
conditions: A book to be awarded annually on the recommendation of the Department of Anthropology to the best graduating honours student in anthropology on the Fredericton campus. The prize is funded by the Department of Anthropology.

APEGNB Prize I
conditions: Two prizes of $500 each, one prize may be awarded annually on each campus, on the recommendation of the Faculty of Engineering and Geoscience to a student who has completed the first year of the Engineering or Geoscience degree program, and has attained a high academic standing. The prize is funded by the Association of Professional Engineers and Geoscientists of New Brunswick Foundation for Education.

APEGNB Prize II
conditions: Two prizes of $500 each, one prize may be awarded annually on each campus, on the recommendation of the Faculty of Engineering and Geoscience to a student who has completed two years of the Engineering or Geoscience degree program, and has attained a high academic standing. The prize is funded by the Association of Professional Engineers and Geoscientists of New Brunswick Foundation for Education.

APEGNB Prize III
conditions: a prize of $500 may be awarded annually on the recommendation of the Faculty of Engineering and Geoscience to a student who has completed three years of the Engineering or Geoscience degree program, and has attained a high academic standing. The prize is funded by the Association of Professional Engineers and Geoscientists of New Brunswick Foundation for Education.

APEGNB Saint John Branch Wallace Rupert Turnbull Memorial Prize
conditions: A prize of $600 to be awarded annually to a deserving student who is enrolled in the second year of studies in the Engineering program at UNB Saint John, who has achieved high academic standing and who has not received a major prize. An award presentation may be made at an A.P.E.N.B. event in addition to the UNBSJ ceremony. The prize is funded by the Saint John Branch of the Association of Professional Engineers of New Brunswick, and named to honour the late Wallace Rupert Turnbull, the Rothesay inventor of the variable pitch propellor and member of the Canadian Science and Engineering Hall of Fame.

Applied Statistics Centre Prize
conditions: A prize of $100 to be awarded each term on the recommendation of the Applied Statistic Centre to Fredericton campus students for outstanding achievement in STAT 3093. The prize is funded by the UNB Applied Statistics Centre.

Archaeology Book Prize
conditions: A book to be awarded on the recommendation of the Department of Anthropology to a graduating honours student on the Fredericton campus who demonstrates successful academic performance in archaeology. The prize is funded by the Department of Anthropology.

C. W. Argue Prize
field: Science. *value:* Up to $2,000. *number:* 1 or more. *duration:* 1 year. *conditions:* A Science student having high academic standing and entering either the third or the fourth year. ("Year" refers to the particular year of the program as specified in the calendar description of the various BSc degree options.) When two scholarships are given, they will be awarded as follows: (a) the first one to a Science student, other than one majoring in Biology, (b) the second one to a Biology Major student. The selection of the recipient(s) will be made by the Dean of Science and the heads of the Science Departments.

Athletic Achievement Awards
conditions: A fund has been established by R.H.B. McLaughlin (CE'43), student athlete and long-time professor of Civil Engineering at UNB. The objective of the fund is to provide a means whereby the Alumni and the University can recognize achievement by individual athletes or athletic teams representing the University in National or International competition in the category of major sports. The awards consist of suitable memorabilia or functions to honor or recognize those who have achieved special recognition. An on-going committee has been established by the donor with the funds being administered by the Alumni director who is the permanent member of the Awards committee.

Atlantic Chapter - ACI Award
conditions: A $100 prize is awarded each term to the student enrolled in Bachelor of Science in Engineering (Civil Engineering) degree program on the Fredericton campus who has submitted the best Senior Report in the general area of concrete. If there is no suitable submission for the competition in one term then a single award of $200 is presented to the winner. Selection is made by a panel of judges consisting of faculty members within the Department of Civil Engineering. The prize is funded by ACI- Atlantic Chapter.

Richard J. Bagley Memorial Prize in Canadian Literature
conditions: A prize of $100 to be awarded on the recommendation of the Department of English to an outstanding student who achieves the highest grade point average in at least two upper level courses in Canadian Literature. This prize is funded by the friends and family of Richard J. Bagley, BA '72, MA '79.

Dr. A. G. Bailey Alumni Prize
conditions: A $250 prize awarded annually on the recommendation of the History Department to a student entering the Senior level (91-120 ch) who has attained high academic standing and also demonstrated a wide interest in History. This prize is funded by the Associated Alumni.

Loring Woart Bailey Prize in Science
conditions: This prize of $500 was established by the late Joseph Whitman Bailey of the class of 1884 in memory of his father, Loring Woart Bailey, LLD, Professor of Science in the University for nearly fifty years (1861-1907). The prize is to be given alternately in the Departments of Biology and Geology. The award is made on the recommendation of the Department concerned.

Walter Baker Memorial Prize in Physics
conditions: This prize has been established by the faculty members of the Department of Physics in memory of Professor Walter Baker, formerly a professor of Physics at the University from 1955-1970. It is awarded on the recommendation of the Department of Physics to a deserving student graduating in Physics. The number of the awards and their value will be at the discretion of the department but there will normally be one prize annually to the value of $100.

Dorothy Bennett Elson Prize
conditions: An annual prize of $250 has been established by the Associated Alumnae and is awarded to the female student on the Fredericton campus who achieves the highest standing in first year Physics.

Viscount Richard Bedford Bennett Prize (Education)
conditions: Two annual prizes of $250 each have been established by the late Viscount Bennett, to be given to two outstanding students selected by the Faculty of Education, one to be entering the final year of the Concurrent program and one to be entering the final year of the Consecutive program.

Viscount Richard Bedford Bennett Prize (Forestry)
conditions: Two annual prizes of $250 has been established by the late Viscount Bennett to be given to two outstanding students selected by the Faculty of Forestry and Environmental Management, one to be entering third year and one to be entering fourth year.

Biology Club Prize
conditions: A prize of $100 to be awarded annually on the recommendation of the Biology discipline and the executive of the Biology Club to a full-time student majoring in Biology on the Saint John campus, in any year beyond the second year, who has shown the greatest improvement in his/her assessment year grade point average in successive years. The prize is being funded by the Biology Club.

James T. Black Award
conditions: An award of $5,000 to be given annually, on the recommendation of the Faculty of Administration, to a full-time student entering the final year of a graduate or undergraduate degree program offered by the Faculty of Administration on the Fredericton campus. Preference will be given to a student with a good academic record who has made a significant contribution to the work of the Centre for International Marketing and Entrepreneurship. The award has been established by the Molson Companies Donation Fund to honour James T. Black, Former Chair of the Board of the Molson Companies Limited.

British High Commissioner's Prize
conditions: A book prize awarded annually on the recommendation of the Department of History and Politics. The prize will be awarded alternately to the student with the highest course mark in POLS 2530, The Government of Great Britain, and the student with the highest course mark in HIST 1150, The History of Modern Britain. The prize has been funded by the British High Commissioner and is open to students on the Saint John campus.

John Storrs Brookfield Prize
conditions: A prize of $1,400 has been established by the late Dr. J.S. Brookfield to be given to a student entering the third year deemed by the professors of Science to be the most promising student in Natural Science. ("Year" refers to the particular year of the program as specified in the calendar descriptions of the various BSc degree options.)

Kingsbury Browne Sr. Memorial Prize
conditions: An annual award valued at approximately $800 has been established in memory of Kingsbury Browne Sr., a founding director of the Miramichi Salmon Association, Inc., by the Browne family, friends, and members of the Association. It is awarded to a student, majoring in Biology, entering the final year, who has excelled in the general area of vertebrate zoology. Preference is given to a resident of New Brunswick.

Sam & Elenore Budovitch Prize in The Humanities
conditions: A prize of approximately $100 to be awarded annually on the recommendation of the Department of Humanities and Languages to an outstanding student who achieves high standing in Classics courses. The prize has been funded by the late Elenore Budovitch.

Sam Budovitch Memorial Prize
conditions: A prize of $600 to be awarded annually on the recommendation of the Department of Civil Engineering to the student with the highest standing in first year Civil Engineering (35-40 ch). Funded by the late Mr. Sam Budovitch.

Sandra Budovitch Memorial Prize
conditions: Mr. and Mrs. Sam Budovitch have established an award in memory of their daughter, Sandra. The prize, having a value of approximately $175, will be given annually to the graduating student having the highest average in Honours Sociology.

Sherry Budovitch Prize in Elementary Education
conditions: A prize of $60 to be awarded annually on the recommendation of the Department of Curriculum and Instruction, to an outstanding graduating student in the Bachelor of Education (Early Years) program based on student teaching performance. The prize has been funded by Sherry (Budovitch) Rioux.

M. D. B. Burt Prize for Biology in Nursing
conditions: A $200 prize to be awarded annually to the graduating student at the Moncton site who has the highest overall standing in Biology courses completed as part of his/her Bachelor of Nursing degree. This prize is funded by Andy S. Didyk.

Business Administration Society Outstanding Student Award
conditions: A prize donated by UNB Business Administration Society to be awarded annually to the outstanding student, studying on the Fredericton campus, in the fourth year of Business Administration. The prize is awarded on the basis of the student's participation in campus activities, scholastic standing, character and attitude.

Edwin Botsford Busteed Memorial Prize
conditions: An annual prize of $675, bequeathed by the late Mrs. Elliott Henderson Busteed, is to be given to a student having the highest standing in Junior level (61-90 ch) Economics.

Adam and Dora Cameron Prize
conditions: An annual prize of $500 to be awarded to a student who, upon completion of the Freshman year, has made the highest standing in the work of the Freshman year.

Canadian Institute of Forestry Merit Award
conditions: The Canadian Institute of Forestry Merit Award will be awarded to the student graduating with either a Bachelor of Science in Forestry degree or a Bachelor of Science in Forest Engineering degree who, in the opinion of the Committee of Award, has been outstanding in his class, taking into consideration academic standing and participation in faculty activities.

Canadian Society for Chemical Engineering Prize
conditions: A certificate of merit, engraved medal and a cash award of $50 are donated annually by the Canadian Society for Chemical Engineering, to be awarded to a student completing the penultimate year of Chemical Engineering with the highest standing.

Canadian Society for Chemistry Silver Medal
conditions: A certificate of merit and an engraved medal are donated annually by the Canadian Society for Chemistry, to be awarded to the student with the highest standing in Chemistry and related subjects in the penultimate year.

Canadian Society for Civil Eng. Certificate of Achievement
conditions: An award of a certificate and a one-year associate membership in the Canadian Society for Civil Engineering, to be awarded on the recommendation of the Department of Civil Engineering to the top graduating Civil Engineering student, based on the regular work in the final two years (greater than or equal to 48 ch) of the student's regular program. The award is provided by the Canadian Society for Civil Engineering, Atlantic Region.

Canadian Society of Petroleum Geologists Award
conditions: An award of a certificate and one-year student membership in the Canadian Society of Petroleum Geologists, to be given to a deserving student on each campus nominated by the members of the Geology discipline and Geology Department. The award is provided by the Canadian Society of Petroleum Geologists.

Bliss Carman Memorial Prize
conditions: A $250 prize awarded annually on the recommendation of the Department of English to an undergraduate submitting the best group of six poems of not more than forty lines each. No student may win the scholarship more than twice. The prize is funded by the late Dr. Lorne Pierce.

Erskine Ireland Carter Memorial Prize in Business Admin.
conditions: A prize of $500 to be awarded annually on the recommendation of the Faculty of Business to the graduating student in Business on the Saint John campus who has attained high academic standing, and has shown exemplary service to the university community. The prize has been funded by family and friends of the late Erskine Ireland Carter (BA Honours Psychology, UNB, 1992, and was enrolled in MBA). He was an outstanding student in Business Administration and Psychology on the Saint John campus, and he epitomized scholastic excellence and strength of character.

Erskine Ireland Carter Memorial Prize in Psychology
conditions: A prize of $500 to be awarded annually on the recommendation of the Department of Psychology to the student on the Saint John campus who is entering the final year in Psychology and has attained high academic standing, and shown exemplary service to the university community. The prize has been funded by family and friends of the late Erskine Ireland Carter (BA Honours Psychology, UNB, 1992, and was enrolled in MBA). He was an outstanding student in Psychology and Business Administration on the Saint John campus, and who epitomized scholastic excellence and strength of character.

W. S. Carter Memorial Prize
conditions: An annual scholarship of $240, established by the late Mrs. W.S. Carter, is given to an outstanding student in Freshman level (1-30 ch) English.

Robert Ellis Dieuaide Cattley Prize in Classics
conditions: A prize in memory of the late Dr. R.E.D. Cattley, long-time Professor and Head of the Department of Classics and Ancient History, and Professor Emeritus, to be awarded annually to the undergraduate student or students in the Arts Faculty on the Fredericton Campus who have successfully completed 30 ch of courses with at least 6 ch of introductory Classics courses offered by the Department. The prize will be awarded on the recommendation of the Department of Classics and Ancient History and will be based on the student's overall interest and academic performance. The prize is funded by the family of Dr. Cattley, and by friends, colleagues, and former students.

Certified General Accountants Association of NB Prize
conditions: One prize of $500 to a Fredericton campus student and one prize of $500 to a Saint John campus student are awarded annually to the students entering the final year of study (90-120 ch) in the Business Administration program who attain the highest grade point average for the campus in the required course in Intermediate Accounting II and any two optional accounting courses, and who is not in receipt of any other accounting award. The recipients must indicate an interest in the CGA Program of Professional Studies. The prize has been funded by the Certified General Accountants Association of New Brunswick.

James K. Chapman Prize in History
conditions: A prize of $100 to be awarded annually on the recommendation of the Department of History for the outstanding presentation of a historical topic in such alternative forms as voice recordings, video tapes, games analyses, or computer projects. The prize has been established by Professor James K. Chapman to promote forms of expression in historical study other than written essays.

Rhoda Chapman Memorial Prize
conditions: Two prizes of $1750 each to be awarded annually, on the recommendation of the Undergraduate Committee in the Department of History, to Fredericton campus students who have demonstrated outstanding academic achievement and have shown promise in at least one undergraduate or graduate course in the field of art history. At least one annual prize will normally be awarded to a student who has not yet completed more than 66 credit hours at the time of the award. The prize has been established to commemorate Rhoda Chapman's love of art, to reward students for outstanding achievement and to encourage further study in the field of art history. Rhoda Chapman was the wife of the late James K. Chapman, Professor of History, UNB Fredericton.

Chemical Engineering Faculty Prize
conditions: An annual prize of $150 has been established by the faculty members of the Department of Chemical Engineering to be awarded to the student who has attained the highest standing in the final year of Chemical Engineering.

Cherry Brook Zoo Prize in Zoology
conditions: An annual prize of $200 awarded to the student entering the final year of the BSc Biology major program at UNBSJ who has achieved the highest grade point average in at least 14 credit hours of the upper-level Zoology courses completed at UNBSJ. The prize is funded by the Cherry Brook Zoo, Saint John, and will be awarded on the recommendation of faculty teaching Zoology courses.

K. R. Chestnut Memorial Prize
conditions: An annual prize of $1,650 was bequeathed to UNB by the late Mrs. Annie H. Chestnut. It is to be awarded to an outstanding student in the Faculty of Engineering on the recommendation of the Engineering Awards Committee.

Simon and Dora Chippin Award
conditions: A prize of $250 awarded to a worthy student in need of financial assistance entering the second year of a program leading to a bachelor's degree in the Faculty of Forestry and Environmental Management. The prize is funded by the late Simon and Dora Chippin.

CIF/UNB Joint Professional Development Forestry Award
conditions: Awards to be used to help defray travel expenses for attending the Annual General Meeting of the Canadian Institute of Forestry, to be awarded annually on the recommendation of a committee made up of representatives of the CIF Maritime Section and the Faculty of Forestry and Environmental Management, to continuing students after completion of at least 30 ch in the BScF or BScFE degree programs. The award has been funded by the Maritime Section of the CIF and the Faculty of Forestry and Environmental Management.

CIS Academic All-Canadian
conditions: Certificates and a monetary prize will be awarded annually on the recommendation of the Director of Athletics to the student-athletes who have achieved at least a 3.5 assessment grade point average and have contributed significantly to a varsity sport on the Fredericton campus. This prize is supported by the Canadian Interuniversity Sport and funded by the Friends of the Varsity Reds.

City of Saint John Award
conditions: A prize of $200 and a plaque to be awarded annually at Spring Convocation on the Saint John Campus to the academically outstanding graduating student who completes his/her degree while registered in a Saint John Campus program. The prize has been funded by the Saint John Faculty.

City of Fredericton Award
conditions: The City of Fredericton offers a sum of money, not less than $200, for competition in the Department of Civil Engineering and Chemistry and in the Faculty of Forestry and Environmental Management in rotation. The prize, which heretofore took the form of a gold medal, was offered for the first time in 1908.

Class of 1909 Prize
conditions: Through the generosity of graduates of the class of 1909, a prize of $2,800 will be given annually to a member of the graduating class who has shown distinction in the final year, but who has not qualified for an award otherwise.

CMA Canada Prize
conditions: A prize of $500 is awarded annually to the students enrolled in the BBA program on each campus who attains the highest grade point average in the following management accounting courses: UNB Saint John - BA 2217 and BA 3224; UNB Fredericton - ADM 2223 and ADM 3225. The recipient must not have received any other accounting award. Donor: CMA Canada. (The Society of Management Accountants of New Brunswick).

Michael R. Cochrane Memorial Medal
conditions: A medal donated by UNB, Fredericton campus SRC to be awarded annually to a student enrolled in the final year on the Fredericton campus and maintaining a satisfactory academic standing. The medal is awarded on the basis of contributions to improving human and community relations.

Della H. Cody Memorial Prize
conditions: A prize with a minimum value of $300 to be awarded annually on the recommendation of the Faculty of Education to the outstanding student in the first or second year of the Concurrent program with the Faculty of Kinesiology. The prize has been funded by friends of the late Della H. Cody.

R. J. Collier Memorial Prize
conditions: A $1000 prize awarded annually on the recommendation of the Electrical Engineering Department to an undergraduate Electrical Engineering student entering the graduating year of his or her studies who has demonstrated the best combination of the qualities of good scholarship and active interest in matters outside the scope of the regular program of study. The prize is funded by friends and students of the late Professor R.J. Collier.

Computer Science Prize for Best Senior Honours Thesis
conditions: A prize of $200 to be awarded annually on the recommendation of the Faculty of Computer Science to the Fredericton campus BCS student (or BCS concurrent degree student) whose senior honours thesis (CS4997) is judged to be the best in that academic year.

Computer Science Prize for Best Senior Technical Report
conditions: A prize of $100 to be awarded annually on the recommendation of the Faculty of Computer Science to the Fredericton campus BCS student (or BCS concurrent degree student) whose senior technical report (CS4983) is judged to be the best in that academic year.

Computer Science Prize I
conditions: A prize of $250 to be awarded annually to the best student who has just completed one year of study with a minimum of 35 ch on the Fredericton campus in the Bachelor of Computer Science program. The prize is awarded on the basis of academic performance in the first year of studies in the degree program.

Computer Science Prize II
conditions: A prize of $250 to be awarded annually to the best student on the Fredericton campus who has just completed three years of study with a minimum of 100 ch in the Bachelor of Computer Science program. The prize is awarded on the basis of academic performance in the third year of studies in the degree program.

Consulate General of the Federal Republic of Germany Prize
conditions: Two book prizes to be awarded annually on the recommendation of the Department of Humanities and Languages (German section) to Saint John campus students who have shown a high level of achievement in German 1000 and German 2000 respectively. These prizes have been funded by the Consulate General of the Federal Republic of Germany.

Dr. Philip Cox Memorial Prize
conditions: A $200 prize awarded annually to a student entering the third year and majoring in Biology who, in the opinion of the staff of the Department of Biology, shows the greatest promise. ("Year" refers to the particular year of the program as specified in the calendar descriptions of the various BSc degree options.)

CPMS Prize
conditions: Two prizes of $500 awarded annually on the recommendation of the Faculty of Administration to Fredericton campus students enrolled in ADM 4450 or MBA 6450. Selection will be based on academic achievement, presentations, leadership, initiative, and commitment to teamwork. The recipients must demonstrate skill in the use of the CPMS Canadian Equity Market Service. This prize is funded by C.P.M.S. Computerized Portfolio Management Service Inc.

CRC Press Freshman Chemistry Achievement Award
conditions: Copies of the current edition of the Handbook of Chemistry and Physics to be given to deserving students selected by the instructors in Freshman Chemistry on each campus. The awards are funded by the publisher, CRC Press, and by faculty members in Chemistry.

CSEP/SCPE Undergraduate Student Award
conditions: A medallion and a citation is awarded annually on the recommendation of the Faculty of Kinesiology to the student graduating with a Bachelor of Science in Kinesiology who has achieved the highest academic standing in the scientific portion of the curriculum. This award is provided by the Canadian Society for Exercise Physiology/Société Canadienne de Physiologie de l'Exercice.

Dept. of Culture & Language Studies Third Century Award
conditions: A prize of approximately $450 to be awarded annually on the recommendation of the Department of Culture and Language Studies to a Fredericton campus student who has completed second year Spanish courses with distinction and is enrolled in third or fourth year Spanish courses. Preference will be given to students planning to complete Single or Joint Honours or a Single or Double Major in Spanish. The prize has been funded by members of the Department of Culture and Language Studies. A student may receive this award more than once.

Christopher Cusack Computer Science & Data Analysis Prize
conditions: A prize of $300 to be awarded annually on the recommendation of the Department of Computer Science and Applied Statistics to a student graduating with a BDA or BSc(CS) degree. In the event of a tie, preference will be given to a student graduating with a BDA degree. The prize is awarded based on performance in DA4993 or CS4993. The prize is funded by friends of the late Christopher Cusack BSc(DA)'81.

Marshall D'Avray Prize in English Literature
conditions: This prize of $500 was made available through a legacy of the late Joseph Whitman Bailey of the class of 1884 to provide a prize in English Literature in memory of his grandfather, Joseph Marshall d'Avray, sometime Professor of Modern Languages at UNB 1848-1872. The prize is to be awarded annually to an undergraduate student in one of the regular courses of the Junior level (61-90 ch) who has shown the most promise in the subject of English Literature. The award is made on the recommendation of the Chair of the Department of English.

Arun Datta Prize
conditions: A prize of approximately $250 to be awarded annually on the recommendation of the Department of Economics to an outstanding student on the Fredericton campus who achieves high standing in ECON 3401 International Economics: Trade. The prize has been funded by colleagues, family and friends of the late Dr. Arun Datta.

Deloitte & Touche Prize in Accounting
conditions: Two prizes of $1,000 each for students in the Business Administration degree program: one prize awarded to a full-time student on the Fredericton campus, and one prize awarded to a full-time student on the Saint John campus. Recipients must have high standing in Accounting courses, including Intermediate Accounting I (ADM 3215 - UNBF, BA 3235 - UNBSJ), and Intermediate Accounting II (ADM 3216 - UNBF, BA 3236 - UNBSJ), and have completed 90 ch of the BBA degree program at UNB. The prize is funded by Deloitte & Touche.

Department of English Book Token Prize
conditions: A certificate for the purchase of book(s) to be awarded annually on the recommendation of the Department of English, Fredericton, to the student who produces the best essay in a 1000-level English course and is in the second or higher year of study. The prize is funded by the Department of English.

Dept. of French Prz. Graduates High School Immersion French
conditions: An annual prize to be awarded to the student on the Fredericton campus, graduate of a High School Immersion Program, whom the Department of French considers to have done the most satisfactory work (6 ch) in French 1184 and French 1194. The prize has been sponsored by the Department of French.

Dept. of Humanities & Languages Prize in English
conditions: A prize of $100 to be awarded on the recommendation of the members of the English discipline Saint John campus, to the student who has achieved the highest standing over at least 24 ch of courses in English completed within the first 90 ch. The prize is funded by the Department of Humanities and Languages.

Dept. of Humanities & Languages Prize in Philosophy
conditions: A prize of $170 to be awarded annually on the recommendation of the Department of Humanities and Languages (Philosophy Discipline) to the student who has achieved the highest standing over at least 24 ch of courses in Philosophy completed within the first 90 ch. The prize is funded by the Department of Humanities and Languages.

Eugene E. Derenyi Alumni Prize in Remote Sensing
conditions: A $500 prize to be awarded annually on the recommendation of the Department of Geodesy and Geomatics to the Fredericton campus student who achieves the highest grade in the remote sensing course GGE 3342: Imaging and Mapping I. The prize is funded by contributions from Alumni at the GGE (SE) 40th Anniversary Reunion held June 22-23, 2001.

T. G. Dilworth Prize for Biology in Nursing
conditions: A $200 prize to be awarded annually to the graduating student at the Bathurst site who has the highest overall standing in Biology courses completed as part of his/her Bachelor of Nursing degree. This prize is funded by Andy S. Didyk.

Douglas Gold Medal
conditions: A gold medal is offered for competition every year among undergraduates. This medal was founded by the late Sir Howard Douglas, Lieutenant-Governor of the Province of New Brunswick and first Chancellor of King's College. It is awarded for the best composition in prose or verse in the Greek, Latin or English languages, on any subject within the regular course of study pursued in the university. Undergraduate theses or reports may be considered along with essays or verse compositions produced as part of regular class work. They may be revised by the student on the basis of instructors' comments. Compositions are submitted by instructors, with the consent of the student, through the department to a committee appointed by the Dean of Graduate Studies and Research. The medal is awarded at Encaenia.

Dr. James Downey Student Leadership Award

conditions: Awarded on the basis of "outstanding contribution to student life" to a student who is a member of the UNB Student union (ie. Paid the student activity fee). The recipient must be in good academic standing. The award is made on the basis of nominations. Advertisements for the award and a call for nominations or applications will be made annually by the Office of the Director of Student Affairs and Services. Ideally, the award is to be presented at the Annual Student Union Banquet. Should there be no banquet, the Director of Student Affairs and Services may select another appropriate forum. awarding agency: A Committee formed by the Director of Student Affairs and Services to include representation from the Undergraduate Awards Office.

Dr. A. Wilmer Duff Memorial Prize

conditions: Dr. Ella Duff Good has given a prize of $100 in memory of her father, Dr. A. Wilmer Duff, who was a graduate of the University and later taught with distinction at the institution. It is to be awarded to a deserving student in the final year of Physics, but may be given in any other science if there is not a qualified student in Physics.

Cyrus and Anne Eaton Prize in American Studies

conditions: Prizes in American History and American Literature, awarded annually to the student or students in the graduating class judged to have done the most distinguished work in American studies. The awards will be determined by a committee of professors from the different Departments offering courses in American studies.

English Departmental Essay Prizes

conditions: **Prize I** - A prize of $100 to be awarded annually on the recommendation of the Department of English to a student on the Fredericton campus who has completed the normal requirements for the first year of the program in which the student is registered, and has written an outstanding essay in any English course in that year.
Prize II - A prize of $100 to be awarded annually on the recommendation of the Department of English to a student on the Fredericton campus who has completed the normal requirements for the second year of the program in which the student is registered, and has written an outstanding essay in any English course in that year.
Prize III - A prize of $100 to be awarded annually on the recommendation of the Department of English to a student on the Fredericton campus who has completed the normal requirements for the third year of the program in which the student is registered, and has written an outstanding essay in any English course in that year. The prizes have been funded by the English Departmental Prize Fund.
Prize IV - A prize of $100 to be awarded annually on the recommendation of the Department of English to a student on the Fredericton campus who has completed the normal requirements for the fourth year of the program in which the student is registered and has written an outstanding essay in any English course in that year. The prize has been funded by the English Departmental Prize Fund.

Ernst & Young Prize

conditions: A prize of $500 is awarded annually to the student enrolled on a full-time basis in the Business Administration program who attains the highest grade point average in the required courses in Managerial Accounting, Quantitative Methods and Analysis, and Corporate Finance. The courses must be taken at UNB but may be taken during the regular academic year, intersession or summer school. All students who complete the final course of the series in the twelve months ending 31 August will be considered for the prize.

Christena Estey Memorial Award

conditions: A prize of $200 to be awarded annually on the recommendation of the Department of Social Sciences, to an outstanding Saint John campus student enrolled in the Bachelor of Kinesiology, the Bachelor of Recreation & Sports Studies, or the Bachelor of Arts majoring in Sport and Exercise Psychology. The prize is being funded by family and friends of the late Christena Estey, former manager of the Bookstore and avid supporter of athletics on the Saint John campus.

G.D. Estey Memorial Prize

conditions: A book prize was established by the late Mrs. Estey in memory of her husband Gerald D. (Jake) Estey of the class of 1949. This prize is awarded to a deserving graduating student in Forestry or Forest Engineering, who, in the opinion of the Faculty of Forestry and Environmental Management, is most interested in practicing sound principles of forestry.

Exmoor Prize

conditions: A prize of $450 is awarded annually to the Fredericton campus student enrolled in the Business Administration (BBA) program who attains the highest grade point average in the required courses in Finance and in Managerial Accounting. (Currently these are ADM 2413, ADM 3415 and ADM 2223). The courses must be taken at UNB but may be taken during the regular academic year, intersession or summer school. All students who complete the final course of the group in the twelve months ending in May will be considered for this prize. (In the event of a tie, the student with the highest cumulative grade point average will be selected.) The prize has been funded by Mr. S.S. Mullin.

Faculty of Business Prize

conditions: A prize of $250 to be awarded annually on the recommendation of the Faculty of Business, on the basis of academic achievement and overall contribution to campus and community life, to an outstanding student, who is enrolled in the BBA program on the Saint John campus and has completed two years of study towards the BBA degree. The prize is being funded by faculty members and friends of the Faculty of Business.

Faculty of Forestry Senior Project Award

conditions: A book prize given to the student who presents the best senior project in Forestry or Forest Engineering. The recipient will be determined by a committee of the Faculty of Forestry and Environmental Management. The book is provided by courtesy of John Wiley & Sons Canada Ltd.

Sherif H. Fahmy Forest Soils Prize

conditions: A prize of $150 to be awarded annually on the recommendation of the Faculty of Forestry and Environmental Management to a student who has successfully completed Forestry 2505 (Soils for Plant growth), Forestry 3456 (Forest Ecology: Cycles & Flows) and Forestry 4545 (Landscape Dynamics I: Climate, Land & Vegetation), and has obtained the highest average mark for these three courses. The prize has been funded by Mr. Sherif H. Fahmy.

Barbara Elizabeth Fisher Founder Prize in Psychology

conditions: A prize of $200 to be awarded annually on the recommendation of the Saint John Psychology Department to the student who presents the best Psychology Honours thesis. The prize has been funded by the Saint John Psychology Faculty to honour B. E. Fisher, the founder of the Psychology Department on the Saint John campus.

Craig S. Fleisher Award for Scholarship & Voluntarism

conditions: A prize of $250 awarded annually upon graduation to a UNBSJ student who has served as an executive member of the Golden Key International Honour Society and who has demonstrated outstanding performance in both scholarship and in giving of themselves in voluntary service to the broader community. The selection of the recipient will be made by the Faculty Advisor of the Golden Key International Honour Society. The prize is funded by Dr. Craig S. Fleisher, on behalf of the Canadian Council for Public Affairs Advancement.

Jean Crawford Flemming Memorial Prize

conditions: A prize of $250 to be awarded in the Fall term on the recommendation of the Dean of SASE to a Saint John campus student who has completed the minimum requirements for the first year of the BCS, BSc(CS) or BDA. Student who have completed the minimum requirements for the first year of Arts or Science and have indicated their intention to Major in Mathematics or Statistics will also be considered. Selection will be based on academic achievement. The prize is funded by J. Archie Flemming, a former Professor of Mathematics and Statistics at UNB Saint John.

B. W. Flieger Memorial Prize

conditions: Two prizes of $1,250 to be awarded annually by the University on the recommendation of the Flieger Prize Committee to an outstanding student in the third year of the program leading to the degree of Bachelor of Science in Forestry or Bachelor of Science in Forest Engineering who achieved high academic standing in the second year. The prize has been funded by Forest Protection Limited.

Lucien J. Forcier Prize in Silviculture
conditions: A prize of $175 is offered from a fund established in memory of Lucien J. Forcier by his friends and colleagues to be awarded annually on the recommendation of the Faculty of Forestry and Environmental Management to an outstanding graduating student who has demonstrated achievement in Silviculture.

Forest Products Research Society Award
conditions: A prize of $100 and a one year society membership established by the Forest Products Research Society, Eastern Canadian Section, to be awarded annually, on the recommendation of the Faculty of Forestry and Environmental Management, to an undergraduate student for academic achievement in the field of wood science.

Foresters' Excellence Award
conditions: A $1000 prize to be awarded annually to a student enrolled in the fourth or fifth year of the Bachelor of Science in Forestry or Bachelor of Science in Forest Engineering degree program. Candidates are required to submit an essay on the role of the professional forester. The prize is funded by Chris Gruenwald, BSF 2004.

Archdeacon Forsyth Prize
conditions: An award of $200, established by the late Archdeacon David Forsyth, is given to the English Literature student who displays the greatest proficiency in the knowledge of English Literature. Presented on the recommendation of the Chair of the Department of English.

Dr. Berton C. Foster Memorial Prize
conditions: An annual prize of $800 to be given to a student from a Fredericton high school-other than a Beaverbrook Scholar-who has made the highest standing in the work of the Freshman year. The scholarship has been established by Mrs. Agnes S. Foster.

Norman S. Fraser Prize in Arts
conditions: A prize of $340 to be awarded annually on the recommendation of the Faculty of Arts to the student with the highest standing in the Junior and Senior years of Bachelor of Arts program. The prize has been funded by the late Norman S. Fraser.

Norman S. Fraser Prize in Education
conditions: A prize of $340 to be awarded annually on the recommendation of the Faculty of Education to a graduating student in the Bachelor of Education program who has shown potential for a high degree of professional ability as a teacher. The prize has been funded by the late Norman S. Fraser.

Norman S. Fraser Prize in Science
conditions: A prize of $340 to be awarded annually on the recommendation of the Faculty of Science to the student with the highest standing in the Junior and Senior years of the Bachelor of Science program. The prize has been funded by the late Norman S. Fraser.

Ralph St. J. and Charles E. Freeze Prize
conditions: An annual prize of $180 bequeathed by the late J. Arthur Freeze to be given to an outstanding scholar in Sophomore level (31-60 ch) English.

Gilberte Gagnon Memorial Prize
conditions: A prize of $300 to be awarded annually on the recommendation of the Department of French to the graduating student on the Fredericton campus who has, in the opinion of the Department, shown the highest achievement in the study of French linguistics. The prize has been funded by the Department of French.

L. A. Gale Prize
conditions: A $545 prize awarded annually on the recommendation of the Department of Geodesy and Geomatics Engineering to a Canadian student upon completion of six terms of Geodesy and Geomatics Engineering who shows academic promise and is in need of financial assistance.

Garson Memorial Prize
conditions: The late Abram I. Garson bequeathed the sum of $2,000 to the University, the investment earnings therefrom to be awarded annually to the student registered in the Faculty of Engineering who, in the first year, attains the highest standing. The amount will be approximately $300.

German Book Prize
conditions: A book to be awarded annually on the recommendation of the Department of Culture and Language Studies to an undergraduate or graduate student on the Fredericton campus who demonstrates outstanding performance in German language, literature or translation.

German Language Prize
conditions: A prize of $150 to be awarded annually on the recommendation of the Department of Culture and Language Studies to the best second-year Fredericton campus student (those taking specific full-year courses with 2000 numbers) in German. The prize has been funded by Departmental Faculty members.

C. H. Gibson Prize for Biology in Nursing
duration: A $200 prize to be awarded annually to the graduating student at the Fredericton site who has the highest overall standing in Biology courses completed as part of his/her Bachelor of Nursing degree. This prize is funded by Andy S. Didyk.

J. Miles Gibson Forestry Award
conditions: A prize awarded annually on the recommendation of the Gibson Award Committee to one or more students entering the second year of a program leading to the degree of Bachelor of Science in Forestry or Forest Engineering. The prize is funded by the friends of J. Miles Gibson.

Gerhard Gloss Prize in Cartography
conditions: A prize to be awarded annually on the recommendation of the Department of Geodesy and Geomatics Engineering to a student in any faculty on the Fredericton campus who has designed and published a map of high technical and artistic merit. The map may be produced using traditional or computer-assisted cartographic techniques. The prize has been funded by friends and colleagues of Professor Gerhard Gloss.

Dr. Donald Digger Gorman Prize in Geology
conditions: A $250 prize to be awarded annually on the recommendation of the Department of Geology to an outstanding Fredericton campus student entering the second year of the Bachelor of Science degree program who achieves high standing in geology. The prize has been funded by Donald Digger Gorman.

Governor General's Silver Medal
conditions: A silver medal to be awarded annually to the undergraduate student who achieves the highest academic standing in an undergraduate Bachelor's degree program. The medal is awarded at Encaenia.

Graham Prize in Military History
conditions: A $200 prize to be awarded annually on the recommendation of the Department of History, for the best essay by a student on the Fredericton campus in an undergraduate seminar in war history. The prize has been endowed by friends, colleagues, and students of Dr. D.S. Graham in recognition of his contribution to scholarship.

Paul Frederick Graham Memorial Prize
conditions: A prize of $250 to be awarded annually in memory of Paul Frederick Graham, a former student at UNB. The prize is awarded on the recommendation of the Department of Political Science to an outstanding graduating student on the Fredericton Campus who, on graduation in Political Science, has the best academic record in the final year of the program. The prize has been funded by the family of Paul Frederick Graham.

Pauline Graham Data Analysis Prize
conditions: A $300 prize to be awarded in the Fall term for a student in the BDA or BSc(CS) program who upon completion of at least 30 ch has an outstanding average in the required first level Mathematics, Computer Science and Statistics courses. The award is made on the recommendation of the Dean of SASE. The prize has been funded by friends of Pauline Graham, former Professor of Mathematics and Statistics at UNB, Saint John.

Dr. Vicky Gray Memorial Award
conditions: A $650 prize awarded annually to a Fredericton campus student engaged in full or part-time study who is entering the final year of the current degree program and has a continuing interest in and commitment to Women's Studies. The recipient normally will have completed the introductory course in Women's Studies and be pursuing a minor in Women's Studies or a comparable course of studies. A minimum grade point average of 3.0 in the last 30 credit hours undertaken is required. apply: Co-ordinator of Women's Studies, UNB, by April 15. A Selection Committee composed of the Coordinator of the Women's Studies Program, a representative of the Estate of Dr. Vicky Gray, and two other members of the Women's Studies Program will select the recipient. The prize is funded by the Estate and Friends of Dr. Vicky Gray.

Mary Grey Memorial Prize
conditions: A prize of $85 to be awarded annually on the recommendation of the Faculty of Education to a student in the Special Education area of the DAUS program. Preference may be given to those who have demonstrated an interest in working with persons with mental disabilities. The prize has been funded by the New Brunswick Association of Auxiliary Teachers and will be presented at the Graduation reception.

Allan K. Grimmer Prize
conditions: Four prizes of $1200 each awarded annually on the recommendation of the Department of Civil Engineering to students who have completed two years of study of the regular program in the Department of Civil Engineering. Preference will be given to applicants with high academic qualifications, who are not already in receipt of a major scholarship. The prize is funded by the late Allan K. Grimmer.

F. Howard Grimmer Prize
conditions: An annual prize of $200 bequeathed by Miss Bessie T. Grimmer for proficiency in the courses required for the Freshman level in the Faculty of Arts as selected by the University authorities.

Govind and Lakshmi Gujar Computer Science Prize
conditions: A prize to be awarded annually on the recommendation of the Faculty of Computer Science to the outstanding graduating student in Computer Science on the Fredericton campus with the highest cumulative grade point average. The student must have completed a minimum of three quarters of the degree program at UNB. The student receiving this prize may or may not be the same person who receives the Lieutenant-Governor of New Brunswick Silver Medal (since the selection criteria are different). The prize has been funded by Mrs. Sarita U. Gujar and Professor Uday G. Gujar to honor Prof. Gujar's parents.

Amelia Hall Memorial Prize
conditions: A prize of $300 to be awarded annually on the recommendation of the members of the Discipline of English in the Department of Humanities and Languages to a student at the Saint John campus entering the fourth year (90 to 120 ch) who has shown academic promise in prior courses in Dramatic Literature and/or Theatre Arts. The prize has been established by Mrs. M.A. MacDonald in memory of Amelia Hall, distinguished Canadian actress for many years with the Stratford Festival, and one of its founding members.

Hafiz Hamdan Education Prize
conditions: A $300 prize to be awarded on the recommendation of the Department of Mathematical Sciences to an outstanding full-time Saint John campus student who achieves the highest standing in Math 2633. The student must be enrolled in a BEd or BA/BEd program. The prize has been funded by the family of Hafiz Hamdan.

Richard Burpee Hanson Prize
conditions: A $450 prize to be awarded annually to a male student, other than a Beaverbrook Scholar, who has registered for the full Junior level (61-90 ch) in the Faculty of Arts, having completed the Freshman (1-30 ch) and Sophomore level (31-60 ch) in Arts at the University of New Brunswick or the sophomore level (31-60 ch) in Arts at such University and who has made the highest grades in English and History in the Sophomore level (31-60 ch) in Arts. The prize is funded by Mrs. R.B. Hanson.

Thomas Harrison Memorial Prize
conditions: An annual prize of $750, given to a student who has completed two years (at least 60 ch) of the program in which the student is registered, and in the opinion of the Mathematics Department, shows the greatest promise in Mathematics. This prize was established by the late Mrs. Ida G.W. Harrison.

W. H. Harrison Prize for Conversational French
conditions: A prize of $400 to be awarded annually on the recommendation of the Department of French and the Department of Humanities and Languages to the graduating student who has shown the highest achievement in the oral skills of French. The prize has been funded by the estate of the late W.H. Harrison. Students whose first language is French are not eligible.

Richard B. Hatfield Prize in Political Science
conditions: The Honourable Richard B. Hatfield (1931-1991), Premier of the Province of New Brunswick from 1970 to 1987, established an endowment fund, the proceeds of which are to be used for awarding annually the Richard B. Hatfield Prize in Political Science to the graduating student who obtains the highest average in the courses required for the Majors or Honours programs in Political Science. The prize is awarded on the recommendation of the Department of Political Science. The recipient must have achieved at least second class standing and may not be a double majors candidate for a degree.

Paul Hazelhurst Memorial Prize
conditions: A prize of $110 to be awarded annually on the recommendation of the Faculty of Administration, to a student entering the second year of the Bachelor of Business Administration degree program on the Fredericton campus. This award will be made to an outstanding student who, at the end of the regular academic year in which he or she completes 30 ch, has achieved the highest sessional grade point average. This prize has been funded by the friends of the late Paul Edward Hazlehurst.

Hebrew Congregation of Fredericton Prize
conditions: An annual prize of $100, established by the Hebrew Congregation of Fredericton, to be given to a student having the highest standing in Education.

Jason Herron Memorial Award
duration: A prize to be awarded annually to students who have completed at least 90 credit hours in the Bachelor of Forest Engineering or Bachelor of Forestry degree program on the Fredericton campus. Major consideration will be given to students who have demonstrated professionalism, a commitment to fellow students, academic leadership and whose judgement is respected by peers and faculty. Nominations from students, staff and faculty will be received by the Faculty Scholarship committee. This award is funded by friends and colleagues of Jason Herron, Forest Manager for Georgia-Pacific in New Brunswick for many years, and a UNB lecturer, 2000-03.

Barry Hoyt Student Leadership Award
conditions: An award of $1,000 and a plaque or certificate is awarded annually on the recommendation of the Office of Student Life and Support Services to a Saint John campus student who has made an outstanding contribution to student life and school spirit. The recipient has completed a minimum of two years (a minimum of 60 ch) of his or her degree on the Saint John campus; must be in good academic standing (min. 2.5 cumulative gpa); and has demonstrated outstanding leadership in student activities and/or university activities. These activities could include but not be limited to: orientation, peer mentoring and student government. This award is funded by friends and family of Barry Hoyt, the UNB Saint John Student Union and the Class of 2001.

Peter J. Hughes Sustainable Forestry Award
conditions: Awarded on the recommendation of the Faculty of Forestry and Environmental Management to a full time student on the Fredericton campus in the Faculty of Forestry and Environmental Management after the completion of at least 60 ch in the BScF or BScFE degree program. The recipient must have demonstrated a commitment to sustainable forestry practices. Preference will be given to students from Atlantic Canada who have been involved in private woodlot management. The award has been funded by family, friends and business associates in memory of the late Peter J. Hughes who was a long-time employee of the NB Federation of Woodlot Owners.

Ronald C. Hurley Award in Chemical Engineering
conditions: An award of $150 to be awarded annually on the recommendation of the students and faculty members of the Department of Chemical Engineering to a graduating student in the Department of Chemical Engineering. Made on the basis of scholastic attainment and participation in department, university and community activities. Donated by students and faculty members in the Department of Chemical Engineering.

I.O.D.E. Provincial Chapter Prize in History
conditions: Two annual prizes of $100 have been donated by the Imperial Order Daughters of the Empire, Provincial Chapter, to be awarded on each campus to a Junior level (61-90 ch) student with the highest standing in British and/or Commonwealth History.

Margaret Burton Innes Award
conditions: An award of $250 to be awarded annually on the recommendation of the Faculty of Nursing to a full-time BN student at the Moncton site. The recipient is selected on the basis of academic ability and demonstrated excellence in nursing. The award has been funded by the family of the late Margaret Burton Innes, a graduate of the former Moncton Hospital School of Nursing.

Institute of Public Admin. of Saint John Branch Prize
conditions: A prize of books and money to be awarded on an annual basis to a mature or part-time Saint John campus student based on performance in the intership programs such as POLS 4610 - Urban Studies Internship, or POLS 4612 - Urban Government Workshop. Selection of the winner will be based on the recommendation of the instructors of Economics, Political Science and Public Administration. The prize is funded by the Institute of Public Administration of Canada (Saint John Branch).

International Development Studies Essay Book Prize
conditions: A book to be awarded annually on the recommendation of the IDS Faculty Committee to the undergraduate student on the Fredericton campus who has written the best essay in an IDS core course. The prize is funded by the IDS program.

International Development Studies Honours Book Prize
conditions: A book to be awarded annually on the recommendation of the IDS Faculty Committee to the undergraduate student on the Fredericton campus who has written the best Honours thesis. The prize is funded by the IDS program.

Brydone Jack Prize
conditions: An annual prize of $540 donated by the Associated Alumni of the University of New Brunswick. It is to be awarded to the full time student who obtains the highest standing in the final two terms of the Electrical or Computer Engineering program.

D. Malcolm Jeffrey Memorial Prize
conditions: The family of the late D. Malcolm Jeffrey has established a prize of $100 to be awarded annually to the Civil Engineering student who obtains the second highest standing based on the regular (full time student) work in the final two years of the student's regular program.

R. Wayne Jollineau Prize in Business
conditions: A prize to be awarded annually on the recommendation of the Faculty of Business, to a student graduating from the Faculty of Business on the Saint John Campus showing high academic achievement and overall contribution to campus life, in particular to the enhancement of student life in this program. The prize is named for Professor R. Wayne Jollineau, who in his 25 years on the Saint John Campus was instrumental in the establishment of the four-year BBA and the Business Co-op program, as well as ensuring UNBSJ's participation in the MBA program. The prize is funded by faculty, staff, family, friends and former students of Professor Jollineau.

Peter Jollymore Award in E-Business and Commerce
conditions: A prize of $500 to be awarded annually on the recommendation of the Faculty of Business to a Saint John campus student enrolled in the E-Business and Commerce program. The prize is awarded to the student who has shown high academic achievement and has made a significant contribution to student life on campus, and in particular, to student life in the E-Business and Commerce program. The prize is funded by friends and colleagues of Peter Jollymore. A prominent business member in the community as well as internationally, Peter Jollymore served as Acting Dean of Business at the Saint John campus.

Dr. C. C. Jones Prize
conditions: A $250 prize awarded on the recommendations of the Department of Mathematics to a student who has completed the normal requirements for the first year of the program in which he/she is registered. Awarded on the basis of the record of the student in first year at the University as follows: (1) First division standing in either Mathematics 1003/1013 or 1053/1063. (2) General standing in all other subjects of the first year. (3) The worthiness of the student. Holders of a major scholarship are ineligible. The prize is funded by the UNB Associated Alumni.

Herbert E. Jones Accounting Prize
conditions: A prize to be awarded annually on the recommendation of the Faculty of Business to the student with the highest standing in the area of Accounting at UNB Saint John, who is in receipt of no other awards. The prize has been funded by the late Herbert E. Jones.

Dr. W. C. Keirstead Memorial Prize in Philosophy
conditions: This prize of $250 has been established by the Associated Alumni in memory of Dr. W.C. Keirstead, formerly a professor of Philosophy at this University. It is awarded to a full or part-time student, on either Campus, who graduates with an undergraduate Bachelor's degree during the academic year of the award, who has not previously won the award, and who makes the highest average of those eligible in any twenty four credit hours in Philosophy courses beyond the Introductory Level, of which eighteen credit hours must be in courses at the Advanced Level. The award is made on the recommendation of the Department of Philosophy and of the professors of Philosophy in the Department of Humanities and Languages.

Dr. W. C. Keirstead Prize in Economics
conditions: A prize of $200 to be awarded on the recommendation of the Department of Economics to the undergraduate student who has submitted the best research essay. The prize has been donated by Mr. and Mrs. James E. Porter.

Miles A. Keirstead Prize in Physics
conditions: A prize of $250 to be awarded annually on the recommendation of the Physics faculty members on the Saint John campus to an outstanding student who achieves high standing in a full-year Freshman level Physics course on the Saint John campus. The prize has been funded through the University Faculty Fund.

Leslie Kelly Memorial Prize
conditions: A prize to be awarded annually, on the recommendation of the appropriate faculty member in Chemistry, to the student who achieves the highest standing in second year Organic Chemistry at UNB Saint John. The prize has been funded by Dr. Ronald B. Kelly, Professor Emeritus of Chemistry, in memory of his late wife.

Ketchum Memorial Medal
conditions: A silver medal to be known as the "Ketchum Medal" has been founded according to the will of the late H.G.C. Ketchum, Esq., and is to be awarded to the top graduating student in Civil Engineering based on the regular (full time student) work in the final two terms of the student's regular program.

Murray Kinloch Memorial Prize in Linguistics
conditions: An annual prize awarded, at the discretion of the Linguistics Committee, to a student on the Fredericton campus with a distinguished record in linguistics. It is not restricted to majors or honours students in Linguistics. The prize is funded by friends and colleagues of the late Dr. Murray Kinloch.

Gottfried Konecny Survey Award
conditions: A $1500 prize awarded annually on the recommendation of the Department of Geodesy and Geomatics Engineering to a student with high academic standing, creative abilities, and a constructive attitude towards the surveying profession who has completed six terms of the Geodesy and Geomatics Engineering program. Financial need will also be considered. The prize is funded by the Gottfried Konecny Survey Award Fund.

Amby Leger - Pete Kelly Prize
conditions: A prize of $1000 is awarded to the student who has completed three years (101 credit hours) of the Bachelor of Recreation and Leisure Studies. The award will be made to the student who has demonstrated the highest academic achievement (Cumulative Grade Point Average). Donor: Physical Education and Recreation Alumni.

Angela Ludan Levine Memorial Book Prize
conditions: A book prize to be awarded annually on the recommendation of the Department of English for the most impressive creative work by a Fredericton campus graduate or undergraduate student in the English Department during the academic year. The prize has been funded by Dr. Larry Levine.

Blanche and Percy M. Levine Memorial Prize
conditions: A prize of $200 to be awarded annually on the recommendation of the Faculty of Administration to the full-time Fredericton campus students in the Business Administration degree program who attains the highest assessment year grade point average in the penultimate year of the degree program. The prize has been donated by the family of the late Mr. & Mrs. P. M. Levine.

Harry Levine Prize in Computer Science
conditions: A prize of $100 to be awarded annually on the recommendation of the Faculty of Computer Science to a deserving student graduating in the Computer Science program. The prize has been donated by the Levine Family.

Thomas Allen Levy Memorial Prize
conditions: A prize of $125 is awarded annually on the recommendation of the Department of Political Science to the Fredericton campus student who has completed the normal requirements for the second or third year and has written the best paper for a Canadian Politics course. The prize is funded by the Department of Political Science.

Gillian Liebenberg Prize
conditions: A prize of $250 to be awarded annually on the recommendation of the Department of History on the Fredericton campus to a mature female student who has demonstrated scholastic excellence in history.

Lieutenant Governor of New Brunswick Silver Medal
conditions: Fourteen medals are to be awarded annually to the outstanding graduating student in each Faculty. The selection is to be made in each case by the appropriate Faculty. The medals are awarded at Encaenia on the Fredericton campus and the Spring Convocation on the Saint John campus. Awarded to the full-time or part-time student judged to be the most outstanding student based primarily on the last half of his/her program as decided by the Faculty in consultation with the Registrar. Students enrolled in a concurrent program are eligible to be considered for the medal in each of the degree programs so represented.

Linguistics Book Prize
conditions: A book prize will be awarded on the recommendation of the Coordinator of the Linguistics Program, UNB Saint John, to a Saint John campus student who demonstrates outstanding performance in linguistics courses. This award is open to all students enrolled in a linguistics program (Minor, Double Major, Joint Honours). The prize has been funded by Dr. Virginia Hill.

Linguistics Prize
conditions: A prize of $200 to be awarded on the recommendation of the Coordinator of the Linguistics Program, UNB Saint John, to a Saint John campus student who demonstrates a deep understanding of linguistic concepts in upper level linguistics courses. The recipient must be a continuing student enrolled in a linguistics program (Minor, Double Major or Joint Honours). The prize has been funded by Drs. Virginia and Rod Hill.

Herbert S. Lipsett Memorial Award in Biology
conditions: This award has been given by Mr. And Mrs. Nathan Liphshetz in memory of the late Herbert S. Lipsett, a graduate of UNB. This award is made annually to a student in Biology, who has demonstrated academic excellence. The amount of the award is approximately $250.

Derek L. Livesey Memorial Prize in Physics
conditions: A prize of a minimum of $500 to be awarded annually on the recommendation of the Department of Physics to an outstanding Fredericton campus student who achieves high standing in Physics 1050 and Physics 1055. The prize has been funded by the family of the late Derek L. Livesey, a former UNB Physics Professor and Department Chairperson, who developed the course.

Duane Logan Award
conditions: An award to be made annually on the recommendation of the Department of Chemical Engineering to the Chemical Engineering student on the Fredericton Campus who has completed 110 to 135 ch in the program, and who in the opinion of the Department best demonstrates the qualities of tenacity and fellowship. Preference will be given to those students who are not, during the same year, recipients of other awards and scholarships valued at over $500. The award has been funded by the Chemical Engineering Class of 1966 in memory of their fellow classmate, Duane Logan.

Purves Loggie Prize
conditions: A $250 prize awarded annually on the recommendation of the Department of Geodesy and Geomatics Engineering to the student having the highest standing in the introductory surveying course. The prize is funded by the family of the late Mr. Purves Loggie.

Mary Louise Lynch Prize in Memory of Annie McGuiggan
conditions: A prize of $300 to be awarded annually on the recommendation of the Registrar to a graduate of St. Vincent's High School or St. Malachys High School, with preference given to the St. Vincents graduate, who has the highest standing after completing the first and second years of full-time study at the Saint John Campus of the University of New Brunswick. The prize has been funded by Miss Mary Louise Lynch, a long-time member of the Board of Governors of the University, in honour of her former teacher at St. Vincent's, who was an inspiring teacher over her many years of distinguished service.

Mary Louise Lynch Prize in Memory of Harriet L. Irving
conditions: A prize of $300 to be awarded annually on the recommendation of the Faculty of Business at UNBSJ to the student in Business Administration who has attained the highest grade point average in a minimum of 30 ch at the second year level. The prize has been funded by Miss Mary Louise Lynch.

Prize in Memory of Ellen J. and M. Josephine Lynch
conditions: A prize of $300 to be awarded annually on the recommendation of the Biology faculty members to the graduating student with the highest standing in a Biology program at UNBSJ. Preference will be given to a student in the Marine Biology option. The prize has been funded by Miss Mary Louise Lynch, a long-time member of the Board of Governors of the University, in honour of her aunts.

Prize in Memory of Mary Louise & Francis J. Lynch
conditions: A prize of $300 to be awarded annually on the recommendation of the Department of History and Politics in consultation with the History faculty members to the student with the highest standing in introductory Canadian History on the Saint John Campus. The prize has been funded by Miss Mary Louise Lynch, a long-time member of the Board of Governors of the University, in honour of her parents.

John D. MacCallum Memorial Prize
conditions: A prize with a minimum of $100 awarded to the student on the Saint John campus who attains the highest grade in a course involving Municipal Government (at least A-). Courses to be considered in descending order of priority are Provincial and Municipal relations, the Government of Metropolitan Areas, and Canadian Municipal Government. If none of these courses is offered in any given year, the prize would be awarded for a course closely related to one of these. Funded by friends of the late John D. MacCallum.

Ian Scott MacDonald Prize
conditions: A prize of $100 is awarded each term to the student enrolled in Bachelor of Science in Engineering (Civil Engineering) degree program on the Fredericton campus who has submitted the Senior Report which is judged to be best in terms of creativity in design. Selection is made by a panel of judges consisting of faculty members within the Department of Civil Engineering. The prize is funded by an endowment established by the late Ira M. Beattie.

William Stuart Macfarlane Prize
conditions: A prize of up to $5000 to be awarded annually to a student or students entering their graduating year on the Fredericton campus who, in the opinion of the Department of Classics and Ancient History is/are the best classical scholar/scholars in Latin and Greek. The prize is funded by Mrs. Annie Macfarlane Logan.

Neil MacGill Prize in Business Ethics
conditions: One prize of $250 will be awarded annually on the recommendation of the Department of Philosophy (UNBF) in each section of PHIL 2153 "Ethical Issues in Business" to a student with the highest standing (at least A-), especially in essay work. The prize has been funded by friends and colleagues of Professor Neil MacGill.

Dr. Katherine MacLaggan Memorial Prize
conditions: A $1900 prize awarded annually on the recommendation of the Faculty of Nursing to the student obtaining a high academic average in the Junior year (having successfully completed 131-136 ch) with demonstrated excellence in nursing practice and who is enrolling in the Senior year for full-time study. The prize is funded by friends of the late Dr. Katherine MacLaggan.

Fred Magee Prize in Technology Education
conditions: A prize of approximately $1,000 to be awarded annually, on the recommendation of the Faculty of Education, to a graduating student in the Technology Education Section, Faculty of Education, who has demonstrated academic excellence, qualities of leadership, and professional promise in technology education. The prize is funded by the Fred Magee endowment fund to the NB Department of Education.

Fred Magee Prize (UNBF)
conditions: Two annual prizes of $300 each established by the late Dr. Fred Magee. One prize to be awarded in each of the Freshman (1-30 ch) and Junior (61-90 ch) levels, to a Fredericton campus student who is not of French origin, whose work in both conversational and written French is, in the opinion of the Department of French, most satisfactory.

Fred Magee Prize (UNBSJ)
conditions: An annual prize of $200 established by the late Dr. Fred Magee to be awarded at the Sophomore (31-60 ch) level, to a Saint John campus student who is not of French origin, whose work in both conversational and written French is, in the opinion of the French Section, Department of Humanities and Languages, most satisfactory.

E. D. Maher Prize
conditions: A prize of $200 to be awarded annually to a full-time student enrolled in the penultimate year of the undergraduate Business Administration program. (The student must have successfully completed a minimum of 60 ch toward the BBA degree.) The award is made to the student who attained the highest grade point average in the business courses required in the first 60 ch of the business program. The prize has been funded by graduates, faculty, staff, organizations, and friends in recognition of E.D. Maher's many contributions to the University community and, in particular, to the undergraduate business program.

Chester Martin Prize in History
conditions: A prize of $200 to be awarded annually on the recommendation of the Department of History, to a student entering the History majors or honours program on the Fredericton campus of the University of New Brunswick who, during the first 60 ch, achieves a high average grade in twelve to eighteen credit hours in History, and an overall grade point average of at least 3.50. The prize was named by Dr. Alfred G. Bailey in memory of Chester Martin, a graduate of the University of New Brunswick and Canada's first Rhodes Scholar, who was for many years Head of the History Department at the University of Toronto.

W. A. G. McAndrew Prize
conditions: An annual prize in honour of the late Dr. W.A.G. McAndrew, professor of French and Head of the Department of Romance Languages, to be awarded to the student on the Fredericton campus whom the Department of French considers to have done the most satisfactory work in two courses (six ch) at the sophomore level (31 - 60 ch) in French as a second language. The prize has been sponsored by the French Department.

Peter McGahan Prize in Sociology
conditions: A prize of $250 to be awarded annually to a student on the Saint John campus who has completed an honors program in Sociology and has produced the best honours thesis as deemed by the faculty members of the Department of Social Science at UNBSJ. The prize is funded by Elizabeth McGahan.

Theresa McGrath Prize
conditions: A book prize (a French/English dictionary) to be awarded annually on the recommendation of the Second Language Education group to a graduating student with a concentration in French Second Language Education. French must be the student's second language (native speakers of French are excluded). The students overall grade point average must be B or above and a grade of B must be obtained in all French Second Language education courses. As well, the internship in a FSL classroom must be deemed as being very successful. The prize has been funded by Mrs. Theresa McGrath-Halbot.

R.H.B. McLaughlin Prize in Civil Engineering
conditions: A prize of $250 to be awarded to the graduating student who has obtained the highest average in the courses in building and construction offered by the Department of Civil Engineering. Only those who have successfully completed 75 per cent of the electives in the designated areas will be eligible. Donor: Prof. R.H.B. McLaughlin, Class of 1943.

Dr. Alan Y. McLean Memorial Prize
conditions: A prize of $1,000 to be awarded annually on the recommendation of the Chair of the J. Herbert Smith/ACOA Chair in Technology Management and Entrepreneurship to the student attaining the highest grade point average within the 15 ch of the TME Diploma Program. A book to be selected by the Chair will be presented to the recipient and a copy placed in the library in the Centre. The name of the student will be placed on a plaque in the Dr. J. Herbert Smith Seminar Room.

Nan McLellan Prize in Art History
conditions: A prize of $100 to be awarded annually on the recommendation of the Department of Humanities and Languages based on academic performance to the best student in courses in Art History. The award commemorates a former University librarian, a well-known supporter of community and cultural activities in the greater Saint John area. The prize is being funded by friends of the late Nan McLellan.

Margaret McPhedran Prize I
conditions: (1) An annual prize of $320 awarded to a student enrolled in full-time study in the basic degree program in the Faculty of Nursing who has obtained the highest standing in the Theory and Practice of Nursing in the Junior Year.(2) An annual prize of $320 awarded to a student enrolled in the degree program for Registered Nurses in the Faculty of Nursing who has obtained the highest standing in the Theory and Practice of Nursing in the Junior Year.

Senator Muriel McQueen Fergusson Memorial Prize in History
conditions: A prize of $350 to be awarded annually to an undergraduate Fredericton campus student, on the recommendation of the Department of History, for an outstanding essay in Women's History. This essay would be part of a History course requirement. Candidates may be enrolled in any undergraduate degree program. The prize is named in honour of the first woman Speaker of the Senate. The prize has been funded by Dr. Gillian Thompson.

John Meagher Prize
conditions: A prize of $1000 is awarded annually on the recommendation of the Faculty of Kinesiology to the student who has completed three years (101 credit hours) in one of the Faculty of Kinesiology's concurrent degree programs with Education. The award will be made to the student who has demonstrated the highest academic achievement (Cumulative Grade Point Average). The prize is funded by Physical Education and Recreation Alumni.

Merck Frosst Award in Experimental Chemistry
conditions: To be awarded to students enrolled in an introductory organic chemistry laboratory course. Copies of the current edition of "The Merck Index" are to be given to deserving students on each campus based on their performance in first-year Chemistry laboratory courses. Selection is to be made by the course instructors. The awards are funded by Merck Frosst Canada Inc. and by faculty members in Chemistry.

Merrithew - de Grandpre Prize in Entrepreneurship
conditions: A prize of $500 to be awarded annually on the recommendation of the Faculty of Administration to a student or a team of students in the Faculty of Administration on the Fredericton campus who prepares an outstanding business plan in the course BA4107: Studies in Small Business. The prize has been donated by Michael Merrithew (BBA '80) and Louise de Grandpré (BPE '79, BBA '80).

H.H. (Mike) Mikaelian Memorial Prize
conditions: A $500 prize to be awarded to a Fredericton campus undergraduate research student in Psychology. The recipient must be in good academic standing, have intentions of pursuing a career in Psychology, be involved in research activities and actively demonstrate curiosity, commitment, and passion for the search of knowledge and understanding in the field of Psychology. The prize is funded by the family, friends and colleagues of the late Dr. H. H.(Mike) Mikaelian.

Muriel Miller Award in Creative Writing
conditions: A medal and a monetary award to be awarded annually on the recommendation of the Department of English to the most promising undergraduate student on the Fredericton campus in the Department of English in its Creative Writing Program. Preference will be given to residents of Atlantic Canada. The award has been established by Michael and Brian Miner in memory of their mother, the late Muriel Miller, a New Brunswick born creative writer who wrote Bliss Carman's biography, and was a graduate of UNB in English.

MindCare New Brunswick Prize in Nursing
conditions: A prize of $300 to be awarded annually, on the recommendation of the Department of Nursing, to an outstanding graduating student who achieves the highest cumulative grade point average in the BN/RN Nursing Program on the Saint John campus. The prize has been funded by MindCare New Brunswick.

Montgomery - Campbell Prize
conditions: This prize was awarded for the first time to the Graduating Class of 1880 and has been offered annually since in memory of George Montgomery-Campbell, sometime Fellow of Magdalene College, Cambridge and Professor of Classics in UNB from 1861 until his death in 1871. Through the generosity of the Executors of the Estates of Colonel Henry Montgomery-Campbell and General Herbert Montgomery-Campbell, a trust fund has been established to provide for this prize in perpetuity. This prize has an annual value of up to $1,650 and will be awarded to a student or students on the Fredericton campus in the following order of priority: 1) to a student for Junior level (61-90 ch) Latin and Greek or for Junior level Latin only, if there are no eligible students in Greek; 2) to the best qualified student in the Classics Department registered as an Honours or Majors student in Classics; 3) to any other Junior or Senior level student taking courses in the Department of Classics; 4) to the student with the highest standing in the penultimate year of a Bachelor's degree program, regardless of Faculty.

John F. Murphy Prize in Electrical Engineering
conditions: A prize to be awarded annually on the recommendation of the Department of Electrical Engineering to the Fredericton campus student in the Electrical Engineering degree program whose senior undergraduate project best displays outstanding technical merit. The prize has been funded by friends of John Murphy, an Electronics Technologist who served the University with distinction for 26 years, 1968-1994.

Anne Murray Prize
conditions: A prize of $1000 is awarded to the student who has completed three years (101 credit hours) of the Bachelor of Science in Kinesiology Program. The award will be made to the student who has demonstrated the highest academic achievement (Cumulative Grade Point Average). Donor: Physical Education and Recreation Alumni.

New Brunswick Institute of Chartered Accountants Prize
conditions: A prize of $1000 is awarded annually to the student currently enrolled in the regular Business Administration degree program on each UNB campus, who has attained the highest weighted average grade in introduction to Business Finance, Intermediate Accounting 1 and Intermediate Accounting II. The courses must be taken at UNB but may be taken during the regular academic year, intersession or summer school.

New Brunswick Nurses' Union Prize
conditions: A prize of $100 to be awarded annually on the recommendation of graduating Nursing students, to a graduating Nursing student exemplifying high academic standards, leadership skills, involvement in extracurricular activities, and commitment to enhancing the interests and status of classmates. The prize has been provided by NBNU and will be presented at the Pin Dinner for Nursing graduates.

North Eastern Forest Soils Prize
conditions: An annual prize of a book or money, valued at a minimum of $100, to be awarded to the full-time student having the highest standing in the second-level soils course (FOR 2505) taught at UNB. In any given year, when a mark of A or higher is not achieved by any student, the prize will not be awarded. The prize was established to emphasize the paramount importance of soils, not only for forestry but for the very existence of every life form on earth. Selection of the recipient will be made on the recommendation of the Professor of the soils course and the Scholarship Committee of the Faculty of Forestry and Environmental Management. The prize is funded by the 1999 North Eastern Forest Soils Conference Scholarship Fund and the Faculty of Forestry and Environmental Management.

Philip W. Oland Prize in Chemistry
conditions: A $250 prize awarded annually on the recommendation of the course instructor to an outstanding Saint John campus student who achieves academic excellence in sophomore level Inorganic Chemistry. Funded by Moosehead Breweries Limited, the prize honours the late Philip W. Oland, D. Litt 78, a member of the first class graduating from UNB with a BSc in Arts in 1930.

Organic Chemistry Prize UNBSJ
conditions: A prize of $200 to be awarded to a Saint John campus student who achieves high standing in CHEM 2401/2422 (Organic Chemistry I & II). The prize is funded by Saint John Laboratory Services Ltd.

Sasi Mohan Pal Prize
conditions: A prize of approximately $100 to be awarded annually on the recommendation of the Department of Chemical Engineering to a Fredericton campus visa student, who achieves the highest standing at the completion of second or third year of the Chemical Engineering degree program at UNB (minimum 80 ch). The prize has been funded by Mrs. Purabi Pal in memory of her husband, Sasi Mohan Pal, a graduate of UNB.

Dean D. Kermode Parr Prize in English
conditions: A prize of $1000 to be awarded annually, on the recommendation of the English Department and the Division of Humanities and Languages, to an outstanding student who achieves high standing in fourth year English.

James Pataki Memorial Award
conditions: A $250 prize awarded annually to a student who has just completed the requirements for the first year of the Bachelor of Philosophy degree program and has developed and demonstrated his/her interest in musical or visual arts with plans to improve, promote and/or pursue their chosen artistic endeavours. The prize is funded by the family and friends of the late James Pataki.

Samuel Leonard Peters Prize
conditions: The late Miss Marianne Grey Otty has bequeathed $900 to UNB, the income therefrom to be used to establish a prize in memory of Flying Officer S. Leonard Peters, of Queenstown, N.B., who was killed in action, August 1944, while serving with the RCAF over France. The prize will be awarded to the student who has the highest standing in the first year of the Mechanical Engineering program.

Ingrid J. Peterson Memorial Prize
conditions: A prize of $100 to be awarded annually on the recommendation of the Faculty of Education, to the graduating student specializing in English of Literacy, who has maintained the highest grade point average. Funded by friends of the late Ingrid J. Peterson.

Philosophy Book Prize
conditions: A book prize is awarded on the recommendation of the Department of Philosophy in each of a number of upper level courses in Philosophy to a student with high standing. The courses in which prizes are to be awarded will be announced by the Department of Philosophy each year. *donor:* Anonymous.

Political Science Book Prize
conditions: A book prize to be awarded annually on the recommendation of the Department of History and Politics (Politics Discipline) to a graduating student on the Saint John campus who has shown a high level of achievement and interest in the area of Political Science. The prize is funded by the Politics Discipline of the Department of History and Politics.

Politics Class of 1995 Prize
conditions: A prize of $500 to be awarded annually on the recommendation of faculty in the discipline to an outstanding student in Politics on the Saint John campus who has completed 60 credit hours in the B.A. program. This prize is funded from the proceeds of the sales of "Rebuilding National Political Parties" (1997), a book published by Prof. Don Desserud's senior students.

T.M. Pond Memorial Prize for Natural Resources Writing
conditions: A prize of $250 to be awarded annually on the recommendation of a committee representing the University and the Forestry Association to the student in any faculty who is in the third year of a degree program and produces the best essay on the theme of the wise use and protection of New Brunswick's renewable natural resources. The prize is funded by the Canadian Forestry Association of New Brunswick. The prize is in memory of the late Mr. T.M. Pond who was an active and strong supporter of the Association for many years.

Francis H. Premadas Prize in Biology
conditions: A prize to be awarded annually to a student entering the second year and majoring in Biology on the Saint John campus who, in the opinion of Faculty members in Biology, shows the greatest promise. The prize has been funded by colleagues and friends upon retirement of Dr. F.H. Premdas who taught Biology on the Saint John campus for nearly 30 years

Prize in Actuarial Science
conditions: A prize of $200 to be awarded annually on the recommendation of the Department of Mathematics and Statistics to a Fredericton campus student who has passed at least one examination given by the Society of Actuaries and is taking appropriate courses. Students should have demonstrated a continuing interest in actuarial science. The prize has been funded in part by a grant from the Society of Actuaries.

Douglas R. Pullman Prize in Sociology
conditions: A prize has been established in honour of the contribution of Douglas R. Pullman to the development of Sociology at UNB. It will be awarded annually on the recommendation of the Department of Sociology to the graduating student on the Fredericton campus with a Major in Sociology. The award would be made on the discretion of the Department of Sociology. The prize has been established by colleagues of Dr. Douglas Pullman.

Jamie Reid Prize for History of the Military in New Brunswick
conditions: A $200 prize to be awarded annually, on the recommendation of the Department of History, to an undergraduate or graduate student for the best essay on the history of the military in New Brunswick written by a student on the Fredericton campus. The prize has been established by Major Jamie Reid of the Princess Patricias Canadian Light Infantry.

Tom Riesterer Memorial Prize
conditions: A prize of $100 to be awarded annually on the recommendation of the Department of English to the student who has written the best undergraduate or graduate essay for the Fredericton campus UNB English Department. The prize has been funded by the family of Tom Riesterer.

Dr. Stefan Rinco Memorial Prize in Statistics
conditions: A prize of approximately $250 dedicated to the memory of Stefan Rinco, Professor of Statistics at UNB, 1974-87. The prize is to be awarded annually on the recommendation of the Department of Mathematics and Statistics, to an outstanding Fredericton campus student enrolled in a degree or joint degree program in Statistics. The student must have completed a minimum of 90 ch toward meeting the degree requirements. The prize is being funded by the family, friends and colleagues of the late Dr. Stefan Rinco.

Sir Charles G. D. Roberts Memorial Prize
conditions: An annual prize of $400 to be awarded for the best short story submitted by an undergraduate. The stories are to be submitted to the Chair of the Department of English.

Eunice White Robertson Memorial Prize
conditions: A $1000 prize awarded annually to a female student who has made a careful investigation of some subject of local history of the Province of New Brunswick selected by the Department of History of the University, and has submitted a competent essay thereon, and has obtained a high standing in the History courses of the Junior level (61-90 ch) at the University. The essay is to be the principal criterion of the award, although the student's class standing will also be considered. This prize is funded by Mrs. Phoebe W.R. Keiffer.

Robert Fulton Ross Memorial Prize in Anthropology
conditions: A prize of $90 to be awarded annually on the recommendation of the Faculty of Arts to a graduating Fredericton campus student enrolled in a major or honours program in Anthropology who has submitted the best essay in Anthropology. The prize was donated by Mrs. Ann Hanley class of 1896, in memory of her father.

Russian Book Prize
conditions: A book to be awarded annually on the recommendation of the Department of Culture and Language Studies to an undergraduate or graduate student on the Fredericton campus who demonstrates outstanding performance in any course or courses in Russian.

Russian Language Prize
conditions: A prize of $100 to be awarded annually on the recommendation of the Department of Culture and Language Studies to the best second-year Fredericton campus student (those taking specific full-year courses with 2000 numbers) in Russian. The prize has been funded by the Departmental Faculty members.

Saint George Prize
conditions: An annual prize of $180, donated by the late Ellen F.P. Peake, to be awarded each year by the English Department for the highest standing in Sophomore level (31-60 ch) English.

Saint John Campus Silver Anniversary Prize
conditions: The Saint John Campus Silver Anniversary Prize is to be awarded on the recommendation of the Faculty to an exceptional student who has completed 90 credit hours of courses at the Saint John Campus. The prize is to be awarded to one student each year on a rotating Faculty basis. Each Faculty will elect its own selection committee with the Registrar as an ex-officio member. The funding for this prize was provided by members of the Saint John Faculty in commemoration of the 25th Anniversary of the campus in 1989.

Saint John Computer Science Prize
conditions: A prize of $200 to be awarded annually to a student enrolled in the BSc(CS) or BDA degree programs who has completed at least 60 credit hours of required courses. The prize is awarded during the Fall term on the recommendation of the Department of Computer Science and Applied Statistics. Selection will be based primarily on the student's academic achievement in Computer related and Statistics courses. The prize is funded by the members and staff of the Department of CSAS.

Saint John General Hospital School of Nursing Alumni Prize
conditions: A prize to be awarded annually, on the recommendation of the Nursing Faculty at the Saint John campus, to a student entering the final year of studies (with 33 or fewer credit hours to finish) in the BN/RN Degree Program. This award will be made on the basis of academic achievement, with preference given to students who are graduates of the Saint John General Hospital School of Nursing. Students may be in competition for the prize more than once, but may win the prize only one time.

Saint John Investors Group Book Prize for Financial Economics
conditions: Two prizes, each a $250 gift certificate for the UNBSJ bookstore, will be awarded to the Saint John campus students with the highest academic standing in ECON 2103 (Financial Institutions and Markets) and ECON 3114 (International Financial Institutions and Markets). The prize has been funded by the Investors Group Inc.

Sainz Family Spanish Award
conditions: An award of $100 to be made annually on the recommendation of the Department of Culture and Language Studies to an outstanding student entering the Senior level (approximately 96 ch) Majors or Honours program in Spanish. Recipients must be Canadian citizens or landed immigrants. The award has been donated by the Sainz Family.

Irma Sainz & Marcia Koven Prize
conditions: A prize of $60 to be awarded annually on the recommendation of the Sociology discipline UNB Saint John to a mature student majoring or honouring in Sociology entering the final year at UNBSJ. Funded by Irma Sainz and Marcia Koven.

Schlich Memorial Prize
conditions: The trustees of the Sir William Schlich Memorial Prize fund offer an annual prize to a graduating forester or forest engineer at one of the Canadian forestry schools. The recipient is to be a deserving student selected by the Dean of the Faculty of Forestry and Environmental Management.

Dr. L. P. Sebastian Prize
conditions: Awarded annually based on the recommendation of the Faculty of Forestry and Environmental Management to an outstanding full-time student in the Faculty of Forestry and Environmental Management on the Fredericton campus who displays excellence in wood technology, wood products or wood engineering upon entering the final year of the Forestry program (approximately 140 ch completed) or the Forest Engineering degree program (approximately 163 ch completed). The prize has been funded by G. and M. Daugharty with matching funds from Northern Telecom, and friends of L.P. Sebastian.

Louis R. Seheult Prize
conditions: A prize of $1,000 to be awarded annually on the recommendation of the Faculty of Forestry and Environmental Management to a UNB student who, upon the completion of the penultimate year of the undergraduate degree in Forest Engineering, exhibits outstanding potential for a future role in industry. Awarding criteria include academic standing in the top quartile, qualities of leadership, managerial potential, and a demonstrated understanding of the interactions of finance, workforce and technology in the industrial forest engineering workplace. The prize has been funded by family and friends of the late Professor Louis R. Seheult.

Selby Associates Inc. Prize
conditions: A prize of $250, to be awarded annually on the recommendation of the Faculty of Forestry and Environmental Management, to the undergraduate student with the highest assessment year grade point average in the BScF or BScFE degree program, who has demonstrated, through course work and/or extra-curricular activities, a special interest in community development, community education or human productivity. This prize has been funded by Susan and Jeremy Rickards, Senior Partners, Selby Associates Inc. - Consultants in Community Development, Community Education and Human Productivity.

Anne & Allen Selby Prize for the Performing Arts
conditions: A prize of variable value (minimum $1,000) to be awarded annually on the recommendation of the Faculty of Education to an undergraduate student enrolled full-time in the consecutive or concurrent Education degree program on the Fredericton campus, who demonstrates outstanding achievement in the study and presentation of one of the categories of written, movement, spoken, musical and dramatic arts. This prize is funded by Anne and Allen Selby.

Agnes Nevers Shaw Memorial Award
conditions: An annual prize of $100 established by Mr. Wendell B. Shaw to be given to an undergraduate student in the Faculty of Education for the best essay on the Magna Carta.

Alvin J. Shaw Prize in Spanish
conditions: A prize of $500 to be awarded annually on the recommendation of the Department Culture and Language Studies to an outstanding student on the Fredericton campus who achieves high standing in a Majors or Honours program in Spanish and who has completed a minimum of 24 ch in that discipline. The prize has been funded by the late Professor Alvin J. Shaw.

Alvin J. Shaw Prize in Theatre Arts
conditions: A prize of $600 to be awarded annually on the recommendation of the Arts Council Committee on Honours and Prizes, to an outstanding student on the Fredericton campus entering the final 30 ch of a Bachelor of Arts program leading to a major in English (Drama). The prize has been funded by the late Professor Alvin J. Shaw.

Lorne Joseph Simon Prize
conditions: A prize of $1000 to be awarded annually to an outstanding full-time Fredericton campus First Nations student, with preference given to a promising writer. The prize will be awarded on the recommendation of the Faculty of Education (Mikmaq-Maliseet Institute) in consultation (where appropriate) with the Prize Committee of the Department of English. The prize has been funded by family and friends of the late Lorne Joseph Simon, an outstanding student in the Faculty of Education, and an accomplished writer.

James Simonds Prize in History
conditions: Sir Charters J. Simonds of London, England, has given to the University an amount to yield an annual income of $575, to establish "The James Simonds Prize in History", in honour of James Simonds, one of the original English settlers at the mouth of the Saint John River. The prize is awarded for the outstanding essay on any historical subject.

Dr. Leonard Campbell Smith Mem. Prize for Ancient History
conditions: This prize is established in memory of the late Dr. L.C. Smith, Professor Emeritus of Classics and Ancient History, to be awarded annually to the student on the Fredericton campus with the highest standing in any 12 ch in ancient history and historiography, and classical archaeology. The award will be made on recommendation of the Department of Classics and Ancient History. It is funded by friends and colleagues of the late Dr. Smith.

Snodgrass Honors Prize in Psychology
conditions: A prize of $700 is awarded on the recommendation of the Department of Psychology to the honours Psychology student on the Fredericton campus entering final year (having completed 90 to 96 ch) with the highest standing in Psychology courses (minimum 24 ch). Part-time students are eligible.

Snodgrass Student Travel Awards
conditions: Open to Fredericton campus students with Honours in Psychology who are the first authors of a paper or poster presented at a peer-refereed psychological conference. A committee struck by the Chair of the Department of Psychology will recommend one or more awards to support travel to present an outstanding paper or poster at a national or international conference. The paper or poster must be judged, on the basis of a submitted abstract, to be of strong scholarly merit in terms of innovation, rigour, and potential to make a contribution to the discipline. Students are only eligible to receive one travel award during each academic year. Students must apply prior to attending the conference and must submit the abstract as well as written confirmation that the paper or poster has been accepted with their application. *apply:* The Psychology Department Chair, UNB Fredericton. *awarding agency:* Psychology Department, UNB Fredericton. *donor:* Snodgrass Fund to commemorate the contributions of Dr. Florence Snodgrass. *deadline:* May 1 and October 1.

Dr. Florence Snodgrass Memorial Prizes
conditions: Up to six $100 prizes to be awarded annually to Fredericton campus students for their outstanding achievements in and contributions to each of the following second year psychology courses offered on the Fredericton campus: Psychology 2113 Introduction to Research and Statistical Methods in Psychology; Psychology 2203 Foundations of Developmental Psychology; Psychology 2403 Foundations of Social Psychology; Psychology 2603 Foundations of Learning, Memory, & Cognition; Psychology 2703 Foundations of Biological Psychology, and Psychology 2313 Foundations of Clinical Psychology. Students may receive more than one award in any given year. These prizes are funded by the Snodgrass Fund to commemorate the contributions of Dr. Florence Snodgrass.

Dr. Florence Snodgrass Essay Prizes
conditions: Two prizes of $300 each to be awarded annually to Fredericton campus students for an outstanding essay submitted in 3000/4000-level Psychology courses. Selection will be based on the quality of the papers in both content (scientific merit and originality) and written expression. These prizes have been funded by the Snodgrass Fund to commemorate the contribution of Dr. Florence Snodgrass.

Dr. Florence Snodgrass Graduating Prize in Psychology
conditions: A prize of $900 is awarded on the recommendation of the Department of Psychology for the best Psychology honours thesis on the Fredericton campus. This prize has been established by the Psychology Department in recognition of Dr. Snodgrass's contribution to the Department and the University.

Society of Chemical Industry Merit Award - Chemistry
conditions: The Canadian Section of the Society of Chemical Industry will award three plaques, one each for Chemistry, Biochemistry and Chemical Engineering, to students with the highest standing in the final year of their course. In the case of a conflict, the award may be given to the student with the highest standing in an alternate Chemistry course, e.g. Environmental Geo-Chemistry, Physics/Chemistry. In the event that a student performs exceptionally well in an alternate Chemistry course, he/she may be considered as a candidate for one of the three awards. There will be only three categories and only one nomination in each "category". Awards apply only for four year programs.

William Somerville Prize
conditions: A prize of approximately $200 to be awarded annually on the recommendation of the Department of Mathematics and Statistics to an outstanding student enrolled in a degree or joint degree program in Mathematics. The student should have successfully completed a minimum of 90 ch toward meeting the degree requirement. The prize was funded by the late Ella Somerville Foster.

Rabbi David Spiro Essay Prize
conditions: A prize of $500 to be awarded annually, on the recommendation of the Arts Council Committee on Honours and Prizes, to a student enrolled in an undergraduate degree program on the Fredericton campus who writes a deserving essay relating to Jewish history, literature or contemporary affairs. The prize is provided by the congregation of the Sgoolai Israel Synagogue.

St. George's Society Saint John Prize
conditions: A prize of not less than $100 to be awarded annually to an outstanding student on the Saint John campus who achieves the highest standing in one of the following courses, in this order of preference: History 1150 (History of Modern Britain), HIST 3185 (Britain 1688-1760), HIST 3360 (The History of the Atlantic Provinces), ENGL 3023 (History of the English Language) or ENGL 3070 (The British Novel). The prize has been funded by the St. George's Society of Saint John.

Dr. Rudolf Starkermann Prize in Mechanical Engineering
conditions: A $1200 prize to be awarded annually to a Fredericton campus student who has the highest Cumulative Grade Point Average of his/her peers after completing between 100 and 135 credit hours in the Bachelor of Science in Engineering (Mechanical) degree program. The prize is funded by Dr. Rudolf Starkerman, professor of Mechanical Engineering at UNB from 1970 to 1989.

John Stephens Memorial Prize
conditions: The late Dr. John Stephens, a graduate of Trinity College, Dublin, was an eminent engineer and for many years the distinguished and beloved professor of Mechanical Engineering at this University. In 1954 the Associated Alumni established the John Stephens Memorial Prize to perpetuate his memory and to encourage scholarship in the Department of Mechanical Engineering. This prize, which has a cash value of $250, is awarded annually upon the recommendation of the head of the department to the leader of the graduating Mechanical Engineering students.

Paul Stewart Prize
duration: A prize of $75 is awarded each term to the student enrolled in Bachelor of Science in Engineering (Civil Engineering) degree program on the Fredericton campus who has submitted the best Senior Report in the general area of Transportation. Selection is made by a panel of judges consisting of faculty members within the Department of Civil Engineering. The prize is funded by an endowment established by Paul Stewart.

Willie Stewart Prize in Arts 1000
conditions: This prize of $400 has been established by Professor Neil MacGill in honour of his teacher, friend and colleague, Dr. W.F.M. Stewart, Head of the Philosophy Department from 1959-1965 and a spectacular lecturer to large classes. It is awarded annually on the recommendation of the Dean of Arts to a student with high standing in ARTS 1000 in the Regular Session on the Fredericton campus.

Willie Stewart Prize in Philosophy
conditions: This prize of $250 has been established by Professor Neil MacGill in honour of his teacher, friend and colleague, Dr. W.F.M. Stewart, Head of the Philosophy Department from 1959-1965. It is awarded annually on the recommendation of the Department of Philosophy to a student with high standing in PHIL 1003, "God, Mind and Freedom," in the Regular Session on the Fredericton campus.

Merlyn Stillwell Memorial Prize
conditions: A prize to be awarded annually upon the recommendation of the Faculty of Forestry and Environmental Management to a Forestry student with high academic standing and creative abilities who has demonstrated an interest in bioethics in forestry. The award is funded by family and friends of the late Merlyn A. Stillwell, a graduate of UNB in Science (Bio), 1949 and Masters in Science (Arts) 1957. Mr. Stillwell was a research scientist with the Canadian Forestry Service, and a part-time lecturer in the Faculty of Forestry at UNB until his untimely death in 1977. His research was aimed at gaining a better understanding of the forest environment with emphasis on tree diseases.

Noel Stone Memorial Prize
conditions: An annual prize of $485, donated by the late Dr. H.S. Stone, to be given to a student of the fourth year who, during the third year, has shown the most promise in the study of Biology and Chemistry. ("Year" refers to the particular year of the program as specified in the calendar description of the various BSc degree options.)

Student Union Activity Award
conditions: Awarded to Fredericton campus students who have made an outstanding contribution to student life during their time at UNB. Gold, Silver and Merit level awards are given to students on the recommendation of the Vice-President Student Services according to their level of participation.

Dr. John F. H. Teed, Q.C., Memorial Prize in Science
conditions: A prize of not less than $250 to be awarded annually to a student on the Saint John campus who achieves the highest standing in one of the following courses, in this order of preference: GEOL 2212 (Sedimentology I), GEOL 2201 (Biogeology I), GEOL 2045 (Introductory Geology for Biologists), or BIOL 2585 (Introductory Ecology). The prize is funded by the family of the late Dr. Teed from moneys obtained for the use of Mary's Point Island, N.B., sandstone quarry for historical reconstruction of buildings in Nova Scotia.

The Department of English Form and Format Prize
conditions: One or more prizes totaling no less than $1000 are awarded on the recommendation of the Department of English to a Fredericton campus student or students who has completed the requirements for the first year of the Bachelor of Arts degree program and has demonstrated excellence in at least 6 credit hours of English. A nomination letter from the course instructor and a portfolio of the student's work, including essays and exams, is required in order to be considered for this prize. The prize is funded by the Department of English through proceeds from the sale of Form and Format.

Mary Tibbits Award
conditions: An award of $125 to be awarded annually on the recommendation of the Women's Studies Co-ordinator in consultation with the co-ordinating committee of the program to a Fredericton campus student who is graduating that year with a Minor in Women's Studies. The recipient will have assisted women in the Fredericton community through appropriate volunteer work, or will have actively participated in an organization that has as its goal the advancement and empowerment of women or has made a contribution to the area of the study of women.

Dr. Carl K. Tompkins Prize
conditions: An annual prize to be awarded on the Saint John campus to the student who has achieved the highest overall standing in Chemical Thermodynamics and Electrochemistry and Chemical Kinetics. The prize has been funded by colleagues & friends upon the retirement in 1999 of Dr. C.K. Tompkins, who taught Chemistry at UNB for over 30 years.

Theresa P. Totton Memorial Prize
conditions: A prize of $550 to be awarded annually on the recommendation of the Faculty of Nursing for clinical and academic competency in Nursing at the completion of the second year of the basic program (92-98 ch). Funded by the Nursing Class of 1982 and friends of Theresa.

Tourism Synergy Prize for Hospitality & Tourism
conditions: A $250 prize to be awarded at Spring Convocation and a second $250 prize to be awarded at Fall Convocation, on the recommendation of the Dean of the Faculty of Business, to the Saint John campus student graduating from the Bachelor of Applied Management in Hospitality & Tourism degree program who has demonstrated high academic achievement and overall contribution to campus life, in particular to the enhancement of student life in this program. This prize has been funded by Tourism Synergy Ltd.

Lowell Trembath Memorial Award
conditions: The Lowell Trembath award, comprised of a book and a monetary component for the purchase of textbooks, is presented, on recommendation of the Department of Geology, to the student exhibiting the highest scientific and professional potential in mineralogy and the theory of solid state materials through achievement in courses previously taught by Professor Trembath. It has been made possible through the support of Lowell's students and friends who remember his humour and devotion to teaching, as well as his enduring interest in personal and professional development. The award is intended to encourage the continuation of his standards of learning and fundamental scientific endeavour.

Dr. E. O. Turner Prize
conditions: An award by the Associated Alumni in honour of Dr. E.O. Turner, former Head of the Department of Civil Engineering and Dean of the Faculty of Engineering at UNB. The award valued at $250 shall be based on qualities of leadership and breadth of horizon, coupled with a good academic standing, that should lead to a high station in future life. One candidate from each of the Departments of Civil, Electrical and Mechanical Engineering shall be nominated by each of the departments. The award agency shall be the University based on the recommendation of the Turner Prize Committee of the Alumni Association.

UNB Saint John Engineering Prize
conditions: A prize of $500 to be awarded annually on the recommendation of UNBSJ Engineering faculty members to an academically outstanding student who has completed the normal four terms of Civil, Chemical, Electrical, Computer or Mechanical Engineering (approximately 90-95 ch) at UNBSJ and who will continue the degree at UNB. The prize has been funded by the Department of Engineering .

UNB Saint John Science Prize
conditions: A prize of $250 to be awarded annually to the Saint John campus student with the highest assessment year grade point average at the completion of the normal requirements for the first year of a B.Sc. Program in the Faculty of Science, Applied Science and Engineering. The student must continue in Science on the Saint John campus. The prize has been funded by the Science faculty members.

UNBSJ Nursing Prize
conditions: A prize of $250 to be awarded annually to an outstanding BN or BN/RN student on the recommendation of the Faculty of Nursing, UNB Saint John.

UNBSJ Student Leadership Award
conditions: Awards to be given annually at fall convocation to students on the Saint John campus who have demonstrated outstanding campus leadership in student activities and/or university activities. Notation to appear on student transcript. Nominations received and selections made by a committee of students and administration, headed by Student Services.

United Empire Loyalists Association of Canada New Brunswick Branch Prize for History
conditions: One prize with a minimum of $200 awarded to the student with the highest standing in Hist 3365 The Formation of Loyalist Canada. In the event that this course is not offered, the prize will be awarded to the student with the highest standing in the course most appropriate to an understanding of the Loyalists and their part in the development of Canada. This prize has been funded by the United Empire Loyalists Association of Canada New Brunswick Branch.

Francis Vanicek Prize in Civil Engineering
conditions: An annual prize of $100 to be awarded, on the recommendation of the Department of Civil Engineering, to a student who has shown a high level of achievement in structural analysis and design and has completed between 90-120 ch of the regular program. The prize has been funded by colleagues of Professor Ralph M. Francis.

Fanny Velensky Memorial Prize in Nursing
conditions: Mr. Nathan Velensky has established an endowment fund of $1,000 in memory of his wife, Fanny Velensky. The income of this fund is to be awarded to a student who has successfully completed the four year basic program and who has demonstrated the most expertise in nursing practice in the penultimate and final years.

Harry Velensky Prize
conditions: A prize valued at approximately $400 has been made available to the University through the generosity of Mr. Harry Velensky, and is to be awarded annually to an undergraduate for the best essay, other than an Honours Thesis, on the subject of human relations, with a view to the promotion of a better understanding between all peoples at all levels of society.

Viator Award
conditions: An annual award or awards of up to $2,000 for a student or students in Classics and/or Ancient History on the Fredericton campus who has/have successfully completed at least two years or the equivalent (a minimum of 12 ch or equivalent) in Latin or Greek. The award is to be used for participation in an approved program of overseas summer study, archeology or research, preferably in classical lands. It must be used within nine months of graduation. The award is to be made by the Department of Classics and Ancient History. The award has been established by Mary Ella Milham.

Videto-Hadley Memorial Prize
conditions: Friends of the late Mr. B.W. Flieger of the Canadian International Paper Company, Montreal and Professor of Forest Engineering at the University of New Brunswick from 1927 to 1950, have offered a prize of $250 in memory of Professors H.E.D. Videto and C. Graham Hadley of the Forestry Faculty, who lost their lives in a drowning accident in October 1951. This prize will be awarded by the Students Forestry Association to a member for outstanding performance during the year.

David H. Walker Prize in Creative Writing
conditions: A prize of $1,000 to be awarded to a gifted undergraduate or graduate writer on the Fredericton campus. Applicants should submit a sample of their recent work (a short story or chapter of a novel, minimum 1500 words) to the Department of English. Past winners of this award are not eligible to enter the competition, and the work submitted cannot have previously won an award or prize. Finalists will be interviewed by the Selection Committee. The prize is funded by the family of the late David H. Walker.

Margaret Walker Memorial Prize
conditions: A first place prize of $250; a second place prize of $150 and a third place prize of $100 are awarded annually to students enrolled in Bachelor of Nursing degree program at any UNB campus or site who present the best oral papers at the UNB Monique Begin Competition. The prize is funded by Dr. Margaret Dykeman, in memory of her mother.

Dr. W. Dana Wasson Prize in Computer Science
conditions: A prize of $250 to be awarded annually in recognition of Dr. Dana Wasson's lifetime contribution to computer science in New Brunswick. This prize is awarded to the best student who has just completed two years of study on the Fredericton campus with a minimum of 70 ch in the Bachelor of Computer Science basic or concurrent degree program. The prize is awarded on the basis of academic performance in the second year of studies in the degree program. The prize has been donated by IBM, NB Tel, and interested benefactors.

Robert F. Watters Memorial Award
conditions: A prize of $200 to be awarded annually on the recommendation of a committee from the Faculty of Kinesiology to a student with special needs, or a student pursuing a career working with individuals with special needs such as those who are physically or mentally challenged or the elderly. The prize is funded by friends of the late Robert F. Watters.

Louis Weisner Memorial Prize in Mathematics
conditions: A prize dedicated to the memory of Louis Weisner, Professor of Mathematics at the University from 1955-1988. It is to be awarded on the recommendation of the Department of Mathematics and Statistics to an outstanding student on the Fredericton campus graduating in Mathematics. The Prize has been established by the family, students, friends, and colleagues of the late Dr. Weisner.

The Late Richard Laurence Weldon Prize in Mechanical Eng.
conditions: A $1715 prize awarded annually on the recommendation of the Department of Mechanical Engineering to a student with high academic standing who is entering the seventh term of a Mechanical Engineering program. The applicant is not eligible should he/she hold another major award tenable during his/her final year. The prize is funded by the late Mr. Richard Laurence Weldon.

Eric E. Wheatley Memorial Medal
conditions: A medal to be awarded annually on the recommendation of the Mechanical Engineering Student-Faculty Liaison Committee (from nominations submitted by members of the faculty) to a graduating Mechanical Engineering student, who has demonstrated both practical ability and strong academic achievement. The medal has been endowed by friends of the late Professor Eric E. Wheatley, professor and developer of Mechanical Engineering at UNB from 1945 to 1973.

Mary Louise Whimster Memorial Prize
conditions: A prize of $300 to be awarded annually on the recommendation of the Department of French to the graduating student on the Fredericton campus who has, in the opinion of the Department, shown the highest achievement in the study of Literature in the Department. The prize has been funded by the Department of French.

Edna White Prize in Classics
conditions: A prize of up to $800 to be awarded annually to one or more students, graduate or undergraduate on the Fredericton campus, who continue their studies in Classics and Ancient History and are deemed by the Department of Classics and Ancient History to be worthy recipients of these awards. The prize is funded by the late Miss Edna White, Class of 1896 and LLD 1948.

Walter C. & Marion (Waring) White Biology Prize
conditions: A prize of the annual earnings of the endowment to be awarded annually on the recommendation of the Biology Department of the Faculty of Science, Applied Science and Engineering at UNBSJ to a UNBSJ student who has shown promise in first year Biology in theoretical and laboratory studies. The prize is established in memory of Walter C. and Marion J. (Waring) White by their daughter, Nancy W. MacLeod.

Ernest Allan Whitebone History Prize
conditions: A prize of $300 to be awarded annually on the recommendation of the faculty members in History at UNB Saint John to an outstanding student on the Saint John campus who achieves high standing in a designated History course. The prize has been funded by the late Mrs. Elizabeth Whitebone.

W. T. Whitehead Memorial Prize
conditions: An annual prize of $195 was established by Mrs. W.T. Whitehead to be awarded to the student having the highest standing in the third year of a program leading to a bachelor's degree in the Faculty of Forestry and Environmental Management.

D. Gordon Willet Prize in History
conditions: An annual prize of $100 and a certificate, to be awarded to a graduating student specializing in History at UNBSJ who has shown proficiency in his/her studies.

A. Jeyaratnam Wilson Memorial Prize
conditions: A prize of $125 is awarded annually on the recommendation of the Department of Political Science to the Fredericton campus student who has completed the normal requirements for the second or third year and has written the best paper for an International Relations or Comparative Politics course. The prize is funded by the Department of Political Science.

Agnes Grey Wilson Prize
conditions: A prize of $250 to be awarded annually on the recommendation of the Faculty of Kinesiology to an outstanding female student who has completed the normal requirements for the first two years of the Bachelor of Physical Education degree program at UNB. The prize has been funded by the Associated Alumnae.

Brian R. Winslow Memorial Prize in Biology
conditions: A prize of approximately $200 to be awarded annually on the recommendation of the members of the Biology discipline, Saint John Campus, to "the most promising third year Biology student" who has completed at least 76 ch in the degree program. The prize has been funded by his parents, Richard W. and Virginia M. Winslow and will be presented at a Fall Awards Ceremony at UNB Saint John.

SCHOLARSHIPS FOR PART-TIME STUDENTS

Part-time students are encouraged to contact the College of Extended Learning UNB Fredericton or Student Life and Support Services, UNB Saint John, for scholarship applications.

ALPS Bursaries for Part-time Students
field: Any undergraduate degree or certification program or No Degree at UNB *value:* Maximum of $400 in 12-month period (Sept-Aug.) *conditions:* Enrolled as a part-time student in degree-credit courses. Completed less than 30 ch any any university. Financial need. To be considered for a spring/summer award, the applicant may have been full-time during the previous academic year. *apply:* College of Extended Learning. *donor:* ALPS (Adult Learner Part-Time Students Organization). *deadline:* Fall - August 15; Winter - December 1; Spring - April1; Summer - June 1

ALPS Keener Award
field: Unrestricted *value:* Up to $1,000 *number:* Variable *duration:* 1 year *conditions:* Awarded to part-time students or full-time mature students enrolled on the Fredericton campus. Selection will be based on the student's class participation and overall enthusiasm. The candidate must have made a significant contribution to student life on campus. The candidate will be nominated for the award by Faculty or fellow students. *apply:* Adult Learner Part-Time Students (ALPS) Office, Room 3A, MacLaggan Hall for the nomination forms. *awarding agency:* The University on the recommendation of ALPS. *donor:* Adult Learner Part-Time Students (ALPS Organization).

ALPS Scholarships for Part-time Students
field: Any undergraduate degree or certificate program at UNB *value:* Maximum of $750 in 12-month period (Sept. - Aug.). *conditions:* Enrolled as a part-time student in undergraduate degree or (University) certificate program at UNB. Successfully completed at least 30 ch at UNB. High academic performance. Financial need considered. To be considered for a spring/summer award, the applicant may have been full-time during the previous academic year. *apply:* College of Extended Learning *donor:* ALPS (Adult Learner Part-time Student Organization) *deadline:* Fall - August 15; Winter - December 1; Spring - April 1; Summer - June 1.

Alumnae Continuing Education Scholarship
field: Unrestricted. *value:* Variable. *number:* Multiple. *duration:* One per calendar year - may be renewed. *conditions:* Awarded to a part-time student on the basis of financial need and attainment of high academic performance. To be eligible, an applicant must (1) be enrolled in an undergraduate degree or certificate program at the University; (2) be registered as a part-time student in a degree - credit course(s) at the time of receipt of award; and (3) have completed successfully a minimum of 30 ch towards the academic program at UNB. *apply:* College of Extended Learning. *awarding agency:* The University in consultation with the Associated Alumnae. *donor:* Associated Alumnae. *deadline:* August 15.

Dr. Everett Chalmers Hospital Auxiliary Awards for Continuing Education

field: BN/RN program. ***value:*** Minimum $100 per course; maximum $300 per course. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Eligibility for this award is based on a combination of high academic performance and financial need. For consideration, the applicant must: (1) be registered as a part-time students in the BN/RN program at UNB at the time of receipt of the award; (2) not have received a Dr. Everett Chalmers Hospital Auxiliary Award for Continuing Education during the same academic year (May to April); (3) have successfully completed a minimum of 30 ch (normally at UNB); (4) be 21 years of age or older; (5) demonstrate financial need. Preference will be given students residing in Health Region 3 (New Brunswick). To be considered for a spring/ summer award, the applicant may not have been full-time during the previous academic year. ***apply:*** College of Extended Learning. ***donor:*** Dr. Everett Chalmers Hospital Auxiliary and the New Brunswick University Opportunitty Fund. ***deadline:*** August 15 for fall awards, December 1 for winter awards, and April 1 for Intersession awards and June 1 for summer awards.

Catherine Earle and her parents Dr. Thomas and his wife, Mary (West) Earle Scholarship for Part-Time Students

field: Arts and Science. ***value:*** Variable. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a part-time student on the Saint John campus who is a graduate of a New Brunswick high school. Selection is made on the basis of scholastic attainment and financial need. The profile of the recipient must indicate that the recipient is hard working, and consideration may be given to the recipient's participation in extracurricular activities. ***apply:*** Student Services, UNB Saint John. ***awarding agency:*** UNBSJ Part-Time Awards Committee. ***donor:*** Friend of Catherine Earle.

Norman S. Fraser Summer Session Scholarship

field: Preferably Education. ***value:*** $330. ***number:*** 1. ***duration:*** 1 Summer Session. ***conditions:*** Awarded to a student of the Summer Session who in the previous session maintained high standing. Consideration is given to financial need. The recipient must be a New Brunswick teacher working towards a degree in the Summer Session. ***apply:*** Director of Summer Sessions, University of New Brunswick, by June 1. ***donor:*** The late Norman S. Fraser.

Dr. Richard Papenhausen Bursary for Part-time Students

field: Unrestricted. ***value:*** $50 to $300 per course. ***number:*** Multiple. ***duration:*** 1 term. ***conditions:*** Awarded to part-time Saint John campus undergraduate students who were not enrolled in full-time studies in the previous 12 months. Selection will be based on scholastic achievement and financial need. ***apply:*** Student Life and Support Services, UNB Saint John. ***awarding agency:*** Student Life and Support Services, UNB Saint John. ***donor:*** Student Life and Support Services, UNB Saint John. ***deadline:*** August 15 for fall awards, December 1 for winter awards, and April 15 for spring and summer awards.

Saint John Faculty Scholarships for Part-time Students

field: Unrestricted. ***value:*** $100. ***number:*** 5. ***conditions:*** Student must be currently registered in a degree or full-credit certificate program on the Saint John Campus, must have successfully completed at least 30 ch in the degree, or certificate program, and must be registering as a part-time student at UNB during the next academic year. Selection is to be made on the basis of scholastic attainment and financial need. Awards will normally be made in October. ***apply:*** Chair, UNBSJ Scholarship Committee, University of New Brunswick in Saint John. ***donor:*** UNBSJ Faculty Council.

Scoudouc River Continuing Education Awards

field: Unrestricted. Tenable only at post-secondary insti ***value:*** Minimum $100 per course, maximum $300 per course. ***duration:*** A recipient may not receive more than one of these awards in any one calendar year. ***conditions:*** These awards are intended for part-time students and are open to persons residing in New Brunswick who were not engaged in full-time study during the twelve month period preceding date of application. Awards are open to part-time students with a real need and may be used for study towards credit or non-credit programs. Major consideration will be given to the relationship of the applicant's study plans to present employment or future career aspiration. At the time of application, an applicant must be a New Brunswick resident and a Canadian citizen, or, if a Landed Immigrant, must have resided in New Brunswick for at least twelve consecutive months prior to application. Those who have received in the same year other major financial awards are not eligible for consideration. ***apply:*** Application forms are available from the Office of Continuing Education, Extension (or the like) at any New Brunswick university or college, or from any New Brunswick university or college, or from any of the offices of the New Brunswick Community College. Application forms must be completed fully and returned to the institution where the applicant will register for the course(s). ***awarding agency:*** Applications will be considered by the Scoudouc River Continuing Education Awards Selection Committee. Recommendations for awards will be forwarded to the President of the University of New Brunswick and successful applicants will be notified shortly thereafter. ***donor:*** The late Dr. William L. Webster. ***deadline:*** August 15 for Fall awards; December 1 for Winter awards; April 1 for Spring awards; June 1 for Summer awards.

Summer Session Award

field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** Summer Session. ***conditions:*** Awarded to Fredericton campus students who have completed at least 24 credit hours at UNB Fredericton during the previous academic year and are attending summer session. Selection will be based on scholastic attainment and financial need. ***apply:*** College of Extended Learning.

UNB Third Century Fund Continuing Education Scholarship

field: Unrestricted. ***value:*** Variable. ***number:*** Variable ***duration:*** 1 year. ***conditions:*** Awarded to part-time student(s) on the basis of scholastic achievement and financial need. To be eligible, applicants must be enrolled in a degree, certificate or diploma program at UNB and have successfully completed at least 30 ch of degree credit courses at UNB towards their academic program. ***apply:*** Coordinator of Adult Learner Services, College of Extended Learning, UNB Fredericton, or Director of Student Services, UNB Saint John. ***donor:*** Contributors to the Third Century Fund. ***deadline:*** August 15.

University of New Brunswick Continuing Education Award

field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 term. ***conditions:*** Awarded to part-time undergraduate students enrolled in a degree or University certificate program on the Fredericton campus who have successfully completed a minimum of 30 credit hours at UNB. Awarded on the basis of financial need and high academic achievement. ***apply:*** College of Extended Learning. ***donor:*** Pepsi-Cola Canada Ltd.

SCHOLARSHIPS ADMINISTERED BY OUTSIDE AGENCIES

Students are encouraged to contact the sponosoring agency directly for application forms. See also: www.unb.ca/scholarships/external.htm

Paul Wm. Alexander Scholarship

field: Unrestricted. ***value:*** $1,650 over life of award; $400 a year for 3 years, and $450 for year 4. ***duration:*** 4 years. ***conditions:*** Recipient must intend to enter a YMCA career. Selections are made primarily on the basis of academic achievement and financial need. ***apply:*** Area Director, Paul W. Alexander Scholarship Fund, International Association of Ys Mens Clubs, Box 56, Kensington, P.E.I. ***donor:*** International Association of Ys Mens Clubs.

ALICA Scholarship (Atlantic Land Improvement Contractors Scholarship)

field: Forestry ***value:*** $1,000 ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a Fredericton campus student from the Atlantic Provinces who has completed the normal requirements for the first year of the Bachelor of Science in Forestry or Bachelor of Science in Forest Engineering degree programs. Selection is made on the basis of scholastic achievement. Preference will be given to students undertaking senior projects dealing with environmental issues related to forest lands, or equipment development for the forest industry. ***apply:*** Faculty of Forestry and Environmental Management. ***donor:*** Atlantic Land Improvement Contractors Association.

Association of Universities and Colleges of Canada
conditions: The AUCC administers more than 150 scholarship programs on behalf of the federal government, domestic and foreign agencies and private sector companies. For a complete listing of the AUCC scholarships, visit their website at http://www.aucc.ca or contact the AUCC at 350 Albert Street, Suite 600, Ottawa, ON K1R 1B1, tel: (613)563-1236.

Bank of Montreal Centre for Entrepreneurial Leadership Scholarship
field: Administration - Entrepreneurial Studies ***value:*** $2000 ***number:*** 5 ***duration:*** 4 years ***conditions:*** Awarded to BBA students who are graduates of New Brunswick high schools. The successful applicants must complete a business plan to be judged by a committee of three business participants and three educators. This scholarship will be applied toward tuition costs for any student entering UNB. ***apply:*** Department of Education, Attention: Jacques Theriault, P.O. Box 6000, Fredericton, NB E3B 5H1. ***awarding agency:*** Centre for Entrepreneurial Leadership. ***donor:*** Bank of Montreal.

Jeanette Robinson Belyea Scholarship
field: Unrestricted ***value:*** Up to $1300. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded every year to a student of the public schools of the Town of St. Stephen or the County of Charlotte, preference being given always to a student of the public schools of the Town of St. Stephen. Consideration will be given to scholastic attainment, character, ability, and financial need. ***apply:*** Student Services Supervisor, School District 10, 11 School St., St. Stephen, NB E3L 2N4. ***awarding agency:*** School District 10. ***donor:*** The late Jeanette Robinson Belyea. ***deadline:*** May 01.

V.C. Blackett Scholarship
field: Engineering. ***value:*** $300 ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Regularly enrolled Engineering student in the year prior to graduation at a Maritime Province University. Must be a resident of Westmorland, Albert, or Kent County, or the Parish of Havelock. Financial need shall be a prime consideration as well as scholastic promise. ***apply:*** The Secretary, Moncton Branch, P.O. Box 2424, Station "A",Moncton, N.B. ***awarding agency:*** Moncton Branch, Engineering Institute of Canada and Association of Professional Engineers of New Brunswick.

C.I.M. New Brunswick Branch, Earth Science Scholarship
field: Geology, Mining or Metallurgy. ***value:*** $1,500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Students who have completed at least one year of studies in a program leading to a degree in the earth sciences. The award is made on the basis of interest in a career in the earth sciences, scholastic ability, need and outside interests. The scholarship is tenable at the Canadian University of the recipients choice. Applicants should have been born or resided in New Brunswick for a total of seven years or have immediate family resident in the Province of New Brunswick. ***apply:*** Ronald Shaw, c/o NB Department of Natural Resources & Energy, Mines Branch, P. O. Box 6000,Fredericton, NB, E3B 5H1 prior to April 15. ***awarding agency:*** C.I.M. New Brunswick Branch.

Cal Callahan Memorial Bursary
field: Unrestricted. ***value:*** Up to $5,000. ***number:*** Multiple. ***duration:*** 1 year. ***conditions:*** To be eligible a student must be the child or legal ward of a person whose principle income is derived from the pipeline industry and whose employers are members of the Association. The student must be beginning undergraduate studies in a full program leading to a degree or certificate in any field. Selection is made on the basis of scholastic record and financial need. Deadline for receipt of applications is 30 September. Applications must be accompanied by proof of enrolment. ***apply:*** Pipe Line Contractors Association of Canada, Suite 720, 5915 Airport Rd., Mississauga, Ontario, L4V 1T1. ***awarding agency:*** Executive Committee of Pipe Line Contractors Association of Canada.

J.A.D. Campbell Memorial Scholarship
conditions: Applications are invited for the J.A.D. Campbell Memorial Scholarship which was established under the terms of the Last Will and Testament of the late J.A.D. Campbell in March 1983. Eligible Applicants: Charlotte County students pursuing literary endeavors at any recognized College or University. Available for either undergraduate or graduate studies. Scholarship Committee: Consists of the Mayors of the Towns of St. George, St. Andrews and St. Stephen who will advise Royal Trust with respect to the name and address of the successful applicant. Amount of Award: Approximately $1,000 non-renewable. Application Procedure: A letter of application containing, (1) the applicants full name, address and SIN number; (2) details of the applicants program of study; (3) applicants statement of need or relevant information and (4) three references that may be contacted, should be sent to: Town of St. Stephen, 34 Milltown Blvd., St. Stephen, N.B. E3L 1G3, Attention: Janet McAuley, Executive Secretary. ***deadline:*** July 2

Canadian Armed Forces Sponsorship Plans (General)
conditions: The Department of National Defence sponsors programs of university education and leadership training for selected young men and women who have the potential to become officers in the Canadian Armed Forces. The programs sponsored are the Regular Officer Training Plan (ROTP), Medical Officer Training Plan (MOTP) and Dental Training Plan (DOTP). Training is divided into normal attendance during the academic year and military training each summer. A period of obligatory military service is a condition of acceptance to any of these plans. For further details, contact: Canadian Armed Forces Recruiting Office, 189 Prince William Street, Saint John, N.B., E2L 2B9, (506) 636-4973 or 1-800-222-9506 (in NB).

Canadian Federation of University Women - Saint John Scholarship I
field: Unrestricted ***value:*** $1000. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Female student entering her final year of university. The student must have graduated from a high school in N.B. School Districts 6,8 or 1. Awarded on the basis of academic standing and financial need. ***apply:*** Chair of the Scholarship Committee, CFUW Saint John, PO Box 6233, Station A, Saint John NB, E2L 4R7 ***awarding agency:*** Canadian Federation of University Women - Saint John

Canadian Federation of University Women - Saint John Scholarship II
field: Unrestricted. ***value:*** $500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a mature female student of Saint John entering a university in New Brunswick either for a degree program or part thereof, for extension courses or post-graduate work. The award will be presented only to applicants who are in need of financial assistance. No application forms are needed, but an informative letter stating previous and intended education and the applicants financial situation is required by April 30. ***apply:*** Chair of the Scholarship Committee, CFUW Saint John, PO Box 6233, Station A, Saint John NB, E2L 4R7 ***awarding agency:*** Canadian Federation of University Women - Saint John

Canadian Institute of Forestry (Nova Scotia Section) Bursary
field: Forestry or Forest Engineering. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded to a student from Nova Scotia with specific financial need who has demonstrated successful academic performance and who is entering the next to final year of a program leading to the degree of Bachelor of Science in Forestry or Bachelor of Science in Forest Engineering. ***apply:*** Faculty of Forestry and Environmental Management. ***awarding agency:*** Canadian Institute of Forestry, Nova Scotia Section.

Canadian Legion Bursary Fredericton Branch
field: Unrestricted. ***value:*** $1,000 ***number:*** up to 20 ***duration:*** 1 year. ***conditions:*** Awarded to children or grandchildren of ex-service personnel residing in the Fredericton Area or descendants of veterans who held membership in Branch No. 4, Fredericton Branch, Royal Canadian Legion. Awards made based on need. ***apply:*** The Secretary, Fredericton Branch, Royal Canadian Legion, P.O. Box 132, Fredericton, N.B. E3B 4Y2 ***awarding agency:*** Fredericton Branch, Royal Canadian Legion.

Canadian Legion Scholarship, Auxiliary Provincial Command
field: Unrestricted. ***value:*** $200 per annum. ***number:*** 4 ***duration:*** 3-1 year awards; 1-4 ***conditions:*** Available from nearest N.B. Legion Branch. ***awarding agency:*** N.B. Auxiliary Command, Royal Canadian Legion.

Canadian Legion Scholarship, Provincial Command
field: Unrestricted. ***value:*** $150. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Available from Provincial Command. ***apply:*** The Secretary-Treasurer, New Brunswick Provincial Command, The Royal Canadian Legion, P.O. Box 3426, Station B, Saint John, N.B.

Central Branch New Brunswick Society of Retired Teachers Scholarship

conditions: Scholarships to provide financial assistance for worthy students enrolled in the education degree program at the University of New Brunswick. Graduates from high school in School Districts 17 and 18 and Ecole Ste. Anne who have been accepted into the Education Program at UNB are eligible to apply. The value and number of awards will be contingent on the amount of the annual interest from investments. Award money will be paid to the University of New Brunswick during the second term of the academic year. ***apply:*** Secretary, CBSRT Awards Committee, 269 Cantebury Drive, Fredericton, N.B., E3B 4M1. ***donor:*** Central Branch New Brunswick Society of Retired Teachers.

Certified General Accountants Scholarship

field: Business Administration. ***value:*** $1,200. ***duration:*** 1 year. ***conditions:*** Students interested in entering the CGA Program of Studies can apply to the Association for a scholarship of $1200. ***apply:*** Applications for this scholarship are available from your Business Administration Department. ***donor:*** Certified General Accountants Association of New Brunswick.

Charlotte County Overseas Soldiers Scholarship

field: Unrestricted. ***value:*** $300. ***number:*** 1 ***duration:*** 3 years. ***conditions:*** A student who is a descendant of a member of the Carleton and York Regiment, residing in Charlotte County, N.B. ***apply:*** Montreal Trust Company, Box 695, Saint John, N.B. ***awarding agency:*** Montreal Trust Company.

Florence Christie Memorial Bursary

field: Unrestricted. ***value:*** $1,500. ***number:*** 1 ***duration:*** 1 year ***conditions:*** Awarded to a full or part-time UNB student. Financial need and volunteer experience will be considered. ***apply:*** The Greater Saint John Community Foundation, P.O. Box 20061, Brunswick Square, Saint John, NB E2L 5B2 (506)372-8880 ***awarding agency:*** Saint John Volunteer Centre. ***donor:*** The Greater Saint John Community Foundation.

Class of 1995 Faculty of Forestry and Environmental Management Award

field: Forestry/Forest Engineering. ***value:*** $500. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded to a student in Forestry or Forest Engineering on the Fredericton campus who has successfully completed four years of study (120 credit hours). Consideration will be given to participation in extra-curricular activities within the Faculty of Forestry & Environmental Management. Presentation of award - October 1 of each year. ***apply:*** Dean, Faculty of Forestry & Environmental Management. ***awarding agency:*** Graduating Class of the Faculty of Forestry & Environmental Management and a representation from the Faculty. ***donor:*** Forestry and Forest Engineering Class of 1995.

Co-Op Atlantic McEwen Scholarship

field: Unrestricted. ***value:*** $1,000 per annum. ***number:*** 2 ***duration:*** Up to four years. ***conditions:*** Applicants must be a) a full-time employee or the dependent of a full-time employee of Co-Op Atlantic or one of its member co-operatives or b) applicants must submit an essay of not less than 500 words regarding past experience and aspirations and the concept of co-opertion. ***apply:*** Manager, Corporate Administrative Services, Co-Op Atlantic, P.O. Box 750, Moncton, NB, E1C 8N5. ***awarding agency:*** Co-Op Atlantic.

Isabel Adams Coburn Memorial Scholarships

field: Unrestricted. ***value:*** Up to $2000 ***number:*** 2 ***duration:*** 1 year ***conditions:*** Awarded in memory of New Brunswick educator Isabel Adams Coburn to students residing in certain areas of the parishes of Bright and Queensbury (Keswick Ridge/Mactaquac area), York Co., N.B., who are entering or attending the University of New Brunswick as candidates for an undergraduate or graduate degree. Award money will be paid to the University during the second term of the academic year. (Contact the awarding agency for a precise definition of areas of eligibility). ***apply:*** Isabel Adams Coburn Scholarship Trust, c/o W.T. Walker, 200-320 Maple Street, Fredericton, N.B. E3A 3R4 by June 15. ***awarding agency:*** Isabel Adams Coburn Scholarship Trust.

Donald E. Curren Scholarships

field: Unrestricted. ***value:*** Variable. ***number:*** Up to 8 awards. ***duration:*** 1 year. ***conditions:*** Open to mobility impaired students who have been accepted by a University in the Atlantic Provinces, with preference to paraplegics and quadriplegics. The scholarships will be awarded on the basis of academic standing and on such other criteria as the Selection Committee may determine. Recipients must be Canadian citizens, or landed immigrants, and residents of the Atlantic Provinces. ***apply:*** Donald E. Curren Scholarship Fund, c/o Canadian Paraplegic Association, Nova Scotia Division, 1310 Hollis Street, Suite 150, Halifax, N.S., B3J 3P3 by July 10. ***awarding agency:*** The Donald E. Curren Scholarship Fund.

Electrolux Canada Award of Excellence

field: Business Administration Marketing Management ***value:*** $1,000. ***number:*** Variable. ***duration:*** 1 year. ***conditions:*** Open to students entering the third or fourth year of an undergraduate degree program relating to Marketing Management. Candidates must be Canadian citizens or have held landed immigrant status for one year prior to submitting application. ***apply:*** Mr. Patrick W. Tolbert, Executive Vice President, Electrolux Canada, 2 Sheppard Ave., East, Willowdale, Ontario, M2N 6C1.

Terry Fox Humanitarian Award Program

field: Unrestricted. ***value:*** $6,000 per year. ***duration:*** Until first degree is obtained. ***conditions:*** In keeping with the spirit of his achievements, the Terry Fox Humanitarian Award Program is intended to encourage Canadian youth to seek the high ideals represented by Terry Fox by the granting of commemorative scholarships for the pursuit of higher education. Terry Fox scholars are evaluated on their sport and fitness involvement, citizenship, academic potential, community service, humanitarian works, and their courage in overcoming personal obstacles. ***apply:*** Visit their website: www.terryfox.org ***deadline:*** February 1.

Fredericton Rotary Club Memorial Scholarships

value: $1,000. ***number:*** 3. ***duration:*** 1 year (may be renewed). ***conditions:*** Scholarship recipients must have successfully completed, as a minimum, one year of undergraduate study at a recognized university and be enrolled as a student at a university in the academic year for which the scholarship is awarded. Recipients must be disabled persons or person who are enrolled in a course of study the purpose of which is to assist or work with disabled persons. In the latter case, previous experience working with the disabled will be considered. Preference will be given to applicants from the Greater Fredericton area. ***apply:*** Memorial Scholarship Committee, Fredericton Rotary Club, P.O. Box 301, Fredericton, NB, E3B 4Y9 ***awarding agency:*** Memorial Scholarship Committee, Fredericton Rotary Club ***deadline:*** April 1.

Fredericton Society of Saint Andrew Scholarship

field: Unrestricted. ***value:*** $500. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Students who are native of Scotland or who are of Scottish descent having completed a minimum of one year undergraduate study in a first degree program on the Fredericton campus. The course must lead to a degree to be conferred by the university. ***apply:*** The Secretary, The Fredericton Society of St. Andrew, P.O. Box 283, Fredericton, N.B. ***awarding agency:*** The Fredericton Society of St. Andrew. ***deadline:*** October 1

Fredericton Women's Executive Club

field: Unrestricted. ***value:*** $500. ***number:*** 1. ***conditions:*** The Women's Executive Club is giving a scholarship to a female student in the Fredericton area that is continuing her education after high school. Criteria: Female candidate requiring financial assistance for post secondary education, can be any year of study. In your application please include the name of the educational institute you are entering and also some of your interests, hobbies, etc. Candidates will be interviewed by the end of April 2004. Confirmation of your registration is required from the school you will be attending to further your education prior to the scholarship being paid out. ***apply:*** Please apply in writing to: Fredericton Women's Executive Club, 527 Beaverbrook Court Suite 140, Fredericton, NB E3B 1X6. ***donor:*** Fredericton Women's Executive Club. ***deadline:*** April 1, 2004.

Gilbert W. Ganong Scholarship
field: Unrestricted. ***value:*** $1300. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Awarded every year to a deserving student entering from the County of Charlotte. ***apply:*** Student Services Supervisor, School District 10, 11 School St., St. Stephen, NB E3L 2N4 ***awarding agency:*** School District 10. ***donor:*** The late Mrs. Maria F. Ganong. ***deadline:*** May 01.

Ralph Gustafson Poetry Prize
conditions: The Fiddlehead through an annual competition for the best poem or suite of poems written originally in English and previously unpublished. The competition will be open to writers from any country. Submission will be judged by a panel of three judges. The winner will be announced in The Fiddlehead and suitable publications such as Books in Canada, the newsletter of the League of Canadian Poets, and UNB Perspectives. Candidates should apply to The Fiddlehead, Campus House, University of New Brunswick, Fredericton, NB, E3B 5A3. Phone: (506) 453-3501; Fax: (506) 453-4599. The prize has been funded by Elisabeth Renninger Gustafson and the Estate of Ralph Barker Gustafson.

J. Harper Kent Charitable Foundation Inc. Scholarship
field: Unrestricted. ***value:*** Variable. ***number:*** Variable. ***duration:*** 1 year (may be renewed). ***conditions:*** Candidates must be Canadian citizens. Preference will be given to candidates entering university at the first year level, with continued support on to the first degree, subject to satisfactory achievement. Priority will be given firstly to residents of the City of Bathurst, N.B. or secondly to residents of the County of Gloucester, N.B., or thirdly to residents of the Province of New Brunswick. Selections will be made on the basis of scholastic attainment and financial need. Scholarships will be granted for attendance at university of candidates choice, with preference given to universities in the Atlantic provinces. ***apply:*** The Selection Committee, J. Harper Kent Charitable Foundation Inc., P.O. Box 1177, Bathurst, N.B. E2A 4H9. ***donor:*** J. Harper Kent Charitable Foundation Inc.

Kinsmen and Kinettes Bursary
field: Unrestricted. ***value:*** $1.000. ***duration:*** 1 year. ***conditions:*** To be eligible you must be a Canadian citizen or landed immigrant; plan to register as a full-time student in September of the upcoming shcool year at a recognized University or Community, Technical Institute or other post-secondary institution for advance learning; demonstrate high ideals and qualities of citizenship and not have previously received a bursary from the Hal Rogers Endowment Fund. ***apply:*** The application form is available on the website: www.kinclubs.ca. Please submit it to your nearest Kinsmen, Kinette or Kin Club. ***awarding agency:*** Kinsmen & Kinette Clubs of Canada ***donor:*** Hal Rogers Endowment Fund.

Ladies Auxiliary of New Brunswick Provincial Command-Royal Canadian Legion Scholarships
conditions: Scholarships valued at $200 each are awarded on a point system which is based on financial need, students scholastic record, with special consideration being given to veterans children. ***apply:*** Mrs. Ida Blyth, Scholarship Chairlady, R.R. #3, Chipman, N.B. E0E 1C0, prior to 10 July.

Ladies Auxiliary of the Fairvale Outing Association Bursary
field: Unrestricted. ***value:*** $1000. ***number:*** Var. ***duration:*** 1 year. ***conditions:*** Applicant must be a resident of the village of Fairvale and a second, third or fourth year student. Selection will be based on scholastic standing and financial need. ***apply:*** Mrs. R. Isaacs, 7 Brook Drive, Fairvale, Rothesay, N.B. E0G 2W0 or Mrs. Foster, 158 Gondola Pt. Road, Fairvale, E2E 2C2 not later than June 7. ***donor:*** Ladies Auxiliary of the Fairvale Outing Association.

Leonard Foundation Scholarships
field: Unrestricted. ***value:*** Variable but on average $1,250. ***number:*** 140 awards will be made annually across Canada. ***duration:*** 1 year - students may reapply ***conditions:*** Awarded to students enrolled in an undergraduate degree program. Preference will be given to sons and daughters of clergy, teachers, military personnel, graduates of Royal Military College, members of the Engineering Institute of Canada and members of the Mining and Metallurgical Institute of Canada. Successful applicants are expected to seek employment during free time to help defray the costs of their education, and to participate in athletics, fitness or military activities, as well as showing qualities of potential leadership ability. ***apply:*** Leonard Foundation, c/o The Canada Trust Company, 20 Eglinton Avenue West, Toronto, Ontario, M4R 2E2. ***deadline:*** March 15.

Dr. William MacIntosh Chapter IODE Bursary
field: Unrestricted. ***value:*** $300. ***duration:*** 1 year. ***conditions:*** Single Parent, part-time undergraduate student at UNBSJ who has successfully completed a minimum of 20 credit hours at University, financial need. Application Available: Student Services, UNBSJ, or donor. ***apply:*** Mrs. Malcolm Baxter, 5 Maple Grove Terrace, Saint John, N.B., E2K 2H9. Apply no later than August 15 for fall. ***donor:*** Dr. William MacIntosh Chapter, IODE.

Fred Magee Scholarships
field: Vocational Teacher Education (Business Education, Home Economics, Industrial). ***value:*** $500. ***number:*** 12 ***duration:*** 1 year. ***conditions:*** Awarded to students enrolling or enrolled in the four-year Vocational Teacher Education program (Business Education, Home Economics, Industrial). ***apply:*** Chair, Division of Vocational Education, UNB by April 15. ***awarding agency:*** New Brunswick Department of Education. ***donor:*** The late Fred Magee.

Miramichi Highland Societys Scholarship
field: Arts or Science. ***value:*** $500. ***number:*** 1 ***duration:*** 1 year (may be re-awarded). ***conditions:*** Awarded every four years or whenever a vacancy occurs, subject to the following Conditions: 1. Candidate must be a Scot or of Scottish descent. 2. Candidate must have exhibited successful academic performance. 3. Pecuniary circumstances are to be taken into consideration. 4. Appointee who fails to maintain a pass standing shall forfeit the scholarship. ***apply:*** Secretary, Highland Society of New Brunswick, 136 Victoria Avenue, Chatham, N.B. E1N 1X8. ***awarding agency:*** The Highland Society of New Brunswick, Miramichi. ***deadline:*** August 20.

Harvey Moore Wildlife Scholarship
field: Wildlife Conservation. ***value:*** Variable. ***number:*** 1 ***duration:*** 1 year. ***conditions:*** Awarded annually with preference to students attending the University of Prince Edward Island and studying Biology or other suitable field of study there, and showing a special interest in wildlife conservation and aptitude for its promotion. Apply by January 31 to President, The Prince Edward Island Wildlife Federation (1977), P. O. Box 753, Charlottetown, P.E.I., C1A 7L3.

National Aboriginal Achievement Foundation Scholarships
conditions: The National Aboriginal Achievement Foundation provides educational scholarship assistance to Aboriginal students with the generous support of the federal government and many corporate sponsors. ***apply:*** The National Aboriginal Achievement Foundation, Suite 331, 70 Yorkville Avenue, Toronto, ON M5R 1B9. Tel: 1-800-329-9780. Email: naaf@istar.ca. Website: www.naaf.ca

New York Times-Gaspesia Scholarship
field: Any branch of learning but preference to Faculties of Engineering,Forestry and Science. ***value:*** $1,000 per year. ***number:*** 2 ***duration:*** 4 years. ***conditions:*** The Scholarship is available for study in any recognized Canadian university. Applicants must reside in the territory situated between Port Daniel and Rivie Gre au Renard included. The applicant must be attending a university or admitted to attend in the year in which application is made. Basis for selection will be scholastic standing, financial need, extra-curricular activities and personal interviews. The winners will be assured of summer employment during the years they are in receipt of the scholarship. ***apply:*** Letter of application to the Personnel Department, Gaspesia Pulp and Paper Company Ltd., Chandler, P.Q. ***awarding agency:*** Scholarship Committee of Gaspesia Pulp and Paper Co. Ltd.

Dr. Robert M. Pendrigh Memorial Prize
conditions: A prize of $500 to be awarded annually on the recommendation of the Department of Nursing to an outstanding graduating student who has achieved high standing in the Bachelor of Nursing degree program on the Saint John campus. The prize has been funded by the late Dr. Robert Pendrigh and is administered by the Atlantic Health Sciences Corporation. ***apply:*** Faculty of Nursing, UNBSJ.

President's Award for Excellence in Nursing
field: Nursing ***value:*** $200. ***number:*** 1 per site ***conditions:*** A prize of $200 to be awarded annually on the recommendation of the Nursing Faculty, to a graduating nursing student exemplifying high academic standards, leadership skills and clinical competency. The prize has been provided by the Nurses Association of New Brunswick and will be presented at the Graduation Dinner for Nursing graduates. ***apply:*** Faculty of Nursing, UNB Fredericton.

Proud to Care Scholarship

field: Health Care Profession ***value:*** $1,000 ***number:*** 2 ***duration:*** 1 year. ***conditions:*** To be eligible, a student must be entering the final year leading to a qualifying license or certification in one of the health care professions who demonstrates excellence in their chosen health profession and is a resident of Region 3, New Brunswick. ***apply:*** Director of Communications, Region 3 Hospital Corporation, P.O. Box 9000, Fredericton, NB E3B 5N5 ***deadline:*** May 15.

Province of New Brunswick Bursaries

conditions: The Province of New Brunswick provides bursaries to New Brunswick students who require financial assistance toward their university education. The program operates in conjunction with the Canada Student Loan Plan, which is administered by the Department of Advanced Education and Training. Applications for student loans are considered on the basis of need, and approvals are made such that part of the financial support is by way of a loan, repayable under the terms of the Canada Student Loan Plan, while the remainder is a bursary and not subject to repayment. Inquiries and applications should be directed to the Student Aid Division, Dept. of Advanced Education and Training P.O. Box 6000, Fredericton, N.B., E3B 5H1.

Queen Elizabeth Scholarships in Education

field: Education. ***value:*** $500 (per annum). ***number:*** Variable. ***duration:*** 2 years. ***conditions:*** Awarded to outstanding students entering the third year of the Bachelor of Education degree program. ***apply:*** Dean of Education, UNB. ***awarding agency:*** New Brunswick Department of Education.

Registered Professional Foresters Association of Nova Scotia Student Award

field: Forestry. ***value:*** $750. ***number:*** 1. ***duration:*** 1 year. ***conditions:*** Open to 3rd or 4th year full time students who are graduates from a Nova Scotia high school and are enrolled in an undergraduate Canadian Forestry Accreditation Board (CFAB) approved forestry degree program at any university in Canada. The recipients must be active in faculty or university events and make a positive contribution to student life on campus. ***apply:*** Faculty of Forestry and Environmental Management. ***awarding agency:*** Registered Professional Foresters Association of Nova Scotia. ***deadline:*** September 30.

Regular Officer Training Plan

conditions: This plan combines university subsidization with career training as an officer in the Regular component of the Canadian Forces. Successful applicants are enrolled and are required to maintain a good standing both academically and militarily while being sponsored. All tuition and other essential fees are paid by the Department of National Defence. As well, a monthly salary is paid to cover living expenses. Free medical and dental care is provided and annual leave is provided generally before and after the summer training period. Upon graduation, Officer Cadet is commissioned as an Officer in the rank of 2nd Lieutenant.The normal obligatory service for ROTP is five years following graduation. Undergraduate students are eligible to apply for this program provided they have at least one full year remaining before graduation. For further details, contact: Canadian Armed Forces Recruiting Office, 189 Prince William Street, Saint John, N.B., E2L 2B9, (506) 636-4973 or 1-800-222-9506 (in NB).

Reserve Entry Scheme Officer (RESO)

conditions: This plan provides an opportunity for a limited number of suitable candidates attending Canadian universities to serve as Officers. Training is primarily during the summer months. Officer Cadet in RESO are paid for participating in training and are provided with uniform, rations and quarters. They are not subsidized for their post-secondary education nor are they obliged to serve in the Reserve Force after graduation. Diversified military training leads to promotion as a commissioned Office in the Primary Reserve of the Canadian Forces. For further details, contact: Canadian Armed Forces Recruiting Office, 189 Prince William Street, Saint John, N.B., E2L 2B9, (506) 636-4973 or 1-800-222-9506 (in NB).

Residence Representative Board Award

conditions: An annual award of $100 presented by the UNB Residence Representative Board to a student living in residence who remains active in residence life and who best promotes house spirit and community involvement. This student must be living in residence for not less than 2 years and be in good academic standing. For more information, contact your house president.

Rotary Foundation Scholarships

field: Unrestricted. ***value:*** Air fare to and from the country of study, incidental travel expenses, tuition and other educational fees, room and board plus incidental living expenses, $300 (U.S.) for limited educational travel. ***duration:*** 1 year. ***conditions:*** Tenable in a country other than that in which the candidate lives or studies. Scholarships are awarded to promote understanding and friendly relations between peoples of different nations through study abroad by outstanding students. Candidate must have maintained high standards in academic studies, have a good knowledge of his/her country, have demonstrated qualities of leadership, and be prepared to act as an "ambassador of good-will". Awards may be made for any field of study by a candidate for an undergraduate or graduate degree: Undergraduate Scholarship (Ages 18 through 24 inclusive): Have two years or more of university level study but not have achieved a bachelors degree. Must not be married. Graduate Scholarship (Ages 18 through 28 inclusive): Must hold a bachelors degree, or equivalent. May be married. ***apply:*** Through a Rotary Club, in the Rotary district in which the student either lives or studies. ***awarding agency:*** Rotary Foundation of Rotary International. ***deadline:*** March 1.

Royal Canadian Naval Benevolent Fund

conditions: Dependents of former members of the Naval Forces of Canada, and the Canadian Merchant Navy Veterans. Limited assistance also for grandchildren. The fund only provides "LAST DOLLAR" assistance. Students should obtain the results of applications for student loan, bursaries, scholarships, etc. prior to making application to the fund. Academic documentation required in addition to details on naval service. For specific requirements on this fund as well as other funds administered through this program, contact: Royal Canadian Naval Benevolent Fund,P.O. Box 505, Stn. "B", Ottawa, Ontario, K1P 5P6. Tel: 613-996-5087, Toll Free: 1-888-557-8777 or Fax: 613-236-8830.

Saint John, N.B., Times Four Scholarship

field: Open - cross-cultural, cross-disciplinary. ***value:*** $1000. ***conditions:*** Awarded to a full-time or part-time student on the Saint John Campus who has demonstrated a commitment to community concerns and awareness of minority issues and who has demonstrated a creative or innovative approach to cross-cultural or cross-disciplinary study. As 2005 is the last year that the Saint John NB-Times Four Scholarship will awarded, its BOARD has decided to award THREE(3) $1,000 scholarships in 2005. ***apply:*** Apply: Rosi Jory, c/o Renea Sleep, Student Life and Support Services, Oland Hall, P.O. Box 5050, Saint John, N.B., E2L 4L5. ***awarding agency:*** Saint John, N.B. - Times Four Scholarship Trust Fund Board. ***deadline:*** September 30, 2005. Please enclose a covering letter stating why you believe you would be a good candidate for this award. Include most recent transcript.

Saint Joseph's Hospital Foundation Bursary

conditions: A bursary valued at $100 to be awarded annually to a Saint John campus student entering the second year of the BN degree program who has successfully completed a minimum of 30 credit hours. Selection is made on the basis of financial need and promise in nursing. The bursary has been funded by the Saint Joseph's Hospital Foundation. ***apply:*** Faculty of Nursing, UNBSJ.

Saint Pauls Wark Scholarship

field: Unrestricted. ***value:*** $400 or $500 ($100 per annum). ***number:*** 1 ***duration:*** 4 or 5 years. ***conditions:*** A deserving student attending UNB who is during his college course a member or adherent of Saint Pauls United Church of Canada, Fredericton, N.B. ***apply:*** Minister of Saint Pauls United Church of Canada, Fredericton, N.B. ***awarding agency:*** Scholarship Committee of the session of Saint Pauls Church. ***donor:*** Saint Pauls United Church of Canada, Fredericton, N.B.

Jack Scovil Scholarship

field: Nursing. ***value:*** $250. ***number:*** 2 ***duration:*** 1 year. ***conditions:*** Awarded to two BN/RN students on the Saint John campus who have successfully completed 30 ch towards their BN/RN degree. Applicants will be assessed on the basis of their community experience(s) and nurses currently employed with the Victoria Order of Nurses (Saint John) will receive preference. ***apply:*** Applications are available at the Office of Student Services, Saint John campus. ***donor:*** V.O.N., Saint John. ***deadline:*** December 1.

Cindy Seaman Memorial Award in Nursing
conditions: An award valued at $500 to be awarded annually to a Saint John campus student entering the third year of the BN degree program who has successfully completed a minimum of 65 credit hours. Selection is made on the basis of scholastic achievement and financial need. The award is dedicated to the memory of Cindy Seaman, former secretary of the Saint John Medical Society. *apply:* Faculty of Nursing, UNBSJ. *donor:* The Saint John Medical Society.

Thelma Sewell Memorial Scholarship
field: Home Economics. *value:* $1,295. *number:* 1 *duration:* 1 year. *conditions:* Open to graduates of a high school in the Province of New Brunswick with evidence of a genuine interest in Home Economics or related subject areas, who have achieved good results in a variety of high school subjects including the applied sciences. Applicant must have applied for admission to a Bachelors degree program in Home Economics in any Province of Canada. *apply:* Margaret McCormack, 9 Firwood Cres., Moncton, N.B. E1A 5W9, prior to 31 May. *awarding agency:* New Brunswick Home Economics Association. *donor:* The family of the late Thelma Sewell.

Frank H. Sobey Fund for Excellence in Business Studies
field: Business. *value:* $6,000 *duration:* 1 year. *conditions:* Applicants must have completed one year of undergraduate business studies at an Atlantic Provinces university and be enrolled for full-time study for the next year, also at an Atlantic Canadian University. *apply:* Faculty of Administration, UNBF, and Faculty of Business, UNBSJ.

St. Vincent's Alumnae Scholarships
conditions: (1) A Scholarship of $500 to honor the memory of Sister M. Francesca, M.A., Principal of St. Vincents High School from 1893-1919 and the foundress of St. Vincents Alumnae Association in 1902. (2) A Scholarship of $800 to honor the memory of Sister M. Angela, LL.D., Principal of St. Vincents High School from 1919-1947. (3) The Scholarship Committee is honored to award a scholarship of $500 in memory of Mrs. M. Muriel Corkery-Ryan Q.C. Mrs. Ryan served as President of St. Vincents Alumnae Association and was Chairman of the Scholarship Fund Committee set up to raise funds for The Sister Francesca Scholarship in 1950. This scholarship was established by the family of the late Mrs. Corkery-Ryan Q.C. (4) The Dolan-McGuiggan Memorial Scholarship is valued at $900 this year. The Scholarship Committee is most grateful to the donor of this award in memory of Miss Marie Dolan and Miss Annie McGuiggan, both graduates of and former teachers at St. Vincents High School. (5) The Katherine Louise Roderick Scholarship of $900 was created by the late Mrs. M. Grace Roderick through monies bequeathed to the Alumnae for a scholarship in memory of her daughter, a member of the Class of 1966. (6) The Mary M. Chaisson Memorial Scholarship of $500 will be awarded to a graduate who has been active in both church and community activities. Mary M. Chaisson, a 1916 graduate of St. Vincents, was the leading N.B. scholar of that year. She was one of the early Presidents of St. Vincents Alumnae and did much to further its development. In 1958 she was awarded the Papal Medal Pro Ecclesia et Pontifice by Pope Pius XII in recognition of her outstanding service to church and community. This scholarship was created by the late Mrs. Eleanor Heffernan in memory of her sister. (7) The Edward L. & M. Clare Broderick Morris Memorial Scholarship valued at $400 is awarded in memory of Mrs. Morris who was a devoted and active member of St. Vincents Alumnae Association and served as Governor of N.B. for the Canadian Catholic Federation of Alumni. This scholarship was instituted by a bequest from the estate of Mrs. Morris. (8) The Helen G. Hurley Family Scholarship is valued at $700 this year. Monies for this scholarship were bequeathed to the Alumnae by Miss Hurley, a retired Saint John business woman and supporter of St. Vincents High School. St. Vincents Alumnae Scholarship Committee is proud to award this scholarship in memory of Helen G. Hurley. (9) The Deborah Montague Bursary valued at $200 is to be awarded to a graduate enrolling in a post-secondary institution. St. Vincents Alumnae Scholarship Committee is grateful to the donor and parties involved in establishing this memorial bursary. Deborah was a member of the Class of 1978. (10) The M. Geraldine Carleton & Class of 1908 Bursary of $100 has been made available through a sum of money bequeathed to the Alumnae by Miss Carleton. Miss Carleton, who practiced nursing for many years, was an active and dedicated member of St. Vincents Alumnae. *apply:* St. Vincents Alumnae Scholarship Committee, 117 Union Street, Saint John, N.B. E2L 1A5 *awarding agency:* St. Vincents Alumnae Scholarship Committee. *donor:* St. Vincents Alumnae. *deadline:* August 30th.

Wajax Fire Control Technical Report Award
conditions: Wajax Limited will award three cash prizes for reports on forest fire control, management or use written as part of an undergraduate forestry curriculum. One report will be selected from and by each of the six forestry faculties in Canada and forwarded to Wajax Limited by January 31. An independent three man committee will judge the reports. Graduating senior theses are excluded. *apply:* Dean of Forestry and Environmental Management.

Walter W. White Scholarship
field: Unrestricted. *value:* Up to $900 per annum *number:* 1 *duration:* 4 years, provided student passes each year *conditions:* The most promising male student from the Saint John High School who requires financial assistance to attend the University of New Brunswick. Tenable from the time the recipient enters university until he graduates. *apply:* The Principal, Saint John High School, Saint John, N.B. *awarding agency:* Canada Permanent Trust Company, 53 King Street, Saint John, N.B. *donor:* The late Douglas V. White.

Sophia Wood Education Fund
field: Geology and/or Geological Engineering *value:* Variable. *number:* Multiple. *duration:* 1 year. *conditions:* Open to students in Geology and Geological Engineering who have completed at least the normal requirements for the first year of their degree program. *apply:* Check with the Faculty of Engineering. *awarding agency:* The Womens Association of the Mining Industry of Canada.

LOANS

Unless otherwise stated, applications forms for loans may be obtained from the UNB Financial Aid Office, Alumni Memorial Building, Room 3, (506) 453-4796.

Note: Students are not considered for University loans until they have successfully completed one term full-time at UNB.

Fred and Dixie Beairsto Emergency Aid Fund
conditions: An emergency aid fund which provides limited assistance for undergraduate students at UNB Fredericton administered through the UNB Financial Aid Office. This aid would be a short term loan to meet unforeseen financial needs. Application for the Beairsto Emergency Aid Fund can be made at the UNB Financial Aid Office in the Alumni Memorial Building. The Fund has been established through the generosity of Fred Beairsto, BScCE 63, his wife Dixie and their family.

Harry F. Bennett Education Fund
conditions: A fund established in 1946 by subscription from membership of the Engineering Institute of Canada as a memorial to Harry F. Bennett, M.E.I.C. The purpose of the Fund is to make loans available to deserving students who need financial assistance to enable them to complete their engineering studies. Money is available to students who have completed their first year in Engineering. The maximum loan for one year is $250 and the maximum total for all years is $450. The interest rate is 4% per annum applied from date of graduation. Application may be made through the Dean of Engineering or to the Harry F. Bennett Education Fund, 2050 Mansfield Street, Montreal 2, Quebec.

Canada Student Loan Plan
conditions: The Canada Student Loan Program was established in 1964 by the Federal government to financially assist Canadian students registered in or accepted by a Canadian university. Each province administers a student aid program offering combined Federal/Provincial student loan funding (exception is Quebec which offers only provincial loan funding) to eligible applicants. Students interested in making application for funding should contact their designated provincial department of education (located in the "blue pages" of the phone book). New Brunswick students can contact 1) Student Financial Services,Department of Education, P.O. Box 6000, 548 York Street, Fredericton, New Brunswick, E3B 5H1; 2) web site: www.studentaid.gnb.ca. Students intending to use the Student Aid Program to fund their educational expenses should file their applications with the provincial authorities at least three months prior to their first day of classes. Further information/questions concerning the provincial loan programs can be discussed with the UNB Financial Aid Office by telephone at (506)453-4796 or fax (506)453-5020.

Canadian Forces Personnel Assistance Loan Fund
conditions: The Canadian Forces Personnel Assistance Fund offers an Education Assistance Loan Program to assist serving and former members and their departments with costs of post-secondary education. To be eligible for a low interest loan of $1,200, $1,500, $2,000 or $2,500 the serving or former member must have served in the Canadian Army, after 1st October 1946, or in the Canadian Forces, after 31 January 1968, and have a minimum of one year Regular Forces military service. The loans are repayable over 12 or 24 months. Application forms are available from Canadian Forces Base Financial Counsellors, district offices of Veterans Affairs Canada, and the Provincial Command offices of the Royal Canadian Legion or by writing to CFPAF, 234 Laurier Avenue West, Ottawa, Ontario, K1P 6K6, telephone (613)760-3447 or toll free 1-888-753-9828. For those who wish to obtain their loan in time for the semester beginning September, your submission should arrive at CFPAF by 30 June. Otherwise, applicatins will be accepted throughout the year until the funds allotted for the EALP are exhausted.

Canadian Institute of Surveying Student Loan Fund
conditions: The Canadian Institute of Surveying has established a loan fund for the purpose of assisting students registered in the fourth and fifth year Surveying course at this University. Applicants must be students in good academic standing. No loan to any single approved applicant shall in any one year exceed $500. Normally, students will only qualify for one Surveying loan, but at the discretion of the awarding committee, applications for a second loan may be considered.

Ken Fuller Memorial Emergency Aid Fund
conditions: An emergency aid fund for undergraduate students at UNB established through the efforts of UNB Counselling Services, and co-ordinated with the UNB Financial Aid Office. This aid would be a short term loan to meet unforeseen financial needs. Application for the Ken Fuller Emergency Aid Fund can be made at the UNB Financial Aid Office. The Ken Fuller Memorial Emergency Aid Fund has been established in commemoration of Ken Fuller, who from 1969 to 1978, served the University of New Brunswick as Director of Counselling Services.

Dr. Frank Gannett Loan Fund
conditions: A loan fund has been established through the generosity of the late Dr. Frank Gannett, of Rochester, N.Y., to assist deserving students in the Business Administration course who require financial assistance. This aid would be a short-term loan to meet unforseen financial needs.

Joe Kaiser Memorial Loan Fund
conditions: This fund has been established at the University through the efforts of the Engineering undergraduates to provide financial assistance to Engineering students. Applications from third year students will be given preference. The maximum loan is $800. The loans are awarded on the basis of need, with scholastic standing of the student a secondary consideration.

The Fred Magee Endowment Loan Fund
conditions: The late Dr. Fred Magee, of Port Elgin, N.B., Class of 1897, founded a loan fund through the means of a most generous bequest to the University. The income from this bequest shall be lent to undergraduate students of UNB who are in need of funds to continue their courses of study. Applicants must be Canadian citizens by birth or naturalization.

Beth Christie McAlpine Emergency Loan Fund
conditions: An emergency aid fund for undergraduate students at UNB has been established by family and friends of the late Beth Christie McAlpine, a graduate of the class of 1984. This fund will provide limited assistance to deserving students. This aid would be a short term loan to meet unforeseen financial needs. Applications for the Beth Christie McAlpine Emergency Loan Fund can be made at the UNB Financial Aid Office.

Oscar D. Morrill Loan Fund
conditions: The late Oscar D. Morrill of Ann Arbor, Michigan, U.S.A., bequeathed the sum of $5,000 to the University to provide loans for worthy young men unable to obtain a university education without financial assistance. Preference is given to students from Yarmouth, Digby or Shelburne Counties of Nova Scotia. Loans may be made to students from other sections of the Maritime Provinces.

C. Alexander Pincombe Memorial Loan Fund
conditions: A loan fund has been established through the generosity of the late C. Alexander Pincombe to assist UNB students who are in need of funds to continue their course of study. Applicants must be Canadian citizens by birth or naturalization and preference is to be given to students from southeastern New Brunswick. The loan fund is administered through the UNB Financial Aid Office.

Florence T. Snodgrass Loan Fund for New Brunswick Students
conditions: An emergency aid fund for full-time students of UNB Fredericton campus who have graduated from a New Brunswick high school. Administered through the UNB Financial Aid Office, this aid is normally in the form of a short-term loan to meet unforeseen financial needs. The maximum loan is $600 annually but under extenuating circumstances may be increased to $800.

Garnet Strong Loan Fund
conditions: This Loan Fund has been established by a friend interested in Forestry. Loans, not exceeding $800 each, are available to Forestry students. The student s financial need, character, academic standing and year at the University will be taken into consideration.

University Loans
conditions: Low-interest university funded loans are available to applicants with demonstrated financial need. Eligibility is restricted to full-time students who have successfully completed one term (full-time) of studies at UNB and are maintaining a satisfactory academic standing. The maximum loan available for an academic year is $800.

Veterans Loan Fund
conditions: This fund has been established at the University by Veteran Students to assist deserving and needy students in obtaining the benefits of a university education. Loans may be obtained to the value of $800 per year for any one student.

ACCOMMODATION, FACILITIES AND SERVICES

ACCOMMODATION

This section provides information about University residences, and off-campus housing as available in Fredericton and Saint John.

FREDERICTON CAMPUS

RESIDENCES

The University maintains thirteen residence halls, including mens, womens and co-ed houses. Each room is furnished with desks, bookshelves, wastebaskets, bulletin boards, single beds, dressers and wardrobes. Pillows are provided but Residents bring all other bedding (sheets, pillow cases, quilt/duvet, etc. for a twin bed) as well as towels. Extra transitional residences also are created each fall to help accommodate students given the tight local housing market and campus residences having more space as the term progresses.

UNB believes in a developmental residential living experience, supporting both academic success and personal development. Living to Learn fosters an academic context within the Residence Community, facilitating a peer-supported learning environment. Leading to Learn also seeks to develop student leadership skills. Another UNB initiative is the ResNet program, which involves the installation of a hardwired connection to the University network and the Internet, as well as cable TV access, in campus residence rooms. ResNet currently is available in all UNB-F residences as well as, except for Lady Beaverbrook Residence and MacKenzie House, cable tv. UNB further fosters a positive living environment through attractive common areas, recent infrastructure improvements, and policies such as all residences being non-smoking, zero tolerance for illegal drugs, and unbreakable beverage containers except for products not otherwise available. Campus dining also is being renewed with the introduction of residential ultimate dining (greater freshness, variety, and personalization of food) and similar retail improvements.

The residences are administered by Residential Life & Conference Services with a team based approach to life and leadership within the communityand houses. Each house is supported by a House Team consisting of a Don plus Student Leaders, both elected by the House (House President and Committee) and selected by the university (Proctors, ResNet Consultants). These House Teams work closely with residence professional support resources including the Residence Coordinators, Counsellors-in-Residence, Residence Office Team, and ResNet Support Administrator.

The functions of the resource persons within the residence community are as follows:

Residential Life & Conference Services*:* the office has overall responsibility for the Residence Community and concentrates on physical facilities, academic, administrative and quality of life issues and policies with the objective of providing a quality residence experience in a strong academic environment. Two other related responsibilities are food services (part of the residence and campus experience) and summer conferences (recruitment, community outreach and financial contributions to residence), although alternate service models currently are being studied for these two areas.

Director: a full-time professional responsible for leadership, overall management, governance, quality, development, and long-term vision of the Residence Community.

Associate Director (Finance and Operations): a full-time professional responsible for the physical operation of the residences (including janitorial services, maintenance, repairs, and capital improvements), finance and administration, conferences, and vending contracts.

Associate Director (Residential Life): a full-time professional with overall responsibility for the Residence Community but generally concentrating on academic residence issues (supportive academic environment, Living to Learn, etc.), quality of life issues (residence conduct, discipline, etc.), residence policy, and food services.

Associate Director (Administration): a full-time professional responsible for the leadership, management, and development of both general (unit-wide) and specific (each RL area) administrative services; mature student/family housing; and residence marketing, recruitment, and communications.

Residence Coordinators: full-time professionals responsible for day to day residential life matters within the residence community. . The Coordinators traditionally have shared these responsibilities geographically by residence cluster but are moving to doing so by area of expertise (Training/Leadership, Development/Conduct, Administration/Facilities/Food).

ResNet Support Administrator: a full-time professional responsible for the effective operation of ResNet, coordinating the House ResNet Consultants and working cooperatively with Integrated Technology Services on main network issues affecting ResNet.

Residence Operations Coordinator: a full-time professional responsible for the day-to-day management of residence janitorial and maintenance staff.

Conference Coordinator: a full-time professional responsible for managing and growing summer residence conferences.

Administrative Assistants, Budget/Magee Coordinator & Receptionist: full-time support personnel who are the first resources when visiting or contacting Residential Life & Conference Services as well as supporting the community.

After Hours Counsellors: full-time professional counsellors who are members of UNB Counselling Services and on-call after hours for crisis intervention, through the Coordinators.

Residence Security*:* Members of UNB Security providing after hours residence coverage and working closely with the community regarding group and individual situations, providing not only security but also support and advice.

House Dons: University faculty, staff members or graduate (or second degree) students living in each residence who are responsible for heading House Teams, mentoring and supporting students, and furthering the academic and educational goals of the Residence Community.

Associate Don ***(Joy Kidd & McLeod as larger houses)****:* shares the same qualifications and responsibilities as the Don, except for the Don heading the House Team.

Proctors (Educational & Hall): experienced undergraduate students living on residence floors who work cooperatively with other House Team Members to provide support and a positive, developmental living environment in residence. In addition to working collaboratively and the common responsibilities shared by all Proctors (house coverage, programming, discipline, etc.), Educational and Hall Proctors also have unique responsibilities:

- Hall Proctors focus on their hall providing support, building community and implementing life skills programs for approximately 35 students.
- Educational Proctors focus on providing academic/wellness support and programs for the House with one Educational Proctor per approximately 100 students.

House Committees: elected Student Leaders who promote a welcoming and supportive environment through developing community.

Residential Network Consultants (RNCs): Students in houses having ResNet who are responsible for helping Students with ResNet.

Janitorial Forepersons, House Cleaners, & Residence Maintenance Person: full-time personnel responsible for cleaning (common areas) and maintaining residences.

RESIDENCE ADMISSION

General

1. Since residence space at UNB is limited, no one can be guaranteed admission or readmission to residence until a formal offer of residence is issued, accepted and confirmed by the payment of the residence deposit.
2. The University recognizes the desirability and value of Students living in residence in their first undergraduate year as well as having senior students remain in residence. Hence, every effort is made to ensure a reasonable balance between new admission and returning students.
3. Although consideration is given to the student's preferences, admission/readmission to residence guarantees a student a place in residence as opposed to a particular room. Initial room assignments or later changes are at the sole discretion of the University.
4. Room assignment information is available in late July via the UNB Website (www.unb.ca) with students selecting My UNB e-Services, entering their Login ID and PIN, and selecting the Residence tab. Students experiencing problems should contact Residential Life & Conference Services.

New Residents

1. Students requesting residence must complete and submit a UNB Residences Application Form. Please note that this is a separate document from the University of New Brunswick Application for Admission. For incoming first year students, the UNB Residences Application Form is included in the UNB Admissions Handbook or can be accessed at www.unb.ca/sweb/application/residence.html. All other students (transfer students; exchange, visiting or St. Thomas University students; students entering law/graduate school, etc.) should contact Residential Life & Conference Services directly for instructions on residence application or complete www.unb.ca/sweb/application/residence.html and describe their situation. There is currently no residence application fee.
2. New residence applicants should note that admission to residence will not be offered until admission to a UNB Fredericton program has been granted by the University Registrar and that acceptance to the University does not guarantee a place in residence.
3. Upon acceptance into their University program, residence applicants will be sent an offer of residence as well as a Response to Offer of Admission to Residence form. Students are asked to complete this form and return it with a $300.00 residence deposit and a $100.00 damage deposit in accordance with the instructions found on the form. The receipt of this form and deposit by UNB serve as a residence confirmation and allows a room assignment to proceed. Please note that room assignments cannot take place without the receipt of the residence deposit.

Returning Residents

1. Students must apply each year for residence accommodation.
2. Reapplication forms are distributed to all residence students late in the Winter Term. Completed forms and a deposit should be submitted no later than May 31 according to instructions issued by Residential Life & Conference Services. Later applications and/or deposits are subject to remaining space.
3. Returning students are considered for readmission to residence provided:
   a. They have attained a minimum assessment grade point average of 2.0;
   b. Their conduct has been acceptable.

   Appeals of a decision to deny readmission may be sent to the Associate Director (Residential Life).
4. Reapplicants are, where possible, readmitted to a house of their choice (provided that their residence reapplication and deposit are received by May 31) but are not guaranteed readmission to a particular house and may be offered readmission to other houses.

RESIDENCE DEPOSIT REFUNDS

Requests for refunds should be directed to Residential Life & Conference Services. Students who have paid a deposit but send written notice of cancellation to Residential Life & Conference Services receive refunds as follows based on a $300 residence deposit:

- a refund of $150 if the written notice is received on or before July 31 . The balance of $150 is NOT REFUNDABLE.
- a refund of $50 if the written notice is received after July 31 but on or before Aug. 21 . The balance of $250 is NOT REFUNDABLE.
- NO REFUND IF THE WRITTEN NOTICE IS RECEIVED AFTER AUGUST 21.

The entire deposit is forfeited if the student cancels after August 21, fails to take up the reserved accommodation, or enters and then subsequently withdraws from residence.

RESIDENCE FEES

1. For Regulations governing the payment of fees, withdrawal, etc. please refer to Section C of this Calendar.

2. Information concerning current residence fees may be obtained from Residential Life & Conference Services.

3. (a) Rooms with meals: Each student's residence fee covers room and board from the day the residences open in the fall (date differs for new and returning students) until the day after the student's last regularly scheduled examination in December, and from the day before classes start in January until the day after the student's last regularly scheduled examination in the spring. Residential meals are served (in one dining hall only) during Thanksgiving Weekend in the first term or during the March Break in the second term.

   (b) Rooms without meals (limited number only): Each student's residence fee covers room rent and use of communal cooking facilities only for the same periods as specified in 3(a) above. Students also have the option of purchasing a residence meal plan from the food services contractor.

4. (a) Although the christmas vacation period is not covered by residence fees and residences are closed, Residents who plan to resume occupancy of their rooms in January may leave their belongings in their rooms during the holidays, but the University accepts no responsibility for these belongings.

   (b) International and other students who are unable to return home at christmas or make other arrangements may request permission to remain in residence (with kitchenettes but no dining plan) from Residential Life & Conference Services. Permission is granted only for those students with a genuine need and such students may not be able to remain in their regular residence. Students remaining in residence are required to pay a $200 fee (via their student account) covering the extra cleaning, support and activity costs for this holiday residence.

OFF-CAMPUS HOUSING

Students are responsible for making their own arrangements for off-campus housing. The UNB Student Union maintains an Off-Campus Housing List to assist students with finding suitable off-campus housing. This list and information are available from UNB Student Union at http://www.frederictonstudenthousing.com, Tel. (506) 453-4955 or Fax (506) 453-4958. Copies of the list also are available at the Residence Administration Building. It is advisable to visit the city well in advance of registration in order to locate suitable housing.

The University operates one apartment building, Magee House, on the Fredericton Campus, which can house 102 families in 49 one-bedroom, 48 two-bedroom and five three-bedroom apartments. Student families wishing to apply for housing in Magee House may obtain application forms and information from the Residential Life & Conference Services, email: cmacfarl@unb.ca, Tel. (506) 453-4800, Fax (506) 453-3585.

Students living off-campus may choose from a variety of dining plans available from the food services contractor.

GENERAL

For further information about the above and other regulations pertinent to the residence community, please contact Residential Life & Conference Services, UNB, P.O. Box 4400, 20 Bailey DR., Fredericton, N.B. E3B 5A3.
Phone (506) 453-4800; FAX (506) 447-3059;
email: resadmin@unb.ca;
website: http://www.unb.ca/residence/reslife.html.

SAINT JOHN CAMPUS

RESIDENCES

UNB Saint John offers two residences on campus overlooking the beautiful Kennebecasis River.

The new residence, opening September 2003, was designed with input from our own students. It offers 170 beds in the form of spacious double suites for independent style living. Suites include two single bedrooms, kitchenette, complete with microwave and fridge and private three-piece bath. At UNB Saint John, housing is non-smoking, co-ed and security locked. Each room is furnished with a double bed, and desk set and standard house amenities include furnished TV rooms and study lounges, high-speed Internet and cable TV connections and laundry facilities.

The Sir James Dunn Residence offers 71 beds and an indoor connection to the campus. Single and double rooms are available. If you prefer a more subdued, quiet lifestyle, the residence also has a section that offers a 24-hour quiet policy.

Food Services and Residence Fees

Sir James Dunn residents must choose one of three meal plans which will be incorporated into the total residence fees as set out in the residence fees schedule. Students living in the new residence may elect to purchase a meal plan. Meal plans are administered on a declining balance basis. For example, this means that if a meal plan that was valued at $1,000 per term were purchased, the student's account would be credited with this amount toward food services. The cost of any purchases at the Baird Dining Hall or Tim Horton's during the term would be deducted from the balance until a zero balance is reached. Ideally, a zero balance is reached at the end of each term; however, food service accounts can be supplemented at any time in increments of $25 or greater. It is important to keep in mind when choosing a meal plan that although an account can be supplemented at any time, any balance remaining at the end of April is non-refundable.

Residence Activities

Living in residence is not just about studying and sleeping. Student house committees are elected each fall to plan social events such as Frosh Week, Winter Carnival, Holiday Formal and charity fundraisers. They also assist in establishing residence policy and procedure, administering the residence and student activities, and representing the residences in student government. The Committee uses house dues, which are collected from the students at registration time to provide Orientation activities, subscriptions to cable television, newspapers etc. for the common areas, and anything else they would like to sponsor. Residences are served by a Residence Academic Leader and a Residence Life Co-ordinator in addition to a number of Residence Assistants who live on campus.

Applying to Residence:

Applicants who are interested in living accommodations in the university residences must complete the application form, which is included in the UNB Saint John Application for Admission package or they may apply online at
https://www.unb.ca/sweb/application/

Residence applicants should note that acceptance to UNB Saint John does not guarantee a place in residence; acceptance into residence will not be offered until admission to UNB Saint John has been granted. Upon acceptance, students will be sent a

residence deposit form. The form must be returned with a confirmation deposit of $300.00 as quickly as possible to ensure a place in residence.

For information on the residences, please contact: Housing & Food Services, Sir James Dunn Residence - email: res@unbsj.ca, telephone 648-5755, fax 648-5762, Monday - Friday 8:15 a.m. - 4:30 p.m.

OFF-CAMPUS HOUSING

Do you need help finding suitable off-campus housing? An apartment, perhaps, or a room in an owner-occupied home? Maybe you need help finding a roommate? Do you have concerns about your present accommodations?

The Off-Campus Housing Office has been established to help students find off-campus accommodations as well as to offer assistance with concerns they may have regarding current accommodations. The Office keeps up-to-date listings of apartments for rent and rooms available in privately-owned homes, as well as a list of students who are looking for a roommate.

The Off-Campus Housing Coordinator, Bonnie Sudul, is located in Annex A, Room A1, mailto: och@unbsj.ca, telephone 648-5952, fax 648-5959, website: http://www.unbsj.ca/och/, Monday - Friday 8:15 am - 4:30 pm. Please feel free to stop in to pick up copies of the current housing listings and other helpful information, or to discuss any concerns you may have about housing.

ABORIGINAL STUDENT SERVICES AND PROGRAMS

FREDERICTON CAMPUS

Special services and programs for Aboriginal students are provided on the Fredericton campus through the Mikmaq-Maliseet Institute (Marshall d'Avray Hall, Rooms 343-344). The Institute is an academic unit of the University which administers UNB Academic programs for Aboriginal students and engages in research and publication in Aboriginal Studies and Aboriginal Education. The Institute's goal is to maintain the high quality of UNB programs for First Nations students and to broaden the Aboriginal content and perspectives in these programs. In addition, MMI develops new programs which meet the stated needs of the First Nations communities of the region and contribute to their educational and professional growth.

MMI services, which are intended for the use of Aboriginal students in all Faculties, include academic counselling and tutoring, access to the Mikmaq-Maliseet Resource Collection in the Harriet Irving Library, an Aboriginal student lounge, and opportunities to participate in social and other group events.

Degree credit courses are available in the Mikmaq and Maliseet languages and cultures, and in Aboriginal Business and Aboriginal Education.

For information on the special BEd Program for Aboriginal students and the First Nations Business Administration Certificate, see the Fredericton Programs Section of this Calendar.

Bridging Year Program

The Faculty of Education offers a Bridging Year Program for Aboriginal students who are preparing for admission to a UNB degree program. See the program description in the Fredericton Programs section of this Calendar (Section G) under Bachelor of Education.

ASSOCIATED ALUMNI OF THE UNIVERSITY OF NEW BRUNSWICK

The Associated Alumni of the University of New Brunswick has 57,000+ alumni (graduates) around the world.

The Associated Alumni keeps graduates connected with each other and the University, and provides opportunities for alumni to contribute to UNB's well-being. The Associated Alumni is governed by an elected and appointed council of 30 former students from various graduating classes, geographical areas and faculties.

Our Alumni are "energized and involved" in the life of the University of New Brunswick. Alumni help with governing the University, advocating on behalf of the university, volunteering, recruiting students, and making financial donations. Alumni give time, talent and treasures to their alma mater. One valuable contribution the Associated Alumni makes to current UNB students is by providing scholarships and merit awards.

You are a student for a defined period of time, but, you will be an alumnus or alumna of the University of New Brunswick for life! UNB's alumni are an integral part of the future of this university. So, what do you call yourself when you graduate? A UNB...

Definitions:

ALUMNI - all graduates both males and females
ALUMNAE - plural, females
ALUMNUS - singular male
ALUMNA - singular female

The Associated Alumni of the University of New Brunswick began in 1862 when seven of the approximately 200 UNB graduates met. They subsequently formed an "alumni society" based on the following motion by Mr. G.S. Smith (class of 1854): "that the objects of such a society be - first, the advancement of the interests of the University of New Brunswick by all honourable means." The association has been an active and important part of the UNB family every since.

"Floreat Alma Mater - May the Alma Mater Prosper"

ATHLETICS

FREDERICTON CAMPUS

The University, through its Faculty of Kinesiology, provides opportunities for participation in a wide variety of recreational and competitive varsity athletic activities. The offices of the Faculty, together with classrooms and laboratories are located in the Lady Beaverbrook Gymnasium. Other features of this building include two gymnasium floors (one with spectator accommodation for 1,200), the Sir Max Aitken Pool (500 spectators), four squash/handball courts, a dance studio, conditioning room, and equipment issue rooms.

The Education Gym contains a full gymnasium plus facilities for gymnastics and the martial arts. There are playing fields adjacent to both gyms and to the Aitken University Centre, as well as a fourth field and running track situated on the lower campus.

The Aitken University Centre is the home of the UNB Varsity Reds and the administrative offices for this athletics program are located there. The building is widely used by the University and includes classroom and training room facilities, noon hour skating, as well as an indoor walking/jogging area.

Thus, with the facilities of three gymnasia, one swimming pool, four playing fields, an arena, and specialty rooms, supplemented by changing facilities and a program that ranges from highly organized intercollegiate competition to casual recreational play, UNB is able to provide sport and recreational activities for all members of the University community.

The Varsity Reds Athletic Program competes in the Atlantic University Sport (AUS) Conference and Canadian Interuniversity Sport (CIS) in the sports of Men's and Women's Basketball, Volleyball, Soccer, Wrestling, Swimming, Hockey and Cross-Country.

SAINT JOHN CAMPUS

Athletics, Recreation and Wellness

The Athletics, Recreation and Wellness Department has seen many changes over the past year, the most noticeable ones being the name change from the Athletics Department to the Athletics, Recreation and Wellness Department, a new logo, a new outreach program Howl with the Wolves and several partnerships with provincial sport organizations and associations. With all of these changes, the ARW Department has released a new mission statement: To promote healthy lifestyle behaviors among students, faculty, staff and community members by providing opportunities for participation through sport, recreation, and wellness programs in a safe environment. In order to fulfill this mission, the Department is soliciting assistance from Alumni to form the first ever Seawolves Alumni Booster Club.

Currently, UNBSJ students have an opportunity to participate on the following varsity teams that compete in the Atlantic Colleges Athletic Association (NB and NS universities): Soccer (men and women); Volleyball (men and women); Basketball (men and women); and Badminton-(co-ed).

The ARW Department also offers many athletics clubs whereby several students compete in a structured league. Some of the clubs include: womens fast pitch; rowing; fencing; womens hockey, running club, faculty and staff badminton, mens and womens indoor soccer, cricket club, etc.

There are also great opportunities in the recreation programs to keep active. Some of the programs include: Self-Defense, Tai Chi, Step Aerobics, Karate Fitness, Table Tennis and Strength Training. There are also various intramural programs that include co-ed ice hockey, ball hockey, volleyball, etc.

Several monthly wellness workshops are offered through the Department. They include: Orientation and Introduction to Strength Training; Coping with Stress; Massage Therapy; Nutrition; Blood Pressure and Cholesterol Clinic; and Relaxation Techniques.

The ARW Department is focusing on the local children and youth through the new Howl with the Wolves program. The purpose of this outreach program is to have Seawolves athletes speak about the importance of physical activity, team work, respect, dedication, self-confidence and other important life skills that can be developed through sports. Seawolves athletes and coaches offer sport clinics to various clubs and school teams.

The Athletics, recreation and Wellness Department has two great athletic facilities. They include the G. Forbes Elliot Athletics Centre and the Canada Game Stadium. The G. Forbes Elliot Athletics Centre opened in 1975 and hosts a wide range of competitive and recreational sports for the university and, community. Thousands of people use the Athletics Centre each year, and it is the hub of many community events and tournaments. Students are able to take part in organized intramural, and recreational and wellness activities such as volleyball, cricket, basketball, badminton, soccer, tennis, yoga, tai chi and other fitness classes.

The The Jeux Canada Games Stadium, built for the 1985 Jeux Canada Games, overlooks the Kennebecasis and Saint John rivers. It features a 400-metre all-weather track, a natural grass field, and locker room facilities.

Please consult the ARW Departments web-site for further information on the varsity programs (www.unbsj.ca/athletics).

AWARDS OFFICE (UNDERGRADUATE)

The University maintains facilities on the Fredericton campus, located in Sir Howard Douglas Hall, where undergraduate students are considered for scholarships and bursaries. The Undergraduate Awards Office looks after scholarships and bursaries for both campuses.

See Section C of this calendar for Financial Information.

BANK

FREDERICTON CAMPUS

A Bank of Montreal Financial Management Centre, specializing in credit, investment and financial management services, is located on Dineen Drive in the UNB Bookstore building. The branch offers two on site full service banking machines, passbook update and statement printer, telephone banking centre and internet banking. There are three additional cash machines on campus (two located at the Student Union Building and a third at St. Thomas University).

Branch Hours are 10:00 a.m. - 4:30 p.m., Monday - Friday.

SAINT JOHN CAMPUS

A Bank of Nova Scotia banking machine is available in the lobby of the Student Centre.

BOOKSTORES

There are well equipped bookstores on both campuses in central locations from which students may obtain books and supplies at a reasonable cost.

FREDERICTON CAMPUS

The University Bookstore offers a vide variety of services to the student community. It is a well stocked retail operation selling textbooks and reference books for all courses taught at UNB and STU, general interest books, special order books, a full line of stationery and office supplies, computer hardware, software and peripherals, as well as university crested clothing and gift items.

Visit the Bookstore Online at: www.unb.ca/bookstore/ or contact them by telephone at 453-4664 or emai: bookstor@unb.ca.

SAINT JOHN CAMPUS

The University Bookstore on the Saint John campus stocks all textbooks and course-related materials for students to purchase.

In addition, it offers a full line of reference and general interest books (with a special order service for books not in stock), school and office supplies, computer hardware, software and peripherals, as well as crested university clothing and giftware. The Bookstore is located on the main floor of the Ward Chipman Library building, and is open year-round:

September through May: 8:30 am - 7 pm Monday - Thursday 9:00 am - 4 pm Friday and Saturday

June through August: 9:00 am - 4 pm Monday through Saturday

Visit the Bookstore online at: www.unbsj.ca/bookstore/ or contact them by telephone at (506) 648-5540 or via email at sjbooks@unbsj.ca

CAMPUS MINISTRY

FREDERICTON CAMPUS

The Campus Ministry team consists of Roman Catholic, Anglican and multi-denominational Protestant chaplains. They seek to minister to the religious needs of all members of the university community and have contacts with many local faith groups. They offer spiritual counselling, worship services, and opportunities by which members of this community are encouraged to integrate their faith and learning. Students can contact members of the Campus Ministry team at the Campus Ministry Office (Room 10, Alumni Memorial Building) or by calling (506) 453-5089.

SAINT JOHN CAMPUS

The Campus Ministry is composed of a number of clergy and spiritual advisors of different faiths in the Saint John area. They volunteer their time in the Campus Ministry Office, Room 33, Ward Chipman Library building. The Campus Ministry sponsors religious services, debates and guest lecturers on the campus during the year. Phone (506) 634-0446. The Ministry motto is: "God cares, so do we."

CHILDCARE SERVICES

FREDERICTON CAMPUS

College Hill Daycare Co-op Ltd.

College Hill Daycare is a non-profit daycare childcare service for University of New Brunswick and Saint Thomas University staff, faculty and students. This Emergent curriculum is available for children 6 months to 7 years of age. Located at 850 Montgomery Street in Fredericton, the Hours of Operation are Monday to Friday from 7:30 a.m. to 6:00 p.m.. For further information, contact Wendi Lunney at mailto: chdc@unb.ca, call (506) 458-2883, or fax 506-458-8198.

CONTINUING EDUCATION AND PROGRAMS FOR PART-TIME STUDENTS

The University provides a variety of courses, programs and services for individuals who need or prefer to study on a part-time basis at either campus as well as at several off-campus locations. These learning opportunities are designed to meet the variety of roles of the individual: occupational, professional, personal, familial and communal.

FREDERICTON CAMPUS

The following types of programs and services are offered through the UNB College of Extended Learning (CEL). Further information is available through the Fall/Winter and Spring/ Summer calendars published by the CEL and the CEL website (http://extend.unb.ca).

1. **Part-time Degree and Certificate Courses:** Credit courses are offered in many disciplines that can be applied towards a variety of degree programs or certificate programs (e.g. Certificate in Family Violence Issues; Certificate in Administration; Certificate Program in Software Development; Certificate in Film Production; Certificate of Proficiency in French; Certificate of Proficiency in Spanish; Certificate in Adult Education). UNBs newest degree program is the Bachelor of Integrated Studies(BIS), a degree completion program for adult learners. Offered through UNB's Renaissance College and the College of Extended Learning, this program is designed for part-time study. Academic sessions are offered throughout the calendar year, and part-time students can elect to take courses during the day or evening or independently, according to their interests and needs. Responsibility for the degree/certificate courses rests with the respective academic units, which are also responsible for the academic advising. The advising of part-time students who are not enrolled in a program and for Bachelor of Integrated Studies students is conducted through the College of Extended Learning. students is conducted through the College of Extended Learning.
2. **Non-Degree Certificates and Workshops:** The College of Extended Learning offers a number of specialized certificate programs to enhance career and personal achievement. Professional development certificate programs include Management Development; Human Resources Management; Public Service Management; Project Management; Health, Safety and Environmental Processes; and Fluency in Information Technology (FITness). The College offers various workshops on effective leadership, management and supervision in the changing workplace. A wide range of courses are offered that are designed to enhance the personal and cultural enrichment of learners including courses in creative writing, business etiquette, painting and drawing, as well as programs like the Maritime Writers Workshop and KidsQuest.
3. **English Language Programme:** See the section below, entitled English as a Second Language - Fredericton Campus.
4. **Distance Education and E-Learning:** In order to better meet the diverse needs of learners, UNB offers a variety of options in course delivery, including audio and video conferencing, text-based correspondence courses, as well as e-learning options through web-based study in the Open Access Learning Program (OALP). The University Programs on the Miramichi offered by UNB, Mount Allison University, and St. Thomas University provides an opportunity for qualified individuals in the Miramichi region to complete first-year studies in Arts, Science, or Business/Commerce.
5. **Visual Arts and Music:** The UNB Arts Centre and the Centre for Musical Arts offer a variety of participation and learning (credit and non-credit) opportunities to UNB students and community members. See Fine Arts section for further detail.

6. **Writing and Math Centres:** These Centres provides individual tutoring and small-group workshops, as well as Saturday and evening sessions. The Writing and Study Skills Program covers essay and report writing, reading techniques, examination preparation, and time management. The Math Help Program is available for all first-year Math courses. Services are free to full-and part-time UNB students; sessions are available by appointment.
7. **Financial Assistance:** Advice and information on loans, bursaries and scholarships for part-time students is offered through the College of Extended Learning (453-4818).
8. **Adult Learner Services:** Advice and information for adults considering or enrolled in academic studies at UNB (453-4818).
9. **Prior Learning Assessment:** In some circumstances, students/potential students may have attained university-level learning through means other than formal university courses. Information and guidelines related to UNB's Prior Learning Assessment policy are available to students, prospective students and faculty from CEL (458-7617). See Section B for further detail.
10. **Adult Learners and Part-time Students (ALPS):** This organization is an information and support network for mature and part-time undergraduate students. ALPS serves as an advocate, responding to the unique concerns and issues of these learners, to help create an enriched university environment.

For additional information, contact the College of Extended Learning, P.O. Box 4400, Fredericton, NB, E3B 5A3; (506) 453-4646 (phone); (506) 453-3572 (fax); extend@unb.ca (email); http://extend.unb.ca (website).

SAINT JOHN CAMPUS

1. The Saint John campus operates an integrated program which treats part-time students on essentially the same basis as full-time students. **Credit courses** are under the administrative control of the Faculties, and are scheduled at the time of day or evening which makes them most accessible to both the full-time and part-time clientele. The only credit courses not under the auspices of the Saint John Faculties are those in Education which are offered at Saint John through a co-operative arrangement with the respective faculties on the Fredericton campus. Academic advising for part-time students is available through the Departments and Faculties, as it is for those in full-time studies.
2. In addition to degree programs, the campus offers **certificate programs** in Data Analysis, Social Science for Police Personnel and in Business Administration, Human Resource Management, Accounting, Electronic Commerce, Economics, Financial Markets, Communication and Professional Writing and General Studies, which are of particular relevance to part-time students. All courses offered towards a certificate are degree-credit courses and students who subsequently enroll in a degree program will normally be able to count courses taken towards the certificate as credits towards the degree. Another certificate program offered is the Certificate of Proficiency in French, Level I and II, which is open to students whether or not they are currently working towards a degree.
3. A variety of **non-degree courses** is also offered to meet the needs of professional associations and other groups.
4. The Writing Centre; Counselling; Employment Liaison; information on scholarships and bursaries for part-time study; student success strategies; and financial advising for part-time students are available at the **Student Services Centre**, ground floor of Philip W. Oland Hall. Phone (506) 648-5501.
5. The campus offers a **Math Centre** available for all full-time and part-time students regardless of degree program. Phone (506) 648-5776.
6. **Saint John College** offers Second Language Training Courses for those who require further instruction in English or French in order to become proficient and to communicate and function effectively in a second language. In addition to the core programs (English for Academic Purposes, English as a Second Language Support, and French as a Second Language), Saint John College offers the following:
   a. **Specialty Second Language Courses (non-credit)** for those wanting an opportunity to acquire conversational skills in, for example, Spanish, Arabic, and Mandarin, or for those needing upgrading and refining of English or French language skills.
   b. **Custom Second Language Courses (non-credit)**, which are specially designed for groups of students and professionals with varying needs and interests. These courses range from off-site corporate training to on-site specialty programs such as English Immersion.
   c. **English Language Testing Site** for the CAEL (Canadian Academic English Language Assessment) exam, for students requiring an official test of English proficiency. The CAEL test is given on-site at regular intervals and the results are accepted at most Canadian post-secondary institutions. The CAEL is also used by Saint John College to place international students into the appropriate ESL or academic degree program.

Information about degree-credit courses/certificate programs may be obtained from the Chair of the appropriate Department, the Dean of the Faculty of Business or, for Education courses, from the Education Coordinator for the campus, (506) 648-5674.

COUNSELLING SERVICES

FREDERICTON CAMPUS

At Counselling Services, there is a friendly, helpful staff of professional counsellors, as well as a Career Consultant, who help students use the Career Resource Centre.

All staff maintain strict confidentiality in their dealings with students who make use of Counselling Services.

Counselling Services provides the following:

1. Personal and Career Counselling services to help students deal with, for example, social (issues such as shyness, self esteem, assertiveness), personal (for example: anxiety, depression, anger, stress management, consequences of traumatic events), marital and relationship problems, career problems and concerns, concerns that impact on academic performance (procrastination, concentration, exam anxiety, etc.), etc.
2. Career Resource Library which includes information concerning careers, academic calendars, self-development, job search techniques, Canadian companies, and study and work abroad.

3. Consultation regarding concerns a friend, staff or faculty member, or other individual may have about a student or situation. Note that no counselling staff person will discuss or release any information about any individual who might be a client of Counselling Services.

Counselling Services is located in Room 19, Alumni Memorial Building. Services are available free of charge to all full-time and part-time students of UNB and Saint Thomas University. Fall and winter office hours are weekdays: 8:15 a.m. - 12:00 noon, and 1:00 p.m. - 4:30 p.m. Summer hours are weekdays: 7:45 a.m. - 12:00 noon, and 1:00 p.m. - 4:00 p.m. For information or to make an appointment call 453-4820. After-hours emergency services are provided by CHIMO Helpline, Inc. - call Counselling Services at 453-4820 after hours and you will be connected to someone who can assist you.

For additional information please visit our website at: http://www.unb.ca/counselling/

SAINT JOHN CAMPUS

Counselling Services provides confidential help for students experiencing:

1. Anxiety and depression
2. Personal problems
3. Relationship & communication problems
4. Substance abuse problems
5. Time and stress management problems
6. Work related issues
7. Career indecision

Counselling services are provided in a concerned, supportive environment. Students in crisis will be seen without appointments. Every effort is made to provide constructive intervention, referrals and counselling follow-up. Counselling Services is located in Student Services, Oland Hall, G18. To make an appointment, please call 506-648-5557 or email to: davisl@unbsj.ca.

EMPLOYMENT SERVICES

FREDERICTON CAMPUS

The Student Employment Service located in the historic Neville

Homestead, helps students find full-time degree-related employment after graduation, part-time employment on campus during the academic year, as well as summer jobs and internships. We provide in-depth resume, cover letter and interview guidance and on-going Job Search Strategy counselling (by appointment and by workshop/seminar). There are approximately 2,000 employment opportunities and over 80 company information sessions held on campus each year. All students are encouraged to contact the Student Employment Service at the beginning of the academic year to review the many opportunities and to take part in the fall recruitment campaigns as well as our Career Fairs and Work-study Program (part-time on-campus employment).

Student employment opportunities and other helpful tips and job search information can be seen on our web-site: http://www.unb.ca/employment.

For information contact: Phone (506) 453-4620; Fax (506) 453-4610; email to: employment@unb.ca.

SAINT JOHN CAMPUS

The **Student Employment Centre** on the Saint John campus assists students and recent graduates in obtaining permanent, summer and part-time employment. Services for students include: assistance with resumes and cover letters, job search strategies, interview preparation, work-study programs, employment counselling and labour market information. Employer services include posting job notices on-campus and assisting with employer information sessions for students and graduates. Students and graduates are encouraged to contact the Student Employment Centre early in the academic year to review job opportunities and take part in the fall recruiting campaigns offered by many employers. The Student Employment Centre and the Career Resource Centre provide services throughout the year and are located in Student Services, Room G18, Oland Hall. For information or to book an appointment, contact Sharon Gerrits by phone at 506-648-5690 or by e-mail at sgerrits@unbsj.ca.

ENGLISH AS A SECOND LANGUAGE

FREDERICTON CAMPUS

Established in 1953, the **UNB English Language Programme** offers courses to assist non-aglophones to function in an English milieu. In all formats, the language of instruction is English; all communication is to be carried on in English as well. Each hour the student is faced with changes in instructor and language focus. Credit and non-credit courses are available.

A. **(Total Intense) SUBMARINE© Immersion**:
   This approach incorporates round the clock classes and activities. A pledge to function only in English for the duration of enrolment is the basis of operation.
   1. Three-week, small-group modules featuring individualized attention and personalized scheduling. Offered monthly September through April.
   2. Five-week, large-group sessions. Offered May/June and July/August.

B. **English Language Classes:**
   1. September - April: Term format in fourteen-week units; 23 hours per week.
   2. September - April: Daily classes, in one-week units; 10 - 30 hours per week.
   3. September - April: Evening classes a three-hour block per week; undergraduate and graduate, credit and non-credit.

C. **Specialized Formats:**
   1. Tutorial Classes available to meet individual needs.
   2. Focus workshops / specialized formats.
   3. Professional / Labour Market Language Training©
   4. Session for High School students.

All proficiency levels are offered. Students are placed in classes according to their level in each area; thus, they might find themselves at one level in writing, another in oral production, a third in grammar, a fourth in sound, and so on.

For information and registration, please contact: UNB English Language Programme. Telephone: (506) 453-3564 mailto: elp@unb.ca website: http://elp.unb.ca

SAINT JOHN CAMPUS

Saint John College is UNB Saint Johns English and academic preparatory college for international students. The 14-week English for Academic Purposes Program (EAP) prepares students for academic studies at UNB Saint John and other Canadian universities. The Colleges English as a Second Language (ESL) Support Program for students with a TOEFL score between 500 and 549 (or equivalent) is one of Canadas largest programs catering to the needs of students with this TOEFL range. Saint John College also offers a variety of language courses, including an extensive French as a Second Language (FSL) program. Other specialized programs are offered based on our learners needs and requirements, and include: English Immersion; Part-Time ESL; Business ESL; Spanish, Mandarin and other languages; and specialty programs for international groups, such as our language training programs for professionals.

Students interested in studying at Saint John College should be aware that application procedures, schedules and fees are different from those of other UNB departments. Fourteen-week courses begin in January, May, and September.

Please contact Saint John College directly for more detailed information and for application forms. The phone number is (506) 648-5599; the fax number is (506) 648-5963; the e-mail address is sjcol@unbsj.ca, and the mailing address is Saint John College, University of New Brunswick, P.O. Box 5050, 100 Tucker Park Road, Saint John, New Brunswick, CANADA, E2L 4L5. Students can also visit the website at www.unbsj.ca/sjcollege.

FACULTY ADVISORS

1. It is very important that students consult with their faculty in planning their program.
2. Faculty advisors are available to all students in the university, and are available for consultation during students full stay on the campus.
3. If students wish to see a faculty advisor they should contact their respective Faculty or Deans Office and ask to be assigned a faculty advisor. Each faculty has its own procedures for assigning students to faculty advisors.
4. In the faculty of Science, academic advising is provided by the Dean or Associate Deans for the first two years, with individual advisors appointed when students select their major programs of study.
5. In the Faculty of Arts, academic advising in the first two years is done primarily through the core ARTS 1000 course. ARTS 1000 tutorial leaders also provide academic advising. Students without an ARTS 1000 advisor will see an Associate Dean for counselling. When students select their field of study departmental advisors will be assigned.

FINANCIAL AID

FREDERICTON CAMPUS

Contact the UNB Financial Aid Office for information/assistance on Government loans. The Financial Aid Office acts as a liaison between students and all governmental student aid offices. Assistance is available to students who need to obtain a provincial student loan application; require an explanation of their government student aid assessment; wish to initiate an appeal for further loan assistance; need information on Canada Study Grants, Millennium Scholarships and; terms of repayment. Additionally, should you not be eligible for Government Loan Assistance, you may discuss alternative funding options such as chartered bank Student Loans and Line-of-Credit procedures with the Financial Aid Office.

Other services provided by the Financial Aid Office include, but, are not limited to:

1. University Small Loan Program are low-interest loans available to full-time students who have successfully completed one term at UNB. Maximum loan award for an academic year is $800.00.
2. Work-Study Program is a subsidized work program designed to assist financially needy students with the high costs associated with post-secondary study. The program will also provide students with an opportunity to gain valuable skills/experience within an on-campus part-time employment sit.
3. UNB Special Bursary Program is available to undergraduate students who have been assessed to receive maximum combined federal and provincial government student aid funding for the current academic year.
4. Graduate Bursary Program is available to graduate students with demonstrated financial need.

For application information and deadlines, please contact the Financial Aid Office of UNB, Room 3, Alumni Memorial Building, (506) 453-4796 or email to: finaid@unb.ca.

For information and applications for part-time student awards, please contact the College of Extended Learning (453-4818).

SAINT JOHN CAMPUS

The UNB Saint John Financial Aid Office provides advice and answers questions on all matters relating to financial aid including: government student loans, student line of credit, University and Emergency funding, bursaries and scholarships, as well as funding by outside agencies. Information is available for both full and part-time students. Budgeting and financial advising is another of our important services.

For more information or to make an appointment, contact Renea Sleep, Student Services, Oland Hall, G15, 648-5765 or emai lto: rsleep@unbsj.ca.

FINE ARTS

UNB has a long tradition of encouraging the fine arts and has directed its resources into sustaining diversified cultural activities.

FREDERICTON CAMPUS

On the Fredericton campus, Fine Arts offerings reflect the philosophy that in a modern university the creative and intellectual aspects of life must be closely integrated.

Fine arts facilities and activities include:

1. **UNB Art Centre:** Founded in 1941 by Pegi Nicol MacLeod and Lucy Jarvis, the UNB Art Centre is considered one of the oldest art centres in the Atlantic region. It remains a focus for a range of informative and stimulating exhibitions and programs. It is home to UNB's student art group, ARTZONE. The UNB Art Centre is the custodian of the UNB Permanent

Collection which totals close to 1500 artworks assembled through the generosity of alumni and benefactors. The collection is on display throughout the Fredericton and Saint John campuses.

2. **The Centre for Musical Arts**, established in 1992, is under the direction of Richard Hornsby. It offers credit and non-credit courses, practice facilities, instruments for student use, a Concert Series, a Young Musicians Program, and a Summer Music Camp and an affiliated professional Music Festival (New Brunswick Summer Music Festival). There are also many ensembles available to students such as the Concert Choir (Director, Bjorn Runefors), and instrumental ensembles (concert band, brass ensemble, flute choir, jazz band)(Director, Richard Hornsby), as well as the Musician-in-Residence program (1993-97, Robert Kortgaard - piano; 1997-2001, Richard Raymond - piano, 2001- Peter Allen).
3. **Theatre at UNB**. Theatre UNB produces several shows (7 last season) in Memorial Hall allowing students to acquire experience in acting, designing, directing, producing, set construction, lighting and stage managing. These activities are organized by Len Falkenstein (Director of Drama).
4. **Music on the Hill.** Music on the Hill offers an annual concert series featuring international, national and regional artists. This is a cooperative endeavour of the Centre for Musical Arts and a cross-disciplinary committee with representation from UNB and STU.
5. **Film and Video**. A series of courses in film studies is offered by the Department of English. These may be taken as optional courses or as part of the Fine Arts Minor.
6. **Writer-in-Residence**. This position has been held by Norman Levine (1965-66), Dorothy Livesay (1966-68), John Metcalfe (1972-73), Alden Nowlan (1968-83), David Adams Richards (1985-87), Douglas Glover (1987-88), Helen Weinzweig (1988-89), Nancy Bauer (1989-90), William Gaston (1990-92), Don Hannah (1992-93) and Karen Connelly (1993-94) and Beth Harvor (1994-95), Anne Michaels (1995-96), Bill Bissett (1998), Richard Sanger (1998-99), Doug Fetherling (2000-01), John Steffler (2001-02), Anne Simpson (2002-03), Ken McKoogan (2003-04).
7. **The Fiddlehead Magazine**. Canada's oldest continuing journal of poetry and short stories was conceived more than three decades ago by Alfred Bailey, and grew from a few mimeographed sheets of poems by students and some faculty to include short stories and book reviews. It has been called a WHOS WHO of Canadian Literature, and it has been edited by various faculty members over the years, including Fred Cogswell, Kent Thompson, Roger Ploude, Peter Thomas, Robert Gibbs, and Don McKay. The current editor is Ross Leckie. Although its emphasis is on Canadian prose and poetry, the Fiddlehead is open to good writing in English from contributors around the world.
8. **Memorial Hall** is the site for on-campus as well as touring drama and music productions. It also houses the UNB Art Centre and the Centre for Musical Arts.
9. **Special events and programs**. Concerts, music master classes and workshops, summer music programs, writers conferences, exhibitions, poetry-readings, and drama productions are arranged or sponsored by the UNB Art Centre, the Centre for Musical Arts, Theatre UNB and Music on the Hill.

SAINT JOHN CAMPUS

Cultural activities on the Saint John campus are presented under the auspices of the **Lorenzo Society** .

1. The **Saint John String Quartet** consisting of David Adams (principal violin), Enoch Kwan (violin), Chris Buckley (viola), and Sonja Adams (cello) offer a series of 5 lecture/recitals and 2 concerts annually.
2. Exhibitions by local, Canadian and International artists are regularly displayed. In addition, the **Cormorant** , the **Lorenzo Societys** literary magazine, has published the works of students and Saint John area writers since 1983.
3. On-campus as well as touring **drama productions** are presented.
4. **Special events and programs**. Concerts, writers conferences, exhibitions and poetry and prose readings are arranged or sponsored by the Lorenzo Society .

FOOD SERVICES

FREDERICTON CAMPUS

On-campus food services are provided:

- in the various residence dining areas with Residential Students having the choice of various dining plans with varying combinations of structured meals and discretionary cash. Students who live off campus also have the option of buying various dining plans or occasional meals on a cash basis.
- in the Student Union Building, Head Hall, Harriet Irving Library, IUC, and DAvray Hall; and
- in vending machines located in various university buildings.

General information concerning food services, vending, and beverage contracts may be obtained from the Associate Director (Residential Life), whose office is in the Residence Administration Building, calling 453-4800, or mailto: resadmin@unb.ca.

Information concerning planning an on-campus event involving food or beverages, or hosting a conference on campus may be obtained from the Conference Coordinator at Residential Life & Conference Services (Residence Administration Building, 453-4800, mailto: unbhotel@unb.ca) or, if for these specific facilities, the Director of the Wu Centre (Wu Centre, 453-5135, mailto: wu@unb.ca) or Event & Marketing Coordinator of the Aitken Centre (Aitken Centre, 458-7803, mailto: morrell@unb.ca).

SAINT JOHN CAMPUS

On the Saint John campus, food services are located in the Thomas J. Condon Student Centre and Ward Chipman Library Building. Information regarding catering, food services or hosting a conference on campus may be obtained from the Office of Housing and Food Services by calling 648-5755.

GRADUATE STUDIES

The University offers a wide range of post-graduate programs through its School of Graduate Studies. The degree of Doctor of Philosophy is offered in Graduate Academic Units in the departments of Biology, Chemical Engineering, Chemistry, Civil Engineering, Computer Science, Education, Electrical Engineering, English, Forestry and Environmental Management, Geodesy and Geomatics (Surveying) Engineering, Geology,

History, Interdisciplinary Studies, Mathematics and Statistics, Mechanical Engineering, Physics, Psychology, and Sociology. Master's degrees are offered in Graduate Academic Units in almost all departments. Graduate studies are carried out on both campuses of the University.

Detailed information concerning the programs offered, financial assistance for graduate students, and regulations governing admission and degree requirements will be found in the School of Graduate Studies Calendar available on request from the School of Graduate Studies (email: gradschl@unb.ca) or on the Internet at http://www.unb.ca/gradschl/.

HEALTH INSURANCE, STUDENT

Basic Health Coverage

Basic health and hospital benefits for Canadian students are provided by the Medicare Plan of their province of permanent residence. Students must ensure that they are registered and in good standing with the Hospital Commission of their province.

International students with student visas do not qualify for Medicare coverage. Basic health coverage for international students is provided through an insured plan administered by the University. International students on both campuses should refer to the following web site for information concerning opt-out dates, refunds, etc.: www.unb.ca/services/financialservices/students/interhealth.htm

International students with landed immigrant status do qualify for Medicare and hospital benefits and must register with the Province immediately upon arrival. Please also refer to the above web site for more information.

Supplementary Health and Dental Coverage

All full-time students on both campuses are automatically enrolled in the Student Health/Dental Plan. The Plan is designed to supplement the coverage provided by the provincial Medicare plans, or by the plan for international students. Administered by the Student Union on the Fredericton campus, and by the Student Representative Council (SRC) on the Saint John campus, the Plan provides students with a comprehensive set of extended health and dental benefits including 80% coverage on prescription drugs, paramedical services, ambulance services, etc. The coverage runs from September 1 through August 31. Students wishing to enroll dependents must contact the Student Union/SRC to make arrangements (Fredericton students: 453-4955; Saint John students: 648-5684).

Students providing proof of alternate coverage may opt out of the Student Health/Dental Plan. To opt out, students must complete an opt-out form and have it signed by a Student Union/SRC staff member. Students who opt out will be credited for the Health/Dental fee. The deadline to complete the opt-out process is September 23, 2005 for both campuses, with no exceptions beyond this date. It is the responsibility of the student to follow all steps and adhere to the deadline in order to receive credit. Students must opt out annually as the opt-out does not automatically carry forward from year to year. The opt-out deadline for new students starting in January (those who were not full-time in September) will be January 20, 2006.

Please refer to the Financial Information section of this calendar for Health Insurance fees and payment deadlines. Information can also be found online at www.unb.ca/services/financialservices/students/tuitionfees.htm

For further information about the Plan, please contact: Fredericton Student Union, Room 126, Student Union Building [(506) 453-4955] or Saint John Student Representative Council, Room 213, T.J. Condon Student Centre [(506) 648-5684].

HEALTH SERVICES

The University has an AIDS Information Officer who provides information and counselling to those at the University who contract the AIDS virus or may be concerned about AIDS. The Officer may be contacted at (506) 453-4642.

FREDERICTON CAMPUS

The Student Health Centre is located in the East end of Tibbits Hall. Weekday hours are 8:00 a.m. to 4:30 p.m. Closed weekends and holidays. Phone (506) 453-4837. After hours physician on call through UNB Security, 453-4830 for hospital emergencies.

Nursing and physician services are available to full-time UNB and STU students. The main function of the Student Health Centre is to provide acute episodic care. The Student Health Centre offers comprehensive primary health care services. In addition, the Centre is interested in preventive medicine, health education and counselling in medical matters. Referral to specialists is arranged when necessary.

SAINT JOHN CAMPUS

The Student Health Centre is located on the western edge of the campus adjacent to the Saint John Regional Hospital. The centre offers a variety of clinical and educational health services for students. Please contact the Centre at 648-5501 or visit the website at www.unbsj.ca/studentservices for a list of services and hours of operation.

Students requiring medical assistance may also access one of the after-hour clinics in the greater Saint John area or the community health centre at St. Josephs Hospital. Please consult the yellow pages under Clinics - Medical. Medical emergencies should be referred to the Saint John Regional Hospital, which is adjacent to the UNB Saint John campus or dial 911.

INFORMATION CENTRES

FREDERICTON CAMPUS

Advocacy Centre

The UNB Student Union-run Advocacy Centre is a place where undergraduate students can access free, confidential legal information from student advocates. If they cannot provide you with specific information, they will find the information for you, or direct you to somewhere that the information can be provided. The advocates are a prime avenue to access Universal Legal Coverage. The Advocacy is located in room 31 in the SUB. Call 447-3068 or email to: univaff@unb.ca for more information.

PaperTrail

The Student Union-run PaperTrail is located in the lobby of the Student Union building. Photocopies, fax service, a binding service, as well as stationary and other merchandise, are available. Also offered are Bus passes, campus maps, and tickets for most activities. The PaperTrail acts as a photofinishing drop-off location, and also a Pharmacy Prescription drop-off which arranges for your prescriptions to be delivered to your home for free. Call 447-3079 for hours and information.

Student Information Centre

The Student Union-run Information Centre is located in the lobby of the Student Union Building (sharing space with the Paper Trail), room 105. Information on any event, program, club, employment opportunity, etc. is available. The Information Centre also coordinates several workshops throughout the school year. Other popular services are the Odd Job Bank and the Used Book Sale, which takes place at the beginning of each term. Call 447-3079 for more information, or email to: resource@unb.ca.

University Womens Centre

Governed by a Board consisting of various members of the UNB, STU and Fredericton Community, the University Womens Centre opened in the fall of 2002. Located in room 129 in the Student Union Building, the centre provides information, space and support for all members of the university community. For more information, phone (506) 452-6124 or email to: women@unb.ca.

SAINT JOHN CAMPUS

At the student-run **Campus Information Centre,** located in the Thomas J. Condon Student Centre, you can obtain general information, find out what is happening on campus, meet other students, send faxes, get photocopies, pick up bus schedules, maps, job postings and much more.

The Office of Advancement, Communications and Recognition (ACR) is the University's key contact point for members of the public seeking information on UNB Saint John. If you are a prospective student or parent, or a high school guidance counselor, principal or teacher, the ACR Office is your source of information on academic programs, facilities, services and campus life at UNB Saint John and its host city (call 506-648-5698 or email to: tellmemore@unbsj.ca) . The ACR Office also works regularly with the media, community interest groups, government officials, benefactors and potential donors, and many others, and provides a news service and internal communications for faculty, staff and students. Check out News@UNB on our website (www.unbsj.ca) for the latest UNB Saint John news, a calendar of events taking place on campus, a list of experts at UNB Saint John and more.

INTEGRATED TECHNOLOGY SERVICES

FREDERICTON CAMPUS

In support of UNBs information and communications technology (ICT) needs, Integrated Technology Services (ITS) provides a variety of facilities and services for students ranging from computer labs and web kiosks to laptop support and wireless networking to computing accounts, email and more:

UNB Photo IDs

Visit ITS Imaging Services (EMC Room106, 453-4843, imaging@unb.ca) to get your UNB photo ID, or for any other printing and duplication needs.

My UNB e-Services

Access your personalized information online in My UNB e-Services. There youll find your class timetable, marks, exam schedules and transcript, your residence assignment, fee statements and much more.

ITS Help Desk

Contact the ITS Help Desk to answer questions involving accounts, email, computer labs, application software, printing, access to web services, problems with technology misuse (such as abusive email) or general IT questions. Phone (506) 453-5199, email helpdesk@unb.ca or drop by in person to D-11 Head Hall from 8 a.m. to midnight every day, except Christmas and New Years Day. Free software, the status of services, information about outages and other information is available from the ITS Help Desk website at www.unb.ca/helpdesk.

ITS Laptop Support Team

The ITS Laptop Support Team will help set-up your laptop so it is protected from viruses and spyware and configure it to access UNBs networks. Call the ITS Help Desk or drop by the side window to make an appointment.

Visit www.unbf.ca/its/students/ for detailed information about our services and for step-by-step instructions on how to activate your UNB IT Services.

SAINT JOHN CAMPUS

Integrated Technology Services (ITS) provides facilities and services for computers, networks, multimedia and audio-visual equipment in support of the academic and research needs of our students and employees. ITS manages and provides user support for more than a dozen servers that provide file storage space, networked applications, print services, web page storage, email services, off-campus FTP access to files, and Internet connectivity services. ITS Saint John operates six computer labs containing more than 150 microcomputers for student use. ITS maintains and supports technology-enhanced classrooms including one video-conferencing facility. For more information, visit our web site: www.unbsj.ca/ITS

International Student Advisor/CIDA Coordinator/Canadian Student Exchanges

Fredericton Campus

Website: www.unb.ca/isao/

The International Student Advisors Office is located in Room 18 of the Alumni Memorial Building and is open during the regular campus office hours. Orientation, counselling and information are available to all non-Canadian students and their families at UNBF. The office provides advice and information on such items as student authorization, health insurance, financial issues, community resources and social events for international students. The International Student Advisor's Office also administers all aspects of the New Brunswick Pilot Project Work Permits for international students at UNBF.

The office also provides information to Canadian students regarding exchange programs. Phone (506) 453-4860.

SAINT JOHN CAMPUS

Website: www.unbsj.ca/international

International Student Advisors

The International Student Advisors office on the Saint John campus is located in Room A10 of (there are now three people

who have international students advising roles, so it might be easier and more clear to simply refer students to the International Centre) the International Centre, Annex A. Orientation, counselling and information are available to all international and landed immigrant students and their families. The International Student Advisors provide assistance and information on arriving in Saint John, finding accommodations, student authorizations, health insurance, campus and community resources, and social events. Phone (506) 648-5775 or email to: ILO@unbsj.ca.

Student Abroad Coordinator

Go Further! Study Abroad! Information and advice on study and work abroad opportunities for UNB Saint John students are available. UNB Saint John offers a number of competitive bursaries each year to financially assist Canadian students to study abroad for one term. To find out more, check out the website at www.unbsj.ca/international/studentabroad, or phone (506) 648-5618 or email to: studentabroad@unbsj.ca.

International Development Project Coordinator

The International Office at UNB Saint John provides support to faculty, staff and students involved with international development projects. Present initiatives include projects in China, Vietnam, Africa and Cuba. The Coordinator is also available to assist faculty, staff and students wishing to develop opportunities and proposals to work, study or do research in developing countries. An active World Universities Services of Canada chapter is also coordinated in this office. For more information on international development, contact: (506) 648-5775 or email to: ILO@unbsj.ca.

Libraries

FREDERICTON CAMPUS

LIBRARIANS - FREDERICTON

- Allan, Erma P., BA (UNB), BLS (Tor), Head, Cataloguing, HIL - 1967
- Balcolm, Lesley, BA (Mt.All.), MLIS (UWO), Head of Reference Dept HIL - 2001
- Belier, Patricia, BA, MA, MLS (Tor), Archives and Special Collections, HIL - 1982
- Bragdon, Marc, BA (St Thomas(NB), MLIS (Dal), HIL - 1999
- Burk, Alan C., BA (Hanover), MA, PhD (Brown), MLS (UWO), Assoc Dir, HIL and Dir ETC - 1982
- Charters, Mary, BSc (UNB), BEd (Qu), MLS (UWO), Cataloguing, HIL - 1975
- Crocker, C. Anne, BA (UNB), BLS (Tor), Head, Law Lib - 1976
- Cull, Barry, BA (Nfld), BA (Dal), MLS (Dal), HIL - 1999
- Fisher, Sue, BA (Western), MA (Qu.), MLIS (Alta.), Curator Eileen Wallace Childrens Literature Collection - 2001
- Giberson, Frances, BA (Dal), MA (UNB), MLS (UWO), Head, Science and Forestry Lib, 2003
- Hamilton, Elizabeth C., BA (UNB), MLS (UWO), MA (UNB), Head, Govt Doc, HIL - 1978
- Holyoke, Francesca, BA (UNB), MLS (Dal), Head, Science and Forestry Lib - 1979
- Johnston, Patricia E., BA, BEd (UNB), MLS (McG.), MA (York) - 1980
- MacKenzie, James, BMus (Mt.All.), MA (UWO), MLS (Dal), HIL - 2002
- Moss, Janet, BA (UNB), MLS (UWO), Law Library - 1991
- Neilson, John, BA, MA (Acad.), MLS (McG.), Documents, HIL - 1989
- Pope, Andrew T., BA (New Sch NY), BEd (UNB), MLS (Tor), HIL - 1974
- Rauch, Doris, BA, MSEd (Brooklyn), MLS (Pitt), Head, Engineering Lib - 1978
- Renner, Melinda, BA, MSLS (Emory), SLS (Atlanta), Law Library - 1998
- Sloan, Stephen, BA (Tor), MLS (UWO), HIL - 1988
- Teskey, John, BA (Guelph), MLS (UWO), Dir of Libraries - 1991
- Thompson, Jocelyne, BA (C'dia), MLS (McG.), Head, Collections and Public Services - 2000
- Wells, Leanne, BA (Acad), MA (UBC), MLS (Dal), HIL - 2002
- Wheeler, Barbara, BA (Mt.St Vin.), MSL (Dal), Cataloguing, HIL - 1985

The UNB library system on the Fredericton campus comprises the Harriet Irving Library and two branch libraries, one serving the faculties of Computer Science and Engineering, the other, the faculties of Forestry and Science. The Law Library is an integral part of the Faculty of Law.

Collectively the libraries hold over one million bound volumes, three million microforms, 220,000 government documents, 50,000 maps, and 3,200 current print journals, as well as many rare books, manuscripts, the University archives and a number of other special collections. Each library has a non-circulating Reference collection consisting of dictionaries, encyclopedias, handbooks, bibliographies, indexes and abstracts. Most materials can, however, be borrowed for home use, and books and periodicals are shelved in open stacks for easy access by library users. QUEST, UNB Libraries online catalogue, lists the materials in all of the university libraries, including Ward Chipman Library on the Saint John campus, and provides location information.

Reflecting the technological advances of recent years, many information resources including some 8,000 full-text journals, a number of major indexing and abstracting tools, and a variety of reference materials are available online from the library web site. These electronic resources can be accessed through computers on campus or at home.

General library tours are offered for all students in September, while more detailed instruction sessions are provided later in the term by librarians and other library staff. Reference staff are also available to give individual instruction on QUEST and database searching and on locating material in the libraries collections.

Study tables and individual carrels are provided in all libraries. Photocopiers and printers are also provided. Furthermore, laptop computers can be borrowed for in-house use at the Harriet Irving Library, as well as at the Science and Forestry and the Engineering libraries.

Opening hours are posted at the entrance to each library and on the library web site at http://www.lib.unb.ca

SAINT JOHN CAMPUS

LIBRARIANS - SAINT JOHN

- Collins, Susan, BA (Qu), MLS (Pitt), Chief Librarian & Director, Information Services & Systems - 1979
- Fraser, Janet, BA (UWO), MLS (Tor), MA (Tor), Librarian II - Information Access Librarian - 2003
- Hansen, Linda S., BA (UNB), MLS (SUNY), Electronic Services Librarian -1996

As part of Information Services & Systems, UNB Saint Johns Library Services provide several kinds of access, from physical books to computer databases, to virtual documents through the Internet. The Ward Chipman Library houses a physical collection of approximately 190,000 volumes, 61,000 microforms, government documents and maps, and 600 current serial titles,

which is supplemented by a document delivery service allowing users rapid access to materials not held locally. Library users share Quest, the University Libraries system with the Fredericton campus libraries. Users have electronic access to the full library catalogue and over 100 licensed bibliographic databases, which include indexes, abstracts, and full-text material. Among the items appearing in full-text are approximately 10,000 serial titles. Students can read needed material on-screen, download it to disk or email it to themselves for future reference and study.

Through campus labs, library computer workstations or home Internet connections, students have access to the Librarys extensive website. This site www.unbsj.ca/library/ provides on-line instructional materials and a variety of links to research and informational items and is open to any user with Internet connections, 24 hours a day, seven days a week. From books to the web, the library staff offers formal and informal instruction, and assistance to students seeking information in support of their course work and their research interests.

Laptop computers can be borrowed for in-house use in the Ward Chipman Library. Library services are available year-round to students and faculty of both campuses and to adult residents of Saint John and surrounding areas.

LOST AND FOUND ITEMS

FREDERICTON CAMPUS

A repository for articles lost and found is located at the Security and Traffic Section in the Wu Conference Centre, Fredericton campus. Another Fredericton location is the Equipment Room at the Lady Beaverbrook Gymnasium.

SAINT JOHN CAMPUS

A repository for articles lost and found is located in the Security Office, in the Athletics Centre Foyer.

MATH HELP AND WRITING AND STUDY SKILLS CENTRES

FREDERICTON CAMPUS

Math Help Centre:

The Math Help Centre provides individual tutoring, group tutorials, workshops and exam review sessions for all students taking first year Math courses. Services are free to full-and part-time UNB students. The Centre is located in Keirstead Hall Room 317. Call the College of Extended Learning (453-4646) for an appointment or mailto: mhc@unb.ca.

Writing and Study Skills Centre:

The Writing and Study Skills Centre (318-319 Keirstead Hall) offers free individual and small group tutoring as well as a variety of workshops for full- and part-time students. Topics include essay and report writing, effective reading and study techniques, examination preparation, and time management. Individual appointments can be booked through the College of Extended Learning (453-4646). The current workshop schedule and contact information are available online: www.unb.ca/extend/wss/wss.htm

SAINT JOHN CAMPUS

Math Help Centre:

Individual and small group tutoring available for various math and stats courses. The Centre also offers review sessions on remedial mathematics. Drop by the Help Centre at Oland Hall G11 to schedule an appointment. Sign-up sheets are posted weekly. Phone (506) 648-5776

Writing Centre

One-on-one tutoring providing help with any academic writing, including assistance with planning, organization, documentation, grammar and punctuation, and academic conventions. To make an appointment, call (506) 648 - 5501 or drop by the Student Services Office, Oland Hall G18.

MUSEUMS AND COLLECTIONS

FREDERICTON CAMPUS

Harriet Irving Library - houses a large number of historical documents and pictures, and several collections, including: the Rufus Hathaway Collection of Canadian Literature; the Beaverbrook Collection of 15,000 volumes; and a collection of first editions, manuscripts and other items also donated by Lord Beaverbrook that contains the papers of Viscount Bennett. A unique collection of tapestries by Dr. Ivan Crowell depicting the historic buildings on campus is on display in the main lobby.

Sir Howard Douglas Hall (Old Arts Building) -
the Kings College Exhibit in the Great Hall, made possible by donations of the Class of 1930, illustrates the history of the building.

Department of Electrical Engineering Museum -
located in Head Hall, Room D-36, contains many items, some dating from circa 1900.

Department of Geology -
a large display of rocks, minerals and fossils.

Brydone Jack Observatory Museum -
houses a unique collection of nineteenth-century astronomical instruments and related photographs.

Provincial Archives of New Brunswick - o
ccupies the Bonar Law-Bennett Building and contains the historical records of the Provincial Government from 1784 together with manuscript collections of individuals and institutions. The Archives also houses 150,000 photographic negatives and prints, 295,000 cartographic sheets, 1,800 videotapes and films and 4,600 hours of oral recordings of historical interest. The Archives is open to the public from 10:00 a.m. to 5:00 p.m. Monday to Friday, and 8:30 a.m. to 5:00 p.m. on Saturday for inquiries and use of the records.

SAINT JOHN CAMPUS

New Brunswick Museum (Saint John) - the oldest museum in Canada, was founded by Abraham Gesner and contains collections in natural science, art and history. It also features touring exhibitions.

POST OFFICE

FREDERICTON CAMPUS

The UNB Student Union-run Canada Post Outlet is located at the Paper Trail in the Student Union Building, Room SUB 105. The

Outlet provides a full range of postal services including, but not limited to, meter stamp sales, student loan processing and money orders. Phone (506) 447-3079 for operating hours or contact the UNB Student Union at (506) 453-4955 for more information. Campus Mail remains the responsibility of the university.

SAINT JOHN CAMPUS

Mailboxes exist in various locations on campus. Stamps are available at the Bookstore.

RESEARCH CENTRES AND INSTITUTES

With research being conducted on both the Fredericton and Saint John campuses, the University is the largest research institution in New Brunswick. Most faculty members are active in research, often in cooperation with graduate students. A number of interdisciplinary research programs exist in which faculty members and students from various Departments collaborate to investigate problems of mutual interest. Active interdisciplinary research units include the Institute of Biomedical Engineering, Centre for Conflict Studies, Muriel McQueen Fergusson Centre for Family Violence Research, Centre for Nuclear Energy Research, Canadian Research Institute for Social Policy, Centre for Property Studies, Canadian Rivers Institute, Centre for Coastal Studies and Aquaculture, Limerick Pulp and Paper Centre, Electronic Text Centre, Canadian Centre for Geodetic Engineering, Information Technology Centre, and the Wood Science and Technology Centre, to name a few. The Office of Research Services, the research administration and development unit, facilitates the undertaking of research within the university on behalf of industry, government, and other clients and sponsors. It also promotes the application of research results to industrial problems and, where appropriate, the transfer of technology through commercialization arrangements.

Further information concerning research activities at the University may be obtained from the Office of the Vice-President (Research): www.unb.ca/research/

SECURITY AND TRAFFIC

Security services are provided for the protection of university property, as well as the security and safety of the university community at both the Fredericton and Saint John Campuses.

Fredericton Campus

Some of the services provided by our department include:

- Campus Patrols
- Campus Inspections
- Proactive Crime Prevention Strategies
- Residence Security

In addition to the physical security of the campuses, security is responsible for parking and traffic control. Parking regulations are in effect and students, faculty and staff and visitors must register their vehicles with the Security and Traffic office and purchase a parking permit to park on campus. The Security and Traffic Department personnel will gladly address questions relative to parking.

Parking violations will result in fines. Violation tickets that are not paid within seven days could result in having the violating vehicle towed from campus without notice and at the owners expense and risk. Vehicles left contrary to the parking regulations constitute or create a traffic hazard and may also be towed away at the owners expense and risk without prior notification. Non-payment of parking fines may result in withholding of grades and transcripts or deductions from financial awards to students.

SPRING AND SUMMER SESSIONS

FREDERICTON AND SAINT JOHN CAMPUSES

The University offers a variety of academic sessions during the spring and summer period: Intersession (Fredericton only) during May and June, Spring Session (Saint John only) from May through July, and Summer Session (Fredericton) during July and August. Courses are offered in a variety of disciplines.

Spring and summer study allows current undergraduate and graduate students to progress in their programs as well as new or visiting students to participate in UNB offerings. Special professional development opportunities exist for teachers as well as travel/study options for all interested students.

As part of its overall Summer Session on the Fredericton campus the University also offers three special programs through the English Language Programme for those wishing to increase their facility in English: two five-week immersion sessions (May-June and July-August) for adult learners and one six-week immersion program for high school students during July-August. Contact the English Language Programme, College of Extended Learning for further details.

In addition to the degree-credit courses, a variety of cultural and related educational activities (e.g. Maritime Writers Workshop, Summer Music Camp, Summer Music Festival) are provided.

Calendars for the Spring and Summer sessions are available in the spring of each year.

For further information, contact the College of Extended Learning, UNB Fredericton, P.O. Box 4400, Fredericton, N.B. E3B 5A3, (506) 453-4646 (phone), (506) 453-3572 (fax), extend@unb.ca (email), http://extend.unb.ca/ (web site). In Saint John, contact the Registrars Office, UNB Saint John, P.O. Box 5050, Tucker Park, Saint John, N.B. E2L 4L5, (506)648-5670 (phone).

For further information on parking regulations, services provided, as well as information on safety and security tips, refer to the UNB website at www.unbf.ca/security.

Saint John Campus

Website: www.unbsj.ca/security/

Security services are provided for the protection of university property and the security and safety of the university community at both the Fredericton and Saint John Campuses. In addition to the physical security of the campuses, security is responsible for parking and traffic control.

Parking regulations are in effect and students, faculty and staff and visitors must register their vehicles with the Security and Traffic office and purchase a parking permit to park on campus.

The Security and Safety Department personnel will gladly address questions relative to parking.

Parking violations will result in fines. Violation tickets that are not paid within seven days could result in having the violating vehicle towed from campus without notice and at the owners expense and risk. Vehicles left contrary to the parking regulations constitute or create a traffic hazard and may also be towed away at the owners expense and risk without prior notification. Non-payment of parking fines may result in withholding of grades and transcripts or deductions from financial awards to students.

SEXUAL HARASSMENT POLICY

Sexual harassment is unwanted attention of a sexual nature, often with an underlying element of threat or coercion. It can also include sexist remarks or verbal abuse directed towards a person or a gender. There are four major dimensions of sexual harassment:

1. when acceptance or rejection of sexual advances is a condition of education or employment;
2. when acceptance or rejection of sexual advances affectsgrades, performance evaluations, or any academicor personnel decisions that concern the student or employee;
3. when conduct of a sexual nature interferes with work or creates an intimidating, hostile, offensive or humiliating environment;
4. when sexual remarks and behaviour of an individual or group of individuals, which may not be physically threatening, create an environment that makes you uncomfortable.

You can contact, on a confidential basis, a Sexual Harassment Advisor, whose role is to provide you with support and information on the options available to you, both informal and formal. Advisors' names and telephone numbers are listed below. The Policy and Procedure on Sexual Harassment of the University of New Brunswick provides several options for action which include: The Direct Approach, Intervention By An Advisor, Mediation, and Formal Investigation.

The complete Policy can be accessed at:
www.unb.ca/hr/employees/policies/harassment.php

ADVISORS UNDER SEXUAL HARASSMENT POLICY		
FREDERICTON CAMPUS		
1. CAMPBELL, Gail (History, Tilley Hall, Rm. 116)	458-7430 / 453-4621	campbell@unb.ca
2. CRAFT, Sandra (Biology, Bailey Hall, Rm.214)	452-6333 / 453-4583	scraft@unb.ca
3. HARALAMPIDES, Katy (Head Hall, Rm. B4)	453-5125	katy@unb.ca
4. MAHER, Robert (Administration, Singer Hall, Rm. 346)	458-7654	maherr@unb.ca
5. MERRITT-GRAY, Marilyn (* on leave 2004-2005))		
6. SPARKS, Maureen (Aitken University Centre, Main Floor)	451-6894	sparks@unb.ca
7. SPENCER, Nancy (Arts, Tilley Hall, Rm. 22)	453-4655	nspencer@unb.ca
8. STAPLEFORD, Deborah (Conflict Studies, Tilley Hall, Rm 42)	453-4587	dstaplef@unb.ca
9. To Be Advised		
SAINT JOHN CAMPUS		
1. DEVARENNE, Sarah (Oland Hall, Rm. 126)	648-5795	sdevaren@unbsj.ca
2. To Be Advised		
3. To Be Advised		

STUDENT AFFAIRS AND SERVICES

FREDERICTON CAMPUS

Student Affairs and Services Website:
http://www.unbf.ca/studentservices/

Director of Student Affairs and Services

The Director of Student Affairs and Services Office is located in the Alumni Memorial Building, Room 8, phone (506) 453-4527, fax (506) 453-5005. The Director is administratively responsible for a comprehensive array of programs and services for students including Counselling, Financial Aid, Student Health Centre, International Student Advisor, Services for Students with Disabilities, Student Development, Student Employment and Campus Ministry. Students who are uncertain of where to begin to address a problem or concern should contact the Director's office for information or referral to the appropriate offices or persons who will address the student's concerns.

Student Advocate

The Office of the Student Advocate is located in the Alumni Memorial Building, Room 8B, phone (506) 453-4527, fax (506) 453-5005. The Student Advocate assists students in preparing academic appeals directed to the Senate Student Standings and Promotions Committee (SS), represents students at SS meetings, provides students with information and support when they are charged under the Student Disciplinary Code (SDC) and assists the Director of Student Affairs and Services as the students advocate at SDC hearings. The Student Advocate also receives complaints from students and determines the appropriate venue for dealing with them, assists students in compassionate or medical absence from class documentation, and guides students through course grade reviews and individual piece of work grade reviews.

Student Development Coordinator

UNB Fredericton offers a variety of orientation programs for all entering students, first year and transfer students, both part-time and full-time status. These activities assist with a successful transition into all aspects of university life. In concert with the Faculties, this office coordinates various other peer-based programs, including peer mentors and peer tutors. For further information contact the Student Development Coordinator in the Alumni Memorial Building, room 8, phone (506) 453-4898, fax 453-5005.

SAINT JOHN CAMPUS

Student Services

Student Services offers a number of programs and services design to assist students in their studies and university life. These services include the Writing Centre, Counselling, Financial Aid & Awards Advising, Student Employment Service,

Services for Students with Disabilities, the Student Health Centre and student orientation activities. The Director of Student Services acts as the campus ombudsperson for students in dealing with academic appeals and disciplinary matters. The staff at Student Services is dedicated to helping students get the most from their university education. For information on programs, services or general inquiries, please contact the Student Services Centre,Oland Hall G18, 648-5501 , email stuserv@unbsj.ca or visit our website at www.unbsj.ca/stu_serv.

STUDENT CENTRES

FREDERICTON CAMPUS

Student Union Building

The Student Union Building (SUB), completed in January 1969, is the result of student-administration cooperation. The cost was shared among the students of the University of New Brunswick, Saint Thomas University, and the former Teachers College, with the University of New Brunswick matching the student contribution.

The SUB houses the offices of several student groups and organizations. Both the Saint Thomas University and the University of New Brunswick student newspaper offices and the student government offices are located in the office wing as well as CHSR-FM, the student radio station. In the main part of the building there are several meeting rooms, a lounge area, a large cafeteria, the College Hill Social Club, The Cellar Pub n' Grill, the Information Centre, the PaperTrail, The Advocacy Centre, the University Women's Centre, the ballroom and the main administrative office for the SUB. For the convenience of the students there are also several retail outlets such as a clothing store, hair styling salon, travel office, two automated banking machines, a sundry shop and a jewelry store.

The Student Union Building is advised by a Board made up of UNB and STU students and members of the Board of Governors of UNB who strive to provide the services and atmosphere which will make student life enjoyable.

SAINT JOHN CAMPUS

Thomas J. Condon Student Centre

Opened in 1986, the Thomas J. Condon Student Centre houses the offices of student government, the student-run Campus Information Centre (information, photocopying and fax services), the student newspaper (The Baron, the Baronian (yearbook), Campus Radio Saint John (CFMH, 92.5 FM), lounges, meeting rooms, offices of various student clubs and societies, and food services. A skywalk connects the Student Centre to the G. Forbes Elliot Athletics Centre. Overseen by the Student Centre Advisory Committee, comprised of students, faculty and administration, the Centre consolidates most aspects of student life. Three rooms the Dr. K.A. Baird Dining Room, the E.A. Whitebone Lounge and the Tanya Hume Room were named in memory of ardent UNB Saint John supporters.

Funding for the Student Centre was provided by the Third Century Fund (donations from faculty, staff and students) and the provincial government. In 1987, the building was named in honour of Thomas J. Condon, Vice-President of the Saint John Campus from 1977-1987, and 2001-2003.

STUDENTS WITH DISABILITIES, SERVICES FOR

The University of New Brunswick strives to help students pursue their studies with as much independence as possible. Students will, with in reason, be provided with the accommodations that they need to follow their program of study.

FREDERICTON CAMPUS

Physical Accessibility

UNB Fredericton which is located on the side of a hill, has more than 50 buildings, the oldest of which opened in 1829. Some of the buildings have been modified to include ramps and accessible washrooms however older buildings have limited accessibility. Information on building accessibility can be obtained from the Director of Student Affairs and Services and / or the Coordinator of Services for Students with Disabilities at (506) 453-3515.

Academic Accommodations

The university makes an effort to provide the accommodations needed by students with disabilities to participate fully in their program of study. Please contact the Coordinator of Services for Students with Disabilities at (506) 453-3515 for more detailed information.

SAINT JOHN CAMPUS

Services for Students with Disabilities are coordinated through Student Life and Support Services. Students requiring accommodations should contact Student Life and Support Services in advance of classes to discuss their needs.

Please contact Student Life and Support Services, Oland Hall G18, 648-5962, mailto: kccraft@unbsj.ca

SAINT JOHN ACADEMIC PROGRAMS

The University of New Brunswick Saint John campus offers the following four-year degree programs:

BACHELOR OF APPLIED MANAGEMENT

- Bachelor of Applied Management in Accounting
- Bachelor of Applied Management in Electronic Commerce
- Bachelor of Applied Management in Hospitality and Tourism

BACHELOR OF ARTS

Majors:	Biology, Economics, English, French, History, Information and Communication Studies, International Studies, Mathematics, Philosophy, Politics, Psychology, Sociology, Sport and Exercise Psychology, Statistics
Honours:	Economics, English, History, Politics, Psychology and Sociology

BACHELOR OF BUSINESS ADMINISTRATION

- Co-op Option
- **Majors** in: Economics, French, Accounting, Electronic Commerce, Human Resource Management
- **Concentrations** in Accounting, Electronic Commerce, Human Resource Management and Marketing

BACHELOR OF DATA ANALYSIS

- **Majors** in: Computer Science, Economics, Mathematics, and Statistics

BACHELOR OF HEALTH SCIENCES

- Nuclear Medicine
- Radiation Therapy
- Radiography
- Respiratory Therapy

BACHELOR OF NURSING

- BN Basic Program
- BN/RN Program

BACHELOR OF SCIENCE

Majors :	General Biology, Environmental Biology, Marine Biology, Psychology, Biology-Psychology, Mathematics, Statistics, and General Science
Specializations :	Biology with Specialization in Zoology

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

Specializations :	Software Engineering, and High-Performance Scientific Computing
Honours :	Software Engineering, and High-Performance Scientific Computing

MINOR PROGRAMS

Each of the following disciplines also offers a Minor program which may be taken in conjunction with the degree programs listed above, with approval of the appropriate Departments:

- Cognitive Neuroscience
- Comparative Literature
- Criminal Justice
- English
- French
- Gender Studies
- History
- Information and Communication Studies
- International Development Studies
- International Studies
- Linguistics
- Mathematics
- Philosophy
- Politics
- Statistics
- In addition, a Minor is offered in Psychosocial Dimensions of Sport.

OTHER PROGRAMS

- A Bachelor of Nursing degree for the post RN student is available.
- A five-year Bachelor of Education Degree in Elementary Education is offered concurrently with the Bachelor of Arts Degree.
- UNBSJ also offers the first two years of programs leading to Majors and Honours degrees in other Arts disciplines and to additional discipline Majors and Honours degrees in Science.
- The first two years of a degree program in Engineering.
- Certificate programs are offered in:
  - Accounting
  - Business Administration
  - Computing
  - Data Analysis
  - Economics
  - Electronic Commerce
  - Financial Markets
  - French Levels I and II
  - Gender Studies
  - Human Resource Management
  - Mathematics for Teachers
  - Mental Health Nursing.
- A Diploma of Advanced Undergraduate Studies is also available.

Detailed information about these academic programs follows under Degree Programs.

ADMISSION, FEES, FINANCIAL AID, SERVICES

Information pertaining to admissions requirements and procedures, fees, financial aid and University services and facilities is located elsewhere in this Calendar. Students should consult the appropriate section of the Calendar as indicated below.

WRITING REQUIREMENT

Note: This requirement is currently under suspension (Saint John Senate, October 2000) The following writing requirements are applicable to all degree programs UNB Saint John:

Students in all full degree programs at UNBSJ are required to pass, with a minimum grade of C, 12 ch in courses requiring a significant amount of writing in English. These courses are designated (W) in Section H.

That a minimum of three and preferably six credit hours of courses with a significant writing component must be taken in the first half of the degree program.

That a minimum of three and preferably six credit hours of courses with a significant writing component must be taken in the student's own field of study.

In each course designated as one with a significant writing component,

a. The forms of writing that fulfill this requirement will include types of writing appropriate to particular disciplines (i.e. reports, case studies, etc. as well as essays);

b. At least one substantial writing assignment or several shorter writing assignments will be required per term;

c. Written work completed by a group of student will not fulfill this requirement;

d. Students will receive explicit instruction in the steps involved in the writing process (with assistance from the writing lab as desired);

e. Student will be encouraged (if professors so desire) to submit rough draft prior to the due date for review either by faculty or by Writing Lab instructors

BACHELOR OF APPLIED MANAGEMENT

GENERAL INFORMATION

FACULTY OF BUSINESS

General Office:	Philip W. Oland Hall, Room 245
Mailing Address:	Faculty of Business, University of New Brunswick, 100 Tucker Park Road, Saint John, N. B., Canada, E2L 4L5
Phone:	(506) 648-5570 / 648-5806
Fax:	(506) 648-5574
Email:	business@unbsj.ca
Website:	http://business.unbsj.ca/

NOTE: For Faculty listing, please see Bachelor of Business Administration program section.

An articulation agreement is a formal, systematic, written collaboration between two institutions designed to identify block transfer credits and to clarify requirements to facilitate student transfers between the two institutions. These agreements are approved by the Maritime Provinces Higher Education Commission and are regularly updated to reflect any changes in curriculum or requirements at the institutions involved.

The Faculty of Business at UNBSJ offers articulated programmes in accounting, electronic commerce or hospitality and tourism leading to The Bachelor of Applied Management (BAM). Students first earn a diploma from a participating community college and then enter the third year of the BAM at UNBSJ.

The BAM in Hospitality and Tourism also offers a high school entry option whereby students attend UNBSJ in their first year, transfer to the New Brunswick Community College in St. Andrews for their second year and return to UNBSJ to complete the final two years of the degree.

The programs are designed to offer students the opportunity to experience two very different types of learning environments while they develop proficiency in both the theoretical and applied areas of their chosen fields.

I. University Regulations on Admission and Academic Regulations

Students are strongly advised to read the General University Regulations, Section B of this Calendar, and in particular the subsection headed "Grading System and Classification". The General University Regulations will govern any point not covered in the regulations that follow. Questions concerning the application of regulations should be directed to the Registrar.

II. BAM Regulations for Students in the Degree Program

A. Grading and Classification

The regulations in respect to the BAM degree are expressed in terms of letter grades, credit hours and grade point averages. These are explained in Section B of the Calendar. In order to take a BA or HTM course that has a prerequisite, students must earn a C or better in the prerequisite course(s), regardless of the program in which the student is registered.

Note: A grade of C or better is necessary in all required and elective courses (including work term reports, where applicable). A grade of D or better is necessary for all options.

B. Credit Hours

The number of credit hours assigned each course is stated in Section F of this Calendar. (In most cases the Faculty of Business assigns a 6 ch weight to a two-term course and a 3 ch weight to a term course.)Due to differences in the methods used by the various Faculties in the calculation of credit hours, students who elect to register for courses taught outside of the Faculty of Business should note the following:

1. For purposes of the BAM degree, any course taught outside of the Faculty of Business, which has a course number ending in and which is taught over the full academic year, will receive the number of credit hours normally assigned by the Faculty in which the course is taught, up to a maximum of 6.
2. For purposes of the BAM degree, any course taught outside of the Faculty of Business, which has a course number ending in other than and which is offered in one term of the academic year, will receive the number of credit hours normally assigned by the Faculty in which the course is taught, up to a maximum of 3.
3. Students may take up to 3 one-credit hour courses of an academic nature during their program.

C. Grade Point Average

1. See Section B of this Calendar for detailed regulations on standing and promotion requirements.
2. A student who has been registered in the BAM program and who withdrew while on probation or who was required to withdraw from the program will not be eligible to re-enter the program without the approval of the Faculty of Business.
3. To earn the BAM degree, a student must successfully complete at least 60 ch in approved courses at UNB and must achieve a minimum grade of C in all courses designated as required or elective.

D. Transfer Students

The University regulations in respect to students transferring to the BAM degree program from another UNB degree program and students transferring to UNB from another university or post-secondary institution are stated in the General Regulations of the University.

Course credits may only be transferred from another university when the grade is equivalent to at least a C at UNB.

At least half the credit hours for the BAM degree must be taken at UNB and must normally include all the required courses in the BAM degree program. (Students may be permitted to take some of these courses elsewhere with the prior permission of the Faculty of Business and the Registrar.)

E. Changes in Degree Requirements

Improvements in the BAM program may lead to changes in the requirements for the degree. The University reserves the right to require candidates already enrolled to meet the revised requirements.

F. Normal Course Loads

The normal course load for students in the BAM program will be five courses per term. Students with a cumulative gpa of at least 2. 5 may, with the written permission of the Director of Undergraduate Studies or the Dean of the Faculty of Business, take a maximum of six courses in a given term.

G. Repeating Courses

A student who fails to obtain a grade of C or better in a required course must retake the course as soon as it becomes available during a session in which the student is in attendance.

A student may take a course a maximum of three times (including Ws but excluding courses which are designated with the # notation). Beyond that, the student must obtain the permission of the Dean of the students Faculty to register again in the repeated course. See University Regulations section VIII.I.

H. Course Requirements

Students are responsible for ensuring that they meet all the requirements specified for the degree. These include the minimum credit hour requirements, minimum grade point averages, minimum grades in specified courses, successful completion of all specifically required courses, and compliance with the restrictions on elective and option courses.

Students are advised to consult Section F of this Calendar for detailed course descriptions, including the number of credit hours assigned to each course.

III. Degree Standing on Graduation

At graduation all successful candidates for the degree of Bachelor of Applied Management shall be listed in alphabetical order within the appropriate degree category as stated below:

a. **Distinction:** A student who attains a cumulative grade point average of at least 3.8 and no grade less than C (2.0) over the final 90 ch of course work shall graduate with Distinction.

b. **First Division:** A student who attains a cumulative grade point average of at least 3.5 shall graduate in First Division.

c. **Second Division:** A student who attains a cumulative grade point average of at least 2.5 but less than 3.5 shall graduate in Second Division.

d. **Third Division:** A student who attains a cumulative grade point average of less than 2.5 shall graduate in Third Division.

IV. Bachelor of Applied Management Curriculum and Degree Requirements

It is the responsibility of students to ascertain that their elective and option courses are acceptable for BAM degree credit. Credit will not be granted for FREN 1103 , CS 1703 , ECON 1004 , MATH 1863 or PSYC 1273 in the BAM program.

Students enrolled in a degree or certificate program under the aegis of the Faculty of Business are not to register in the following courses or similar courses without prior permission of the Faculty of Business: PSYC 2901 , PSYC 3913 , STAT 1793 , STAT 3093 (The content of these courses is similar to required or optional BBA or BAM courses.).

Note: Students should contact the Faculty of Business at the beginning of each regular academic year for a revised list of courses in this category. Courses listed elsewhere in this Calendar, as service courses by other Faculties or Departments are normally not credits for the BAM degree.

BACHELOR OF APPLIED MANAGEMENT - ACCOUNTING

Admission Requirements

Students must have successfully completed the two-year Business Technology program with the Accounting Option at NBCC-Saint John, or an equivalent program, with an average of at least 70%. Additional admission requirements will depend upon the institution from which a student graduated.

Curriculum and Degree Requirements

Students must have successfully completed at least 60 ch of course work and must obtain the minimum required grades in all required, elective and option courses specifically required for the degree and in the prerequisites for those courses.

Candidates for the degree must successfully complete the following credit hours:

a. 39 chs of required courses
b. 3 chs Accounting Elective chosen from BA 4237 , BA 4238 or BA 4242
c. 3 chs Finance Elective chosen from BA 4418 , BA 4437 , BA 4448 or other courses as approved by the Faculty of Business
d. 3 chs Elective courses chosen from ICS 2001 , IS 1001 , IS 1002 , SOCI 2413 , ECON 2091 , 3 chs Psychology or other courses as approved by the Faculty of Business.
e. 3 chs Business Elective chosen from BA 3123 , BA 3134 , BA 3557 , BA 4101 , BA 4193 or other business course as approved by the Faculty of Business.
f. 9 chs non-business options

Example of a Typical Student's Program BAM Accounting Degree

Third Year	
Fall Term	MATH 1853 , BA 2123 , BA 2504 , BA 4223 , 3 chs electives or non-business options
Winter Term	BA 2606 , BA 3224 , BA 3672 , BA 4207 , 3 chs of electives or non-business options
Fourth Year	
Fall Term	BA 2858 , BA 4221 , BA 4229 , 6 chs of electives or non-business options
Winter Term	BA 3304 , BA 3623 , 9 chs electives or non-business options

Co-operative Education Component

Students may choose the co-op mode. Work terms follow years 2 and 3 for High School entry students; a work term follows year 3 (i.e. first year at UNBSJ) for College entry students. These work terms provide "hands on" multi-level practical experiences.

BACHELOR OF APPLIED MANAGEMENT - ELECTRONIC COMMERCE

Admission Requirements

Students must have successfully completed the two-year Business Technology program with the Information Systems Specialist Option at NBCC-Saint John, or an equivalent program, with an average of at least 70%. Additional admission requirements will depend upon the institution from which a student graduated.

Curriculum and Degree Requirements

Students must have successfully completed at least 60 ch of course work and must obtain the minimum required grades in all required, elective and option courses specifically required for the degree and in the prerequisites for those courses.

Candidates for the degree must successfully complete the following credit hours:

a. 39 chs of required courses;
b. 6 chs of Electives chosen from BA 3126 , BA 3328 , BA 4108 , BA 4109 , BA 4126 , BA 4223 , CS 2773 or other courses as approved by the Faculty of Business;
c. 6 chs of Electives chosen from BA 3557 , BA 4866 , an ICS course as approved by the Faculty of Business or other courses as approved by the Faculty of Business;
d. 3 chs Elective chosen from ECON 2091 , SOCI 2413 or 3 chs Psyc or other courses as approved by the Faculty of Business;
e. 6 chs non-business options.

Example of a Typical Student's Program BAM Electronic Commerce Degree

Third Year	
Fall Term	Math 1853 , BA 2123 , BA 2217 , BA 2504 , 3 chs elective or option.
Winter Term	BA 2606 , BA 2663 , BA 3672 , 6 chs elective or option.
Fourth Year	
Fall Term	BA 2858 , BA 3125 , BA 3305 , BA 3718, 3 chs electives or options
Winter Term	BA 3304 , BA 4506 , 9 ch electives or options

BACHELOR OF APPLIED MANAGEMENT - HOSPITALITY AND TOURISM

ADMISSION

a. **High School Entry ("3+1" Program)**

Students must have an overall average of 65% in English 122, Math 112/122, Math 120 and 3 electives. In addition they must achieve a minimum of 60% in English 122 and Math 120.

b. **College Entry ("2+2" Program)**

Students must have successfully completed a two-year diploma program in Hospitality and Tourism at a recognized community college with an average of at least 70%. Additional admission requirements will depend upon the institution from which a student graduated. Students should visit the BAMHT website (www.business.unbsj.ca/bamht) or contact the Faculty of Business for details.

C0-OPERATIVE EDUCATION COMPONENT

Students may choose the co-op mode. Work terms follow years 2 and 3 for High School entry students; a work term follows year 3 (i.e. first year at UNBSJ) for College entry students. These work terms provide "hands on" multi-level practical experiences.

CURRICULUM AND DEGREE REQUIREMENTS

A. **High School Entry** Students must successfully complete at least 90 chs of course work and must obtain the minimum required grades in all required and elective courses specifically required for the degree and in the prerequisites for those courses.

College Entry 2+2 Students must successfully complete at least 60 chs of course work and must obtain the minimum required grades in all required, elective and option courses specifically required for the degree and in the prerequisites for those courses.

B. **Candidates for the degree must successfully complete the following: High School Entry ("3+1")**

a. 45 credit hours required courses;
b. 6 credit hours of Social Science Electives;
c. 9 credit hours of Humanities and/or Languages Electives;
d. 9 credit hours chosen from approved HTM electives (includes BA 4108);
e. 24 credit hours of options of which no more than 12 credit hours may be at the introductory level, and no more than 6 credit hours may be chosen from HTM or business courses); and
f. 30 credit hours of block transfer credit in hospitality and tourism from an approved community college.

College Entry ("2+2)

a. 30 credit hours required courses; Note: Students who do not have the equivalent of ECON 1013 and ECON 1023 as part of their diploma must take these courses in addition to the required courses for the BAMHT.
b. 9 credit hours chosen from approved HTM electives (includes BA 4108);
c. 21 credit hours of options of which no more than 12 credit hours may be at the introductory level and no more than 6 credit hours may chosen from HTM or business courses; and
d. 60 credit hours of block transfer credit in hospitality and tourism from an approved community college.

C. **Course Requirements`**

Students are responsible for ensuring that they meet all the requirements specified for the degree. These include the minimum credit hour requirements, minimum grade point averages, minimum grades in specified courses, successful completion of all specifically required courses, electives and options course and compliance with the restrictions on elective courses as in regulation IV above. Students are advised to consult Section H of this calendar for detailed course descriptions, including the number of credit hours assigned to each course.

EXAMPLE OF A TYPICAL STUDENT'S PROGRAM High School Entry - BAMHT Degree (3+1")

First Year: Fall Term
- Math 1853 Math for Business I*
- 3 chs Option
- ECON 1013 Intro to Economics - Micro
- Social Science Elective*
- Humanities or Language Elective**

First Year: Winter Term
- HTM 1103 Introduction to Tourism
- BA 1216 Accounting for Managers I
- ECON 1023 Intro to Economics - Macro
- Social Science Elective*
- Humanities or Language Elective*

Second Year: Fall and Winter Term
- Students must satisfactorily complete a year-long program at an approved community college.

Second Year: May-August
- Optional co-op work term

Third Year: Fall Term
- BA 1605 Business Decision Analysis I
- BA 2504 Introduction to Organizational Behaviour
- HTM 2217 Management Accounting for the Hospitality Industries
- Electives or Options** 6 ch

Third Year: Winter Term
- BA 2123 Introduction to Electronic Commerce
- BA 2606 Business Decision Analysis II
- BA 3672 Introduction to Management Information Systems
- Electives or Options** 6 ch

Third Year: May-August
- Optional co-op work term

Fourth Year: Fall Term
- BA 3371 Marketing of Services
- BA 3425 Managerial Finance
- HTM 4129 Tourism and Research Methods
- Electives or Option** 6 ch

Fourth Year: Winter Term
- HTM 4101 Competitive Strategy
- HTM 4161 Planning and Development of Sustainable Tourism
- 9 ch Electives or Options

EXAMPLE OF A TYPICAL STUDENT'S PROGRAM College Entry- BAMHT Degree (2 + 2"):

Third Year: Fall Term
- BA 1605 Business Decision Analysis I
- HTM 2217 Management Accounting for the Hospitality Industries
- 9 ch electives or options **

Third Year: Winter Term
- BA 2123 Introduction ton to Electronic Commerce
- BA 2606 Business Decision Analysis II
- BA 2672 Introduction to Management Information Systems
- 6 ch electives or options**

Third Year: May-August
- Optional Co-op Work Term Fourth Year

Fourth Year: Fall Term
- BA 3371 Marketing of Services
- BA 3425 Managerial Finance
- HTM 4129 Tourism and Research Methods
- 6 ch electives or options**

Fourth Year: Winter Term
- HTM 4101 Competitive Strategy
- HTM 4161 Planning and Development of Sustainable Tourism
- 9 ch electives or options**

* All students must include Math 1853 within their first 30 ch; 6 ch from the Social Science disciplines of Anthropology, Politics, Psychology or Sociology within their first 60 ch, and 6 ch from the Humanities and Languages disciplines of Classics, English, French, German, History, Humanities, Latin, Philosophy or Spanish within their first 60 ch.

** Option courses may be selected from the offerings of any faculty provided that the selections are in accord with regulations V above, and provided they are approved by the Faculty of Business.

BACHELOR OF ARTS

FACULTY OF ARTS

General Office:	Sir Douglas Hazen Hall, Room 201
Mailing Address:	Faculty of Arts, University of New Brunswick, 100 Tucker Park Road, Saint John, N. B., Canada, E2L 4L5
Phone:	(506) 648-5560
Fax:	(506) 648-5611
Email:	artssj@unbsj.ca
Website:	http://www.unbsj.ca/arts/

FACULTY

Dean: Dr. Robert MacKinnon

Department of History and Politics
- Cavaliere, Patrick, BA, MA (York), D.Phil. (Oxf), Asst Prof - 1999
- Dartnell, Michael, BA (Winn), MA, PhD (York Can.), Asst. Prof. - 2002
- Desserud, Donald A., BA, MA (Dal), MA (UNB), PhD (UWO), Prof & Chair - 1989
- Donnelly, Frederick, BA (Car) MA, PhD (Sheff), Prof - 1979
- Everitt, Joanna, BA (Car), MA, PhD (Tor), Assoc Prof - 1997
- Goud, Thomas, BA (Calg), MA, PhD (Tor), Asst Prof - 1994
- Jeffrey, Leslie, BA (Acad), MA (Car), PhD (York), Assoc Prof - 1998
- Lindsay, Debra, BA (Sask), MA, PhD (Man), Assoc Prof- 1997
- Vance MacLaren, BA, Ma (UNB), Lecturer - 2004
- Marquis, Greg, BA (SFX), MA (UNB), PhD (Qu), Asst Prof - 1999
- Toner, Peter M., BA (St Thomas(NB)), MA (UNB), PhD (NUI), Prof 1971
- Whitney, Robert, BA, MA (Alta.), PhD (Qu), Assoc Prof - 2000

Department of Humanities and Languages
- Belanger, Louis, BA (Montr), MA (Queb), PhD (Sher), Prof - 1990
- Bell, Sandra, BA, MA (McM), PhD (Qu), Asst Prof - 2000
- Creelman, David, BA (Acad), MA (UNB), PhD (York), Assoc Prof. - 1998
- Flagel, David, BA (UNB), MA, PhD (Qu), Prof - 1989
- Hamer, Kathryn, BA, MA, PhD (Tor), Prof & Vice-President (Saint John) - 2003
- Hill, Virginia, MA (Bucharest), MA, PhD (Geneva), Prof - 1990
- Jones, Miriam, BA (Tor), MA, PhD (York), Asst Prof - 1999
- Kurak, Michael, BA, MA, BEd (Windsor), PhD (Warw.), Asst Prof - 2003
- Littlejohn, Murray, BA, MA (Ott), Lecturer - 2003
- Long, Michael, BA (UNB), Instructor - 2003
- Maier, Sarah, BA, MA, PhD (Alta.), Assoc Prof - 1998
- Moore, Robert, BA, MA, PhD (McM), Prof & Chair - 1990
- Nkunzimana, Obed, Lic(Tanzania), MA, PhD(Sher), Asst Prof - 2000
- Noble, James E., BA (Bishops), DipEd, MA, PhD (UWO), Prof - 1989
- Serrano, Pedro, BA (El Salvador), MA (ITCA), Instructor - 1999

Department of Psychology
- Best, Lisa, BA (York), MA (Arkansas Little Rock), PhD (Maine), Asst. Prof. - 2002
- Both, Lilly E., BA (Manit), MA, PhD (Wat), Asst Prof - 1996
- Bradley, Michael T., BSc (Vic.(BC)), MA, PhD (Manit), Prof - 1980
- Campbell, Mary Ann, BA (Hons) (Dal), MA (Lakehead), PhD (Dal), Asst Prof - 2004
- Cullen, Murray, Adjunct Prof - 2003
- DiTommaso, Enrico, BA (McG.), MA, PhD (UNB), Assoc Prof - 1997

- Gendreau, Paul, BA, MA (OH), PhD (Qu), Univ. Research Prof - 1990
- Goddard, Murray J., BA (Calg), PhD (McM), Univ. Teaching Prof - 1987
- Grant, Brian, Adjunct Prof - 2003
- Taukulis, Harald, BA (N Ill), MSc, PhD (Nfld), Prof 1986
- Wilson, Alexander, BA (Mt.All.), MA, PhD (Manit), Prof and Chair - 1981

Department of Social Science

- Burns, Janet, M. C. , BA (Alta) MA (Victoria), PhD (S.Fraser), Assoc Prof - 1988
- Chalmers, D. Lee V., BA, MA (Regina), PhD (Essex), Assoc Prof - 1995
- Chiasson, Paul-Émile, BA, BEd (St FX), MA, MA(France), Education Coordinator-2004
- Childs, Jason, BA (Mt.All.), MA, PhD (McM), Asst Prof - 2002
- Doran, Christopher, J., BA (York), MA, PhD (Calg), Prof 1989
- Downes, Daniel, BA (Ott), MA (Car), PhD (McG), Assoc Prof - 2001
- Duchesne, Ricardo, BA, MA (C'dia), PhD (York), Assoc Prof - 1995
- Ezeala-Harrison, Fidel, Adjunct Prof. - 2002
- Galbo, Joseph, BA (CUNY), MA, PhD (York), Assoc Prof - 1997
- Hill, Roderick, BA (Tor), Diploma (Stockholm), MA, PhD (W.Ont), Prof 1990
- Kabir, Muhammed, BA, MA (Dacca), MA, PhD (McM), Prof and Associate Vice-President (Saint John) 1983
- MacKinnon, Robert, BA (Mt.All.), MA (Nfld.), PhD (UBC), Prof and Dean of Arts - 2001
- Moir, Robert, BA (McM), MA (Qu), PhD (McM), Assoc. Prof - 1996
- Nieva, Ricardo BA (Peru), MA, PhD (Minn), Asst Prof - 2004
- Reddick, Andrew, Adjunct Prof - 2003
- Ridler, Neil B., BA (Oxf.), MA, PhD (S.Fraser), Prof 1973
- Turvey, Rosario, BA (Centro Escolar), MURP (Philippines), MAES, PhD (Wat), Asst Prof - 2003
- Worrell, Gary L., BPE (UNB), MSc (Penn State), PhD (Florida State), Assoc Prof & Acting Chair - 1977
- Xu, Xiaoping, Adjunct Prof - 2001

GENERAL INFORMATION

On the Saint John campus there are a variety of programs leading to the degree of Bachelor of Arts: Majors programs in Biology, French, Information and Communication Studies, International Studies, Math, Philosophy, Sport and Exercise Psychology, and Statistics, and Majors and Honours programs in Economics, English, History, Politics, Psychology and Sociology.

BA DEGREE REGULATIONS

INTENT. The BA Degree regulations are intended to ensure that the student is exposed to a diversity of academic disciplines in the first half of the degree program, and to give the student a more specialized and concentrated knowledge of one or two academic disciplines in the second half of the program. Students are responsible for ensuring that their course of study meets the BA Degree regulations.

Grading System and Classification

The grading system used is that adopted by the University in 1974. The regulations governing grades, grade points, grade point averages and cumulative grade point averages for the BA degree are the same as the General University Regulations, for full-time students, part-time students, and for students enrolled before 1974. For their own benefit all students should study these regulations (see Section B of the Calendar) carefully.

1. The BA degree will be granted on successful completion of a minimum of 40 term-courses. A term course must be between 3 and 5 credit hours to be included in the general BA regulations. Some programs may require courses of lesser values, but these will not count in the general BA requirements (min. 3 ch each term course). Certain Honours programs may require successful completion of more than 40 term courses. A full-year course of 6 or more credit hours will count as 2 term courses. A grade of D or above indicates successful completion of a course, except as stated elsewhere in the Calendar.

2. Normally, the student will successfully complete 20 term courses at the lower-level (i.e. courses whose number begins with 1 or 2) before taking the 20 term courses, or more for certain Honours programs, of upper-level courses (i.e. courses whose numbers begin with 3 or 4) which complete the degree program, in accordance with the requirements of either one or two majors programs. Under special circumstances, up to 4 lower level term courses may be substituted in the total of 20 term courses of upper-level courses. The written permission of the appropriate chair(s) is required for such a concession.

3. During the session in which students expect to complete successfully the first 20 term-courses, they must choose one or two academic disciplines or fields of study in which they wish to specialize. If the students choose to specialize in one academic discipline or field of study they are said to be taking a single major; if they choose to specialize in two academic disciplines or fields of study they are said to be taking a double major. Students with a high grade point average may apply to honour rather than major, in one or two disciplines. The honours programs involve more intensive study and are typically taken by students in preparation for postgraduate work. When students have decided on the academic discipline(s) or field(s) of study in which they wish to specialize, they must apply to the appropriate Department(s)/ Discipline(s) for permission to enter the majors program(s) concerned. Students who fail to apply for acceptance to a majors program after they have successfully completed 20 term-courses may find that they will be required to complete successfully more than 40 term-courses in order to fulfill the majors requirements and get a degree. A student must fulfill the requirement for one or more Majors program(s) in order to obtain a BA Degree. Course selections for students in majors programs must be approved by the appropriate Department Chair(s), or their designates.

4. Among the 20 term-courses at the lower-level, a student must successfully complete at least 2 term-courses in three of the four groups listed below. Up to 6 term-courses may be taken in any one discipline, but not more than 4 term-courses may be taken in any other discipline. For students pursuing a double major, this may be amended to allow up to 5 term courses in each of the disciplines the student is double majoring in subject to Department Chair approval..

Group 1 - Humanities:	Classics, English, History, Humanities, Philosophy. Courses in French, German, or Spanish Civilization also form part of this group.

Group 2 - Languages:	French, German, Greek, Latin, Spanish. (Note: Courses in French, German, or Spanish Civilization do not form part of this group.)
Group 3 - Social Science:	Economics, Gender Studies, Geography, Information & Communication Studies, International Studies, Kinesiology, Linguistics, Politics, Psychology, Sociology.
Group 4 - Science:	Biology, Chemistry, Computer Science, Geology, Mathematics, Physics, Science, Statistics.

5. With the exceptions noted below only credit hours successfully completed in disciplines listed above will count towards the BA degree.
   a. Subject to the agreement of the appropriate departments, up to a maximum of 4 term courses of core Education courses, Kinesiology or a combination of core Education and Kinesiology courses can be counted towards a BA degree with the exception of the Sport and Exercise Psychology program. For the Sport and Exercise Psychology program, up to 9 term courses of Kinesiology courses can be counted toward the BA degree.
   b. All core Education courses (see Section G Fredericton Programs, Bachelor of Education - Core Studies in the Undergraduate Calendar), as well as ED 3561 and 4562 for Arts students who are registered in the Certificate in Teaching English as a Second Language (CTESL) Program), can be counted as Arts elective credits, up to the maximum of 4 term courses. Methods courses in Education are not eligible for Arts elective credits. Non-core Education courses which are similar to Arts courses, may be considered for Arts elective credit on an individual basis by the Dean of Arts.
   c. All courses successfully completed in Humanities (designated HUM), Social Science (designated SOCS), Business Administration (designated BA), and Hospitality and Tourism (HTM) count towards a BA degree, provided that UNB course program regulations are met.
4. A student may not take more than 6 courses in any term without the written permission of the Dean.
5. For the purposes of the BA degree, a course offered at UNB Saint John shall have the credit-hour rating assigned to it by the Faculty offering the course. NOTE: Students taking courses with labs must complete the appropriate lab requirements.
6. Exceptions to these credit hour designations in the BA program may be made only by the Dean of the Faculty and the Registrar.
7. Requirements for the 20 term-courses of upper-level courses are listed in the regulations of the appropriate majors programs.
8. Candidates for the degrees of BA (Major) are listed with divisions based on the cumulative grade point averages of all courses taken. See Section B of this Calendar, -Listing of Graduates-.
9. A student who attains a grade point average equal to or greater than 3.75 over credit hours 61-120 and no grades less than C over the last 90 ch shall be awarded a Distinction upon graduation.

BIOLOGY MAJOR

Students who wish to major in Biology will have to plan their course selections carefully in order to meet the various prerequisite requirements. The Biology Major in the BA programme will include courses in whole organisms and ecology but will exclude biochemistry, cell biology and a few of the marine biology courses.

During the first year the student will take either BIOL 1551 (a minimum grade of B is required to continue in the major) or BIOL 1001 during Term 1. In Term 2, BIOL 1012 and BIOL 1017 are required. Students must also complete a year of Chemistry courses. Students must take either CHEM 1831 and CHEM 1842 (a minimum grade of B is required in both courses) or CHEM 1041 / 1046 / 1072 / 1077 . Students taking CHEM 1041 etc. must also take MATH 1003 .

During second year the students will take BIOL 2125 , BIOL 2485 , BIOL 2585 , BIOL 2615 and STAT 2263 or equivalent. During the third and fourth year the students will complete at least eight upper level Biology courses. Students must have the appropriate 2000 level Biology course to enrol in upper level courses. The course descriptions list the necessary prerequisites.

Except where noted above, a grade of C or higher is required for all core courses. Students must also complete the general BA requirements. There is not a Minor in Biology.

COGNITIVE NEUROSCIENCE

General Information

Cognitive neuroscience is a multi-disciplinary study of the neurological underpinnings of cognitive activity. Cognitive neuroscience brings in perspectives from psychology, linguistics, philosophy, mathematics, and computer science to tackle the complex area of the neurological basis of cognition.

Eligibility

Admission to the minor in Cognitive Science is open to students who have completed 60 credit hours towards their degree and have achieved a minimum GPA of 2.0. The minor requires a minimum of 24 credit hours. Courses cannot be counted towards both a minor and a major. A minimum grade of C is required in all required courses.

Note: PSYC 1003 , 1004 is a prerequisite for all Psychology courses.

Psychology courses (15 credit hours) (Required)	
PSYC 3383	Perception
PSYC 3693	Cognitive Processes
PSYC 3723	Human Neuropsychology (Prerequisite: PSYC 3711 Physiological Psychology)
PSYC 4733	Cognitive Neuroscience (Prerequisites: PSYC 3711 and either PSYC 3383 or PSYC 3693)
One of:	
PSYC 3724	Clinical Neuropsychology
PSYC 4833	Psychopharmacology
PSYC 3503	Learning
Linguistic Courses (6 credit hours) (Required)	
LING 2101	Intro to Linguistics 1
LING 2102	Intro to Linguistics 2
Philosophy, Mathematics (3 credit hours) (Required)	
One of:	
PHIL 3140	Philosophy of the Mind
MATH 3753	Applications of Mathematical Modelling

COMPARATIVE LITERATURE

Minor in Comparative Literature

The minor in Comparative Literature will require WLIT 2501 (3 ch) and WLIT 2502 ; in addition, students must complete 6 ch from group A and 12 ch at the upper level from group B for a total of 24 ch. A grade of C or better is required in all courses for successful completion of the minor.

Required:		
WLIT 2501	The Western Literary Tradition	(3 ch)
WLIT 2502	The Eastern Literary Tradition	(3 ch)
Group A: (choose 6 ch)		
FR 1203	Communicating in French I	(3 ch)
FR 1204	Communicating in French II	(3 ch)
FR 1304	French for Immersion Students I	(3 ch)
FR 2203	Communicating in French III	(3 ch)
FR 2204	Communicating in French IV	(3 ch)
FR 2304	French for Immersion Students II	(3 ch)
GER 1003	Basic German	(3 ch)
GER 1004	Improving Basic German	(3 ch)
SPAN 1203	Introductory Spanish I	(3 ch)
SPAN 1204	Introductory Spanish II	(3 ch)
SPAN 2203	Intermediate Spanish I	(3 ch)
SPAN 2204	Intermediate Spanish II	(3 ch)
Group B: (choose 12 ch) **Note: students my not take more than 6 ch from the discipline of the Majors or Honours programme in which they are enrolled. Courses will not be double counted.**		
WLIT 3314	European Romanticism	(3 ch)
WLIT 3315	Nineteenth-Century Comparative Literature	(3 ch)
WLIT 3725	Literature and/as Philosophy	(3 ch)
WLIT 3901	Studies in Comparative Literature	(3 ch)
ENGL 3601	Literary Theory	(3 ch)
ENGL 3705	Literature of West Indies, Africa and India	(3 ch)
ENGL 3812	Postmodern Literature	(3 ch)
ENGL 3903	Development of Western Drama	(3 ch)
FR 3514	Communication and Literary Form	(3 ch)
FR 3524	Contemporary French African and Caribbean Literature	3 ch)
FR 3614	18th C French Authors	(3 ch)
FR 3615	19th C French Authors	(3 ch)
FR 3616	20th C French Authors	(3 ch)
FR 3704	Aspects of World Francophone Culture	(3 ch)
FR 3734	Language of Cinema and Literature	(3 ch)
PHIL 3075	Philosophies of Art	(3 ch)
PHIL 3110	Contemporary Philosophy	(6 ch)
SPAN 3007	Fundamentals of Spanish Language and Culture	(3 ch)
SPAN 3974	Contemporary Spanish-American Prose Fiction	(3 ch)

CRIMINAL JUSTICE MINOR

The Criminal Justice interdisciplinary minor provides an academic opportunity for systematic study in the fields of criminology, penology and criminal justice.

Eligibility

Admission to the Criminal Justice Minor is open to students who are majoring in either Sociology or Psychology. Students must select the Minor in consultation with a Faculty Advisor and this should normally be done at the same time as they declare a Major.

Program of Study

The Minor program in Criminal Justice shall consist of at least 24 ch of instruction. The four courses listed below are mandatory. A minimum grade of C+ is necessary in the mandatory courses to qualify for the Minor. Prerequisites are noted in brackets.

Mandatory Courses		
PSYC 3263	(3 ch)	Psychology of Criminal Behaviour (PSYC 1003)
PSYC 4233	(3 ch)	Programme Evaluation (PSYC 1003 , 1004 , 2102 , 2901). Sociology students may substitute Sociology 3100 for PSYC 2901.
SOCI 2611	(3 ch)	Language, Crime and Human Agency (SOCI 1001).
SOCI 3614	(3 ch)	Culture , Criminal Justice and Social Structure (SOCI 1001 , SOCI 2611 , and another 3 ch of lower level Sociology).
Students must choose the remaining 12 ch from the following courses, some of which may have prerequisites.		
BA 3557	(3 ch)	The Management of Planned Change
ECON 1004	(3 ch)	Economics & Society, OR
ECON 1013	(3 ch)	Intro. Economics : Microeconomics
ENGL 3714	(3 ch)	Special Topics II: Tales from the Scaffold
HIST 3195	(3 ch)	Britain in the Age of Revolution 1760-1832
HIST 3377	(3 ch)	Social History of Crime in Canada
HIST 3381	(3 ch)	Family and the State in North America
HIST 3383	(3 ch)	Police and Society in North America
HIST 3386	(3 ch)	Canadian Criminal Justice System
PHIL 2124	(3 ch)	Contemporary Moral Problems
POLS 1201	(3 ch)	Introduction to Canadian Politics
POLS 4311	(3 ch)	Special Topics in Comparative Politics
PSYC 3313	(3 ch)	Introduction to Psychological Testing
PSYC 3493	(3 ch)	Changing Behaviour
PSYC 3553	(3 ch)	Psychopathology
PSYC 3752	(3 ch)	Drugs and Behaviour
SOCI 2603	(3 ch)	Sociology of Deviance
SOCI 3611	(3 ch)	Socio-Legal Studies
SOCI 4603	(3 ch)	Special Topics in Criminological Theory
SOCI 4613	(3 ch)	Special Topics in Socio-Legal Studies

Note: These courses cannot be double counted. That is, any course taken to fulfill the requirements of the Criminal Justice minor cannot be counted towards any other program.

ECONOMICS

Honours, Major and Minor

Honours

A student wishing to honour in Economics must obtain a minimum of 60 ch in Economics (or approved substitutes). To remain in the honours program a grade point average of 3.0 in economics courses and approved substitutes must be maintained.

The program requires the following compulsory courses: ECON 1013 , 1023 , 2013 , 2023 , 3013 , 3023 , 3665 , 4035 , 4045 , BA 1605 , 2606 ; and ECON 4645 is recommended but not required. Students are also required to pass MATH 1003 and MATH 1013

For the award of a first class Honours degree, a grade point average of 3.6 is required in all the courses required for the degree, excluding those which the Department considers introductory in scope. For a second class Honours degree an average of 3.0 is required in these courses.

Major

A student wishing to major in Economics will complete a minimum of 48 ch in Economics or approved substitutes. (Students usually choose a major in the second or third year.)

ECON 1013 , 1023 , 2013 , 2023 , 3013 , 3023 , BA 2603 , (or equivalent). Total 21 ch.

The mathematics requirement for this major will consist of MATH 1823 with the substitution of MATH 1003 , where appropriate.

The remaining 27 ch will normally be taken in the Economics discipline but up to 9 ch may be substituted for non-compulsory Economics courses, with the approval of the Economics discipline.

Students who desire to undertake a double major must complete 21 ch in the compulsory courses, as listed above and 21 ch of Economics electives, with the allowance of a 9 ch substitution if approved by the Economics discipline, for a total of 42 ch.

Minor

A minor in economics will consist of at least 24 ch of courses in Economics. The following courses are compulsory: ECON 1013, 1023 , 2013, 2023 and 6 ch of upper level Economics courses.

Certificate in Economics

This certificate is a stand-alone program intended for visiting international students and for members of the community interested in economics. It will not be awarded to a student enrolled in a degree program, but students who have withdrawn from an undergraduate degree program may apply. A maximum of 50% of required credits may be transferred from another degree, certificate, or similar program, whether taken at UNB or elsewhere.

The Certificate requires completion of 24 credit hours including ECON 1013 , 1023 , 2013 , 2023 , plus an additional four courses at or above the 2000 level. To earn a Certificate, a student must achieve a grade of at least a C in all specifically required courses, and achieve a cumulative grade point average of at least 2.0. While no specific prerequisites are required for admission to this Certificate program, a background in high school mathematics is strongly recommended.

Certificate in Financial Markets

The Certificate requires completion of 24 credit hours including BA 1216 , ECON 1013 , 1023 , 2013 , 2023 , 3114 , plus two additional courses in Business or Economics which are in Accounting, Finance, or International/Macro Economics.

To earn a Certificate, a student must achieve a grade of at least a C in all specifically required courses, and achieve a cumulative grade point average of at least 2.0. While no specific prerequisites are required for admission to this Certificate program, a background in high school mathematics is strongly recommended

EDUCATION

BA / BEd Concurrent Degree Program (Early Years Option)

The BA/BEd Concurrent Degree Program (early years option) is designed for students who prefer to combine their studies in Arts and Elementary Education rather than approach them separately in the Consecutive Program. After a minimum of five years, successful students will be granted both BA and BEd degrees. Graduates normally qualify for a level 5 teaching certificate in elementary education from the provincial Department of Education.

Admission Procedures

1. Students apply for entry to the Bachelor of Arts degree program upon completion of their high school program.
2. Students should apply to the Education Faculty for admission to the Concurrent Program before January 31 of their first year in the BA program. Upon successful completion of 30 ch and meeting other admission criteria, they may be admitted to the Concurrent Program.

Concurrent Program Requirements (168 ch)

1. 60 ch from the Faculty of Education.
2. 120 ch approved by the Faculty of Arts of which 12 ch of specified Education credits may be used as Arts electives.
3. A student cannot obtain a BEd degree by itself in this program. If a student decides to leave the Concurrent Program, only those Education courses eligible as Arts electives may be transferred to the BA program.

Concurrent BEd courses offered at UNBSJ over a 4-year cycle:

ED 3041, 3621, 3031, 3361, 4451 / 4791, 4354, 3021, 4211, 3241, 3415 / 3416, 3051, 5314, 351, 3475, 3424, 4164, 5000 .

Please note: Only the early years option of the Concurrent BEd is offered to full-time students on the Saint John Campus of UNB. For more details of other options, refer to Section G of this Calendar, Fredericton Academic Programs.

Certificate in Mathematics for Teachers

The Certificate in Mathematics for Teachers is open to all interested students, however it is primarily intended for current and future school teachers for whom mathematics is a potential teachable subject, or ones who simply wish to expand their knowledge in the field of mathematics.

This Certificate can be taken as a stand-alone program or in conjunction with a degree program, with the approval of the appropriate faculty.

Candidates for admission to the Certificate must meet the Universitys requirements for admission to any of the faculties, or the requirements for admission as mature students.

The Certificate consists of 24 credit hours (8 courses) as outlined below. A grade of C or better is required in each of the courses.

Core Courses:

MATH 1003 :	Introduction to Calculus I
MATH 1013 :	Introduction to Calculus II
MATH 2213:	Linear Algebra
MATH 2633 :	Fundamental Principles of Elementary School Mathematics
MATH 3093 :	Number Theory
MATH 3633 :	Fundamental Principles of School Mathematics

Additional Requirements: A minimum of two Mathematics or Statistics courses selected in consultation with the Department of Mathematical Sciences.

Certificate in Teaching English as a Second Language (TESL)

Program Description

The program is designed for three groups:

1. English speakers who have completed an undergraduate degree and are seeking employment in TESL.
2. International students who have completed an undergraduate degree, have an acceptable standard of English, and wish to receive TESL certification in an English-speaking environment.
3. Native English speakers who want to obtain a TESL certificate while pursuing an undergraduate degree.

The Certificate in Teaching English as a Second Language (CTESL) Program is a 15 credit hour (ch) program designed to provide participants with knowledge and skills necessary to become effective teachers of English as a second language (ESL). The CTESL Program requires successful completion of:

A. Three compulsory courses: ED 3561 Introduction to Second Language Education (3 ch) An overview of the theories of learning and teaching in the Second Language context with particular emphasis on a Communicative, multi-dimensional and multi-resource methodology. ED 4562 Advanced Studies in ESL Education (3 ch) Examines communicative/ multi-dimensional language teaching in the context of ESL classrooms. Emphasizes varied teaching methods, curriculum development, and evaluation of second language learning. Particular emphasis on the teaching of language skills (pre-requisite: ED 3561 or 3560 or equivalent) ED 5566 Field Experience in TESL (3 ch) Supervised field experience for students in an environment in which they can both observe qualified instructors and participate in planning and teaching English as a second language. (The course does not qualify for the 12 ch hours of ED courses which may be applied to the BA degree.)

B. 6 ch of approved Arts and/or Education courses in the area of language education. LING 2101 Linguistics I and LING 3202 Linguistics II, are highly recommended. English, Humanities and/or foreign language courses which emphasize grammar and syntax. Or literacy methodology courses in Education, may also qualify.

Eligibility

Candidates seeking admission to the Certificate in Teaching English as a Second Language must have completed 30 ch hours at a recognized post-secondary institution with a minimum cumulative grade point average of 2.7 (B-). They must be able to demonstrate an advanced level of written and spoken English. The Faculty of Arts reserves the right to test oral and written proficiency in English.

For more information, please contact the Education Coordinator or the Education Secretary in Hazen Hall at (506) 648-5593.

Diploma in Advanced Undergraduate Study (DAUS)

The DAUS is a 36 ch program designed for students with a first degree in Education but who are not qualified or who do not wish to enter the MEd program. While this program is only offered on the Fredericton Campus, it is possible to take courses at UNBSJ. For additional information on this program, please see the listing under Bachelor of Education in the Fredericton Programs section of this calendar.

Contact the Education Coordinator on the Saint John campus at 648- 5593. To register for the DAUS Program, students should contact the appropriate department at UNB Fredericton:

Chair, Adult and Vocational Education:
Telephone: 506-453-3508 Fax: 506-453-3569
Faculty of Education
University of New Brunswick Fredericton, N.B. E3B 6E3

ENGLISH

Honours, Major and Minor

HONOURS

Students interested in pursuing an honours degree in English should consult with any member of the English discipline prior to submitting a formal letter of application to the discipline for admission to the Honours Coordinator. Prospective students may obtain further information and advice by consulting the Honours Coordinator.

Although students are encouraged to declare their intention to pursue an honours degree while in their second year, they are not eligible to apply until they have completed 60 ch, including 12 ch at the lower level (6 ch which must be 1200 and 1500 (or equivalent). Because of the seminar requirements (see below), only in exceptional circumstances will students be admitted in their fourth year, or after 90 ch. To enter the Honours Programme, students must have achieved an average of B+ (3.3) in English courses. An average of B+ (3.3) in English courses and C+ (2.3) in non-English courses must be maintained if the student is to retain Honours standing.

Requirements

Students admitted to the Honours Programme are required to complete 60 ch in English including 12 ch of English at the lower level, and 48 ch of English at the upper level with 3 chs from each of the coverage areas. As part of the 48 ch, students have the option to complete English 4801: Honours Reading and Research (3 ch) and English 4802: Thesis (3 ch).

The Honours Programme requires the successful completion of at least two of the upper-level courses designated as honours seminars. In each academic year, at least two of the upper-level courses in the Discipline of English will be designated as honours seminars. Although these courses will be open to all students, honours students will be expected to complete extra assignments.

Students will design their Honours Programme in consultation with any member of the English discipline. A minimum of 3 ch is required in each of the following areas:

a. Medieval (ENGL 3002 , 3003 , 3004 , 3007 , and 3008)
b. Renaissance Dramatic (ENGL 3105 , 3106 or, 3107)
c. Renaissance Non-dramatic (ENGL 3108 or 3109)
d. Restoration and Eighteenth Century (ENGL 3203 , 3204 , or 3205)
e. Romantic (ENGL 3301 , 3302 , 3303 or 3304)
f. Victorian (ENGL 3303 , 3311 , 3312 , 3313 or 3314)
g. Modern British (ENGL 3401 , 3402 , 3403 , 3404 or 3405)
h. Canadian (ENGL 3501 , 3502 , 3503 , 3504 , 3505 , 3506, 3508 or 3509)
i. American (ENGL 3511 , 3512 , 3513 , 3514 or 3515)
j. Literary Theory (ENGL 3601)

Electives may be chosen from each of these areas and from the area of Special Studies (ENGL 3602 , 3621 , 3622 , 3631 , 3702, 3706 , 3707 , 3709 , 3711 , 3712 , 3713 , 3714 , 3721 , 3722 , 3751 , 3721 , 3801 , 3802 , 3803 , 3808 , 3901 , 3903). Up to 6 ch of approved upper level courses (See Honours Coordinator) in literatures other than English may be substituted for up to 6 ch of English.

For first-class honours, a minimum grade point average of 3.6 is required in English courses. For second-class honours, a minimum grade point average of 3.0 is required in these courses. Averages are calculated on the basis of the minimum number of credit hours required in the programme; credit hours successfully completed above this minimum are treated as "non-required" courses.

Courses

ENGL 4801 : Honours Essay: Reading and Research (3 ch): This course is devoted to the research portion of the honours project.

ENGL 4802 : Honours Essay (3 ch) Upon successful completion of ENGL 4801 , an honours essay will be written and presented.

JOINT HONOURS PROGRAMME - ENGLISH AND HISTORY

Students interested in pursuing a joint Honours Programme in English and History must apply in writing to either the Honours Coordinator of English or the Coordinator of History.

To satisfy the English requirements for the joint honours degree, students must complete 12 ch of lower level English courses and 30 ch of upper level courses in English. The 30 ch of courses at the upper level must include 3 ch from each of the following five (5) areas:

a. Medieval/Renaissance Non-dramatic/18th Century (ENGL 3001 , 3003 , 3004 , 3007 , 3008 , 3108 , 3109 , 3201 , 3203 , 3204 , 3205 .)
b. Renaissance Dramatic (ENGL 3105 , 3106 or 3107)
c. Romantic/Victorian Literature (ENGL 3301 , 3302 , 3303 , 3304 , 3311 , 3312 , 3313 or 3314)
d. Modern British/Canadian/American (ENGL 3401 , 3402 , 3403 , 3404 , 3405 , 3501 , 3502 , 3503 , 3504 , 3505 , 3506, 3508 , 3509 , 3511 , 3512 , 3513 , 3514 or 3515)
e. Literary Theory (ENGL 3601)

As part of the 30 ch in either English or History, students must complete HENG 4000, a 6 ch thesis course. Once the student has decided whether the primary emphasis will be on English or History, the supervisors will be assigned from the two disciplines. Credit for thesis will be assigned to the discipline receiving the primary emphasis.

To satisfy the History requirements for the joint honours degree, students must complete 6 ch of lower level History and 30 ch of upper level History courses, of which 6 ch will be an Honours Seminar.

MAJOR

Although students are encouraged to signify their intention to pursue a Major in English while in their second year, they are not eligible to declare a major until they have completed 60 ch. Students will design their programme in consultation with any member of the English discipline, or with the Honours/Majors Co-ordinator.

A single Major in English will consist of at least 42 ch in English, of which at least 30 ch must be in upper level courses. Students electing to Major in English will be expected to complete a minimum of 12 ch of English at a lower level (6 ch which must be 1200 or 1500 or equivalent). At the upper level, a minimum of 3 ch is required in each of the following areas:

a. Medieval, Renaissance Nondramatic, Restoration & Eighteenth Century (ENGL 3002 , 3003 , 3004 , 3007 , 3108 , 3109 , 3201 , 3203 , 3204 , 3205)
b. Renaissance Dramatic (ENGL 3105 , 3106 , or 3107)
c. Romantic/Victorian Literature (ENGL 3301 , 3302 , 3303 , 3304 , 3311 , 3312 3313 , or 3314)
d. Modern British/Canadian/American (ENGL 3401 , 3402 , 3403 , 3404 , 3405 , 3501 , 3502 , 3503 , 3504 , 3505 , 3506, 3508 , 3509 3511 , 3512 , 3513 , 3514 . 3515)

Electives may be chosen from these areas and from the area of Special Studies (ENGL 3601 , 3602 , 3621 , 3622 , 3631 , 3702 , 3706 , 3709 , 3711 , 3712 , 3713 , 3714 , 3721 3722 , 3751 , 3801 , 3802 , 3803 , 3808 , 3901 , 3903). Up to 6 ch of approved upper level courses (See Honours Coordinator) in literatures other than English may be substituted for up to 6 ch of English.

An English course will count towards the fulfilment of the Major requirements only when it is passed with a grade of C or above.

A Double Major including English will consist of a minimum of 30 ch in English, with 6 ch of 1200 or 1500 or equivalent, and with at least 21 ch in upper-level courses which includes at least 3 ch to be taken in each of categories (a),(b),(c) and (d) above.

OPTIONAL PROGRAMMES

English (Drama)

Students wishing to concentrate in drama may elect the Majors option in English (Drama). This programme will consist of at least 42 ch in English, of which at least 30 ch must be in upper level courses. Students electing the drama option will be required to complete 6 ch from ENGL 2201, ENGL 2202, and ENGL 3801. At the upper level, in addition to Shakespeare, they will be required to complete 9 ch of upper level devoted to the study of dramatic literature. Among their upper level courses, students must complete at least 3 ch from each of categories (a), (b), (c), and (d).

English (Creative Writing)

Students wishing to concentrate in Creative Writing may elect the Majors option in English (Creative Writing). This program will consist of 42 ch in English, of which 30 ch must be in upper level courses. At the upper level, students electing the Creative Writing option will be required to complete 9 ch from ENGL 3913, ENGL 3914, ENGL 3915, ENGL 3916, and ENGL 3801. Among their upper level courses, students must complete at least 3 ch from each of categories (a), (b), (c), and (d).

MINOR

The Minor in English will consist of a minimum of 9 ch (6 ch of which must be 1200 or 1500, or equivalent) and a maximum of 12 ch in English at the lower level and a minimum of 12 ch at the upper level for a total of 24 ch. A grade of C or better is required in all courses.

FRENCH

Major and Minor

Major

A student who wishes to major in French Communication and Culture will normally have completed 12 ch in French (FR 1203 , 1204 and FR 2203 , 2204) and have received a grade of C or above. A student who has successfully completed a school French Immersion program may begin a major in French Communication and Culture following completion of FR 1304 and FR 2304 with a grade of C or above.

A Single Major in French Communication and Culture will consist of at least 30 ch of upper level courses. A Double Major including French Communication and Culture will consist of at least 24 ch of upper level courses.

A French Communication and Culture course will count towards the fulfilment of the Major requirement only when it is passed with a grade of C or above.

Students will normally apply for admission to the Major Program while completing FR 2204 or FR 2304 . Prospective major students should consult a faculty advisor in French when selecting French Communication and Culture courses.

Students may elect to take French courses at other campuses (e.g., in summer school). These credits may be counted for credit in the major program here if prior authorization has been obtained from the Department and the Registrar. This can be done by completing a form available from the Registrar's Office. The student is responsible for providing a detailed description of the course and any other information the Department may require in order to assess it. Only in special cases will students currently enrolled in the program be given retroactive approval for courses taken at other institutions.

In exceptional circumstances, one or more required courses may be replaced by other upper-level French courses.

A Single Major would normally comprise FR 3203 , 3204 , 4204 and one of 3704 , 3714 , 3724 and 18 ch chosen among upper level courses. Students who have completed FR 1304 and FR 2304 and are admitted into FR 3203 will do 24 ch chosen among upper level courses. Six (6) ch must be chosen from **GROUP A** (FR 3084 , 3324 , 3412 , 3422 , 3432 , 3434 , 3442 , 3464 , 4324), and at least 6 ch from **GROUP B** (FR 3514 , 3524 , 3614, 3615 , 3616 , 3704 , 3714 , 3724 , 3734 , 3744 , 3814 , 3824, 3844).

A Double Major including French Communication and Culture would normally comprise FR 3203 , 3204 , 4204 and one of 3704 , 3714 3724 , and 12 ch chosen among upper level courses, 6 from Group A and 6 from Group B.

There is also a French Major as part of the Business Administration program. See relevant section under Business Administration.

Minor

Students completing a French Minor are required to complete 12 ch of upper level French courses. FR 3203 and FR 3204 will be required. A minimum grade of C or above is required. The Minor must be declared at the same time as the Major.

There is also a French Minor as part of the Business Administration program. See relevantsection under Business Administration.

BBA With a Major/Minor in French Communication and Culture

BBA With a Major in French Communication and Culture

In addition to complying with the existing curriculum requirements and regulations governing the award of a BBA degree, BBA students wishing to Major in French Communication and Culture must also comply with the following regulations and requirements of the Faculty of Business and the French discipline:

a. Students electing to major in French Communication and Culture should declare the major by the beginning of their third year. All courses taken to comply with the major requirement must be approved by the Department of Humanities and Languages and by the Faculty of Business.

b. (i.) A BBA student who wishes to major in French Communication and Culture will normally have completed 12 ch in French (FR 1203 , 1204 and FR 2203 , 2204) and have received a grade of C or above. A student who has successfully completed a school French Immersion program may begin a major in French Communication and Culture following completion of FR 1304 and FR 2304 with a grade of C or above. Students receiving a grade between C and B in FR 2304 would normally proceed to FR 2203 and FR 2204. A BBA with a major including French Communication and Culture will consist of at least 24 ch of upper level French courses.

(ii.) All students must earn a minimum grade of C in FR 3203 , FR 3204 , and FR 4204 ; and one of FR 3704 , FR 3714 , or FR 3724 and 12 ch of approved French Communication and Culture upper level electives, 6 from Group A and 6 from Group B.

BBA With a Major in French (Honours) Communication and Culture

In addition to the above requirements for the major, students must obtain a GPA of 3.3 on compulsory and elective courses required for the major.

BBA With a Minor in French Communication and Culture

Students completing a French Minor are required to complete at least 12 ch of upper level courses in French Communication and Culture, with a maximum of 12 ch at the lower level (FR 1203 , 1204 and FR 2203 , 2204). FR 3203 and 3204 will be required; the remaining 6 ch will be chosen from advanced courses. A minimum grade of C, in lower level courses, and C, in upper level courses, are required. The Minor must be declared at the same time as the Major.

Students who have completed FR 1304 and FR 2304 and are admitted into FR 3203 will also do 12 ch in upper level courses.

Certificate of Proficiency in French

Saint John - Certificate of Proficiency in French Communication and Culture

Persons who would like to have official recognition of their competence in the French language may apply for admission to the above-mentioned program, which is administered for the University by the Department of French on the Fredericton campus and the Department of Humanities and Languages on the Saint John campus. The program consists normally of FR 1203/1204 , 2203/2204 , 3203 and 3204 , 4204 and one of 3704, 3714 , 3724 , in all of which the student is to attain a mark of C or higher, and the Certificate is awarded on the basis of a comprehensive examination upon termination of FR 4204 .

Full-time students who are not majoring or honouring in French may take these courses as part of their undergraduate program. Persons not working towards a degree may enrol for the courses as part-time students.

Students may apply to enter the Certificate program at any time before their completion of FR 4204 . They are encouraged to apply for entry as soon as they register in a course in the program.

The Certificate of Proficiency in French will be awarded by the University through the Registrar's Office. The student's transcript will bear a separate entry showing that the Certificate has been awarded and recording the grades obtained in the four areas of language competence (speaking, listening comprehension, reading comprehension, and writing).

These grades are: A (very good); B (good), and C (satisfactory), and they may be interpreted as follows:

Speaking:

A. participate with ease in conversation
B. can participate adequately in conversation albeit with a certain degree of hesitancy
C. can make themselves understood in conversation

Listening Comprehension:

A. can understand lectures in a job-related context and radio and TV news and programs which interest them
B. can understand lectures on non-technical subjects and group conversations
C. can understand what is said to them in individual conversation with one other person

Reading Conversation:

A. can understand the main ideas in books, magazines and newspapers without the aid of a dictionary
B. can read printed material of personal interest with occasional help from a dictionary
C. can read, with the aid of a dictionary, standard texts written without stylistic difficulties on subjects within their interest

Writing:

A. can write papers, essays, etc., which are acceptable in form and format
B. can write résumés, letters, short compositions, which are structurally acceptable but which would need some revision
C. can write sentences and short paragraphs which are grammatically acceptable

Diplôme de Bilinguisme (Certificate Level Two)

All students who have successfully completed the Certificate of Proficiency in French and students who have completed FR 4204 (or equivalent) with a grade of C or higher (or the equivalent) are eligible for admission.

24 ch must be completed, from any of the 3000/4000 level French courses. Approval of courses will be required. The requirements for the diploma are: (a) satisfactory completion of the program with a grade of C or higher in each course, and (b) the passing of a comprehensive final examination.

GENDER STUDIES

Programs

Minor in Gender Studies

Admission to the Minor is open to students majoring in any Arts discipline and could be available to students in other faculties as minors become available. Students must select the Minor in consultation with the Gender Studies Coordinator, and this should normally be done at the same time as they declare a Major. The Minor requires 24 ch, comprised of Gender Studies 2001 and 21 ch selected from Gender Studies eligible courses. (NOTE: The required 24ch does not include the prerequisites required for the Gender Studies eligible courses.) A grade of C or better is required in all courses counting towards the Minor in Gender Studies.

Certificate in Gender Studies

Students meeting the Universitys entry requirements or the requirements for admission as a mature student may be admitted to the Certificate in Gender Studies programme in consultation with the Gender Studies Coordinator. The Certificate requires 30 ch, comprised of Gender Studies 2001 and 27 ch selected from Gender Studies eligible courses. (NOTE: The required 30ch does not include the prerequisites required for the Gender Studies eligible courses.) A grade of C or better is required in all courses counting towards the Certificate in Gender Studies.

Elective Courses

For the GEND Minor: 21ch from the following list of Gender Studies eligible courses with at least 6ch in two of the three groups.

For the Certificate in Gender Studies: 27ch from the following list of Gender Studies eligible courses with at least 6ch in two of the three groups.

GEND 4001 is available as a 3ch elective, and its categorization into the 3 groupings will vary depending upon the specialization of the instructor (please consult with the Gender Studies Coordinator).

Note: Unless otherwise indicated, students will be admitted to the following courses when (a) they have met the disciplinary prerequisites for these courses, or (b) they have completed GEND 2001 with a grade of C or better and have obtained permission from the instructor.

GROUP 1:	
ENGL3621	Writing by Women I
ENGL3622	Writing by Women II
ENGL3631	Studies in Gender and Genre
HIST3402	Women in American History (disciplinary prerequisites apply)
GROUP 2:	
POLS3225	Gender and Politics
POLS3325	Gender and Comparative Politics
POLS3625	Global Gender Issues
POLS4311	Global Politics of Prostitution
SOCI3105	Qualitative Methods in the Social Sciences
SOCI3543	Sociology of Gender Relations
SOCI4263	Discourse and Text (prerequisite: Sociology 3105)
SOCI4555	Gender and Organization
GROUP 3:	
HIST3945	Women, Science and Medicine (disciplinary prerequisites apply)
NURS3053	Gendered Experiences in Health Care
PSYC3223	Sex Differences (disciplinary prerequisites apply)
PSYC3263	Psychology of Women (disciplinary prerequisites apply)
SCI3155	Women and Science
SCI3255	Women, Development, and the Environment
SOCI3544	Gender and Technology

FOR STUDENTS ENROLLED IN THE GENDER STUDIES MINOR: These courses cannot be double counted for those enrolled in Arts. That is, any course taken to fulfil the requirements of the Minor in Gender Studies cannot be counted towards any other programme within Arts.

PLEASE NOTE: The list of GEND-eligible courses is updated annually, and is available from the Gender Studies Coordinator. Students seeking credit for courses not on this list must have written approval from the Gender Studies Coordinator prior to enrolling in the course. Gender Studies students are responsible for ensuring they have completed the appropriate prerequisites for their GEND-eligible electives.

HISTORY

Honours

Students in Honours History must meet the requirements for the History Major and complete an additional 12 ch in history, as outlined below:

- HIST 4900 : Honours Thesis: This is a required course for Honours students who will complete a research project leading to a thesis. Topics must be approved by the Honours co-ordinator.
- HIST 4333 : History: Theory and Practice
- HIST 4906 : Honours Seminar
- one additional course offered at the 3000 level

For the awarding of a first-class Honours degree, a minimum grade point average of 3.6 is required in all History courses needed to meet the minimum number of credit hours for the program. For a second-class Honours degree, a minimum grade point average of 3.0 is required in these courses. In both cases, a minimum cumulative grade point average of 2.7 is required.

Joint Honours Program - English and History

Students interested in pursuing a joint honours program in English and History must apply in writing to either the Coordinator of English or the Coordinator of History.

To satisfy the History requirements for the joint honours degree, students must complete 6 ch of lower level History and 30 ch of upper level History courses, of which 6 ch will be an Honours seminar.

To satisfy the English requirements for the joint honours degree, students must complete 12 ch of lower level English courses and 30 ch of upper level courses in English. The 30 ch of courses at the upper level must include 3 ch from each of the following five (5) areas:

1. Medieval/Renaissance Non-Dramatic/18th century
2. Renaissance Dramatic
3. Romantic/Victorian
4. Twentieth-Century Literature/Special Studies
5. Literary Theory

As part of the 30 ch in either English or History, students must complete HENG4000 , a 6 ch thesis course. Once the students has decided whether the primary emphasis will be on English or History, supervisors will be assigned from the two disciplines. Credit for the thesis will be assigned to the discipline receiving the primary emphasis.

Major

To be admitted to the Major in History students must have completed 60 ch in the Bachelor of Arts program. To enter the History Majors program a student must have a minimum GPA of 2.7 (B-) in 15 ch of lower division history courses as follows:

a. A minimum of 3 credit hours of 1000 level history courses, typically in the first 30 ch of their program. NOTE: Students who have already received credit for 2000 or 3000 level history courses may only register for a 1000 level history course with written permission from the instructor

b. A minimum of 12 credit hours of 2000 level courses, typically in the second 30 ch of the program. NOTE: Classics courses designated as Ancient History count as History courses.

In the Majors History program students must complete 30 ch of upper division History courses and obtain an average of 2.7 (B-) with no grade lower than 2.3 (C+) in these courses. The total credit hours in the History Major will include a minimum of 15 ch lower division History and 30 ch upper division History courses for a total of 45 ch in History.

Double Major

To obtain a Double Major in History students must complete a minimum of 33 ch in History of which at least 24 ch will be upper division courses. All History courses credited towards the double Major in History must have a minimum grade of 2.3 (C+) and those at the upper level must have an average of 2.7 (B-).

Minor

To obtain a Minor in History students must complete 12 ch of lower division History courses and 12 ch of upper division History courses with a minimum grade of 2.3 (C+) in all History courses for a total of 24 ch.

INFORMATION AND COMMUNICATION STUDIES

General Information

The University of New Brunswick at Saint John offers a Bachelor of Arts in Information and Communication Studies (ICS), a Double Major in ICS, and a Minor in ICS. The ICS program seeks to provide students with a comprehensive understanding of the social, political, economic and cultural impact of information and communication technologies and practices. As an interdisciplinary Arts program based in the tradition of the social sciences and humanities, the ICS approach combines theoretical, historical, empirical, and practical study, with an emphasis on emerging media of communication and information gathering and distribution. Course offerings are grouped into three primary areas: Media Studies; Technology, Information and Society; and Public Opinion and Information Gathering. These areas of concentration, combined with the interdisciplinary organization of the program, provide students with broad exposure to a variety of perspectives in information and communication studies.

Major

Students are eligible to declare an ICS Major after having completed 60 credit hours towards a Bachelor of Arts degree. To graduate with a Major in ICS, students must complete 51 credit hours (24 lower level/27 upper level) comprised of the following courses:

Lower Level: Total 24 ch		
*	ICS 2001	Introduction to Information & Communication Studies
*	SOCI 1001	Introduction to Sociology
*	SOCI 2251	Film and Society
*	SOCI 2253	From TV to the Internet
*	CS 1703	Introduction to Computing Concepts
*	CS 1713	Multimedia and the Information Highway
*	POLS 1201	Introduction to Canadian Politics
Upper Level: Total 27 chs		
*	ICS 3001	Theories of Information and Communication
*	ICS 3003	Electronic Research
AND		
*	3 credit hours selected from the following:	
	POLS 4411	Special Topics in Political Theory; OR
	POLS 4211	Special Topics in Canadian Politics; OR
	SOCI 4503	Research Seminar in Popular Culture, OR
	ICS 4001	Research Seminar in ICS
AND		
*	6 credit hours of 3000/4000 POLS from the ICS-eligible list [See Note 1]	
*	6 credit hours of 3000/4000 SOCI from the ICS-eligible list	
*	6 credit hours of 3000/4000 electives from the ICS-eligible list [See Note 2]	

Notes:

[1] The list of current ICS-eligible courses is updated annually, and is available from the ICS Coordinator. Students seeking credit for courses not on this list must have written approval from the ICS Coordinator prior to enrolling in the course.

[2] ICS students are responsible for ensuring they have completed appropriate pre-requisites for their ICS-eligible electives.

Double Major

Students are eligible to declare an ICS Double Major after having completed 60 credit hours towards a Bachelor of Arts degree. To graduate with a Double Major in ICS, students must complete 36 credit hours (15 lower level/21 upper level) comprised of the following courses:

Lower Level: Total 15 chs		
*	ICS 2001	Introduction to Information & Communication Studies
*	SOCI 2251	Film and Society
*	SOCI 2253	From TV to the Internet
*	CS 1703	Introduction to Computing Concepts
*	CS1713	Multimedia and the Information Highway
Upper Level: Total 21 ch		
*	ICS 3001	Theories of Information and Communication
*	ICS 3003	Electronic Research
AND		
*	3 credit hours selected from the following:	
	POLS 4411	Special Topics in Political Theory, or
	POLS 4211	Special Topics in Canadian Politics, or
	SOCI 4503	Research Seminar in Popular Culture, or
	ICS 4001	Research Seminars in ICS
AND		
*	12 credit hours of 3000/4000 electives from the ICS-eligiblelist [See Note 2]	

NOTE: Upper division courses count for credit in ONE major field only (e.g., POLS 4411 credit assigned to an ICS Double Major will not be counted for credit towards a Politics Major or Double Major, or vice-versa).

Notes:

[1] The list of current ICS-eligible courses is updated annually, and is available from the ICS Coordinator. Students seeking credit for courses not on this list must have written approval from the ICS Coordinator prior to enrolling in the course.

[2] ICS students are responsible for ensuring they have completed appropriate pre-requisites for their ICS-eligible electives.

Minor

Students are eligible to declare an ICS Minor after having completed 60 credit hours towards a Bachelor of Arts degree. To graduate with a Minor in ICS, students must complete 24 credit hours comprised of the following courses:

Lower Level: Total 15 ch		
*	ICS 2001	Introduction to Information & Communication Studies
*	SOCI 2251	Film and Society
*	SOCI 2253	From TV to the Internet
*	CS 1703	Introduction to Computing Concepts
*	CS 1713	Multimedia and the Information Highway
Upper Level: Total 9 ch		
*	ICS 3001	Theories of Information and Communication
*	ICS 3003	Electronic Research
*	3 credit hours of 3000/4000 electives from the ICS-eligible list [See Note 2]	

Notes:

[1] The list of current ICS-eligible courses is updated annually, and is available from the ICS Coordinator. Students seeking credit for courses not on this list must have written approval from the ICS Coordinator prior to enrolling in the course.

[2] ICS students are responsible for ensuring they have completed appropriate pre-requisites for their ICS-eligible electives.

INTERNATIONAL DEVELOPMENT STUDIES MINOR

General Information

The minor in International Development Studies is an interdisciplinary program jointly administered by participating departments. It offers students a broad base of courses with an international orientation.

Program of Study

The Minor consists of 24 ch. A grade of C or better must be attained in all required and elective courses. Note: None of the courses taken for this Minor may be counted towards the requirements for another Minor or Major.

The following 9 ch of courses are required:

POLS 1601	Introduction to International Politics	(6 ch)
ECON 3531	Introduction to International Development (Note: ECON 1013 and 1023 are prerequisites.)	(3 ch)

A further 15 ch of elective courses selected from the following:

HIST 2000	World History	(6 ch)
HIST 3025	Economic Development of Pre-Industrial Europe	(3 ch)
HIST 3035	Industrialization of Europe	(3 ch)
POLS 3303	Politics of the Developing World	(3 ch)
POLS 3622	International Organization and Law	(3 ch)
POLS 3631	Survey of Global Issues	(3 ch)
ECON 3542	Topics in International Development	(3 ch)
ECON 3755	Environmental and Resource Economics	(3 ch)
ECON 3702	Cost-Benefit Analysis	(3 ch)
BA 4193	International & Comparative Management	(3 ch)
BA 4858	International Human Resources Management	(3 ch)
SOCI 3523	Sociology of Third World Development	(3 ch)

INTERNATIONAL STUDIES

General Information

The University of New Brunswick at Saint John offers a double major in International Studies. This interdisciplinary program permits students to combine studies in language, culture, politics, economics, history, and literature and offers a comprehensive introduction to global and regional developments.

Programme of Study

The International Studies Program is one half of a double major in the Faculty of Arts.

International Studies 1001 and 1002 are prerequisites to all courses in International Studies. A grade of C in both IS 1001 and IS 1002 is the minimum grade requirement for a Major in International Studies. Students apply for permission to Major in International Studies during the term in which they complete 60 ch of study. Students entering the IS Program must have a cumulative GPA of 2.7 (B-). To complete the double Major in IS students must maintain a "B-" average overall in their IS courses with no IS course lower than a "C". Courses in the 4000 series are specialized courses intended mainly for Majors students. Students must satisfy the prerequisite requirements for all upper level courses. Any student in any program may take IS 1001 or IS 1002 as an elective.

Double counting courses in the IS program will not be permitted.

Double Major in International Studies

1. **Lower level requirements: (18 credit hours)**

   Students must, in their first 60 credit hours, meet the regular Faculty of Arts breadth requirements. Students must include in their program the following:

   a. 12 credit hours of a modern language other than English.
   b. Six credit hours of lower level International Studies courses:

IS 1001 Introduction to International Studies
An interdisciplinary introduction to the regional approach to International Studies. The course examines the political, social and economic aspects of developing and developed regions.

IS 1002 Global Issues
An interdisciplinary examination of issues and problems relating to the environment, human rights, gender and inequality, migration, and poverty in a global perspective.

Upper level requirements: (24 credit hours)

Students must complete a minimum of 24 credit hours of upper level courses. These courses must include:

a. International Studies 3501: Seminar in International Studies (3 credit hours).

b. International Studies 4501: Research Project in International Studies (3 credit hours). This course is limited to students with 15 ch in IS courses or permission of instructor.

c. A minimum of 9 credit hours, selected from the list of International Studies electives and 9 credit hours from related disciplinary electives determined in consultation with the International Studies program advisor(s). Students will be advised in their first and second year that many of the upper level related disciplinary electives have specific prerequisites that must be completed for these upper level courses to be selected.

For the double Major in a discipline, students will be required to meet the double Majors requirement for one of the existing Faculty of Arts disciplines. These requirements vary - please consult the calendar for further details.

Minor in International Studies

The minor in International Studies will consist of 6 ch of lower level IS courses and 6 ch of course in a language other than English, and a minimum of 12 ch of upper level courses in IS. A grade of C or better is required in all courses to be counted for the minor in IS. A minor must be declared at the same time as the major.

LAW IN SOCIETY

Double Majors Program

Law in Society is an interdepartmental and inter-faculty majors program involving the departments of Anthropology, Economics, History, Philosophy, Politics, Psychology and Sociology in the Arts Faculty, the Law Faculty, and the Faculty of Business Administration, on the Fredericton campus. A number of UNB Saint John courses are eligible for credit for the Law in Society Double Major. Please consult the Fredericton Bachelor of Arts programs section for more information.

LINGUISTICS MINOR

The Minor in Linguistics consists of eight three-credit hour courses organized in three groups, which are listed below: Group 1 contains the obligatory courses, which offer the basis for further training in Linguistics; Group 2 contains the Linguistics optional courses (one further step to areas presented in LING 2101 / 3202); Group 3 contains related courses that provide either practice for Linguistics topics (e.g. ancient and modern languages and writing courses) or interdisciplinary extensions of some Linguistics topics (e.g., courses in psychology, sociology or computer science). Courses with the denomination Ling are taught in English through rotation every other year. That is, LING 2101 and LING 3202 are taught in one year, while LING 3111 and LING 3212 are taught in the following year. Courses with the denomination FR in Group 2 are taught in French, through rotation of two courses per year. That amounts to four courses per year to cover the requirements from Group 1 and Group 2. Some courses in Group 3 are offered every year (e.g. FR and SPAN, CPW), while other courses are offered according to the needs of the respective programmes. However, a minimum of 18ch is available every year in this Group.

Admission requirements, standards etc.

Linguistics training at graduate level in major universities shows that the rate of success depends on familiarisation with mathematics and/or languages that have a different organization of grammar (e.g., Latin, Greek, Sanskrit or non-Indo-European languages). Since one goal of the Minor in Linguistics proposed here is to prepare the students for admission to graduate programs in related areas, students are strongly encouraged (under Group 3) to take the courses that will provide them with the proper background. A mark of C or higher in every course is required for granting of the Minor. Prerequisites for courses included in the three groups do not count toward the 24ch of the Minor.

List of courses

Group 1 - required (6ch)	
LING 2101	Linguistics 1
LING 3202	Linguistics 2
Group 2 - Linguistics options(minimum 6 ch, maximum 18 ch)	
LING 3111	Language Acquisition
LING 3212	The History of the English Language
FR 3412	Fundamentals of Language Learning
FR 3422	Language Change and Genetic Classifications
FR 3434	Words and Meaning
FR 3464	Mind and Sentence
FR 3442	Dialect Variation 1
FR 3432	Dialect Variation 2 (Acadian French)
Group 3 - related options (to a maximum of 12ch)	
1. Strongly recommended options:	
GRK 1001	Intro Ancient Greek 1
GRK 1002	Intro Ancient Greek 2
LAT 1001	Intro Latin 1
LAT 1002	Intro Latin 2
MATH 2203	Discrete Structures
NOTE: The strongly recommended options are most useful when taken prior or simultaneously to LING 2101 / LING 3202 .	

2. Other options:	
CPW 2003	Theory and Practice of Technical and Professional Communication I
CPW 3003	Theory and Practice of Technical and Professional Communication II
CS 4613	Programming Languages
CS 4913	Theory of Computation
ED 3561	ntro to Second Language Education
FR 3324	Cross-Linguistic Communication
FR 4324	Cross-Linguistic Communication
GER 2003	Creative German
HUM 2120	Effective Writing
LAT 2001	Intermediate Latin 1
LAT 2002	Intermediate Latin 2
PHIL 2034	Intro to Language and Semantics
PSYC 3693	Cognitive Processes
PSYC 4733	Cognitive Neuropsychology
SOCI 4263	Discourse and Text
SPAN 2203	Intermediate Spanish
SPAN 2204	Intermediate Spanish

MATHEMATICS AND STATISTICS

Majors and Minors

Mathematics Major

1. A student in the BA degree who wishes to major in Mathematics must complete a minimum of 48 ch in Mathematics or approved substitutes as follows:
   a. MATH 1003 , 1013 , 2003 , 2203 , 2013 , 2213
   b. MATH 3213 , MATH 3713 , MATH 3733 , STAT 3083 , 3093
   c. At least five upper level mathematics courses. A maximum of two courses from CS 3113 , DA 4123 an upper level Statistics course may count toward the five courses.
2. In addition, at least two courses in Computer Science are required.

NOTE: Suggested elective for the first year is STAT 1793 (or equivalent).

Statistics Major

1. A student in the BA degree who wishes to major in Statistics must complete a minimum of 48 ch in Statistics or approved substitutes as follows:
   a. MATH 1003 , MATH 1013 , MATH 2003 , MATH 2013 , MATH 2203 , MATH 2213 , STAT 1793
   b. MATH 3713 , MATH 3733 , STAT 3083 , STAT 3093
   c. At least five upper level Statistics courses. An upper level Mathematics course may count toward the five courses.
2. At least two courses in Computer Science are required.

Minor in Mathematics

A student who intends to pursue a Minor in Mathematics is required to take 24 ch in Mathematics. Credit must be obtained for MATH 1003 , MATH 1013 and either MATH 1503 or MATH 2213 . The remaining 15 ch of the Minor must consist of Mathematics courses at the second year level, or above, that are electives in the students degree program. A maximum of 6 ch of Statistics courses, at any level, may count towards the 15 ch. The Minor must be declared at the same time as the Major.

Minor in Statistics

A student who intends to pursue a Minor in Statistics is required to take 24 ch in Statistics. A maximum of 9 ch from Mathematics may be selected. The Minor must be declared at the same time as the Major.

PHILOSOPHY

Major and Minor

Major

Students in the BA degree program who wish to take a Major in Philosophy, either alone or with some other subject, should consult with a Faculty advisor in Philosophy on successful completion of 60 ch of courses.

A single Major in Philosophy will consist of at least 48 ch in Philosophy, passed with a grade of C or better, including:

a. at least 6 ch of logic;
b. at least 3 ch of ethics;
c. at least 24 ch of advanced level courses.

A double Major in Philosophy will consist of at least 30 ch in Philosophy, passed with a grade of C or better, of which at least 24 ch must be at the advanced level.

Minor

The Minor in Philosophy will consist of a maximum of 12 ch in Philosophy at the lower level and a minimum of 12 ch at the upper level for a total of 24 ch. A grade of C or better is required in all courses. The Minor must be declared at the same time as the Major.

POLITICS

Honours, Majors and Minor

Honours

Students interested in an Honours degree in Politics must apply to the Department of History and Politics after they complete 60 ch of studies. To be eligible to apply students must have a minimum grade point average of 3.0 in Politics courses and a minimum cumulative grade point average of 3.0. These minimums must be maintained for the duration of the program. No grade lower than C in a Politics course will count for credit towards the required credits in Politics for an Honours degree.

The Honours Politics programme consists of 54 ch of Political Science courses. This shall be comprised of the 42 ch required for a Major in Politics, plus an additional 12 ch of upper level Political Science courses which must include POLS 4001 Honours Seminar in Politics and POLS 4002 Honours Thesis, as well as 3 ch in another 4000 level course.

For the award of a first-class Honours degree, a grade point average of 3.6 is required in all Politics courses above the introductory level. For a second-class Honours degree an average of 3.3 is required in these courses. In both cases a minimum cumulative grat point average of 3.3 is required.

Major

Students choosing the discipline major must complete a minimum of 42 credit hours of Politics courses, including POLS 1201 , POLS 2401 , POLS 3901 , and at least 3 credit hours chosen from either POLS 1301 or POLS 2601 . The remaining credit hours must be upper level courses selected by the student in consultation with the faculty advisor in Politics. No grade lower than a C in a Politics course will count for credit towards a Majors degree in Politics.

Unless otherwise noted:

1. the required prerequisite for entry into any upper-level course in Canadian Politics (any course with the number 1, 2 or 5 as its second digit) is POLS 1201 ;
2. the required prerequisites for entry into any upper-level courses in Comparative Politics (any course with the number 3 as its second digit) and International Politics (any course with the number 6 as its second digit) are POLS 1301 and/or POLS 2601 .
3. the required prerequisites for entry into any upper-level courses in Political Theory (any course with the number 4 as its second digit) is POLS 2401 .

Exceptions are subject to approval by the Chair of the Department, in consultation with the Politics faculty.

Double Major

Double major students in Politics and in another discipline must complete 36 credit hours in Politics, as follows: - POLS 1201 , POLS 2401 , POLS 3901 , and at least 3 credit hours of courses from either POLS 1301 or POLS 2601 . The remaining 24 credit hours must be upper level courses selected by the student in consultation with the faculty advisor in Politics. No grade lower than a C in a Politics course will count towards a Double Majors in Politics.

Minor

A Minor in Politics requires the completion of 9 credit hours from any of the lower level courses in Politics and 15 credit hours of upper level courses. No grade lower than a C in a Politics course will count towards a Minor in Politics.

PSYCHOLOGY

General Information and Curriculum

Successful completion of PSYC 1003 or an equivalent is necessary before taking PSYC 1004 . Both PSYC 1003 and PSYC 1004 must be completed before taking any of the remaining psychology courses.

Major and Honours

MAJOR

To qualify for a Major degree a student must accumulate 42 ch of approved psychology courses. Fifteen ch of courses are compulsory as follows: PSYC 1003 , PSYC 1004 , PSYC 2102 , PSYC 2901 , PSYC 4053 . A minimum grade of C (2.0) is required for all Psychology courses taken to meet the Majors requirement.

A student who wishes to do a double major in Psychology and another discipline must complete 36 ch including 24 ch in upper level courses and all the compulsory courses for the single Major in psychology. A minimum grade of C(2.0) is required for all psychology courses taken to meet the Majors requirement.

HONOURS

The Honours program in Psychology provides a broad knowledge of this field and its research methods. Students planning to pursue graduate studies in psychology are advised to consider this program.

Students may apply to the Honours program at the end of their third year. To be eligible to apply they must have a minimum cumulative grade point average of 3.3 (B+).

Students must complete 51 ch of approved Psychology courses for the Honours degree. Of the 51 ch of approved Psychology courses for the Honours degree, the following 24 ch are compulsory: PSYC 1003 , PSYC 1004 , PSYC 2102 , PSYC 2901 , PSYC 3913 , PSYC 4053 , PSYC 4143 , PSYC 4145 .

An additional 27 ch derived from a selection of 9 ch from each of the following 3 groups is necessary.

Group I: Biological/Cognitive Basis of Behaviour I

PSYC 3343 , PSYC 3383 , PSYC 3503 , PSYC 3603 , PSYC 3632 , PSYC 3693 , PSYC 3711 , PSYC 3723 , PSYC 3743 , PSYC 3752 , PSYC 4021 , PSYC 4583 , PSYC 4693 , PSYC 4733 , PSYC 4833

Group II: Social/Personality

PSYC 2201 , PSYC 2401 , PSYC 3222 , PSYC 3232 , PSYC 3263 , PSYC 3293 , PSYC 3343 , PSYC 3352 , PSYC 3412 , PSYC 3461 , PSYC 3752 , PSYC 4463

Group III: Clinical/Applied

PSYC 3033 , PSYC 3263 , PSYC 3313 , PSYC 3323 , PSYC 3362 , PSYC 3393 , PSYC 3493 , PSYC 3553 , PSYC 3724 , PSYC 3725 , PSYC 3803 , PSYC 4213 , PSYC 4214 , PSYC 4233 , PSYC 4493

All Psychology courses taken for the Honours degree must be passed with at least a C (2.0). Furthermore, to graduate with an Honours degree in Psychology an overall cumulative grade point average of 3.3 (B+) is necessary, as well as, a cumulative grade point average of 3.3 in all required Psychology courses. For first class Honours, a grade point average of 3.6 is required in such Psychology courses. For second class Honours, a grade point average of 3.3 is required in such Psychology courses.

PSYCHOSOCIAL DIMENSIONS OF SPORT MINOR

General Information

The Psychosocial Dimensions of Sport Minor provides an academic opportunity for systematic study in the fields of Sport Psychology and Sport Sociology.

Eligibility

Admission to the Psychosocial Dimensions of Sport Minor is open to any Arts student. Students majoring in Psychology or Sociology may find the program to be of particular interest. Students must select the Minor in consultation with a Faculty advisor, and this should normally be done at the same time as they declare a major.

Program of Study

The Minor Programme in the Psychosocial Dimensions of Sport shall consist of at least 24 credit hours of instruction. The three courses listed below are mandatory. A grade of at least B- is necessary in each of the mandatory courses to qualify for the Minor. Prerequisites are noted in brackets.

The Minor will be jointly administered by the Departments of Psychology and Social Science.

Mandatory Courses		
KIN 2021 (3 ch)	Youth in Sport	PSYC1003 PSYC 1004 SOCI 1001
KIN 2023 (3 ch)	Introduction to the Sociology of Sport	SOCI 1001
KIN 2032 (3 ch)	Introduction to Sport Psychology	PSYC 1003 PSYC 1004

Students must choose the remaining 15 ch from the following groups of courses, some of which may have prerequisites. :

Group A - Kinesiology (6 ch) Choose two (2) courses		
KIN 3031	Exercise Psychology	(3 ch)
KIN 3032	Sport Psychology	(3 ch)
KIN 3123	Careers of Elite Athletes: A Sociological Analysis	(3 ch)
KIN 4021	Aggression & Violence Perspectives in Sport	(3 ch)
KIN 4022	Sociological Analysis of Sport	(3 ch)
KIN 4904	Directed Studies in Exercise & Sport Science	(3 ch)
KIN 4993	Selected Topics in Kinesiology	(3 ch)
KIN 4994	Selected Topics in Kinesiology	(3 ch)
Group B - Psychology (3 ch) Choose one (1) course		
PSYC 3412	Advanced Social Psychology	(3 ch)
PSYC 3461	Theories of Personality	(3 ch)
PSYC 3493	Changing Behaviour	(3 ch)
PSYC 3632	Motivation	(3 ch)
Note: PSYC 1003 is a prerequisite for PSYC 1004 , and PSYC 1004 is a prerequisite for all remaining Psychology courses.		
Group C - Sociology (3 ch) Choose one (1) course		
SOCI 2533	Social Movements and Social Revolutions	(3 ch)
SOCI 2603	Sociology of Deviance	(3 ch)
SOCI 3103	Strategies of Sociological Research	(3 ch)
SOCI 3543	Sociology of Gender Relations	(3 ch)
Note: SOCI 1001 is a prerequisite for all courses in Sociology.		
Group D - Group A, B or C (3 ch) Choose one (1) course		
	KIN	(3 ch)
	PSYC	(3 ch)
	SOCI	(3 ch)

:

SOCIOLOGY

General Information and Curriculum

Unless otherwise indicated, students must complete Sociology 1001 before taking any sociology courses at the 2000 level or above. Students are required to complete at least 9 credit hours of sociology courses at the lower level (10002000 courses) before enrolling in any upper level sociology courses. Students who are not majoring or honouring in Sociology will be admitted to a 4000 level course only if they have completed 18ch of Sociology and have consulted with the instructor. A minimum grade of C (2.0) is required for all sociology courses taken to meet the Majors, Honours requirements or prerequisites.

Admission to Major, Double Major and Honours Options

Students apply for permission to Major in Sociology in the term in which they complete 60 ch of study. In addition to SOCI 1001, students intending to Major or Honour in Sociology must have completed at least nine credit hours in Sociology with a grade of C or better prior to admission into the program.

Note: Most courses have a prerequisite; students are responsible for ensuring they have completed the appropriate prerequisites.

MAJOR

Students choosing Sociology as a Major must have their program approved by the Department, and must complete a minimum of 42 ch in Sociology, including the following required 18 ch:

SOCI 1001	Introduction to Sociology
SOCI 3000	Theoretical Foundations of Sociology
SOCI 3104	Quantitative Methods in the Social Sciences
SOCI 3105	Qualitative Methods in the Social Sciences
3 ch hours	4000 Level Sociology Courses

DOUBLE MAJOR

A student who wishes to do a double major in sociology and another discipline must complete 36ch of sociology, including all compulsory courses for the single major in sociology.

HONOURS

Students must apply to the Department for permission to honour in Sociology in the term in which they complete 60 ch of studies. Only under exceptional circumstances will students be permitted

to enter the Honours program after this time.

To be eligible to apply for the Honours program in Sociology, a student must meet the requirements for admission to the major and have a minimum cumulative grade point average of 3.3. The decision to admit a student to the Honours program rests with the Sociology faculty.

For the award of a first-class Honours degree, a grade point average of 3.6 is required in Sociology courses above the introductory level and for a second-class Honours degree an average of 3.3 is required. In both cases a minimum cumulative grade point average of 3.3 is required.

Students choosing to Honour in Sociology must have their program approved by the Department, and must complete a minimum of 48 ch in Sociology including the following required 30 ch and an honours thesis:

SOCI 1001	Introduction to Sociology
SOCI 3000	Theoretical Foundations of Sociology
SOCI 3104	Quantitative Methods in the Social Sciences
SOCI 3105	Qualitative methods in the Social Sciences
SOCI 4014	Designing Research Proposals
SOCI 4015	Honours Thesis
Nine additional ch of 4000 level SOCI courses.	

An honours thesis is required in the Final Year.

SPORT AND EXERCISE PSYCHOLOGY

General Information

The Sport and Exercise Psychology Major provides an academic opportunity for systematic study in the fields of Kinesiology and Psychology.

Kinesiological Characteristics

Kinesiological analysis of sport assumes the study of human beings from a movement science and physical activity perspective. Sport and physical activity provide the environmental setting for this analysis.

Psychological Characteristics

Psychological characteristics of the participant are studied from theoretical and conceptual approaches such as body image, self-concept, exercise adherence, risk-taking, situational specificity of behaviour, aggression, motivation, self-efficacy, need achievement, anxiety, arousal, kinesthetic satisfaction, and general personality and performance relationships.

Eligibility

Admission to the Sport and Exercise Psychology Major is open to any Arts student. Students interested in the Psychological and/or Kinesiological aspects of sport may find the program to be of particular interest. Students should indicate their interest in the program in their first year of study and must select the major no later than the start of their third year.

Program of Study

To qualify for the interdisciplinary Major degree, a student must complete fifty-one (51) credit hours of approved courses from the disciplines of Kinesiology and Psychology. Students who are seeking to complete a Double Major should select their courses in consultation with a faculty advisor. A minimum grade of C (2.0) is required for all courses taken to meet the interdisciplinary Major's requirement with the exception of KIN 2021 , 2023 and 2032 where a minimum grade of B- is required. A student majoring in Sports and Exercise Psychology must complete 27 credit hours of compulsory lower level credits in Kinesiology and Psychology. They must also complete a minimum of 21 credit hours of upper level courses in Kinesiology and Psychology, of which three credit hours must be PSYC 3313 or PSYC 4233 . These courses must be selected in consultation with a faculty advisor and must include at least 6 credit hours in upper level kinesiology and 6 credit hours in upper level psychology.

A student who wishes to do a double major in Sport and Exercise Psychology and another discipline must complete 3 credit hours of upper-level courses in each of Kinesiology and Psychology. Students must also complete all compulsory courses for the single major in Sport and Exercise Psychology.

Administration

The Sport and Exercise Psychology Major will be jointly administered by the Departments of Psychology and Social Science.

Curriculum

FIRST YEAR (30 ch):		
Required Courses (24 ch)		
KIN 1001	Introduction to Kinesiology	3 ch
KIN 1012	Kinesiological Aspects of Lifespan Development	3 ch
OR		
PSYC 2201	Child Development	3 ch
PSYC 1003	Introduction to Psychology I	3 ch
PSYC 1004	Introduction to Psychology II	3 ch
CS 1703	Introduction to Computer Concepts	3 ch
OR		
CS 1803	Introduction to Computers and Systems	3 ch
CS 1713	Multimedia and the Information Highway	3 ch
BIOL 1551	Principles of Biology	3 ch
BIOL 1012	Biological Principles, Part II	3 ch
Electives	6 credit hours of elective courses	6 ch
	TOTAL	**30 ch**
SECOND, THIRD AND FOURTH YEARS (90 ch):		
Required Courses (18 ch):		
KIN 2021	Youth in Sport	3 ch
KIN 2023	Introduction to the Sociology of Sport	3 ch
KIN 2032	Introduction to Sport Psychology	3 ch
PSYC 2102	Research Methods in Psychology	3 ch
PSYC 2901	Introduction to Statistical Analysis for Psychologists	3 ch

One of:		
PSYC 3313	Introduction to Psychological Testing	3 ch
PSYC 4233	Programme Evaluation	3 ch
	TOTAL	**18 ch**

Upper Level Electives in Sport and Exercise Psychology (21 ch):

From List A and List B, a minimum of 21 credit hours of upper level courses in Psychology and Kinesiology must be chosen. Courses must include six (6) credit hours from each of the disciplines of Kinesi ology and Psychology. Substitutions are allowed with the approval of program coordinators.

List A: Kinesiology Group (6 ch) - Choose a minimum of two (2) electives from:

KIN 3031	Exercise Psychology	3 ch
KIN 3032	Sport Psychology	3 ch
KIN 3123	Careers of Elite Athletes: A Sociological Analysis	3 ch
KIN 4021	Aggression and Violence Perspectives in Sport	3 ch
KIN 4022	Sociological Analysis of Sport	3 ch
KIN 4904	Directed Studies in Exercise and Sport Science	3 ch
KIN 4993	Selected Topics in Kinesiology	3 ch
KIN 4994	Selected Topics in Kinesiology	3 ch

Note: KIN 1001 is a prerequisite for all courses in Kinesiology.

List B: Psychology Group (6 ch) - Choose a minimum of two (2) electives from:

PSYC 3222	Sex Differences	3 ch
PSYC 3293	The Psychology of Aging	3 ch
PSYC 3313	Introduction to Psychological Testing	3 ch
PSYC 3343	Human Sexuality	3 ch
PSYC 3362	Introduction to Guidance and Counselling	3 ch
PSYC 3383	Perception	3 ch
PSYC 3412	Advanced Social Psychology	3 ch
PSYC 3461	Theories of Personality	3 ch
PSYC 3493	Changing Behaviour	3 ch
PSYC 3503	Learning	3 ch
PSYC 3553	Psychopathology	3 ch
PSYC 3603	Selective Attention and Memory	3 ch
PSYC 3632	Motivation	3 ch
PSYC 3752	Drugs and Behaviour	3 ch
PSYC 3913	Introduction to Statistical Inference and Experimental Design in Psychology	3 ch
PSYC 4233	Programme Evaluation	3 ch

Note: PSYC 1003 is a prerequisite for PSYC 1004 , and PSYC 1004 is a prerequisite for all remaining Psychology courses.

Electives (2nd, 3rd and 4th years):

15 credit hours lower level, 36 credit hours upper level.

BACHELOR OF BUSINESS ADMINISTRATION

FACULTY OF BUSINESS

General Office:	Philip W. Oland Hall, Room 245
Mailing Address:	Faculty of Business, University of New Brunswick, 100 Tucker Park Road, Saint John, N. B., Canada, E2L 4L5
Phone:	(506) 648-5570 / 648-5806
Fax:	(506) 648-5574
Email:	business@unbsj.ca
Website:	business.unbsj.ca/

FACULTY

Dean:	Dr. Shelley Rinehart
Director, Undergraduate Studies:	Professor Doreen MacAulay
Director of Graduate Studies in Business:	Dr. Henryk Sterniczuk

- Condon, Caroline, MIR, MBA (Tor), Lecturer, 2004
- Davidson, Robert, B.Sc., MBA (W.Ont), Lecturer, 2004
- Davis, Charles, BA, MA, PhD (Montr), Prof. - 1997
- Dewar, Keith, BES, PhD (Wat), BEd (Lakehead), MA (Car) Assoc. Prof. - 2002
- Doiron, Daniel, BScEE (UNB), SMMoT (MIT), Instructor - 2003
- Dunstan, Judith E., BBA (Acad), LLB (Tor), CA, Sr Teach Assoc - 1998
- Farnsworth, Regena BBA (Chapman), MBA (UTA), PhD (Texas A & M), Assoc. Prof. - 1999
- Fleet, Gregory, BA, MA, PhD(UNO), Assoc Prof - 2000
- Frooman, Jeff, BA, BS (Illinois), MBA (Michigan), MA, PhD (Pitt), Asst Prof - 2000
- Gilbert, S. Elizabeth, BA, MBA (Qu), PhD (Tor), Prof 1976
- Huq, ABM Saiful, BA, MA (Dhaka), MA, PhD (Boston), Assoc Prof - 2001
- Hurley, Catherine, BBA, MBA (UNB), CA, Sr Teaching Assoc - 2001
- Jolliffe, Lee, BA (W. Laur), MA (Tor), PhD (Leic), Asst Prof - 2001
- Keeping, David, BCom (Nfld), MBA (St Marys (Can)),CA, Instructor - 2003
- Lopez, Marcel, BS (Electrical Eng), MBA (U of Phillipines), PhD(Stanford), Asst. Prof - 2004
- MacAulay, Doreen, BSc (StFX), MBA (UNB), Instructor - 2003
- McLean, Marion, BSc, MA, BEd (UNB), Instructor - 2002
- Mellon, Mark, BA (SFX), MBA (St Marys (Can)), CA, CPA, Asst. Prof. - 2002
- Mendelson, Morris, BA (C'dia), MSc (St Marys (Can)), PhD (ABD) (Qu), Asst Prof - 2001
- Rinehart, Shelley, BA, MBA (UNB), PhD (U of Oklahoma), Prof and Dean, Business -1988
- Roumi, Ebrahim, BSc (Arya-Mehr), MSc, PhD (Wat), Prof 1988
- Sankey, Alyssa, A.B, Math (Vassar), PhD (U of Mich), Asst. Prof. - 2004
- Sears, Donna, BA (Mt. A), MBA (UNBSJ), PhD (ABD)(McG), Asst. Prof. - 2004
- Sterniczuk, Henryk, MB, PhD (Warsaw), Prof 1987
- Wilson, Wendy, BSc, MSc, MBA (UNB), Instructor - 2003

GENERAL INFORMATION

The Faculty of Business offers a four-year program (equally accessible to part-time students) leading to the degree of Bachelor of Business Administration. The objectives of the program are to provide all students with a solid basic understanding of the fundamental human, physical and conceptual relationships that underlie the organization and management of profit and non-profit organizations; to provide individual students with an opportunity to study, in greater depth, those areas of business they find most interesting; to give students the opportunity to obtain the breadth of background in the Arts and Sciences required to appreciate the environment in which organizations must function; and above all, to develop problem-solving abilities and flexibility in students to help them cope with the challenges presented by a rapidly changing society.

I. Cooperative Education Option

The Faculty of Business offers a 4-year Cooperative Education option within the BBA program. Consistent with the philosophy of Cooperative education, the program is designed to alternate study terms and meaningful work terms. The number of positions is limited and, therefore, restricted to students with a B- average or higher after their first year. Students may apply for the Co-op program during their second semester. Co- op students are also required to maintain a B- GPA or higher throughout their academic terms.

II. Opportunities for Graduates

The program has been designed to prepare its graduates, by means of a well-rounded theoretical and practical education, to enter the administrative levels of private and public corporations, institutions, and agencies. It also prepares students interested in a career in accountancy to undertake on-the-job training leading to professional certification in the fields of public or management accounting. Holders of the BBA degree will normally be exempt from part of the required term of service, part of the course of study, and some of the examinations prescribed by the organizations awarding the professional designations "Chartered Accountant (CA)", "Certified Management Accountant (CMA)", and "Certified General Accountant (CGA)". Students interested in the accounting profession should discuss their interest with their faculty advisor, or consult the Accounting Associations directly. Inquiries may be directed to The Atlantic School of Chartered Accountancy, P.O. Box 489, Halifax, N. S. B3J 2R7; The Society of Management Accountants of New Brunswick, call (toll free) 1-800- 565-7198; The Certified General Accountants Association of New Brunswick, P. O. Box 5100, Moncton, N. B. E1C 8R2.

Operational Research is the professional discipline that deals with the application of analytical and numerical techniques as well as information technology to understand and tackle complex decision situations. Operational Research specialists may work in areas such as consulting, business process analysis and logistic analysis. Operational Research techniques can also be effectively combined with specializations in other areas such as electronic commerce, finance, and marketing. The CORS Diploma is awarded by the Canadian Operational Research Society (CORS), in association with recognized Canadian universities, to students who have completed a program of studies with significant Operational Research content. For the official requirements for the CORS Diploma, see the CORS website (www.cors.ca/).

III. Business Administration and Law

BBA students who have completed three years of the BBA program may be admitted to the UNB Faculty of Law and may qualify for the BBA degree by successfully completing the first year of the Law program. To qualify for the BBA, such students must have credit for all of the REQUIRED courses specified for the BBA degree (except BA 4101) and must have a session grade point average of at least 2. 0. Students must apply to and be accepted by the Faculty of Law. The current regulations of that Faculty require a minimum grade point average of 3. 5 (on a 4. scale) before a student without a degree will be considered for admission. The final grade-point average for degree purposes will be determined by including the results in the first year of the Law program as part of the "final" credit hours used.

IV. Certificate Programs in Administration

The University of New Brunswick, Saint John Campus offers five certificate programs in Administration. This includes a certificate program in Business Administration Level I and Level II, Accounting, Electronic Commerce and Human Resource Management.

These certificate programs are designed to provide individuals; especially working adults, with an opportunity to engage in systematic and co-ordinated study directed towards an academic goal. Participants enrolled in the certificate programs will have an opportunity to study the basic principles of administration and management; to improve their analytical skills; to increase their awareness of the various factors contributing to effective decision-making and to understand the basic functions of organizations.

The certificate programs will be of particular interest to individuals who are engaged in administration, contemplating a career in administration or management and wish to expand their knowledge in the related subject areas.

The courses in the certificate programs are presented at the undergraduate level of study and provide a framework for theoretical analysis of general principles of administration through lectures, discussions and individual study. By combining accumulated work experience and formal classroom learning, participants will be able to relate theory and practice as part of their continuing development.

All courses for the certificates are degree-credit courses. Individuals who successfully complete certificate courses and subsequently are admitted to a degree program will receive credit towards a degree. Credit will be granted for those courses accepted by the particular degree program. Individuals admitted to a BBA degree program will normally be able to apply certificate courses completed successfully to their degree program.

For further information on these Certificate Programs please see the section entitled Certificate Programs in Business Administration, in the Saint John Programs Section of this Calendar.

V. Graduate Studies in Business

The Faculty of Business offers graduate studies in Business leading to the Master of Business Administration (MBA) on a full-time or part-time basis. Students may concentrate in international business or electronic commerce at the graduate level. Applicants who have previously received an undergraduate degree and who want to study business should

contact the Faculty of Business at 648-5746 to receive information on the entrance requirements of the MBA. The full-time program is a very intensive 12-month, co-op MBA. Part-time students may choose their courses from evening and Saturday offerings.

VI. University Regulations on Admission and Academic Regulations

Students are strongly advised to read the General University Regulations, Section B of this Calendar, and in particular the subsection headed "Grading and Classification". The General University Regulations will govern any point not covered in the regulations that follow. Questions concerning the application of regulations should be directed to the Registrar.

VII. Graduate of a Community College or Equivalent System

Graduates in Business Technology from the New Brunswick Community College with a 65% average or equivalent standing over the normal two years (or equivalent standing from comparable institutions), may be granted up to 30 ch toward the BBA degree. They will be required to successfully complete, including any transfer credits, a total of 120 ch in order to qualify for the BBA degree. Students who have partially completed such programs may be granted some credit towards the BBA. Entering students will be advised of their status as provided for in the General Regulations of the University,Section B of this Calendar. Also, please consult the calendar section for the Bachelor of Applied Management Programs.

VIII. BBA Regulations for Full-time and Part-time Students in the Degree Program

A. **Grading and Classification**

The regulations in respect to the BBA degree and the Certificates are expressed in terms of letter grades, credit hours and grade point averages. These are explained in Section B of the Calendar. In order to take a Business Administration (BA) course that has a prerequisite, students must earn a C or better in the prerequisite course(s), regardless of the program in which the student is registered.

B. **Credit Hours**

The number of credit hours assigned each course is stated in Section F of this Calendar. (In most cases the Faculty of Business assigns a 6 ch weight to a two-term course and a 3 ch weight to a term course.)

Due to differences in the methods used by the various Faculties in the calculation of credit hours, students who elect to register for courses taught outside of the Faculty of Business should note the following:

1. For purposes of the BBA degree, any course taught outside of the Faculty of Business, which has a course number ending in zero and which is taught over the full academic year, will receive the number of credit hours normally assigned by the Faculty in which the course is taught, up to a maximum of 6.
2. For purposes of the BBA degree, any course taught outside of the Faculty of Business, which has a course number ending in other than zero and which is offered in one term of the academic year, will receive the number of credit hours normally assigned by the Faculty in which the course is taught, up to a maximum of 3.

C. **Grade Point Average**

1. See Section B of this Calendar for detailed regulations on standing and promotion requirements.
2. A student who has been registered in the BBA program and who withdrew while on probation or who was required to withdraw from the program will not be eligible to re-enter the program without the approval of the Faculty of Business.
3. To earn the BBA degree, a student must successfully complete at least 120 ch in approved courses and must achieve a minimum grade of C in all courses designated as required or elective.

D. **Transfer Students**

The University regulations in respect to students transferring to the BBA degree program from another UNB degree program and students transferring to UNB from another university or post-secondary institution are as stated in the General Regulations of the University.

Course credits may only be transferred from another university when the grade is equivalent to at least a C at UNB.

At least half the credit hours for the BBA degree must be taken at UNB and must normally include all the required courses in the BBA degree program. (Students may be permitted to take some of these courses elsewhere with the prior permission of the Faculty of Business and the Registrar.)

E. **The BBA as a Second Degree**

Graduates of UNB are required to successfully complete a minimum of 30 additional credit hours at UNB; graduates of other recognized universities must successfully complete a minimum of 60 ch at UNB. All graduates must have credit for all the required, elective and option courses (or their equ ivalent) in the BBA program, and must comply with the regulations in Section C above.

F. **Changes in Degree Requirements**

Improvements in the BBA program may lead to changes in the requirements for the degree. The University reserves the right to require candidates already enrolled to meet the revised requirements.

G. **Normal Course Load**

The normal course load for students in the BBA program will be five courses per term. Students with a cumulative gpa of at least 2.7 may, with the written permission of the Director of Undergraduate Studies or the Dean of the Faculty of Business, take a maximum of six courses in a given term. The normal course load for students accepted into the co-op program is six courses per term.

H. **Repeating Courses**

A student who fails to obtain a grade of C or better in a required course must retake the course as soon as it becomes available during a session in which the student is in attendance.

A student may take a course a maximum of three times (including Ws but excluding courses which are designated with the # notation). Beyond that, the student must obtain the permission of the Dean of the students Faculty to register again in the repeated course. See University Regulations section VIII.I.

I. **Majors and Concentrations**

1. See Section XI, regarding the BBA with a major in Economics.
2. See Section XII regarding the BBA with a major in French.
3. See Section XIII regarding the BBA with a minor in French.
4. See Section XIV regarding the BBA with a major in Human Resource Management.
5. See Section XV regarding the BBA with a major in Accounting.
6. See Section XVI regarding the BBA with a major in Electronic Commerce.
7. A student qualifying for the BBA degree who has met the requirements for a Single or a Double Major in the Bachelor of Arts program may request the Registrar to note on the student's transcript that the Major requirement in the external discipline has been met. Students are advised that the Faculty of Business must approve their entire program with the Major requirement approved by the external discipline. Note: Students persuing minors or double majors either within or outside the Faculty of Business may not double count any course or courses which may be common to more than one program.
8. Majors in specific Business disciplines other than HRM, Accounting and Electronic Commerce are not offered although a student may concentrate in a particular Business area (Business and Public Policy, Finance, Industrial Relations, Marketing, Operations Research or Organizational Behaviour) or in Computer Science by selecting appropriate option courses. Students should note that not all elective or optional courses are offered each year. The timetable should be consulted for current offerings.
9. **Concentrations** are offered in Accounting, Electronic Commerce, Finance, Human Resource Management, and Marketing. Concentrations are completed by achieving a cumulative GPA of at least 3.0 for 12 ch of approved electives in the area of interest. Approved courses for each subject of concentration are as follows:

Accounting

1. BA 3235 Intermediate Accounting I
2. BA 3236 Intermediate Accounting II
3. BA 3224 Accounting for Manager III
4. And one of:
   BA 4207 Current Accounting Issues
   BA 4221 Advanced Management Accounting
   BA 4223 Accounting Information Systems
   BA 4229 Advanced Financial Accounting
   BA 4237 Income Taxation
   BA 4238 Auditing
   BA 4242 Accounting Theory
   Or other course(s) as approved by the Faculty of Business

Electronic Commerce

1. BA 2123 Introduction to Electronic Commerce
2. BA 2663 Technology Fundamentals of Electronic Commerce
3. And at least two of the following:
   BA 3125 Industry Impact of Electronic Commerce
   BA 3126 Frontiers of E-commerce I
   BA 3305 Marketing on the Internet
   BA 3718 Legal, Privacy & Security Issues in Electronic Commerce
   BA 4108 Management of New Enterprise
   BA 4109 Management of Online Business
   BA 4126 Frontiers of E-commerce II
   BA 4223 Accounting Information Systems
   BA 4506 Organizations and Electronic Commerce
   BA 4866 Management of Technology
   Or other course(s) as approved by the Faculty of Business

Finance

1. 6 chs of approved Finance Electives
2. 6 chs of approved Finance or Non-Finance Electives
   - Available Finance electives are:
     BA 3421 Personal Financial Planning
     BA 4418 Advanced Financial Management
     BA 4437 Investment Analysis and Portfolio Management
     BA 4448 Canadian Financial Institutions
     BA 4455 Derivatives: Options and Futures
   - Approved non-Finance electives are:
     ECON 2103 Financial Institutions and Markets
     ECON 3114 International Financial Institutions and Markets
     ECON 3412 International Macroeconomics and Finance
     or other course(s) as approved by the Faculty of Business

Human Resources Management

At least four of the following electives:

a. BA 2758 Employment Law
b. BA 3813 Introduction to Industrial Relations
c. BA 4813 Negotiations and Dispute Resolutions
d. BA 4829 Research Methodology
e. BA 4853 Recruitment and Selection
f. BA 4854 Training and Development
g. BA 4855 Compensation Structure Development
h. BA 4856 Evaluating and Rewarding Employee Performance
i. BA 4857 Management of Occupational Health and Employee Wellness
j. BA 4858 International Human Resource Management
k. BA 4866 Management of Technology
l. Or other course(s) as approved by the Faculty of Business

Marketing

1. BA 4319 Marketing Research
2. BA 3328 Consumer Behaviour
3. And two of:
   BA 4107 Studies in Small Business
   BA 3305 Marketing on the Internet
   BA 3339 Marketing Communications
   BA 3371 Marketing of Services
   BA 4334 Public and Non-profit Marketing
   BA 4398 International Marketing
   Or other course(s) as approved by the Faculty of Business

IX. Degree Standing on Graduation

At graduation all successful candidates for the degree of Bachelor of Business Administration shall be listed in alphabetical order within the appropriate degree category as stated below:

a. **Distinction** A student who attains a cumulative grade point average of at least 3. 8 over the final 60 credit hours of course work and no grade less than C (2. 0) over the final 90 ch of course work shall graduate with Distinction.
b. **First Division** A student who attains a cumulative grade point average of at least 3. 5 shall graduate in First Division.
c. **Second Division** A student who attains a cumulative grade point average of at least 2. 5 but less than 3. 5 shall graduate in Second Division.
d. **Third Division** A student who attains a cumulative grade point average of less than 2. 5 shall graduate in Third Division.

X. Business Administration Curriculum and Degree Requirements

1. Students must successfully complete at least 120 ch of course work and must obtain a grade of at least C in all required and elective courses specifically required for the degree.
2. The normal course load for students in the BBA program will be five courses per term. Students with a cumulative gpa of at least 2. 5 may, with the written permission of the Director of Undergraduate Studies or the Dean of the Faculty of Business, take a maximum of six courses in a given term.
3. It is the responsibility of students to ascertain that their elective and option courses are acceptable for BBA degree credit. Credit will not be granted for FREN 1103 , CS 1703 , ECON 1004 , PSYC 1273 or MATH 1863 in the BBA program. Credit will be granted for only one of MATH 1003 and MATH 2853 .

   Students enrolled in a degree or certificate program under the aegis of the Faculty of Business are not to register in the following courses or similar courses without prior permission of the Faculty of Business. (The content of these courses is similar to required or option BBA courses.)

   PSYC 2901 , PSYC 3913 , STAT 1793 , STAT 3093 .

   Note: Students should contact the Faculty of Business at the beginning of each regular academic year for a revised list of courses in this category. Courses listed elsewhere in this Calendar as service courses by other Faculties or Departments are normally not credits for the BBA degree.
4. Candidates for the degree must successfully complete the following credit hours: a) 51 required, b) 18 Business electives, c) 6 Social Science electives, d) 6 Humanities and Languages electives, e) 39 options, of which a maximum of 18 may be chosen from Business and a maximum of 12 of the 39 may be at the introductory level. An elective course is one chosen from a specified group of courses, e.g. "from Social Science or Business". An option course is an approved course chosen by the student from any approved discipline
5. **Course Requirements**

   Students are responsible for ensuring that they meet all the requirements specified for the degree. These include the minimum credit hour requirements, minimum grade point averages, minimum grades in specified courses, successful completion of all specifically required courses and compliance with the restrictions on elective and option courses as in regulation X. 3. and 4. above.

   Students are advised to consult Section F of this Calendar for detailed course descriptions, including the number of credit hours assigned to each course.

Example of a Typical Student's Program

(15 ch per term, total 120 ch)

FIRST YEAR	
Fall Term	
MATH 1853	Math for Business I
ECON 1013	Intro to Economics-Micro
Social Science Elective*	
Humanities or Language Elective*	
Business Elective/Option 3 ch**	
Winter Term	
BA 1605	Business Decision Analysis I
ECON 1023	ntro to Economics-Macro
BA 1216	Accounting for Managers I
Social Science Elective	
Humanities or Language Elective	
SECOND YEAR	
Fall Term	
BA 2217	Accounting for Managers II
BA 2504	Introduction to Organizational Behaviour
BA 2606	Business Decision Analysis II
Business Elective/Option - 6 ch	
Winter Term	
BA 2303	Principles of Marketing
BA 2858	Introduction to Human Resource Management
BA 3623	Management Science: Deterministic Models
Business Electives or Option Courses - 6 ch	
THIRD YEAR	
Fall Term	
BA 3425	Managerial Finance
Business electives or option courses - 12 ch	
Winter Term	
BA 3304	Marketing Management
BA 3653	Production & Operations Management
BA 3672	Introduction to Management Information Stystems

BA 3705	Business Law
Business Electives or Option Courses - 3 ch	
FOURTH YEAR	
Fall Term	
BA 4101	Competitive Strategy
Business Electives or Option Courses - 12 ch	
Winter Term	
Business Electives or Option Courses - 15 ch	

Notes: * All students must include Math 1853 within their first 30 ch; 6 ch from the Social Science disciplines of Anthropology, Politics, Psychology or Sociology within their first 60 ch, and 6 ch from the Humanities and Languages disciplines of Classics, English, French, German, History, Humanities, Latin, Philosophy or Spanish within their first 60 ch. ** Option courses may be selected from the offerings of any faculty provided that the selections are in accord with regulations X. 3 and 4 above, and provided they are approved by the Faculty of Business.

XI. BBA with a Major in Economics

In addition to complying with the existing curriculum requirements and regulations governing the award of a BBA degree, BBA students wishing to major in Economics must also comply with the following regulations and requirements of the Faculty of Business and the Economics discipline:

a. Students electing to major in Economics should declare the major by the beginning of their third year. The Faculty of Business must approve all courses taken to comply with the major requirement.

b. In order to earn the major in Economics BBA students must complete the following:

   i. earn a minimum grade of C in the following compulsory courses: ECON 2013 , 2023 , 3013 and 3023 ; and

   ii. successfully complete with a grade of C or better 15 ch of elective Economics courses or approved substitutes from disciplines other than Economics up to a maximum of 6 ch. Many upper-level business courses qualify as approved substitutes; a current list is available from the Faculty of Business or the Economics discipline.

   Note: Students may not double count courses required for the general BBA.

XII. BBA with a Major in French Communication and Culture

In addition to complying with the existing curriculum requirements and regulations governing the award of a BBA degree, BBA students wishing to major in French must also comply with the following regulations and requirements of the Faculty of Business and the French discipline:

a. Students electing to major in French Communication and Culture should declare the major by the beginning of their third year. All courses taken to comply with the major requirement must be approved by the Department of Humanities and Languages and by the Faculty of Business.

b. **i.** A BBA student who wishes to major in French Communication and Culture will normally have completed 12 ch in French (FR 1203 , 1204 and 2203 , 2204) and have received a grade of C or above. A student who has successfully completed a school French immersion program may begin a major in French Communication and Culture following completion of FR 1304 and 2304 with a grade of B or above. Students receiving a grade between C and B- in FR 2304 and would normally proceed to FR 2203 and 2204 . A BBA with a major including French Communication and Culture will consist of at least 24 ch of upper level French courses.

   ii. All students must earn a grade of C in FR 3203 , FR 3204, FR 4204 and one of 3704 , 3714 , 3724 and 12 ch of approved French Communication and Culture upper-level electives, six from Group A, six from Group B. (Please consult the Bachelor of Arts degree, major in French, for a complete listing of Groups A and B courses.)

XIII. BBA with a Minor in French Communication and Culture

Students completing a French Minor are required to complete at least 12 ch of upper level courses in French Communication and Culture, with a maximum of 12 ch at the lower level (FR 1203 , 1204 and 2203 , 2204). FR 3203 and FR 3204 will be required; the remaining 6 ch will be chosen from advanced courses. A minimum grade of C, in lower level courses, and C, in upper level courses, is required. The Minor must be declared at the same time as the Major. Students who have completed FR 1304 and FR 2304 and are admitted into FR 3203 will also do 12 ch in upper level courses.

XIV. BBA with a Major in Human Resource Management

In addition to complying with the existing curriculum requirements and regulations governing the award of a BBA degree, BBA students wishing to major in Human Resource Management must also comply with the following regulations and requirements.

a. Students electing to major in Human Resource Management should declare the major by the beginning of their third year. The Faculty of Business must approve all courses taken to comply with the major requirement.

b. In order to earn the major in Human Resource Management, BBA students must:

   i. maintain a minimum 3.0 (B) grade point average in the 24 ch of courses (ii, iii), and

   ii. earn a minimum grade of C in the following compulsory courses: BA 2504 , 2758 , 2858 , 3813 , 4829 , and 4898 ; and

   iii. earn a minimum grade of C in six credit hours of electives chosen from the following: BA 3715 , 4813 , 4853 , 4854 , 4855 , 4856 , 4857 , 4858 and 4866 .

XV. BBA with a Major in Accounting

In addition to complying with the existing curriculum requirements and regulations governing the award of a BBA degree, BBA students wishing to major in Accounting must also comply with the following regulations and requirements.

a. Students electing to major in Accounting should declare the major by the beginning of their third year. The Faculty of Business must approve all courses taken to comply with the major requirement.

b. In order to earn the major in Accounting, BBA students must in addition to the general requirements of the BBA degree:

   i. earn a minimum grade of C in the following compulsory courses: BA 1218 , 3224 , 3235 , 3236 , 4207 , 4221 , 4223 , 4229 ; and

ii. earn a minimum grade of C in one of the following elective courses: BA 4237 , 4238 , 4242 ;

iii. earn a minimum grade of C in one of the following elective courses: BA 4418 , 4437 , 4448 , 4455 , ECON 3114 or other approved finance course.

XVI. BBA with a Major in Electronic Commerce

In addition to complying with the existing curriculum requirements and regulations governing the award of a BBA degree, BBA students wishing to major in electronic Commerce must also comply with the following regulations and requirements.

a. Students electing to major in Electronic Commerce should declare the major by the beginning of their third year. The Faculty of Business must approve all courses taken to comply with the major.

b. In order to earn the major in Electronic Commerce, BBA students must:

i. earn a minimum grade of C in the following compulsory courses: BA2123 , BA2663 , BA3125 , BA3305 , BA3718 and BA4506 ;

ii. earn a minimum grade of C in six credit hours of elective courses chosen from the following: BA3126, BA3328 , BA4108 , BA4109 , BA4126 , BA4223 , BA4866 , CS2773 , ICS2001 or any other 6 credit hours on approval of the Faculty.

BBA CO-OP OPTION

The Curriculum

The Faculty of Business offers a Co-operative Education option within the BBA program. While the program is designed to be completed in four years, students may take longer to complete the program. Students may also major and take the Co-op option. Consistent with the philosophy of Co-operative education, the program is designed to alternate study terms and relevant work terms, as follows:

Co-op Program Academic / Work Term Sequence

	Fall	Winter	Spring / Summer
	Sept-Dec	Jan-April	May-Aug
Year 1	Academic Term 1	Academic Term 2	
Year 2	Academic Term 3	Work Term 1	Academic Term 4
Year 3	Work Term 2	Academic Term 5	Work Term 3
Year 4	Academic Term 6	Academic Term 7	

Every co-op student shall complete three work terms with full-time academic semesters directly before and after each work term. The co-op program considers students full-time if they are enrolled in at least 12 credit-hours of course-work, not including the work term reports: BA 2903 , BA 3903 or BA 4903 , or any required ESL support courses. Academic course requirements and work terms are listed in Table A.

TABLE A: Example of a typical student's program:

FIRST YEAR	
Fall Term (September - December)	
MATH 1853	Math for Business I
ECON 1013	Intro to Economics - Micro
Social Science elective*	
Humanities or Language Elective*	
Business Elective/Option 3 ch**	
Winter Term (January - April)	
BA 1605	Business Decision Analysis I
ECON 1023	Intro to Economics - Macro
BA 1216	Accounting for Managers I
Social Science elective*	
Humanities or Language Elective*	
SECOND YEAR	
Fall Term (September - December)	
BA 2217	Accounting for Managers II
BA 2504	Introduction to Organizational Behaviour
BA 2606	Business Decision Analysis II
Business Electives or Optional Courses - 9 ch	
Winter Term (January - April):	
Work Term I	
Spring/Summer Term (May - August)	
BA 2303	Principles of Marketing
BA 2858	Introduction to Human Resource Management
BA 2903	Work Term Report I
BA 3425	Managerial Finance
BA 3623	Management Science: Deterministic Models
Business Electives or Option Courses - 6 ch	
THIRD YEAR	
Fall Term (September - December):	
Work Term II	
Winter Term (January - April)	
BA 3304	Marketing Management
BA 3653	Production and Operations Management
BA 3672	Introduction to Management Information Systems
BA 3705	Business Law
BA 3903	Work Term Report II
Business Electives or Option Courses - 6 ch	
Summer Term (May - August)	
Work Term III	
FOURTH YEAR	
Fall Term (September - December)	
BA 4101	Competitive Strategy
BA 4903	Work Term Report III
Business Electives or Option Courses - 15 ch	
Winter Term (January - April)	
Business Electives or Option Courses - 15 ch	

Notes:

1. * All students must include Math 1853 within their first 30 ch; 6 ch chosen from the Social Science disciplines of Anthropology, Political Science, Psychology or Sociology within their first 60 ch, and 6 ch from the Humanities and

Languages disciplines of Classics, English, French, German, History, Humanities, Latin, Philosophy or Spanish within their first 60 ch.

2. ** Option courses may be selected from the offerings of any faculty provided that the selections are in accord with regulations X. (3) and (4) of the Business Administration Curriculum and Degree Requirements of the university calendar, and provided they are approved by the Faculty of Business.
3. The sequence of academic terms and work terms outlined above is not flexible. Only in unusual circumstances will the Director or Coordinator of the Co-op Program approve deviation from the regular sequence.
4. If students' course selections deviate from the schedule above they are responsible for obtaining academic advising from either a Faculty of Business or Co-op advisor. Students are responsible for their own academic planning and course selection.
5. Each work term is normally 12 to 16 weeks in duration.

Admission

Students must apply for the Co-op program during their second semester. Entrance to the Co-op program is a four-step process, as follows:

- **Step One:** Academic Achievement - Obtain a B- (2.7) average* or higher after their first year to be eligible for the entry-level Professional Development Workshop Series.
- **Step Two:** Professional Development - Successfully complete all required elements of the entry-level professional development seminars (PDSs).
- **Step Three:** Mock Job Interview - Pass a mock job interview
- **Step Four:** The Job Competition - Obtain a position for Work Term One.

Students who are unsuccessful in any one of the four steps will remain in the traditional BBA program.To remain eligible for each Co-op work term, students must attend and complete assignments for all mandatory professional develop seminars in academic terms three, four and five.

For additional details and for information pertaining to transfer students, please read the Co-op students' handbook available from the Faculty of Business, P.O. Box 5050, Saint John, N.B., E2L 4L5. Web address: www.business.unbsj.ca

Admissions Policy for International Students Entering the BBA Co-op Program

In addition to the above criteria, students require a TOEFL score of 550 to enter the BBA Co-op program if English is not their first language.

Advancement

To complete the program and earn a Co-op designation, students must

- maintain a minimum GPA of 2.7 (B-) throughout the program
- successfully complete all PDSs
- perform satisfactorily in all three work terms
- obtain a grade of C or higher on three work term reports

If a student's GPA falls below 2.7 but not lower than 2.5 in any one academic semester directly before or after the work terms, he/she will be placed on co-op program probation. For additional information, please refer to the co-op students' handbook.

Work Term Reports

The work term report plays a pivotal role in the success of our Co-operative Education Program. Work term reports BA 2903 , BA 3903 and BA 4903 are written during the first, second and third work terms respectively. They are required courses carrying 1 credit hour each and requiring a minimum grade of C.

Students must achieve a grade of C on BA 2903 , BA 3903 and BA 4903 to be allowed to continue in the program.

Students who withdraw or are required to withdraw from the co-op program before they have completed BA 2903 , BA 3903 and BA 4903 may not use the credit from BA 2903 and/or BA 3903 and/or BA 4903 in conjunction with a lab credit toward their BBA degree.

The Co-op Fee

A comprehensive Co-operative Education Program includes many important components. Each component provides tangible benefits which are not offered to students in the traditional BBA program. Information on fees may be found in Section C of this calendar. Co-operative Education fees are used to develop and support the following areas:

1. Professional Development Seminars
2. Providing feedback to students in order to help them improve performance
3. Employer recruitment
4. Organizing job interviews with employers
5. Mid-Work term performance evaluations
6. Heightening the profile of our co-op program with schools, businesses, and community

Students who do not abide by Co-op Program regulations set out in the calendar and the Co-op Students' Handbook, available from the Co-op Office, will be asked to withdraw from the Co-op Program.

CERTIFICATE PROGRAMS IN BUSINESS ADMINISTRATION

The University of New Brunswick, Saint John Campus offers five certificate programs. This includes a certificate program in Business Administration Level I and Level II, Accounting, Electronic Commerce and Human Resource Management.

These certificate programs are designed to provide individuals; especially working adults, with an opportunity to engage in systematic and co-ordinated study directed towards an academic goal. Participants enrolled in the certificate programs will have an opportunity to study the basic principles of administration and management; to improve their analytical skills; to increase their awareness of the various factors contributing to effective decision-making and to understand the basic functions of organizations.

The certificate programs will be of particular interest to individuals who are engaged in administration, contemplating a career in administration or management and wish to expand their knowledge in the related subject areas.

The courses in the certificate programs are presented at the undergraduate level of study and provide a framework for theoretical analysis of general principles of administration through lectures, discussions and individual study. By combining accumulated work experience and formal classroom learning, participants will be able to relate theory and practice as part of their continuing development.

All courses for the certificates are degree-credit courses. Individuals who successfully complete certificate courses and subsequently are admitted to a degree program will receive credit towards a degree. Credit will be granted for those courses accepted by the particular degree program. Individuals admitted to a BBA degree program will normally be able to apply certificate courses completed successfully to their degree program.

GENERAL REGULATIONS

The following regulations apply to the certificate programs in business:

1. **Certificate in Business Administration Level I, Certificate in Accounting, Certificate in Electronic Commerce and Certificate in Human Resource Management:**
   A maximum of 50% of total program requirements may be transferred from another degree, certificate or similar program whether taken at the University of New Brunswick or elsewhere. However, 50% of the required business courses must be taken at the University of New Brunswick. Courses taken more than five years ago will be approved on an individual basis.

   Business Administration Certificate Level II:
   A maximum of 75% of total program requirements may be transferred from another degree, certificate or similar program taken at the University of New Brunswick. For students transferring credits from outside the University of New Brunswick, only 50% of total program credits will be transferable. However, 50% of the required business courses must be taken at the University of New Brunswick. Courses taken more than five years ago will be approved on an individual basis.
2. Each student entering a certificate program on a full-time basis must have the prior approval of the Faculty of Business.
3. A certificate will not be awarded to a student enrolled for a degree, but students who have withdrawn from an undergraduate degree program may apply for the appropriate certificate.
4. To earn the Certificate in Business Administration Level I, Level II, the Certificate in Accounting, or the Certificate in Electronic Commerce a student must successfully complete the number of credit hours in approved courses specified for the certificate, achieve a grade of at least C in all specifically required courses and achieve a cumulative grade point average of at least 2.0.
5. To earn the Certificate in Human Resource Management, a student must achieve a cumulative grade point average of at least 3.0 (B) over 24 credit hours required, (excluding BA 1605 and BA 2606).
6. There is no minimum age and no specific prerequisites for entrance into the Business Administration Certificate Level I, Level II or the Certificate in Accounting. Admission information concerning the Certificate in Electronic Commerce is shown on page 7 and the Certificate in Human Resource Management on page 9. Although, there are no specific entrance requirements for the Business Administration Certificate Level I, Level II or the Certificate in Accounting students will undertake university-level study and assignments demanded in degree-credit courses. Some courses such as Finance, Computer Science and Quantitative Methods require at least a background knowledge of high school mathematics.

GENERAL INFORMATION

Admission:

The certificate programs are open to all interested individuals. With the exception of the Certificate in Electronic Commerce and the Certificate in Human Resource Management, there are no specific academic prerequisites for students enrolled in the business certificate programs on a part-time basis, only a desire and willingness on the part of the student to engage in learning at a university level. However, students engaged in full-time study must receive Faculty approval to be admitted to the program.

Application forms are available from the Admissions Office (506-648-5674).

Additional Information:

A brochure entitled Certificate Programs in Administration provides full information on regulations and course requirements and can be obtained by dialing (506)648-5570 or 1-800-50-UNBSJ or by writing to The Faculty of Business, University of New Brunswick, P.O. Box 5050, Saint John, NB, E2L 4L5, or emailing business@unbsj.ca.

Business Administration Certificate Level I

REQUIREMENTS:

A Business Administration Certificate Level I will be awarded to individuals who:

a. achieve a cumulative grade point average of at least 2.0 over the 30 credit hours required, and
b. successfully complete (with a C or better):

BA 1216	Accounting for Managers I (See note B)	3 ch
BA 2217	Accounting for Managers II	3 ch
BA 2303	Principles of Marketing	3 ch
BA 2504	Introduction to Organizational Behaviour	3 ch
BA 3425	Managerial Finance	3 ch
Plus six credit hours in Economics (ECON 1013 and 1023 or ECON 2103 and 3114)		6 ch
Business elective		3 ch
Plus six credit hours of non-business courses to be approved by the Faculty of Business (See note B).		6 ch
		30 ch

NOTES:

A. Students wishing to proceed to the degree in Business Administration (BBA) should select ECON 1013 and 1023 as part of their Business Administration Certificate Level I requirements.

B. Although, the usual math prerequisites are waived for certificate students, it is recommended that students planning to proceed with the following: Business Administration Certificate Level II, Human Resource Management Certificate or the BBA or BAM degrees choose Math 1853 as an elective before studying BA 1216 and BA 1605 . Most business courses have prerequisites. Students who do not have credit for grade 12 academic math and who intend to continue on to the BBA degree are urged to take MATH 1863 as one of their Business Administration Certificate Level I electives.

Please note that although MATH 1863 is a credit towards the Certificate, it cannot be used as a credit towards the BBA, or BAM degrees.

Business Administration Certificate Level II

REQUIREMENTS:

The requirements for the Business Administration Certificate Level II are stated in terms of cumulative credit hours. The 30 credit hours required for the Business Administration Certificate Level I are included as part of the stated requirement of 60 credit hours for the Business Administration Certificate Level II.

A Business Administration Certificate Level II will be awarded to individuals who:

a. achieve a cumulative grade point average of at least 2.0 over the 60 credit hours required, and
b. successfully complete (with a C or better):

BA 1216	Accounting for Managers I	3 ch
BA 1605	Business Decision Analysis I (Note C)	3 ch
BA 2217	Accounting for Managers II	3 ch
BA 2303	Principles of Marketing	3 ch
BA 2504	Introduction to Organizational Behaviour	3 ch
BA 2606	Business Decision Analysis II	3 ch
BA 2858	Introduction to Human Resource Management	3 ch
BA 3425	Managerial Finance	3 ch
Plus six credit hours in Economics (ECON 1013 and 1023 or ECON 2103 and 3114) (See Note A.)		6 ch
Plus a total of 30 credit hours in Arts (Humanities, Social Science, Languages and Mathematics), Business Administration, Computer Science, Data Analysis, Engineering or Science. (See Notes A & B).		30 ch
		60 ch

NOTES:

A. Students who plan to enrol in the Business Administration degree program (BBA) after completing the Business Administration Certificate Level II are advised to elect MATH 1863 (if necessary), MATH 1853 , ECON 1013 and ECON 1023 as part of their certificate program.

B. Six (6) credit hours in Humanities or Languages and six (6) credit hours from Psychology, Sociology or Political Science must be completed within the Business Administration Certificate Level I requirements and/or the 30 optional credit hours of Business Administration Certificate Level II.

C. The normal prerequisite will be waived for students registered in this program.

Certificate in Accounting

REQUIREMENTS:

A Certificate in Accounting will be awarded to individuals who:

a. achieve a cumulative grade point average of at least 2.0 over the 34 credit hours required, and
b. successfully complete (with a C or better):

BA 1216	Accounting for Managers I	3 ch
BA 1218	Accounting Lab	1 ch
BA 1605	Business Decision Analysis I (Note C above)	3 ch
BA 2217	Accounting for Managers II	3 ch
BA 3224	Accounting for Managers III	3 ch
BA 3235	Intermediate Accounting I	3 ch
BA 3236	Intermediate Accounting II	3 ch
BA 3425	Managerial Finance	3 ch
BA 4221	Advanced Management Accounting	3 ch
BA 4223	Accounting Information Systems	3 ch
BA 4229	Advanced Financial Accounting	3 ch
BA 4238	Auditing	3 ch
		34 ch

Certificate in Electronic Commerce

Admission to the Certificate in Electronic Commerce program will require a minimum of either:

1. 30 credit hours at a recognized post secondary institution with a minimum cumulative grade point average of 2.7 (B-) or
2. At least one year's relevant work experience in the electronic commerce area to be approved on an individual basis by the Dean in consultation with the Electronic Commerce faculty.

Because the courses offered in this program are largely upper level, the above admission criteria will be waived only in the most exceptional circumstances.

REQUIREMENTS:

A Certificate in Electronic Commerce will be awarded to individuals who:

a. achieve a cumulative grade point average of at least 2.0 over the 33 credit hours required, and
b. successfully complete (with a C or better):

BA 1216	Accounting for Managers	3 ch
BA 2123	Introduction to Electronic Commerce	3 ch
BA 2303	Principles of Marketing	3 ch
BA 2504	Introduction to Organizational Behaviour	3 ch
BA 2663	Technology Fundamentals of Electronic Commerce	3 ch
BA 3125	Industry Impact of Electronic Commerce	3 ch
BA 3305	Marketing on the Internet	3 ch
BA 3672	Introduction to Management Information Systems	3 ch
BA 3718	Legal, Privacy and Security Issues in Electronic Commerce	3 ch
BA 4506	Organizations and Electronic Commerce	
Plus 3 credit hours of electives chosen from the following:		
BA 3126	Frontiers in E-Commerce I	3 ch
BA 3328	Consumer Behaviour	3 ch
BA 4108	Management of New Enterprise	3 ch
BA 4109	Management of Online Business	3 ch
BA 4223	Accounting Information Systems	3 ch
BA 4866	Management of Technology	3 ch
CS 2773	Java Programming for the Internet	3 ch
ICS 2001	Introduction to Information and Communication Studies	3 ch
Or any other three hours on approval		3 ch
Total elective credit hours		3 ch
		33 ch

Certificate in Human Resource Management

Admission to the Certificate in Human Resource Management program will require a minimum of either:

1. 30 credit hours at a recognized postsecondary institution with a minimum cumulative grade point average of 2.7 (B-) in all course work completed, or
2. At least 24 months of relevant work experience in the human resource area to be approved on an individual basis by the Faculty of Business in consultation with Organizational Behaviour/Human Resource Management faculty.

Because the courses offered in this program are largely upper level, the above admission criteria will be waived only in the most exceptional circumstances. However, if an applicant to the program believes that his or her application deserves special consideration related to either of the criteria above, he or she may submit a Permission and Request form to the Faculty of Business undergraduate studies office with an explanation for the reason for the request.

REQUIREMENTS:

The Certificate in Human Resource Management will require the successful completion of 10 term courses (30 credit hours) as detailed below. For those candidates who have already received credit for more than fifteen credit hours of required courses, course selections may be made from the list of electives as replacements for any credit hours above fifteen.

A Certificate in Human Resource Management will be awarded to individuals who:

a. achieve a cumulative grade point average of at least 3.0 (B) over 24 credit hours required, (excluding BA 1605 and BA 2606); and
b. successfully complete (with C or better):

BA 1605	Business Decision Analysis I (See Note A)	3 ch
BA 2504	Introduction to Organizational Behaviour	3 ch
BA 2606	Business Decision Analysis II	3 ch
BA 2758	Employment Law	3 ch
BA 2858	Introduction to Human Resource Management	3 ch
BA 3813	Introduction to Industrial Relations	3 ch
BA 4829	Research Methodology	3 ch
BA 4898	Strategic Human Resource Policy	3 ch
Plus 6 credit hours of electives chosen from the following:		
BA 4813	Negotiations and Dispute Resolution	3 ch
BA 4853	Recruitment and Selection	3 ch
BA 4854	Training and Development	3 ch
BA 4855	Compensation Structure Development	3 ch
BA 4856	Evaluating and Rewarding Employee Performance	3 ch
BA 4857	Management of Occupational Health and Employee Wellness	3 ch
BA 4858	International Human Resource Management	3 ch
BA 4866	Management of Technology	3 ch
	Total elective credit hours	6 ch
		30 ch

NOTES: The normal prerequisite will be waived for students registered in this program.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

Department of Computer Science and Applied Statistics

General Office:	Sir Douglas Hazen Hall, Room 305
Mailing Address:	Department of Computer Science and Applied Statistics, University of New Brunswick, 100 Tucker Park Road, Saint John, N. B., Canada, E2L 4L5
Phone:	(506) 648-5970
Fax:	(506) 648-5799
Email:	csas@unbsj.ca
Website:	http://www.unbsj.ca/sase/csas/

FACULTY

Chair: Dr. Lawrence E. Garey

- Garey, Lawrence E., BSc (St FX), MA, PhD (Dal), Prof & Chair - 1971
- Gupta, Rameshwar D., BSc, MSc (Meerut), MA, PhD (Dal), Prof - 1980
- Kaser, Owen, BCSS (Acad), MS, PhD (SUNY, Stony Brook), Assoc Prof - 1993
- Light, Janet, BEng (Madras), MEng (Bharathiar), PhD (Avinashilingam), Asst Prof - 2002
- Mahanti, Prabhat, BSc (Calc.), MSc, PhD (Indian Inst. of Technology), Prof - 2001
- Shaw, Ruth, BScDA, MScCS, PhD (UNB), Prof - 1986
- Tasse, Josee, BScCS (Montr.), PhD (McG.), Assoc Prof - 1997
- Webb, Hazel, BScDA (UNB), Instructor - 2002

Curriculum:

This is a four year undergraduate program leading to a Bachelor of Science in Computer Science. Both honours and majors are available through the specializations. A set of core courses and some student selected courses comprise the requirements for the degree. For general regulations on admission, please consult the appropriate section of the University calendar. Transfer into the BScCS from another UNB degree program is not permitted if the GPA for the most recent assessment period is below 2.0. For transfer from another university, a CGPA equivalent to 2.0 at UNB is required.

Regulations:

1. The total curriculum consists of a minimum of 141 credit hours.
2. For students admitted to the programme before May 2003, a grade of C or better is required for prerequisite programme courses. Students who fail to attain a C or better in such a course must repeat it until that grade level is attained. For students admitted to the programme in May 2003 or after, a grade of C or better is required in all required core courses, all courses offered for specializations or honours, and all CS courses.

3. Overall, a minimum of 50 ch of upper-level courses are required.

The basic degree curriculum consists of a set of core requirements plus elective courses. It is expected that students will take four (4) years of study at 5 term courses per term to complete the program. The specific requirements are listed below:

MATH 1003	Intro to Calculus I
MATH 1013	Intro to Calculus II
MATH 2213	Linear Algebra
STAT 1793	Intro to Applied Statistics
BA 2123	Intro to Electronic Commerce
BA 3718	Legal, Privacy, and Security Issues in Electronic Commerce
CS 1073	Intro to Computer Programming in Java
CS 1083	Computer Science Concepts (Java)
CS 1303	Discrete Structures I
CS 2003	Computer Architecture and Assembly Programming
CS 2013	Software Engineering I
CS 2113	Scientific Computing
CS 2303	Discrete Structures II
CS 2403	Operating Systems Principles I
CS 2803	Switching Theory and Logical Design
CS 3323	Intro to Data Structures
CS 3813	Computer Organization and Architecture
CS 3913	Algorithms I
CS 3983	Technical Report I
CS 4613	Programming Languages
CS 4983	Technical Report II or CS 4993 (Honours Project)

At least one of:

CS 2513	Intro to Information Systems
CS 3123	High-Speed Numerical Computation
CS 3893	Computer Networking

At least two of:

CS 3033	Software Design and Development
CS 3513	Database Management Systems I
CS 4033	Software Project Management and Quality Assurance
CS 4073	Software Process Improvement
CS 4083	Leading-Edge Technology in Software Development
CS 4093	Team Software Development Project
CS 4103	Parallel Processing Numerical Algorithms
CS 4113	Advanced Scientific Computing
CS 4123	Topics in High-Performance Scientific Computing and Visualization
CS 4525	Database Management Systems II
CS 4843	Wireless and Mobile Computing
CS 4913	Theory of Computation
CS 5065	Introduction to Functional Programming

Mathematics and Statistics Core Requirement: At least one three credit hour upper-level MATH/STAT elective

Arts Core Requirements: At least fifteen credit hours of Arts electives (at least 3ch beyond first-year level), to be selected from a list available at the Department of Computer Science and Applied Statistics.

Science/Engineering Electives: At least eight credit hours of Science, which must include a lab component, from course combinations normally chosen from the following list:

- CHEM 1041 / CHEM 1046 / CHEM 1072 / CHEM 1077 ;
- GEOL 1044 / GEOL 1074 ;
- PHYS 1917 / EE 1713 ;
- PHYS 1000 ;
- BIOL 1001 / BIOL 1012 / BIOL 1017 .

Areas of Specialization:

The basic degree is obtained by satisfying the basic curriculum outlined above. In addition to the basic degree, three specializations or curriculum options are described:

1. **Specialization in High-Performance Scientific Computing**
2. **Specialization in Software Engineering, and**
3. **Specialization in Networking**

To obtain a specialized degree, students must complete all required core courses and all courses in the chosen area of specialization, and they must obtain a cumulative grade point average of 2.5 or greater.

SPECIALIZATION IN HIGH-PERFORMANCE SCIENTIFIC COMPUTING

Required Courses

CS 3113	Introduction to Numerical Methods
CS 3123	High-Speed Numerical Computation
CS 4103	Parallel Processing Numerical Algorithms
CS 4113	Advanced Scientific Computing
CS 4123	Topics in High-Performance Scientific Computing and Visualization

SPECIALIZATION IN SOFTWARE ENGINEERING

Required Courses

CS 4525	Database Management Systems II
STAT 3093	Probability and Mathematical Statistics II

In addition, at least three (3) of the following four (4) courses must be completed.

CS 4033	Software Project Management and Quality Assurance
CS 4073	Software Process Improvement
CS 4083	Leading-Edge Technology in Software Development
CS 4093	Team Software Development Project

Note: The following courses have to be selected from the core

studies in order to meet the prerequisites:

CS 3033	Software Design and Development
CS 3513	Database Management Systems I
STAT 3083	Probability and Mathematical Statistics I

Note: The Specialization in Software Engineering is not an accredited engineering program and does not lead to registration as a Professional Engineer.

SPECIALIZATION IN NETWORKING

Required Courses

CS 3893	Computer Networking
CS 4843	Wireless and Mobile Computing

In addition, at least three (3) of the following four (4) courses must be completed.

MATH 3343	Networks and Graphs
CS 3123	High Speed Numerical Computation
CS 4893	Network Programming
CS 4713	Fundamentals of Simulation

Honours Degree Curriculum, Basic and Specialized

Students in the BScCS degree programme may elect, after their first or second year, an Honours degree programme, with or without a specialization. Students who satisfy the requirements for an honours and/or specialized degree will have that designation on their final transcript. The honours degrees are designed to meet international ACM/IEEE standards, preparing students for graduate work at most North American institutions.

The requirements for the basic BScCS degree must be met. Within the constraints of those basic requirements, the student must complete:

- CS 4913 : Theory of Computation
- CS 3113 : Introduction to Numerical Methods
- 15 ch in Science
- CS 4xxx (4ch) A fourth year CS elective, excluding CS 4613, CS 4993 , and CS 4913 .
- CS 4993 with a grade of B or better, in lieu of CS 4983 .
- It is recommended that PHYS 1000 or the EE 1713 / PHYS 1917 pair be chosen.

An honours degree with specialization requires that the student meet the requirements of both the honours degree and the specialization. It further requires:

- **Honours in High-Performance Scientific Computing**: STAT 3083 , and STAT 3093 .
- **Honours in Software Engineering**: STAT 3703 .
- **Honours in Networking**: no additional courses required

A cumulative grade point average greater than or equal to 3.0 is required to achieve the honours degree. Students who satisfy the requirements for an Honours degree will receive "First Class Honours" if their CGPAs are greater than or equal to 3.5. If their CGPAs are greater than or equal to 3.0 and less than 3.5, they will receive "Second Class Honours".

Certificate in Computing

This certificate programme is designed to provide individuals, especially working adults, with an opportunity to acquire the formal background necessary to become effective participants in the Information Technology Industry. Since the courses taken in the Certificate are also appropriate for the BScCS, students who later decide to pursue a BScCS will normally be able to transfer their credits into that programme.

Although the scheduling of courses cannot be guaranteed, it is likely that the Certificate can be completed on a part-time basis in five terms. Typically, the 1000-level courses are available in the evening.

The Certificate is also available to students who do not meet the entrance requirements of the BScCS; in fact, there are no specific entrance requirements except the formal approval of the Department of Computer Science & Applied Statistics. However, students who do not have NB Advanced Math 120 will have to pass Math 1863 before they take the required CS courses.

Core Courses

CS 1073	Introduction to Computing in Java
CS 1083	Computer Science Concepts (Java)
CS 1303	Discrete Structures I
CS 2013	Software Engineering I
CS 2513	Introduction to Information Systems
CS 2617	C/C++ for Programmers (1ch)
CS 2618	Fortran for Programmers (1ch)
CS 3323	Introduction to Data Structures
ICS 2001	Introduction to Information and Communication Studies

Electives :(At least 12ch required)

Electives may be chosen from any of the 2000-, 3000-, or 4000-level Computer Science courses. CS 2773 is an acceptable elective, although it cannot be credited toward a later BScCS or BCS or BDA degree.

A grade of C or better is required in all courses credited toward the Certificate.

BACHELOR OF DATA ANALYSIS

General Information

The Data Analysis program is by design an interdisciplinary program involving core courses taken primarily from Mathematics, Statistics, Computer Science and Data Analysis. The core subjects are particularly relevant to the collection, treatment and analysis of data encountered in other academic disciplines as well as in business, industry, government and other areas. Emphasis is placed on the statistical methods and modern computing techniques of handling these data and the design and application of mathematical models.

This four year degree program is offered in cooperation and in conjunction with other Departments on the campus.

For general regulations on admission, please consult the appropriate section of the University calendar. Transfer into the BDA from another UNB degree program is not permitted if the GPA for the most recent assessment period is below 2.0. For transfer from another university, a CGPA equivalent to 2.0 at UNB is required.

General Regulations

It is recommended that students read the General University Regulations, Section B of the calendar, and in particular the subsection headed Grading System and Classification.

Curriculum

The basic curriculum of the degree consists of a specified set of core courses and a set of regulations governing the choice of others. A student's program is chosen in consultation with a faculty advisor.

I. Required Courses

CS 1073 , CS 1083 , CS 1303 *, CS 2013 , CS 2113 ; MATH 1003 , MATH 1013 , MATH 2003 , plus at least one of MATH 2013 , MATH 2213 ; STAT 1793 , STAT 3083 , STAT 3093 ; DA 4993 .

II. Regulations Governing Course Selection

1. At least 12 ch of courses selected from CS 3033 , CS 3113, CS 3123 , CS 3323 , CS 3513 , CS 3813 , CS 3893 , CS 3913 , CS 4033 .
2. At least 6 ch of courses selected from STAT 3703 , STAT 4043 , STAT 4203 , STAT 4243 , STAT 4703 .
3. At least 6 ch of courses selected from CS 4113 , MATH 3303 , MATH 3343 .
4. At least 9 ch of additional credits chosen from upper level Computer Science, Data Analysis, Mathematics and Statistics courses.
5. At least 6 ch from each of two disciplines' offerings excluding Mathematics, Computer Science, Statistics, and Data Analysis.
6. At least 12 ch of upper level courses in a single discipline other than Mathematics, Computer Science, Statistics, and Data Analysis.
7. At least 30 ch of additional credits, chosen in consultation with the Department of Computer Science and Applied Statistics or the Department of Mathematical Sciences.
8. For students admitted to the programme before May 2003, a grade of C or better is required in any CS, MATH, STAT, or DA course used as a prerequisite. Effective for students admitted to the programme in May 2003 or after, a grade of C or better is required in all required courses, all courses selected under II.1 - II.6, all courses used toward a major, and all CS, MATH, STAT, or DA courses.

* students taking the Mathematics Major should take MATH 2203 instead of CS 1303

An example of what would typically be taken by a student in the first year of the degree program follows:

MATH 1003	Intro to Calculus I	(1st term)
MATH 1013	Intro to Calculus II	(2nd term)
CS 1303	Discrete Structures I	(1st term)
CS 1073	Intro to Computer Programming in Java	(1st term)
CS 1083	Computer Science Concepts (Java)	(2nd Term)
STAT 1793	Intro to Applied Statistics	(2nd Term)
Plus electives equivalent to 4 term courses.		

Computer Science Major

A student in the BDA degree who wishes to major in Computer Science must complete the following courses:

a. MATH 2213
b. CS 2003 , CS 2303 , CS 2403 , CS 2803 , CS 3323 , CS 3513 , CS 3813 , CS 3913 , CS 4613
c. Three upper-level CS or DA courses chosen in consultation with the Department of Computer Science and Applied Statistics. These courses are in addition to those in (a)-(b). CS 3893 and CS 4525 highly recommended.

Economics Major

A student in the BDA degree who wishes to major in Economics must complete a minimum of 36 ch in Economics as follows:

a. ECON 1013 , ECON 1023 , ECCON 2013 , ECON 2023 , ECON 3013 , ECON 3023
b. At least 18 ch in additional upper level Economics courses, to be chosen in consultation with the Department of Social Sciences.

Mathematics Major

A student in the BDA degree who wishes to major in Mathematics must complete a minimum of 48 ch in Mathematics or approved substitutes as follows:

1. a. MATH 1003 , MATH 1013 , MATH 2003 , MATH 2013, MATH 2203 , MATH 2213
   b. MATH 3213 , MATH 3713 , MATH 3733 , STAT 3083, STAT 3093

c. At least five upper level Mathematics courses. A maximum of two courses from CS 3113 , DA 4123 , and an upper level Statistics course may count toward the five courses.

2. In addition, at least two courses in Computer Science are required.

NOTE: Suggested elective for first year is STAT 1793 (or equivalent).

Statistics Major

A student in the BDA degree who wishes to major in Statistics must complete a minimum of 48 ch in Statistics or approved substitutes as follows:

a. MATH 1003 , MATH 1013 , MATH 2003 , MATH 2013 , MATH 2213 , STAT 1793
b. MATH 3713 , MATH 3733 , STAT 3083 , STAT 3093
c. At least five upper level Statistics courses. An upper level Mathematics course may count towards the five courses.

At least two courses in Computer Science are required.

Certificate in Data Analysis

The Certificate in Data Analysis is offered to afford individuals an opportunity to study the basic skills in mathematics, statistics, computer science and data analysis. The program will be of particular interest to those who wish to gain an insight into the way in which computer programs are developed and how they can be used effectively in the analysis of both scientific and business data.

Subject to the General Regulations listed below, the certificate program is open to all interested individuals. There are no specific academic prerequisites, but only a desire and willingness on the part of each student to engage in learning at a university level.

All courses in the certificate program (with the exception of MATH 1863) are degree credit courses and, subject to any minimum grade requirements, can be used as credit courses in the Bachelor of Data Analysis degree.

A certificate will be awarded to a student upon successful completion of the program.

General Regulations

1. Each person entering the program must have the approval of the Department of Computer Science and Applied Statistics or the Department of Mathematical Sciences.
2. A maximum of 12 ch or the equivalent may be transferred from another degree or similar program, whether taken at this university or elsewhere.
3. A certificate will not be awarded to a student enrolled for a degree but students who have withdrawn from an undergraduate degree program may apply for the certificate.
4. Normally a student must have grade 12 mathematics to enter the program. Math 1863 may be taken as one of the optional courses in the certificate program by those students who do not have grade 12 mathematics from high school or feel that they are weak in the subject. It should be noted that MATH 1863 does not count as a credit course in the BDA degree.
5. To earn a certificate a student must successfully complete 34 ch in approved courses specified for the certificate and must achieve a grade point average of at least 2.0. It should be noted that students must obtain a grade of C or better in certain courses if they are to be used as prerequisites for subsequent courses.

Requirements

Students must complete at least 34 ch as follows:

1.	MATH 1003 :	Intro to Calculus I	3 ch
	STAT 1793 :	Intro to Applied Statistics	3 ch
	CS 1073 :	Intro to Computer Programming in Java	4 ch
2.	At least 15 chosen from:		
	MATH 1013 :	Intro to Calculus II	3 ch
	CS 1083 :	Computer Science Concepts (Java)	4 ch
	CS 1303 :	Discrete Structures I	4 ch
	CS 2013 :	Software Engineering I	4 ch
	CS 2113 :	Scientific Computing	4 ch
	CS 2513 :	Intro to Information Systems	4 ch
	DA 3203 :	Data Analysis using Statistical Software Pkgs.	4 ch
	Other choices may be approved in consultation with the Department of Computer Science & Applied Statistics or the Department of Mathematical Sciences.		
3.	Sufficient additional credits, chosen in consultation with the Department of Computer Science & Applied Statistics or the Department of Mathematical Sciences, to bring the total to 34 ch.		

Further information may be obtained by contacting the Department of Computer Science and Applied Statistics or the Department of Mathematical Sciences.

BACHELOR OF HEALTH SCIENCES

To be admitted to the Bachelor of Health Sciences (BHS) degree, students must be accepted by a Canadian Medical Association (CMA) accredited program in Nuclear Medicine, Radiation Therapy, Respiratory Therapy or Radiography or have completed such an accredited program.

To earn the degree, students must successfully complete 150 credit hours. Note: 77 credit hours are required to be taken at UNB and 75 credit hours are allotted on successful completion of the accredited program. Proof of acceptance to or completion of the accredited program must be submitted to the Registrars Office before entrance to the BHS program will be granted.

Students entering the University who have not yet been admitted to an accredited program should enroll in the B.Sc. program.

Required Courses:

YEAR 1:

- MATH 1003 / MATH 1013 ,
- BIOL 1001 / BIOL 1012 / BIOL 1017
- CHEM 1041 / CHEM 1046 / CHEM 1072 / CHEM 1077
- PHYS 1000
- PSYC 1003 / PSYC 1004

YEARS 2, 3, and 4:

In addition to the requirements of the appropriate accredited program, students must complete the following University courses:

- BA 2504
- one of SOCI 2376 , SOCI 2703 or GEND 2001
- HSCI 3032
- STAT 2263
- one of PSYC 3383 , PSYC 3693 , PSYC 3711 , PSYC 3723, PSYC 3724 or PSYC 3752 (PSYC 3711 is strongly recommended)
- NURS 4144
- PHIL 3133 and PHIL 3134
- HSCI 4091
- one (3ch) elective of 3000/4000 level PSYC, NURS or BIOL courses
- one (3ch) elective (any level)

Bachelor of Health Sciences Post Diploma Program

This program is open only to students who hold a diploma from an appropriate accredited program and are qualified to practice (as recognized by the appropriate national and provincial bodies) in an area of health sciences in which a BHS is offered.

Course requirements are the same as for the regular BHS degree, however students who have previously completed a first year of university studies at an Association of Universities and Colleges of Canada (AUCC) recognized university may apply for credit toward the BHS degree.

BACHELOR OF NURSING

Department of Nursing

General Office:	K.C. Irving Hall, Room 329
Mailing Address:	UNBSJ Department of Nursing, 100 Tucker Park Road, P.O. Box 5050, Saint John, N. B., Canada, E2L 4L5
Phone:	(506) 648-5542
Fax:	(506) 648-5784
Email:	nursing@unbsj.ca
Website:	http://www.unbsj.ca/sase/nursing/

FACULTY

Chair: Professor Roberta Clark

- Buchanan, Judith, RN Dip (StJosSN), MHSc (McM.), Sr Instructor - 2002
- Carr, Tracy, BN (UNB), MSc (Tor), Assoc Prof - 1995
- Clark, C. Roberta, RN Dip (Miramichi), BN (UNB), MN (Dal), Assoc Prof & Chair -1992
- Furlong, Karen, RN Dip (SJSN), BN (UNB), Instructor 2000
- Hahn, Trudean, RN Dip (SJGH), BN, MN (Dal), Sr Instructor - 1995
- Hicks-Moore, Sandee, BN (Dal), MN (UNB), Asst Prof - 2001
- Logue, Nancy, BN (UNB), MN (Dal), Sr Instructor - 1995
- Mallory, Patricia, RN Dip (StJosSN), BN, MN (Dal), Instructor 1999
- McCloskey, Rose, BSc (Acad.), RN Dip (Hfx.Inf.SN), BN, MN (UNB), Asst Prof 2000
- McCormack, Dianne, BN (Nfld.), MSc (McG.), Prof 1998
- Nugent, Linda, RN Dip (VG Hosp), BN (Dal), MScN (Tor), Prof - 1980
- OBrien-Larivee, Catherine, BN (UNB), MSc Applied Nursing (McG) Instructor 2004
- Pastirik, Pamela, BN (UNB), MScN (Br.Col.), Asst. Prof. - 2002

Program Goal

The goal of the Nursing Programs at UNBSJ is to educate caring professional nurses. Faculty believe that professional nursing encompasses three interrelated areas of competency: utilization of knowledge (knowing); accountable actions (doing); and attitudes and ethics expected of a nurse beginning to practice (being).

Basic BN Program

In 1989, the membership of the Nurses' Association of New Brunswick (NANB) voted to establish a baccalaureate degree in Nursing as the entry level to the profession by the year 2000. On December 15th, 1994, the Minister of Advanced Education and Labor announced the government's support of this goal by transferring the total responsibility for nursing education in New Brunswick to the universities. In the Fall of 1995, the Basic Nursing Program at the Saint John campus of UNB admitted its first students.

The basic degree program spans four years of general and professional education. On completion of the program, graduates are eligible to write the Canadian Registered Nurse Examination to procure registration in the Province of New Brunswick. Those who are successful are eligible to obtain

registration across Canada and in other countries through reciprocal agreements.

UNBSJ's four-year basic Baccalaureate Program in Nursing includes a majority of course work in nursing, and courses from the liberal arts and sciences. Many nursing courses provide opportunities for clinical practice. Students work with individuals, families, groups and communities, and with persons at various stages of the life cycle and in a variety of settings.

Costs

There are costs in addition to those listed in Section C of this Calendar. For example, costs associated with intersession, preceptorship and room and board for off-campus placements may be incurred. Uniforms, equipment, nursing pin, registration examination fees, CPR Certifications, and travel costs to and from practice areas are expenses unique to the Nursing program.

Credit Hour Requirements for Nursing Programs

Basic Degree Program	Minimum 140 ch
BN/RN Program	Minimum 57 ch

Regulations

University Regulations

It is advisable to read carefully Section B of this Calendar, General University Regulations, and in particular the subsection headed Grading and Classification.

Transfer and mature students are particularly advised to consult Section B. Students applying for a second undergraduate degree will take Nursing courses and the required Arts and Science courses in the program, if they have not already taken them. Questions concerning the application of regulations must be made to the Registrar in writing.

Any point not covered in the following regulations will be governed by the General University Regulations.

Admission Policy on English Language Proficiency

The language of our program is English and prospective students whose mother tongue is not English may prove English language proficiency in one of the following ways:

i. Minimum TOEFL score on a paper-based test of 600.
ii. Minimum CanTEST scores of 5.0 on reading and listening, and 4.5 on writing.
iii. A minimum of 4 years full-time study in the English language in Canada.

Notwithstanding the above, students must demonstrate competence in speaking, listening, reading and writing English to meet course requirements.

General Regulations

1. University regulations state that a student whose assessment grade point average (GPA.) falls below 2.0 will be placed on academic probation (UNB Calendar: Standing and Promotion Requirements). In addition to this regulation, a Nursing student whose assessment GPA. falls below 1.7 will be required to withdraw from the program.

2. The following grades are required in the Nursing program:
   - at least a C grade in all required Nursing classroom courses
   - a credit in all required Nursing clinical courses
   - at least a C grade in all required non-nursing courses
   - at least a D grade in all electives, both Nursing and non-nursing
3. A student must receive a passing grade in all required nursing and non-nursing courses in each year of the program before proceeding to the next year of the program.
4. A student who fails a clinical course may normally be allowed to repeat the course; a student who twice fails to achieve a passing grade in any Nursing clinical course will be required to withdraw from the Nursing program.
5. Student actions that compromise patient safety and serious breaches of conduct by the student will be reviewed within the Department; the student may be required to withdraw from the program.
6. A student must receive a credit in Nursing clinical course and at least a C in its co-requisite Nursing classroom course before proceeding to subsequent clinical courses. In instances where a Nursing classroom course and Nursing clinical course are co-requisites, a failure in one results in a requirement to repeat and pass both courses.
7. A student who has been absent from Nursing clinical courses for 1 year or longer may be required to repeat and pass relevant Nursing courses as determined by the Department.
8. A student who fails to receive a credit in NURS 4152 Concentrated Clinical Practice III will be required to repeat and pass relevant clinical and classroom courses under the supervision of Nursing faculty before being permitted to repeat the Concentration.
9. Basic degree students must complete the program within 6 years of enrolment.

Curriculum for BN (Basic) Students

(See Section F for descriptions of these courses.)

Year I

Term 1: NURS 1011 (3 ch); NURS 1032 (3 ch); BIOL 1411 (3 ch); BIOL 1416 (2 ch); PSYC 1003 (3 ch); Open Elective (3 ch).

Term 2: NURS 1225 (3 ch); NURS 1235 (4 ch); BIOL 1412 (3 ch); BIOL 1417 (2 ch); PSYC 1273 (3 ch); Open Elective (3 ch).

Year II

Term 1: NURS 2041 (4 ch); NURS 2135 (3 ch); NURS 2156 (4 ch); BIOL 2831 (3 ch); STAT 2263 (3 ch).

Term 2: NURS 2063 (5 ch); NURS 2132 (3 ch); NURS 2145 (3 ch); NURS 2177 (3 ch); NURS 2188 (4 ch); BIOL 2852 (3 ch).

Year III

Term 1: NURS 3033 (4 ch); NURS 3071 (3 ch); NURS 3073 (6 ch); NURS 3092 (3 ch).

Term 2: NURS 3112 (4 ch); NURS 3122 (3 ch); NURS 3123 (6 ch); BIOL 3251 (3 ch); NURS 3703 (5 ch).

Year IV

Term 1: Open Elective* (3 ch); Open Elective* (3 ch); NURS 4061 (3 ch); NURS 4062 (3 ch); NURS 4144 (3 ch).

Term 2: NURS 4132 (3 ch); NURS 4133 (2 ch); NURS 4142 (3 ch); NURS 4152 (7 ch).

*At least 3 ch must be beyond an introductory level. Only 3 of the 4 electives may be chosen from the same discipline.

Bachelor of Nursing Degree for Registered Nurses

This program is for graduates of two- and three-year diploma programs. Requirements for admission are as stated in the University Regulations for Nursing. Applicants must have successfully completed a diploma program in nursing and be eligible for active registration with the Nurses Association of New Brunswick prior to being admitted to the Post-RN (BN/ RN) Program.

Many students choose to pursue this degree on a part-time basis. Part-time students are advised to apply for admission to the BN/RN program as soon as they take their first university course.Part-time students will normally be required to complete 3 ch of university course work with a cumulative grade point average of 2.0 or better before enrolling in the introductory Nursing course. Full time BN/RN students must complete the Program within 6 years of enrollment. Part-time BN/ RN students must complete the Program within 10 years of enrolling in the first nursing course.

Required Non-Nursing Courses (6 ch)

BIOL 2853 (3ch); STAT 2263 or equivalent (3 ch)

Electives (18 ch)

1. Students may take a minimum of 9 ch of open electives.
2. Students may take a maximum of 9 ch of nursing electives.
3. No restrictions are placed on the level at which elective courses are taken; students are advised to take upper-level electives where and when possible.

Required Nursing Courses (33 ch)

(See Section F of the Calendar for course descriptions)

NURS 2011 (3 ch); NURS 3032 (4 ch); NURS 3092 (3 ch); NURS 3211 (3 ch); NURS 3215 (3 ch); NURS 4061 (3 ch); NURS 4062 (3 ch); NURS 4132 (3 ch); NURS 4133 (2 ch); NURS 4142 (3 ch); NURS 4144 (3 ch).

Nursing Electives (available in the BN and the BN/RN Programs):

A series of electives in both clinical and non-clinical areas will be developed based on faculty expertise and societal trends. (Subject to enrolment limitations, faculty resources, and prior faculty approval, these Nursing electives may be open to students not enrolled in the BN or BN/RN programs.)

Students may choose from the following (additional Nursing Electives are listed in the Fredericton section of the Calendar). Only select nursing electives will be available in any academic year.

NURS 3053	Gendered Experiences in Health Care
NURS 3081	Theoretical Foundations in Nursing
NURS 3144	Client Teaching
NURS 4184	Professional Values, Ethical Issues and Nursing Practice
NURS 4234	Independent Study
NURS 4254	Issues in Transcultural Health

Certificate Programs

The Faculty of Nursing offers certificates in Mental Health Nursing and Critical Care Nursing which are open to BN/RN students and BN graduates. For further information contact the Department of Nursing.

BACHELOR OF SCIENCE

FACULTY OF SCIENCE, APPLIED SCIENCE AND ENGINEERING

General Office:	Ganong Hall, Second Floor, Room 231
Mailing Address:	Faculty of Science, Applied Science and Engineering, University of New Brunswick, 100 Tucker Park Road, Saint John, N. B., Canada, E2L 4L5
Phone:	(506) 648-5615
Fax:	(506) 648-5650
Email:	sci-eng@unbsj.ca
Website:	http://www.unbsj.ca/sase/

FACULTY

Dean: Dr. Deborah MacLatchy

Department of Biology

- Chopin, Thierry B. R., BSc (Lyon), MSc (Brest), DEA (Paris), PhD (Brest), Prof & Chair - 1989
- Costello, Mark, Adjunct Prof- 2003
- Dowding, Barbara, BSc, MSc (Nfld.), Sr Instructor - 2001
- Frego, Katherine, BSc (Winn.), MSc (Manit.), PhD (Tor) Prof - 1993
- Halcrow, Kevin, BSc (Manc.), MSc, PhD (Dal), Honorary Research Prof - 1999
- Houlahan, Jeff, BA (Carl), BSc, PhD (Ott.), Asst. Prof - 2003
- Hunt, Heather, BSc, PhD (Dal), Asst. Prof. - 2002
- Johnson, John, BSc, MSc, PhD (UNB), Prof - 1989
- Kidd, Karen, BSc (Guelph), PhD (Alta), Asso Professor - 2004
- Kieffer, James, BSc (Ott.), MSc, PhD (Qu.), Assoc Prof, University Teaching Scholar - 1996
- Klassen, Gregory, BSc, MSc (Guelph), PhD (Tor), Adjunct Prof - 2002
- Litvak, Matthew K., BSc (York), MSc, PhD (Tor), Prof - 1995
- MacDonald, Bruce A., BSc (Acad.), MSc (UNB), PhD (Nfld.) Prof - 1992
- MacLatchy, Deborah L., BSc (Acad.), PhD (Manit.), Prof & Dean - 1994
- Methven, David, BSc (Mt.All.), MSc, PhD (Nfld.), Asst. Prof. - 2002
- Miron, Gilles, Adjunct Prof - 2003
- Munkittrick, Kelly, BSc, MSc(Guelph), PhD(Wat), Prof & Canadian Research Chair and Associate Director of Canadian Rivers Institute - 2001
- Page, Fred, Adjunct Prof - 2003
- Pohle, Gerhard, Adjunct Prof - 1996
- Robinson, Shawn, Adjunct Prof - 2002
- Rochette, Rémy, BSc, PhD(Laval), Asst Prof -2001
- Roff, John, Adjunct Prof. - 2002
- Terhune, John M., BScAgr, MSc (Guelph), Lic Scient (Aarhus), Prof 1975
- Trippel, Edward, Adjunct Prof - 2001
- Turnbull, Stephen D., BSc (Manit.), BEd, MSc, PhD (UNB), Sr Instructor & Director of Animal Care (Saint John) - 1994

Department of Computer Science & Applied Statistics

- Garey, Lawrence E., BSc (St FX), MA, PhD (Dal), Prof - 1971
- Gupta, Rameshwar D., BSc, MSc (Meerut), MA, PhD (Dal), Prof - 1980
- Kaser, Owen, BCSS (Acad), MS, PhD (SUNY, Stony Brook), Assoc Prof - 1993
- Light, Janet, BEng (Madras), MEng (Bharathiar), PhD (Avinashilingam), Asst Prof - 2002
- Mahanti, Prabhat, BSc (Calc.), MSc, PhD (Indian Inst. of Technology), Prof - 2001
- Raven, Andrew, BSc, MSc (Guelph), Instructor - 2003
- Shaw, Ruth, BScDA, MScCS, PhD (UNB), Prof - 1986
- Tasse, Josee, BScCS (Montr.), PhD (McG.), Assoc Prof - 1997
- Thompson, Caryn, BScAgr, MSc (Guelph), PhD (Oregon State), Assoc Prof & Chair - 2001
- Turner, Christopher, BSc (Tor.), MSc (UNB), PhD (Qu), Instructor - 2003
- Webb, Hazel, BScDA (UNB), Instructor - 2002

Department of Mathematical Sciences

- Alderson, Timothy, BSc, Msc, PhD(UWO), Asst Prof - 2000
- Belacel, Nabil, Adjunct Prof (Joint Appt: Faculty of CS UNBF) - 2003
- De'Bell, Keith, BSc (Kings), MSc, PhD (Westfield), Prof - 1999
- Hamdan, Mohammad, BSc, MSc, PhD (Windsor), Prof 1991
- Kamel, Merzik T., BSc (Assiut), MSc, PhD (Windsor), Prof & Chair- 1981
- Stoica, George, Dip., MSc(Bucharest), PhD (Paris), Assoc. Prof.- 2000

Department of Physical Sciences

- Backman, Philip J., BSc (Dal), MSc (UND), Instructor - 2004
- Feicht, Anton, BSc, PhD (UNB), Asst Prof - 2001
- Fullerton, Frances, BSc (UNB), Sr Teaching Assoc 1986
- Humphries, Robyn E., GRIC (Teesside Poly), MSc (Sus), PhD (LUT), Assoc Prof - 1980
- Kayser, Margaret, BSc, MSc, PhD (Ott), Prof 1986
- Leung, Chi -Hong, BSc, BScSpec (HK), PhD (Manit), Prof - 1979
- Logan, Alan, BSc, PhD (Dunelm), Honorary Res. Prof. - 2002
- Wilson, Lucy, BA (UNB), DEA, PhD (Univ.of Paris VI), Asst. Prof. - 2002
- Xiao, Shaorong, Cert. In IT, MSc, PhD (C.Lancs), Instructor 2001
- Xu, Li-Hong, BSc (Suzhou), PhD (UNB), Prof & Acting Chair - 1994

Students are strongly encouraged to read Section B of the Calendar for general regulations governing the degree. General information on the B.Sc. degree can also be found in Section G. of the Calendar.

In the Faculty of Science, Applied Science and Engineering, the minimum acceptable grade in a required course or course being used as a prerequisite is normally a grade of "C". Any student who fails to obtain a "C" or better in such a course must repeat the course (at the next regular session) until a grade of "C" or better is attained. Students will not be eligible for graduation until such deficiencies are removed, unless the course is a normal part of the final year of the program, and is being taken for the first time in the final year.

Students in the degree programs of Bachelor of Science, Bachelor of Science in Computer Science, Bachelor of Data Analysis, and Bachelor of Nursing, who complete the requirements for approved minor programs at UNB, will receive recognition of the minor upon completion of the respective degree program.

CURRICULUM

First Year

All properly qualified students entering the first year of the BSc program will normally complete the following courses:

1. CHEM 1041, 1046, 1072, 1077, MATH 1003, 1013, PHYS 1000* .
2. Two of: BIOL 1001, 1012, 1017, GEOL 1044, GEOL 1074, a minimum of 6ch in approved electives.

* PHYS 1000 is not required for B.Sc. Biology, Marine Biology, Environmental Biology, Psychology or Biology-Psychology degrees.

Note 1: All BIOL and GEOL courses listed above must be completed before graduation except for Saint John Majors in Marine Biology, Mathematics, Statistics, Psychology and Biology-Psychology.

Note 2: Students transferring to the Fredericton campus who have successfully completed BIOL 1001 , 1012 , 1017 and who will be taking no further Biology courses beyond first year will be allowed to complete the first year Fredericton Biology requirements by enrolling in BIOL 1006 .

Second and Succeeding Years

In the second and succeeding years sixteen options are available to the students. Eight of these, Biology, Chemistry, Environmental Biology, Geology, Marine Biology, Physics, Psychology, Mathematics and/ or Statistics lead naturally to specialization. Six interdepartmental programs, Biology-Chemistry, Biology-Mathematics/ Statistics, Biology-Psychology, Chemistry-Geology, Chemistry-Mathematics, and Chemistry-Physics are available. The remaining option, General Science, avoids specialization by providing a variety of choice in both Science and Arts electives.

Note: Students should note that the full four years required for a Major in Mathematics, Statistics, Psychology, Biology, Marine Biology, Environmental Biology, Biology - Psychology, Data Analysis and Computer Science, may be completed on the Saint John campus and that the Environmental Biology and Marine Biology programs are offered only on the Saint John campus. The full four years of a General Science option are also offered at Saint John.

BIOLOGY, ENVIRONMENTAL BIOLOGY, AND MARINE BIOLOGY OPTIONS

Honours and Majors Programs

Students planning on specializing in Biology, Environmental Biology or Marine Biology are requested to seek counselling within the Department of Biology. Courses required in the second year should normally be taken before the third year, and must be completed by the end of the third year. Students honouring in Biology, Environmental Biology or Marine Biology must take BIOL 4090 as one of their advanced Biology courses.

Students should note that courses offered by other disciplines form an important complementary part of the overall course of studies.

BIOLOGY OPTION

The following courses are required for all Biology, Majors and Honours students:

First Year

1. BIOL 1001 , 1012 , 1017 .
2. CHEM 1041 , 1046 , 1072 , 1077 .
3. MATH 1003 , 1013 .
4. GEOL 1044 , 1074 .
5. And a minimum of 6 ch in approved electives, for a total of 40 ch.

Second Year

1. BIOL 2125 , 2485 , 2585 , 2615 , Plus one of either 2015 , 2065 or 2245 .
2. CHEM 2401 or 2441 , STAT 2264 .
3. A minimum of 9 ch in approved electives.

It is expected that students will take a minimum of 36 ch during their second year.

Third and Fourth Years

1. 42 ch of advanced Biology courses. This can include BIOL 4090 and the two remaining second year elective Biology courses (BIOL 2015 , 2065 or 2245).
2. 18 ch of approved electives with at least a minimum 12 ch being from non-Biology electives.
3. A total of at least 136 ch is required for graduation.

Biology Majors can specialize in General Studies or Zoology. Information on the specific courses required for each of these specializations is available from the Department of Biology. Biology Majors completing more than 50 ch of upper level Biology courses must add these extra credit hours to the total required for graduation.

ENVIRONMENTAL BIOLOGY OPTION

All properly qualified students entering the first year of the BSc Environmental Major program will normally complete the following courses:

First Year

1. BIOL 1001 , 1012 , 1017 , 1302
2. CHEM 1041 , 1046 , 1072 , 1077
3. GEOL 1044
4. ECON 1013 , 1023
5. MATH 1003
6. A minimum of 3 ch in approved electives, for a total of 38 ch.

Second Year

1. BIOL 2125 , 2485 , 2585 , 2615 , plus one of BIOL 2015 , 2065 , 2245
2. CHEM 2401 , 2416 , 2422 , 2457
3. STAT 2264
4. ECON 3755

Third and Fourth Years

1. BIOL 3055 , 3565 , 4825 , 4855 , 4861 , 4875
2. SOCI 1001
3. 13 ch upper level Biology Grouped Electives
4. 6 ch electives non-Biology science courses, 9 ch electives Arts or Business, 12 ch electives.
5. A total of at least 141 ch is required for graduation.

MARINE BIOLOGY OPTION

All properly qualified students entering the first year of the BSc Marine Biology program will normally complete the following courses:

First Year

1. BIOL 1001 , 1012 , 1017 , 1202 .
2. CHEM 1041 , 1046 , 1072 , 1077 .
3. MATH 1003 , STAT 2264 .
4. GEOL 1044 .
5. A minimum of 6 ch in approved electives, for a total of 38 ch.

Second Year

1. BIOL 2125 , 2485 , 2585 , 2615 , plus one of BIOL 2015 , 2065 or 2245 .
2. CHEM 2401 or CHEM 2441 .
3. STAT 3264.

It is expected that students will take a minimum of 36 ch during their second year.

Third and Fourth Years

1. BIOL 3173 plus 42 ch from advanced Biology courses. This can include BIOL 4090 and the two remaining second year elective Biology courses (BIOL 2015, 2065 or 2245). 30 ch must be from courses designated as having a marine content including BIOL 3165 , 3215 , 3605 , 3663 , 3685 , 3755 , 3955 , 4215 , 4592 , 4645 , 4775 .
2. 18 ch of approved electives with at least a minimum 12 ch being from non-Biology electives.
3. A total of at least 138 ch is required for graduation.

Note Concerning Transfer to the Fredericton Campus

Students are strongly advised to seek academic advising from a member of the Biology Department on the Fredericton Campus prior to commencing the transfer process.

CHEMISTRY OPTION

The first two years of three UNBF programs are offered on the Saint John campus: **Major, Honours and Honours Co-op**. All three programs have national accreditation under the Chemical Institute of Canada and are acceptable for graduate work in Chemistry and/or Chemistry related fields. A Minor program is offered for students in other departments within and outside of the Faculty of Science, Applied Science and Engineering who are interested in a coherent package of chemistry courses.

The minimum credit hour requirements beyond first year are:

Major:	67 ch Chemistry, 6 ch Mathematics, 21 ch approved electives (total 94 ch)
Honours:	73 ch Chemistry, 6 ch Mathematics, 21 ch approved electives (total 100 ch)
Honours Co-Op:	73 ch Chemistry, 6 ch Mathematics, 21 ch approved electives (total 100 ch) and two work terms

Note: A minimum of 12 ch of the 21 ch of electives must be from the Faculty of Arts. 6 ch of the Faculty of Arts courses must be chosen from English 1200 , English 1500 Philosophy 2110 , 3241 , 3242 , Psychology 3752 or equivalents.

Major and Honours Program Second Year

CHEM 2201 / 2222 , 2237	Inorganic Chemistry
CHEM 2401 / 2422 / 2416	Organic Chemistry
CHEM 2601 / 2622 / 2637	Physical Chemistry
MATH 2003	Intermediate Math I or equiv.
MATH 2213	Linear Algebra or equiv.
Plus approved electives.	

Honours Program

Entry to the Honours program in second year is allowed, provided the prerequisite content has been met and a minimum cgpa of 3.0 has been obtained for all subjects taken within the degree program. A sessional gpa of 3.5 must be maintained in subsequent years. A student may be permitted to continue in the Honours program with a cgpa of 3.0 to 3.5 on a provisional basis, with the permission of the Department. The graduating Honours student must obtain a minimum cgpa of 3.5 for Division I standing and a minimum of 3.0 for Division II standing. Students should apply in writing to the Chair, Physical Sciences Department, no later than August 15th in any given year.

Honours Co-Op Second Year

In addition to courses listed above in Second Year, CHEM 2909 Workterm I (Summer after second year) is required.

Note: It is strongly recommended that Honours Co-Op students choose CHE 1004, 2004, 2503 and CS 1003 among their electives.

GEOLOGY OPTION

Major Program

The Geology major program requires concentration in Geology courses in the second, third, and fourth years. The second year program exposes the student to a broad spectrum of Geology courses and lays a common groundwork for all students. In the third and fourth years, further specialization in one of the sub-disciplines is allowed, but not mandatory. Students must consult with the Department prior to registration in the major program.

Honours Program

The minimum requirements are the same as the Geology majors program, with the addition of a Thesis Project GEOL 4900 .

Second Year

GEOL 2201, 2212, 2131, 2142, 2321, 2703; MATH 2003, 2013 or 2503, 2513; CHEM 2601 / 2622 .

A minimum of one half course (3 ch) approved by the Department.

GENERAL SCIENCE OPTION

Students taking the General Science option as offered on the Saint John campus are subject to all the general regulations which apply to students in the BSc program (except that the requirements for the first two years are considered as one unit).

First Two Years (Minimum 72 ch)

During the first two years of the program (or their equivalent), students must successfully complete a minimum of 72 credit hours as follows: BIOL 1001, 1012, 1017 or GEOL 1044/1074 (see Note 1); CHEM 1041, 1046, 1072, 1077, MATH 1003, 1013; PHYS 1000; CS 1803 (or equivalent); plus an additional minimum of 24 ch from BIOL, CHEM, GEOL, MATH, PHYS, PSYC or STAT (see Note 2); plus 9 ch selected from Arts, Business, Computer Science or Data Analysis.

Final Two Years (Minimum 72 ch)

During the third and fourth years of the program (or their equivalent), students must successfully complete a minimum of 72 ch as follows: A minimum of 48 ch at the upper level (courses at the 3 or 4 level) selected from BIOL, CHEM, MATH, PSYC and STAT, with at least 12 ch from each of two disciplines but no more than 24 ch in any one discipline. A minimum of 24 ch of approved electives, at any level, of which 12 ch must be selected from Arts, Business, Computer Science or Data Analysis. Suggested elective courses: PHIL 1053, PHIL 2110, PHIL 3241, PHIL 3242 .

Note 1: Both the BIOL 1001 , 1012 , 1017 combination and GEOL 1044 , 1074 must be completed before graduation. The course not taken as part of the compulsory requirements in the first two years can be used to fulfil part of the approved electives at any time in the program.

Note 2: Courses in the first two years should be selected in a manner which allows progression to the areas of concentration planned for the upper years.

For graduation, students will be listed in three divisions as for other BSc students, but a student achieving a cumulative grade point average of 3.5 or better will graduate with distinction.

Note 3: The General Science options offered on the two campuses differ from one another. The regulations governing the General Science option offered at UNBF are given in Section G.

MATHEMATICS OPTION

MATHEMATICS MAJOR

First Year (Minimum 39 ch)

As required under the BSc general regulations.

Second Year (Minimum 30 ch)

MATH 2003 , MATH 2013 , MATH 2203 , MATH 2213 plus electives equivalent to six term courses.

Third Year and Fourth Year (Minimum 69 ch)

a. MATH 3213 , MATH 3713 , MATH 3733 , STAT 3083 , STAT 3093 plus 15 ch of upper level MATH courses. (A maximum of two courses from CS 3113 , DA 4123 , and an upper level STAT course may contribute to these 15 ch.)
b. Plus 30 ch of upper level (3-4000 level) elective courses approved by the department.
c. An additional 9 ch of electives at any level.

NOTE:

a. Suggested elective for first year is STAT 1793 .
b. At least 6 ch of Computer Science are required in the program.

CALCULUS CHALLENGE EXAM

This examination which is held in early June is open to students registered in a Calculus course at a high school that has made arrangements with the Department of Mathematical Sciences. A fee will be charged.

Students who qualify for credit will receive a certificate entitling them to credit for and thereby exemption from Math 1003 when they register at UNBSJ. Upon the students acceptance of the credit, the letter grade of the exam will be recorded on their transcript. More information can be obtained from http://www.math.unbsj.ca .

CERTIFICATE IN MATHEMATICS FOR TEACHERS

The Certificate in Mathematics for Teachers is open to all interested students, however it is primarily intended for current and future school teachers for whom mathematics is a potential teachable subject, or ones who simply wish to expand their knowledge in the field of mathematics.

This Certificate can be taken as a stand-alone program or in conjunction with a degree program, with the approval of the appropriate faculty.

Candidates for admission to the Certificate must meet the Universitys requirements for admission to any of the faculties, or the requirements for admission as mature students.

The Certificate consists of 24 credit hours (8 courses) as outlined below. A grade of C or better is required in each of the courses.**Additional Requirements:** A minimum of two

Core Courses	
MATH 1003	Introduction to Calculus I
MATH 1013	Introduction to Calculus II
MATH 2213	Linear Algebra
MATH 2633	Fundamental Principles of Elementary School Mathematics
MATH 3093	Number Theory
MATH 3633	Fundamental Principles of School Mathematics

Mathematics or Statistics courses selected in consultation with the Department of Mathematical Sciences.

MATHEMATICS AND ECONOMICS OPTIONS

The motivation for the program is to equip students with the necessary analytical skill to pursue a graduate degree in either Economics or Mathematics. The combination of mathematics in their economics courses and the rigorous techniques from mathematics will aid students in their problem -solving skills.

First Year (Minimum 39 ch)

- As required under the B.Sc. General regulations.
- Students are strongly advised to take the required courses ECON 1013/1023 in their first year.

Second Year (30 ch)

- 2003 , 2013 , 2213 , ECON 2013 , 2023 , plus approved electives (STAT 1793 recommended) including a first-level course in computer programming.

Third and Fourth Years (69 ch)

Economics Requirements:

- ECON 3013, ECON 3023 plus 21 chs of economics courses or approved substitutes. ECON 3665 is highly recommended.

Mathematics Requirements:

- MATH 3713, MATH 3303, STAT 3083, STAT 3093;
- Three chosen from: MATH 3073, MATH 3243, MATH 3503, MATH 3733, CS 3113.
- Three chosen from: STAT 3383, STAT 3713, STAT 4043, STAT 4203, STAT 4243, 4703 .
- Plus an additional 12 ch of electives at any level.

Note:

1. Credit will not be given for both STAT 4703 and ECON 4645 .
2. Students who are interested in pursuing graduate work in Mathematics must take MATH 3733 .

PHYSICS OPTION

Two programs are offered:

1. **Honours:** This program is designed primarily for qualified students intending to pursue a postgraduate education. The Honours program requires more specialization and a greater overall course load than the Major program.
2. **Major:** The Major program allows a wider choice of courses outside the Physics Department and a somewhat reduced course load.

In addition a student may specialize in Physics or Applied Physics. The Applied Physics program may be entered by any student with a satisfactory record in either first year Science or first year Engineering. It is recommended that students in Applied Physics take, CS 1003 in the first year. The Applied Physics program is not an Engineering program and does not satisfy the requirements for a P.Eng. qualification.

Second Year

The normal second year program requires the following: PHYS 2011 , PHYS 2022 , PHYS 2041 , PHYS 2055 , PHYS 2975 , MATH 2003 2013 or equivalent, MATH 2213 , plus approved electives totalling at least 4 ch. Recommended electives include CS 3113 and STAT 3083 . Students at the Saint John Campus may defer PHYS 2041 (which is not normally offered at Saint John) until their third year, or may take CHEM 2601 2622 in lieu. Students entering second year from Engineering will be required to complete, prior to graduation, BIOL 1001 1012 1017 and GEOL 1044 / 1074 or approved equivalents. Students who have taken CHEM 1882 will be required to complete CHEM 1041 and CHEM 1046 . Applied Physics students must choose MATH 2503 / 2513 and take CS 1003 (if it has not been taken in first year). Electives for Applied Physics students should include approved Engineering courses.

PSYCHOLOGY OPTION

General Information and Curriculum

The Psychology discipline offers Majors and Honours Bachelor of Science degrees. Course requirements common to the Majors and Honours BSc degree are as follows:

- PSYC 1003 , 1004
- PSYC 2102
- PSYC 2901
- PSYC 3913 (in second or third year)
- PSYC 4053 (in third or fourth year)

Each degree program requires the equivalent total of 20 full courses and course selection for each program should conform to the following pattern.

First and Second Year

- BIOL 1001 , 2615
- CHEM 1041 , 1046 , 1072 , 1077
- MATH 1003 , 1013
- PSYC 1003 , 1004 , 2102 , 2901 (or equivalent)
- 1 additional full course equivalent in Psychology.
- 2 full course equivalents from list A.
- 1 1/2 full course equivalents as electives.

Third and Fourth Year

- 5 1/2 full course equivalents in Psychology .
- 2 full course equivalents from List A (1 full course equivalent must be from either the third or fourth year).
- 2 1/2 full course equivalents as electives from either the third or fourth year.

List A: Biology, Chemistry, Computer Science, Data Analysis, Geology, Mathematics, Physics, Statistics.

BSc Major Program

A student must successfully complete the equivalent of 20 full courses conforming to the above pattern and all required psychology courses must be passed with at least a C (2.0).

BSc Honours Program

An Honours BSc has requirements beyond those outlined above. PSYC 4143 , 4145 must be taken. In addition 27 ch of elective psychology courses must be chosen in the following manner. At least 9 ch must be successfully completed from each of the three groups outlined below:

1. **Biological/Cognitive Basis of Behaviour:** PSYC 3343, PSYC 3383, PSYC 3503, PSYC 3603, PSYC 3632, PSYC 3693, PSYC 3711, PSYC 3723, PSYC 3743, PSYC 3752, PSYC 4021, PSYC 4583, PSYC 4693, PSYC 4733, PSYC 4833 ;
2. **Social/Personality:** PSYC 2201, PSYC 2401, PSYC 3222, PSYC 3232, PSYC 3263, PSYC 3293, PSYC 3352, PSYC 3412, PSYC 3461, PSYC 4463;
3. **Clinical/Applied:** PSYC 3033, PSYC 3313, PSYC 3323, PSYC 3362, PSYC 3393, PSYC 3493, PSYC 3553, PSYC 3724, PSYC 3725, PSYC 3803, PSYC 4213, PSYC 4214, PSYC 4233, PSYC 4493 .

An Honours student must successfully complete an Honours Thesis (PSYC 4143 and 4145). This typically requires that a student conceive, plan, perform and report an experiment under the supervision of a Faculty advisor. Normally, the thesis research is completed during the student's final year of study.

Applicants to the Honours program should apply in writing to the Coordinator of the Honours program. To be eligible for admission to the program a student should have a minimum cumulative grade point average of 3.3 (B+). After admission, a cumulative grade point average of 3.3 must be maintained. To graduate with an honours degree, a grade point average of 3.3 is needed in all required Psychology courses.

BIOLOGY-PSYCHOLOGY OPTION

Honours and Majors Program

This interdepartmental program is intended to meet the needs of students who are interested in the interdisciplinary areas covered by both psychology and zoology.

First Year

CHEM 1041, 1046 , 1072 , 1077 , BIOL 1001, 1012, 1017, MATH 1003, 1013, PSYC 1003 / 1004, 6 ch of approved electives (total 39 ch).

Second Year

BIOL 2015, 2065, 2615, CHEM 2401 or CHEM 2441, PSYC 2102, PSYC 2901 (or equivalent), plus 11 ch of approved electives (total 33 ch).

Third and Fourth Years

BIOL 4935, PSYC 3913, 4053, plus approved electives equivalent to 51 ch (total 60 ch). The electives in years 2, 3 and 4 must contain at least 24 ch in psychology courses and at least 24 ch in biology courses. At least 132 approved credits are required to complete the program of which a minimum of 46 ch must be beyond the second year level.

To register for the honours program, students must have a cumulative grade point average of at least 3.3 at the end of the third year and must take BIPS4000 in addition to the above requirements.

STATISTICS OPTION

STATISTICS MAJOR

First Year (Minimum 39 ch)

As required under the BSc general regulations. Students are strongly advised to take CS 1303 and STAT 1793 as the electives in first year.

Second Year (Minimum 30 ch)

MATH 2003 , MATH 2013 , MATH 2213 plus electives equivalent to seven term courses.

Third Year and Fourth Year (Minimum 69 ch)

MATH 3713 , MATH 3733 , STAT 3083 , STAT 3093 plus 15 ch of upper level STAT courses. An upper level MATH course may contribute to these 15 ch.

Plus 33 ch of upper level (3-4000 level) elective courses approved by the department.

Plus an additional 9 ch of electives at any level.

Note: At least 6 ch of Computer Science are required in the programme.

INTERDEPARTMENTAL PROGRAMS

Note Concerning Transfer to the Fredericton Campus

The first two years of the 4 interdepartmental programs listed below are offered. For details see Section G of this calendar.

Biology-Chemistry;
Chemistry-Geology;
Biology-Mathematics;
Chemistry-Mathematics.

PRE-PROFESSIONAL PROGRAMS IN SCIENCE

Students intending to apply to professional schools, such as schools of medicine, dentistry, or veterinary medicine, should consult the admissions information for the individual school they intend to apply to. Students may be required to complete a specific entrance test for a particular profession, e.g. the Medical College Admission Test (MCAT) in the case of schools of medicine.

Students should select a B.Sc. program and ensure that they complete all core requirements for the selected program. In addition, the courses indicated below are strongly recommended. Students are also strongly advised to take courses in English and the Humanities and Social Sciences.

FIRST YEAR

- BIOL 1001 , 1012 / 1017 , CHEM 1041 , 1046 , 1072 , 1077 , MATH 1003 , 1013 , PHYS 1000 , ENGL 1200 or 1500

SECOND, THIRD & FOURTH YEARS

Pre-Dentistry

- BIOL 2065 , 2245 , 2485 , 3055 , 3635
- CHEM 2401 , 2416 , 2422 , 2457
- 12 ch Humanities and/or Social Sciences

Pre-Medicine

- BIOL 2065 , 2245 , 2485 , 3055 , 3635
- CHEM2401 , 2416 , 2422 , 2457
- STAT 2263 (or equivalent)
- Humanities and Social Sciences electives

Pre-Veterinary Medicine

- BIOL 2015 , 2485
- CHEM 2401 , 2416
- STAT 2263 (or equivalent)
- 9 ch Humanities and/or Social Sciences

BACHELOR OF SCIENCE IN ENGINEERING

Department of Engineering

General Office:	K.C. Irving Hall, Room 221
Mailing Address:	Department of Engineering, University of New Brunswick, 100 Tucker Park Road, Saint John, N. B., Canada, E2L 4L5
Phone:	(506) 648-5595
Fax:	(506) 648-5513
Email:	eng@unbsj.ca
Website:	http://www.unbsj.ca/engineer/

FACULTY

Chair: Dr. Ramesh C. Prasad

- Christie, James S., BScE, MScE, PhD (UNB), PEng, Prof - 1989
- Cotter, G. Terrance, BScE, MScE (UNB), PhD (Purdue), PEng, Prof - 1972
- Prasad, Ramesh C., BScE (BhU), MTech (IIT), MScE, PhD (UNB), PEng, Prof & Chair - 1982
- Riley, Peregrine, BScE (Qu), PhD (UNB), PEng, Sr Teaching Assoc - 1986
- Roach, Dale, BScEng, PhD (UNB), PEng, Instructor - 2000
- Sollows, Kenneth F., BScE, MScE, PhD (UNB), PEng, Assoc Prof - 1985
- Walton, Byron A., Eng Cert (Mt.All.), BScE (NSTC), MScE (UNB), PEng, Asst Prof - 1975

The Engineering programs are based on Department course credit requirements established by the Faculty of Engineering as detailed in Section G of this Calendar. The courses available will satisfy up to one-half of the total course requirements for Chemical, Civil, Computer, Electrical, Mechanical, and Software Engineering. Geological, Forest and Geomatics Engineering students may obtain approximately one-quarter of their total course requirements.

Elective courses should be chosen to satisfy specific Department program requirements. See Section G of this Calendar.

The total number of terms required to complete an Engineering program depends on the course load taken by the student. Students who follow approved programs, and who obtain about 85 credit hours of approved courses at UNB Saint John, will have the opportunity to complete the Bachelor's degree requirements in Chemical, Civil, Computer, Electrical and Mechanical Engineering at UNB Fredericton in two additional fall and two additional winter terms. Students in Geomatics, Geological and Forest Engineering will require six or more terms at UNB Fredericton in addition to the program credits they obtain at UNBSJ.

For information on the Co-op Program, Professional Experience Program (PEP) and the Diploma in Technology Management and Entrepreneurship (TME), refer to Section G of this Calendar.

Engineering practice and environmental concerns cannot be separated; they are fundamental to all engineering disciplines. Engineering students with a particular interest in environmental issues are encouraged to choose the discipline most closely related to their interest. The following list indicates disciplines associated with various areas of environmental concern

Chemical Engineering:	air and water quality
	pollution control
Civil Engineering:	hydrology
	groundwater
	solid waste management
	water and wastewater treatment
	environmental geotechnics
Computer Engineering:	digital hardware
	automotive and vehicle control
	process industries and power systems
	instrumentation and communication
Electrical Engineering:	instrumentation and control
	energy conversion and utilization
	electromagnetic interference and compatibility
Forest Engineering:	forest dynamics
	silviculture
	integrated renewable resource management
	machine/environment interactions
	hydrology
Geodesy & Geomatics Engineering:	remote sensing of the environment
	mapping of land and water resources
	monitoring of topographic change
	hazard mapping
	environmental information systems
Geological Engineering:	conservation and management of resources
	waste disposal
	environmental geotechnics
Mechanical Engineering:	alternative energy systems
	recycling systems and design for recycling
	energy conservation and utilization
Software Engineering	computer software
	information system
	system testing and maintenance

At UNB Saint John the following courses are equivalent to the same courses at UNB Fredericton and/or to the other UNB Fredericton courses listed opposite:

PHYS 2975 = PHYS 2972 + PHYS 2977;
CHE 2503 = ME 2503;
CE 2023 = ME 2121;
GEOL 1044 = GEOL 1001 + GEOL 1026;
GEOL 1044 + GEOL 1074 = GEOL 1001 + GEOL 1026 + GEOL 2022;
ME 3232 = CE 3963;
ME 3413 + CHEM 2601 = CHE 2012 + CHE 2123;
ME 3513 = ME 3511;
CE 2703 = CHE 2703;
SE 1001 = GGE 1001 .

Note: Minimum grade of C is required for all prerequisite and all core and technical elective courses used for credit towards the B.Sc.(Eng.) degree.

Standard Engineering Programs

Please Note:

Curriculum in the Bachelor of Science in Engineering program, as presented, is under review by the Saint John Senate to ensure consistency with recent changes in engineering programs on the Fredericton campus. Please contact the Department of Engineering in the Faculty of Science, Applied Science and Engineering, for up to date information and specific details on the Saint John program.

Courses are arranged by priority for each major program, with high priority courses on the left. Most programs are designed to be completed in eight terms of study. Students electing to spread their studies over nine or ten terms can defer low-priority courses to later terms and thus balance their workload. Students should consult their faculty advisors before selecting courses.

Chemical Engineering	
Term 1:	MATH1003, MATH1053, CE1013, CHEM1041, CHEM1046, PHYS1917, ME1003 .
Term 2:	MATH1013, CHEM1072, CHEM1077, CHE1004, ME1113, ECON1073, CS1003.
Term 3:	MATH2503**, CHEM2601, CHEM2886, CHE2503, CHEM2401, EE1713.
Term 4:	MATH2513, ME3413, CHEM2622, CE2703, CHE2412, MATH3503.
Term 5:	Complete Term 1 & 3 requirements + STAT2593 and up to 3 CSE's*.
Term 6:	Complete Term 2 & 4 requirements.
Civil Engineering	
Term 1:	CE1013, MATH1003, MATH1503, PHYS1917, SE1001, CE1003.
Term 2:	CHEM1882, CS1003, MATH1013, ME1113, ECON1073, CPW1001.
Spring Camp: GGE1803	
Term 3:	CE2023, CHE2503, MATH2503**, STAT2593, GEOL1044, ME1003 .
Term 4:	CE3033, CE2703, CE2953, ME3232, MATH2513, CE3113 .
Computer Engineering	
Term 1:	MATH1003, MATH1503, EE1713, CE1013, CS1073, PHYS1917.
Term 2:	MATH1013, CS1083, CHEM1882, ME1113, ECON1073, CSE*.
Term 3:	MATH2503**, EE2773, CS2013, STAT 2593, CMPE2013, ME1003.
Term 4:	MATH2513, MATH3503, EE2213, EE2783, EE2703, ME3232.

Joint Computer Science/Survey Engineering	
Term 1:	CE1013, MATH1003, MATH1503, PHYS1917, SE1001, CS1073.
Term 2:	CS1083, CHEM1882, MATH1013, ME1013, CS2513, ME1113
Spring Camp: GGE1003 .	
Electrical Engineering	
Term 1:	MATH1003, MATH1503, EE1713, CE1013, CS1073, PHYS1917.
Term 2:	MATH1013, CS1083, ME1113, CHEM1882, ECON1073, CSE*
Term 3:	MATH2503**, EE2773, CS2013, CMPE2013, ME1003, CHE2503 or STAT2593 .
Term 4:	MATH2513, MATH3503, EE2783, EE2213, EE2703, ME3232.
Forest Engineering	
Term 1:	CE1013, MATH1003, MATH1503, PHYS1917, SE1001, ME1003.
Term 2:	CS1003, CHEM1882, MATH1013, ME1113, CSE*
Geological Engineering	
Term 1:	CE1013, GEOL1044, MATH1003, MATH1503, PHYS1917, SE1001
Term 2:	CHEM1882, GEOL1074, MATH1013, ME1113, ECON1073, CS1003 or CPW1001.
Spring Camp: GGE1803 .	
Geodesy and Geomatics Engineering	
Term 1:	CE1013, MATH1003, MATH1503, PHYS1917, SE1001, CS1073.
Term 2:	CS1083, CHEM1882, MATH1013, ME1113, ECON1073, CSE*.
Spring Camp: GGE1003 .	
Mechanical Engineering	
Term 1:	CE1013, MATH1003, MATH1503, ME1003, PHYS1917, EE1713.
Term 2:	CHEM1882, MATH1013, CS1003, ME1013, ME1113, ECON1073
Term 3:	CE2023, CHE2503, MATH2503**, ME2321, ME2143, STAT 2593.
Term 4:	MATH2513, ME2332, ME3413, ME2613, ME2222, ME3513.
Term 5:	Complete Term 1 & 3 requirements + EE2773 and up to 3 CSE's*.
Term 6:	Complete Term 2 & 4 requirements + ME3232 , MATH3503 , PHYS2975 , CS3113 .

Software Engineering	
Students may take the following courses towards completion of the Bachelor of Science in Software Engineering (see Section G. of this calendar). The Bachelor of Science in Software Engineering (BScSWE) is a different program than the Specialization in Software Engineering offered as part of the Bachelor of Science in Computer Science on the Saint John Campus.	
Term 1:	MATH1003, MATH1503, EE1713, CE1013, CS1073, PHYS1917 .
Term 2:	MATH1013, CS1083, CHEM1882, ME1113, ECON1073, CSE*.
Term 3:	MATH2503**, CS2013, STAT2593, CMPE2013, CS1303, CS2303 .
Term 4:	CS2513, EE2213, ME3232, ME2613, PHYS2975 or basic science, CSE*.
No Major	
Most students select their major (Civil, Computer, Electrical, Mechanical, etc.) on entry to the first year of their studies. Students who are unsure of their choice are strongly advised to select courses from the following list to ensure maximum flexibility when they make their final decision on their program. All of these courses are creditable to existing programs, but students following this path may require extra time to complete their degree.	
Term 1:	MATH1003, MATH1503, CE1013, PHYS1917, EE1713, SE1001.
Term 2:	MATH1013, ME1113, CHEM1882, ECON1073, CS1003, ME1013

Notes:

1. * Complimentary studies elective.
2. ** MATH2503 has been replaced by MATH1503 for students beginning the program in Fall 2004.

FREDERICTON ACADEMIC PROGRAMS

Undergraduate Degree Programs

The University offers courses of undergraduate instruction leading to the degrees of:

- Bachelor of Arts
- Bachelor of Applied Arts (Craft and Design)
- Bachelor of Arts and Science
- Bachelor of Business Administration
- Bachelor of Computer Science
- Bachelor of Education
- Bachelor of Integrated Studies
- Bachelor of Laws
- Bachelor of Medical Laboratory Science
- Bachelor of Nursing
- Bachelor of Philosophy in Interdisciplinary Leadership
- Bachelor of Recreation and Sports Studies
- Bachelor of Science
- Bachelor of Science in Engineering
- Bachelor of Science in Forestry
- Bachelor of Science in Forest Engineering
- Bachelor of Science in Kinesiology
- Bachelor of Science in Software Engineering

Concurrent Undergraduate Degree Programs

The University offers a number of concurrent degree options:

- Bachelor of Arts/Bachelor of Science
- Bachelor of Arts/Bachelor of Computer Science
- Bachelor of Arts/Bachelor of Education
- Bachelor of Business Administration/Bachelor of Education
- Bachelor of Computer Science/Bachelor of Education
- Bachelor of Computer Science/Bachelor of Science in Engineering (Geodesy & Geomatics Engineering)
- Bachelor of Computer Science/Bachelor of Science
- Bachelor of Recreation and Sport Studies / Bachelor of Education
- Bachelor of Science/Bachelor of Education
- Bachelor of Science in Kinesiology/Bachelor of Education

Post-Graduate Bachelor's Degree Programs

- Bachelor of Education (60ch program)

Degree and Diploma Programs within the School of Graduate Studies

- Doctor of Philosophy
- Master of Arts
- Master of Arts in Sport and Recreation Administration
- Master of Business Administration
- Master of Computer Science
- Master of Education
- Master of Engineering
- Master of Forestry
- Master of Forest Engineering
- Master of Nursing
- Master of Philosophy
- Master of Science
- Master of Science in Forest Engineering
- Master of Science in Forestry
- Master of Science in Engineering
- Master of Science in Exercise and Sports Science
- Postgraduate Diploma in Land Information Management
- Postgraduate Diploma in French

Honorary Degrees

The degrees of Doctor of Science, Doctor of Letters, Doctor of Civil Law and Doctor of Laws are the Honorary degrees conferred from time to time by the University upon persons who have achieved distinction in scholastic or public service.

Other Programs

- **Art and Design** University courses, completed at a level above a 'D' grade, may be transferred toward and in accordance with the academic and/or elective requirements of the degree programs offered by the Nova Scotia College of Art and Design.
- **Certificate of Academic Proficiency in Hydrographic Surveying**: See description under Geomatics Engineering(Section G).
- **Certificate in Adult Education**: See description under Education (Section G).
- **Certificate in Computer Telephony Integration**: See description under Computer Science (Section G).
- **Certificate in Critical Care Nursing**: See Description under Nursing (Section G).
- **Certificate in Family Violence Issues**: See description under Arts (Section G).
- **Certificate in Film Production**: See description under Arts (Section G).
- **First Nations Business Administration Certificate**: See description under Business Administration (Section G).
- **Certificate in French Immersion Teaching**: See description under Education (Section G).
- **Certificate Programs in Geomatics**: To provide technologists with an opportunity to gain a thorough understanding of the theory and principles of specific applications of new technology, one-year certificate programs (thirty credit-hours in length) in five specialized areas of Geomatics are offered. Contact the Admissions Office for appropriate application forms and details.
- **Management Certificates**: See description under Business Administration (Section G).
- **Certificate in Mental Health Nursing**: See description under Faculty of Nursing (Section G).
- **Certificate in Mi'kmaq Linguistics**: See description under Education (Section G).
- **Certificate of Proficiency in French**: Awarded after four years of French language study. See description under Arts (Section G).
- **Certificate of Proficiency in Spanish**: See description under Culture and Language Studies (Section G).
- **Certificate in Software Development**: See description under Computer Science (Section G).
- **Certificate in Software Development**: See description under Computer Science (Section G).
- **Certificate in Teaching English as a Second Language**: See description under Education (Section G).
- **Diploma in Advanced Undergraduate Studies**: See description under Education (Section G).
- **Diploma in Construction**: See description under Civil Engineering (Section G).
- **Diploma in Geomatics Engineering**: See description under Engineering (Section G).
- **Diploma in Technology Management and Entrepreneurship**: See description under Engineering (Section G).

BACHELOR OF ARTS

FACULTY OF ARTS

General Office:	Tilley Hall, Room 26
Mailing Address:	Faculty of Arts University of New Brunswick P.O. Box 4400, Fredericton, N.B., Canada, E3B 5A3
Phone:	(506) 453-4655
Fax:	(506) 453-5102
Email:	arts@unb.ca
Website:	http://www.unbf.ca/arts/
Dean:	James S. Murray, BA, MA, PhD
Associate Dean:	Weiqiu Yu, BSc, MA, PhD
Assistant Dean:	Stephanie Slauenwhite, BA
Coordinator, Student Support Service:	Deborah Johnston, BA, MA, DPhil

Disciplines

The Faculty of Arts offers programs in the following disciplines:

Humanities	Languages	Social Sciences	Interdisciplinary Studies	Fine Arts Minors
Classics and Ancient History	French	Anthropology	German Studies	Creative Writing
English	German	Economics	International Development Studies	Film/Video
History	Greek	Political Science	Law in Society	Theatre
Philosophy	Latin	Psychology	Linguistics	
World Literature and Culture Studies	Russian	Sociology	Multimedia Studies	
	Spanish		Russian and Eurasian Studies	
			Women's Studies	

In order to graduate with Honours or Majors in these disciplines, a student must enrol in the Bachelor of Arts program.

The Arts curriculum is designed to enlarge students' understanding of themselves, society and the world, by acquainting them with the results of scholarly inquiry in the humanities and social sciences. The strengths of a good Arts graduate are communication skills, flexibility and adaptability, and the ability to relate the findings of specialists and to evaluate their usefulness. Students enrolled in other faculties are encouraged to take Arts courses as electives. Students intending to make their career in the creative arts, education, medicine, dentistry, the civil service, administration, business, librarianship or journalism will find that some acquaintance with the Humanities and Social Sciences broadens their general background in a beneficial way. See also the note on Certificate programs at the end of this section.

General Information

Courses offered by Departments in the Faculty of Arts generally have a rating of 3 ch per term. For a detailed description of the credit hour system, see Section B of the Calendar. The course weighting is based on assumptions concerning the total amount of time each course can reasonably be expected to take up in a working week. In the Faculty of Arts most courses are given a weighting of 3 ch per term, so that a one-term course will count for 3 ch, and a full-year course for 6 ch. In both these cases, students should plan to devote a total of nine hours to the subject (class meetings and private study) each week. "Private study" means study undertaken outside the regular class hours: reading, preparation of assignments, assimilation of information, etc.

Some courses have a stated prerequisite. This means that in order to enrol, a student must have successfully completed the prerequisite course. Unless the Department specifically requires a grade of C, it can be assumed that a grade of D satisfies the requirement.

Students who enrol in the four-year Bachelor of Arts program are exposed to a wide variety of disciplines in their first two years. There the emphasis falls on the Western cultural inheritance, on the different ways we have of understanding the world in which we live, and on acquiring some of the communicative skills necessary in the modern world. In the last two years of the program, students concentrate on one or two disciplines, identified as the "Major." Students with consistently high grades specialize more intensely, with a view to earning a Bachelor's degree with Honours. Such students are identified as Honours students, as distinct from Major students. Most students at this level do, however, have room in their program for "elective" courses; that is, courses which are not an obligatory part of the specialized program. Majors, in particular, are encouraged to look beyond the Departments in which they are majoring when deciding on their elective courses.

A BA student may choose among a number of different disciplines, listed above. It is also possible to earn a BA degree by specializing in a Science: Biology, Chemistry, Geology, Mathematics, Statistics or Physics. (For details of programs in the Sciences, interested students should direct their inquiries to the Department concerned.)

In planning their program of study, students should note that programs at the Junior and Senior levels are greatly dependent on their choice of subjects at the First Year and, more particularly, at the Sophomore levels. They should note also that in order to enrol in some courses, they must have successfully completed a stated prerequisite course. Students should therefore read carefully the regulations in the following pages of the entitled Description of Courses, and should make full use of opportunities for consultation with the faculty members concerned.

All programs of study must have the approval of the Dean.

General Regulations

Any point not covered by the General Regulations of the Arts Faculty will be governed by the General University Regulations stated in Section B of this Calendar. In particular, these Regulations should be noted by students who fail to complete the work associated with a course (with regard to the regulations concerning the notation of incomplete (INC), by students applying for a second undergraduate bachelor's degree, by students transferring from other institutions, and by students changing degree program. Questions concerning the application of regulations should be directed in writing to the Registrar.

The 120 credit hours to be successfully completed for the degree are organized in the following manner.

Lower Level	Upper Level
First Level: Credit hours 1-30	Credit hours 61-120
Second Level: Credit hours 31-60	

1. To earn a BA degree, a student must successfully complete a minimum of 120 ch and must have a session grade point average of at least 2.0 (C).
2. The normal credit hour load for a student is 15 ch each term or 30 ch each academic year. In order to maintain full-time standing a student must enrol for at least 12 ch in each term. The maximum number of credit hours for which a student may normally register is 18 each term. Course loads outside of the range of 12 to 18 ch in a term may be permitted only with the approval of the Dean.
3. Normally, students shall not enrol in any course to meet the requirements of any level of the degree program unless they enrol at the same time in every course that they still need to complete the requirements of all the preceding levels of the program. For example, First Year students who have successfully completed 24 of the 30 ch required for First Year must register for the course or courses necessary to complete the first year requirements at the same time that they register for courses associated with the second year requirements.
4. Students who elect to register for courses taught outside the Faculty of Arts should note that, for purposes of the BA degree, courses receive either a 3 or a 6 credit hour weighting, for term and full-year courses respectively. Exceptions to these credit hour designations in the BA program may be made under the authority of the Dean of Arts and the Registrar.
5. Students transferring from other institutions should note that at least one-half of the credit hours required for the BA degree must be taken at UNB and must normally include at least 30 ch toward completion of the Junior and Senior level regulations.
6. These regulations are designed for the Fredericton campus of the University of New Brunswick. Students from the Saint John campus wishing to transfer to Fredericton after the first year (credit hours 1-30) shall have their full first year accepted as equivalent to that offered in Fredericton. Normally, UNBSJ students transferring to UNBF will take their final 60 ch at Fredericton.

FIRST LEVEL REGULATIONS (1 - 30 Credit Hours)

Students must successfully complete courses equalling 30 ch. No more than 6 ch can be taken in any discipline.

Students must successfully meet the following requirements:

1. Arts 1000 (6 ch).
2. Six credit hours in each of three other disciplines. Three of the four groups of disciplines (A, B, C, D) listed below must be represented (18 ch).
3. The remaining six credit hours may be taken in one discipline, or taken as three credit hours in each of two disciplines, including multimedia. (6 ch).

A [1]	B	C	D [2]
French	Classics	Anthropology	Astronomy
German	English	Economics	Biology
Greek	History	Political Science	Chemistry
Latin	Philosophy	Psychology	Computer Science
Russian	WLCS	Sociology	Geology
Spanish			Mathematics
			Physics
			Statistics

Notes:

1. Other languages such as Maliseet, Micmac, Arabic, Chinese, Italian and Japanese (when available), may, with permission of the Dean's Office, be taken to satisfy the requirements of Group A.
2. a) Students electing CHEM 1001 / 1012 / 1006 / 1017 / 1045 must also take MATH 1003 and 1013 . Students may take CHEM 1801 or CHEM 1882 without taking Mathematics.

   b) The lower level laboratory courses will not be counted in the ch total or in the calculation of the grade point average.

SECOND LEVEL REGULATIONS (31-60 Credit Hours)

Students must successfully complete courses equalling a total of 30 ch.

1. Students must take 6 ch in each of 3 disciplines, and at least 3 ch in a fourth discipline.
2. No more than 12 ch may be taken in a single discipline.
3. Courses for the second level may be chosen from the disciplines listed under the first level regulations, as well as Geography (Education) and courses from Interdisciplinary programs, including: Fine Arts, Linguistics, Multimedia Studies, Russian and Eurasian Studies, International Development Studies, Women's Studies, and Environmental Studies.

Note: Students may take for credit any appropriate courses in the Faculties of Science and Computer Science. A list of approved courses from the other faculties (Administration, Education, Engineering, Forestry, Kinesiology, Law and Nursing) is available in the Dean's office. Students may take no more than 12 ch (total) from this list toward the completion of the 120 ch program.

UPPER LEVEL REGULATIONS (61-120 Credit Hours)

General Information

1. **Choice of program** : For Upper level students two programs are available: BA Major and BA Honours. Students entering the Junior level must elect to follow one or the other of these two programs. Their decisions should be made in consultation with the appropriate Departments, and with their Academic Advisors. The Honours program is designed for students with a high level of ability who wish to undertake intensive study of one or two subjects, especially in preparation for postgraduate work.

   In most cases students can choose to take either one or two subjects for their specialization. The exceptions are noted below, in Regulation 2 (BA Major) and Regulation 2 (BA Honours).

Programs also exist in interdisciplinary areas: Fine Arts, Linguistics, Russian and Eurasian Studies, Law in Society, International Development Studies, Women's Studies, Environmental Studies. In what follows, the word "Department" is used to cover both Departments and the committees that administer these interdisciplinary programs.

2. **Advanced level courses available** : Normally, all courses taken to fulfill the last 60 ch of the BA degree will be advanced level courses. (Advanced level courses have 3, 4 or 5 as the first digit of the course number.) Advanced level courses are available in: Anthropology, Biology, Business Administration, Chemistry, Classics, Computer Science, Economics, Education, English, Fine Arts, French, Geology, German, Greek, History, International Development Studies, Latin, Linguistics, Mathematics, Philosophy, Physics, Political Science, Psychology, Russian, Russian and Eurasian Studies, Sociology, Spanish, Statistics, Women's Studies, World Literature and Culture Studies.
3. **Courses in the Major or Honours subject** : Honours and Majors programs are available in most, but not all, the subjects listed in (2) above. For the exceptions, see below, Regulation 2 (BA Major) and Regulation 2 (BA Honours). A Department may accept as part of its Major and Honours programs courses outside the Department and Faculty, including courses in subjects which are not listed above (2) as being normally available in the BA program.
4. Courses for the upper level may be chosen from the disciplines listed under either the first or second level regulations. Students may, on approval of the Dean of Arts, be granted permission to take up to 9 ch of the last 60 from courses with the first digit 1 or 2. Program directors may recommend exceptions in the case of specifically designed programs.
5. **Approval of Courses** : All the courses for which a student enrols must be elected in consultation with the Department or Departments in which the student is majoring or honouring, and the final selection of courses must be approved by the Dean.
6. **Minors** : Students should consider the possibility of taking a Minor concentration in another discipline or another Faculty. A Minor comprises 24 ch, forming a coherent set or sequence, so designated by the Department concerned. Departments which offer a Minor specify details in the departmental listings in Section F of the Calendar. A Minor may not be taken in the department with which the student is majoring or honouring. See Section B for university regulations regarding Minors.

BA Majors Program

1. A Major in a given subject shall consist of the successful completion of not less than 30 ch in that subject, 24 of which must be in advanced level courses. Departments may require Single Major students to take up to 42 ch in advanced courses and Double Major students to take up to 30 ch in advanced courses.
2. Students may not major in Business Administration, Computer Science, Fine Arts, Environmental Studies, or Education. Students may major in Women's Studies, Law in Society or International Development Studies only as part of a Double Major.
3. Not more than 12 ch in Education are permitted for the degree of BA and these courses must be approved by the Dean of Arts.
4. Students should consult the sections of the Calendar which pertain to the Department or Departments in which they are majoring to determine whether grades higher than D are required to meet Major requirements.
5. Candidates for the degrees of BA (Major) are listed with divisions based on the cumulative grade point averages of all courses taken. See Section B of this Calendar, "Listing of Graduates."
6. A student who attains a grade point average equal to or greater than 3.75 over credit hours 61 -120 and no grades less than C over the last 90 ch shall be awarded a Distinction upon graduation.

BA Honours Program

1. Admission to Honours will normally occur after the completion of 60 ch, although application for Honours may be made after completing 30 ch. Only under exceptional circumstances will Senior level students be permitted to enter an Honours program.

   The basic requirement for entrance into Honours is that the student shall have demonstrated a high level of ability in previous work in the subject in which Honours is proposed. Departments may refuse to admit to Honours students whose cumulative grade point average is below 2.5 at the completion of 60 ch.

   Students wishing to be admitted to Honours should apply in writing to the Chair of the Department concerned, who will make recommendations to the Dean of Arts. In the case of application for a Joint Honours program, a single recommendation will be made by the Departments acting in collaboration. Applications should be received by the Chairs before 1 September of the year in which the student attains Junior status, although applications will be considered up to 1 October.
2. In most subjects, Honours may be taken singly or jointly with Honours in another subject. These subjects are: Anthropology, Chemistry, Classics, Economics, English, French, German, Greek, History, Latin, Linguistics, Philosophy, Physics, Political Science, Psychology, Sociology, Spanish, World Literature and Culture Studies.

   Honours in Biology cannot be taken jointly with Honours in another subject.

   Honours in Geology and International Development Studies must be taken jointly with Honours in another subject.
3. Single Honours students are required to take at least 36 ch in advanced level courses. Individual Departments may require up to 48 advanced level ch.

   Joint Honours students must take at least 24 ch in advanced level courses from each Department. Departments may require up to 30 advanced level ch.
4. Honours students who are able to fulfill the requirements laid down for a Double Majors student, in a discipline outside the Department in which they are honouring may, if they choose, register for a supplementary Major. Such students will not be placed in a division, but their transcript will record that they have fulfilled the requirements for a Major in that subject. Registration for the supplementary Major shall normally be completed no later than the beginning of the student's Senior year.

5. For the award of a first-class Honours degree, a grade point average of 3.6 is required in the courses of the Honours subject or subjects excluding those courses which the Department considers to be introductory in scope. For a second-class Honours degree an average of 3.0 is required in these courses. Averages in the Honours subjects are calculated on the basis of the minimum number of credit hours required by individual Departments, and credit hours successfully completed above this minimum are treated as "non-required" courses. Students are required to sustain a grade point average of 2.5 in "non-required" courses taken for credit hours 31 -120. Courses which Honours students are obliged to take must be counted as part of the minimum number of credit hours for the purpose of calculating the grade point average in the Honours courses.

   The recommendation to award a student an Honours degree will be made by the Department or Departments concerned to the Dean of Arts. In the case of Joint Honours, the class is determined by the overall average in the courses required to fulfill the minimum requirements in both disciplines, and is subject to the agreement of both Departments concerned.

Regulations for Granting a Second UNB Bachelor of Arts Degree

BA graduates of UNB may apply for admission to and follow a program towards a second BA undergraduate Bachelor's degree under the following regulations:

- The general regulations of the University must be satisfied.
- The regulations of the Degree program and Departmental regulations concerning Major or Honours must be satisfied.

Normally, the minimum number of credit hours which must be successfully completed beyond the work required for the previous degree will not be less than the normal load of the final academic year in the degree program concerned. More than the minimum number of credit hours may be required.

The courses taken must be approved by the Dean and the Department or Departments under which the Major or Honours falls.

The general regulation that at least half the credit hours for a degree must be taken at this University still apply.

Candidates for a second undergraduate degree may not choose a Major or Honours in the same Departmental discipline as in the first undergraduate degree, whether the first degree involved a single or double Major or single or joint Honours. Students who have taken a BA with Majors or Honours in a Language are not precluded from taking a second BA in a different language. Candidates may not choose a Major or Honours in a discipline in which they previously did a minor.

Students must make specific application to the Associate Registrar/Admissions for entry to the second degree program.

Only under special circumstances will students be admitted to a third undergraduate degree program.

After completing a first degree students may be permitted to upgrade a Minor to a Major or Honours, or to upgrade a Major to Honours but in either case a notation only will be included on the student record and a second degree will not be awarded.

PROGRAMS OF STUDY

ANTHROPOLOGY

DEPARTMENT OF ANTHROPOLOGY

General Office:	Annex C, Room 28,
Mailing Address:	Department of Anthropology University of New Brunswick P.O. Box 4400 15 McAulay Lane, Room 28 Fredericton, New Brunswick, Canada, E3B 5A3
Phone:	(506) 453-4975
Fax:	(506) 453-5071
Email:	c/o Marina Hernandez, Administrative Secretary mhernand@unb.ca
Website:	http://www.unbf.ca/arts/anthropology/

FACULTY

- Black, David W., BA (S.Fraser), MA, PhD (McM), Prof & Chair - 1991
- Lovell, Peter R., BA (Wat), MA, PhD (McM), Assoc Prof - 1980
- Mitra, Koumari, BSc, MSc, PhD (Delhi), Assoc Prof - 2000
- Paponnet-Cantat, Christiane, BA (UBC), MA, PhD (S.Fraser), Prof - 1988
- Plaice, Evelyn, BA (Oxf.Brookes), MA (Nfld), PhD (Manc), Assoc Prof (Jt Educ) - 1999
- Pool, Gail R., AB (Calif), MA (McM), PhD (McG.), Prof - 1976
- Wiber, Melanie, BA (Leth), MA, PhD (Alta), Prof - 1987

General Information

Anthropology is the global study of the human condition, including biological and cultural similarities and differences in the past and the present. The discipline encompasses four sub-fields:

1. social and cultural anthropology examines contemporary and recent cultures around the world;
2. archaeology is the study of human cultures through material remains;
3. biological anthropology explores human evolution and biological diversity;
4. linguistics is the study of how languages are constructed and the ways language affects thought.

Courses in Area Ethnographies

ANTH3604 through ANTH3724 are intended to provide a general knowledge of the societies and cultures of selected geographical regions. These courses are designed for non-Majors as well as for Anthropology Majors and Honours students. Note that there are no prerequisites for these courses.

Prerequisites

Courses beyond the second level frequently require both ANTH1001 and 1002 as well as second year courses as a prerequisite (see course listings for specifics).

Majors and Honours Programs

Major To Major in Anthropology, a student must complete ANTH 1001 and ANTH 1002 , and 12 ch of third-level and 12 ch in fourth- and/or fifth-level anthropology courses, with a grade of C or better in each course.

Double Major To do a Double Major in Anthropology and another discipline, a student must complete ANTH 1001 and ANTH 1002, and 12 ch of third-level and 12 ch of fourth- and/or fifth-level anthropology courses, with a grade of C or better in each course.

Honours Students wishing to be admitted to Honours should apply in writing to the Director of Undergraduate Studies of the Department.

- **Single Honours:**
  To earn an Honours degree in Anthropology, a student must complete ANTH 1001 and ANTH 1002 , 18 ch of third-level, and 18 ch of fourth- and fifth-level anthropology courses, including ANTH 5701 and ANTH 5702 .
- **Joint Honours:**
  To graduate with Joint Honours in Anthropology and another discipline, a student must complete ANTH1001 and 1002, and 24 ch of advanced-level anthropology courses (third, fourth and fifth), including ANTH 5701 and ANTH 5702 .

Minor in Culture and Economy

This is a joint minor proposed by the departments of economics and anthropology. The minor is open to all students including those majoring in economics and anthropology.

Economics and anthropology overlap in so far as both disciplines seek to understand humankinds myriad social customs, institutions and behaviour as being the outcome of a rational attempt to avoid costs and reap benefits. Just as anthropology has extended its field of study to include modern capitalist economies, so economics has extended its orbit to include social and political interactions. The commonality of the endeavour suggests that a rich cross-fertilisation is not only possible, but desirable.

Students may minor in Culture and Economy by completing 24ch of courses offered by the Department of Economics and the Department of Anthropology. Students must achieve a grade of C or better in each course for it to be counted as part of the Minor and are required to complete 24ch as follows:

a. 6ch of Economics chosen from: ECON 1001 , ECON 1002 , ECON 2515 , ECON 2505 , ECON 2705 , ECON 2905 .

b. 6ch of introductory Anthropology (ANTH) courses chosen from: ANTH 1001 , ANTH 2114 , ANTH 2144 .

c. 6ch of advanced economics (ECON) courses chosen from: ECON 3055 , ECON 3504 , ECON 3702 , ECON 3724 , ECON 3845 , ECON 3361 , ECON 3633 , ECON 4775 .

d. 6 ch of advanced anthropology (ANTH) courses, chosen from: ANTH 3204 , ANTH 3244 , ANTH 3284 , ANTH 3434 , ANTH 3714 , ANTH 4011 , ANTH 4012 , ANTH 4214 .

CLASSICS AND ANCIENT HISTORY

DEPARTMENT OF CLASSICS AND ANCIENT HISTORY

General Office:	Carleton Hall, Room 239
Mailing Address:	Department of Classics and Ancient History University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506)453-4763
Fax:	(506)447-3072
Email:	classics@unb.ca
Website:	http://www.unbf.ca/arts/CLAS/

FACULTY

- Geyssen, John W., BA, MA (Qu), PhD (Duke), Assoc Prof - 1998
- Kerr, William G., BA (Tor), BA (Oxon), MA, PhD (Prin), Assoc Prof - 1987
- Mills, Michael J., BA, MA, MLitt (Oxon), Prof - 1968
- Murray, James S., BA, MA (UNB), PhD (Pitt.), Prof & Dean- 1984
- Papaioannou, Maria A., BA (Thessalonike), MA, PhD (UBC), Asst Prof - 2005

General Information

The Department of Classics and Ancient History offers courses in three disciplines: Latin [LAT], Greek [GRK] and Classics [CLAS]. The designation **LAT** or **GRK** indicates a course in which students are taught [in English] how to read and write Classical Latin or Ancient Greek. The designation **CLAS** indicates a course in which students are introduced to the social, political and cultural life of the Greeks and/or Romans through reading the ancient authors in English translation.

Courses in Latin or Greek

Students without previous experience in classical languages are encouraged to begin the study of Latin with LAT 1103 and of Greek with GRK 1203. These courses assume no knowledge of the language and are taught in English. In order to take advanced language courses, students must complete each of the appropriate introductory and intermediate courses with a grade of C or better.

Courses in Classics

Students are encouraged to begin the study of Classical Civilization by enrolling in two of the Introductory courses: CLAS 1003 , 1303 , 1323 , 1403 , 1413 , 1503 or 1903 . Advanced offerings in Classics include courses in history, archaeology, art history, mythology, philosophy and literature. Though specific prerequisites have not always been stated, the Department does not advise students to attempt advanced Classics courses in the first year of this program.

Students may take courses in Classics, Greek or Latin as part of a degree program [Honours, Major or Minor] or for general interest.

The following Classics courses may be counted for advanced credit in the Department of History up to a maximum of 12 ch: Greek History [CLAS 3003 / 3013], Roman History [3033 / 3043], Roman Army [3053], Caesar Augustus [3063], Jewish Civilization [3073],Graeco-Roman Background of the New Testament [3803], The Early Church [3813], and Topics in Greek/Roman History [5003 / 5013].

Program of Study

The Department of Classics and Ancient History offers students two programs for the study of Classical Antiquity: CLASSICS and CLASSICAL STUDIES. Students should be aware of the differences between these two options.

Classics

The key to the study of Greece and Rome is a critical knowledge of the works of ancient authors in their original languages. The study of Latin and Greek has always been a fundamental element in the Western tradition. It continues to be a necessary component in the education of anyone seriously contemplating advanced professional standing, or even graduate work, in any area of Classics. Therefore, students intending to pursue the study of ancient Greece or Rome beyond the Baccalaureate level are directed to the program in Classics, which includes the study of both Latin and Greek, and are strongly advised to commence their language study at the earliest possible stage of the degree.

Classical Studies

The written and manufactured remains of the Classical cultures of Greece and Rome provide a rich heritage for our modern western culture. One finds in the work of classical authors and artisans the first thorough treatment of a number of current political, social and personal issues. Moreover, since a number of modern academic disciplines trace their ancestry to the Classical Mediterranean, students investigating such diverse fields as English literature, philosophy, sociology and European history will find in the study of Greece and Rome a useful complement to their primary discipline. Therefore, students who do not intend to pursue Classics beyond the Baccalaureate degree, but who do wish to continue their study of ancient Greece and Rome as an adjunct to another field, or who are intending to enter professional training [such as law or journalism or education] for which a general humanities Baccalaureate degree would be appropriate preparation are directed to the program in Classical Studies.

Note: Students who begin in the program of Classical Studies may enter the program of Classics on the basis of a language study program approved by the Department.

Honours, Majors and Minors

HONOURS

Students may apply to the Department for admission to Honours Programs in either Classics or Classical Studies after completing 60 ch of university study. Admission to an Honours program normally requires the completion of at least 12 ch of courses taught in the Department of Classics and Ancient History, including at least 6 ch of a Classical language for those students choosing the CLASSICS option. Students considering the Classics option should begin their language training as early as possible in the program.

Honours in Classics

Students reading for an Honours degree in Classics must successfully complete 66 ch of courses as follows:

a. **Latin and Greek** -- at least 9 ch of advanced language courses, with a minimum grade of C in each course. With the permission of the Department, additional courses of advanced language study above 9 ch may be counted among the required Classics courses. [Students must complete 12 ch at the introductory and intermediate levels in each of the classical languages.]

b. **Classics** -- at least 27 ch of advanced Classics courses, with a minimum grade of C in each course. [Students must complete 6 ch of Classics courses at the introductory or intermediate level.]

[Students fulfilling the requirements for Joint Honours in Classics may reduce the required number of advanced language ch by 3 and the number of advanced Classics courses by 9 for a total of 24 ch of advanced courses, with a minimum grade of C in each course.]

Honours in Classical Studies

Students reading for an Honours degree in Classical Studies must successfully complete 60 ch of courses as follows:

a. **Latin and Greek** -- Students must complete at least 12 ch of introductory and/or intermediate language courses. With the permission of the Department, courses of advanced language study may be counted among the required Classics courses below.

b. **Classics** -- 36 ch of advanced Classics courses with a minimum grade of C in each course. [Students must complete at least 12 ch at the introductory and/or intermediate level in Classics.]

[Students fulfilling the requirements for Joint Honours in Classical Studies may reduce the number of advanced Classics courses by 12 ch, for a total of 24 ch of advanced courses with a minimum grade of C in each course. A total of 6 ch of language courses is required for Joint Honours in Classical Studies.]

MAJORS

Students may enter a Major program in either Classics or Classical Studies after completing 60 ch of university study, which must include at least 6 ch of courses in Classics, Latin or Greek at the introductory level.

Major in Classics

Students in a Major program in Classics are required to complete 54 ch of courses in Latin, Greek and Classics as follows:

a. **Latin and Greek** -- at least 3 ch of advanced level Greek or Latin courses. [Students must complete at least 6 ch at the introductory level in the other classical language.]

b. **Classics** -- at least 27 ch of advanced Classics courses. [Students must complete at least 6 ch at the introductory level in Classics.]

[Students fulfilling the requirements for Classics as part of a Double Major may reduce the number of advanced Classics courses by 6 ch, for a total of 24 ch of advanced courses.]

Major in Classical Studies

Students in a Major program in Classical Studies are required to complete 42 ch of courses in Classics as follows:

a. **Latin and Greek** -- Though there is no language requirement in this program, the Department encourages each student to attempt the study of the classical languages.

b. **Classics** -- at least 30 ch of advanced Classics courses. [Students must complete at least 12 ch of courses at the introductory and/or intermediate level in Classics.]

[Students fulfilling the requirements for Classical Studies as part of a Double Major may reduce the number of advanced Classics courses by 6 ch, for a total of 24 ch.]

MINORS

Students may **minor** in **Classics** by completing 24 ch of courses offered by the Department of Classics and Ancient History, including at least 12 ch of a classical language and 12 ch of advanced courses in Latin, Greek or Classics.

Students may **minor** in **Classical Studies** by completing 24 ch of courses offered by the Department of Classics and Ancient History, including at least 6 ch at the introductory level, and at least 12 ch of advanced courses in Latin, Greek or Classics.

Minor in Ancient Philosophy

Students may minor in Ancient Philosophy by completing 24ch of courses offered by the Department of Classics & Ancient History and the Department of Philosophy. For Philosophy (PHIL) departmental course descriptions, please consult that departments calendar listing.

Students are required to complete 24ch as follows:

a. 6ch of introductory philosophy chosen from PHIL 1001 , PHIL 1002 , PHIL 1003 , PHIL 1004 , and PHIL 1005

b. 6ch of ancient language: GRK 1203 / 1213 or LAT 1103/ 1113 or any other 6ch of Greek and/or Latin

c. 6ch of advanced philosophy (PHIL) courses, including at least one of PHIL 3033 and PHIL 3034

d. 6 ch of advanced classics (CLAS) courses, including at least one of CLAS 3703 , CLAS 3723 and CLAS 3733

Credit Courses from Cognate Disciplines

The Department of Classics and Ancient History will accept for Classics credit courses in ancient philosophy [PHIL 3033 , PHIL 3034], and archaeological methods and practice [ANTH 3340 , ANTH 3350] to a maximum of 12 ch.

CULTURE AND LANGUAGE STUDIES

DEPARTMENT OF CULTURE AND LANGUAGE STUDIES

General Office:	Carleton Hall, Room 333
Mailing Address:	Department of Culture and Language Studies University of New Brunswick Box 4400 Fredericton, N.B. Canada E3B 5A3
Phone:	(506) 453-3571 or 453-4636
Fax:	(506) 447-3166
Email:	cals@unb.ca
Website:	http://www.unbf.ca/arts/Culture_Lang/

FACULTY

- Hamling, Anna, BA, BEd (Cardiff), MA (Qu), PhD (Warsaw), Sr. Instr. - 1999
- Hernandez, Rafael, BA (UNAM), MA (U of California), PhD (NYU), Assoc. Prof. - 2004
- Linton, Murray, BA, MA (UNB), Sr. Instr. Multimedia Studies - 1999
- Lorey, Christoph, Industriekaufmann (Germany), BA, MA, PhD (Alta), Prof & Acting Chair- 1994
- Reid, Allan, BA (Sask), MA, PhD (Alta), Prof - 1991

The Department of Culture and Language Studies welcomes students of all disciplines to participate in the quest for cultural literacy and multilingual communication.

Globalization, democratization, and post-colonial forces continue to powerfully shape our increasingly complex and interconnected world, requiring each one of us to respond to new challenges and opportunities by increasing our understanding of diverse cultures and our competence in foreign languages.

The Department of Culture and Language Studies houses a variety of specialists in languages, literatures, and cultures. We are dedicated to the teaching of cultural literacy, which can best be achieved through the long-term development of linguistic competence and the study of literary and social texts. In the spirit of diversity and understanding, we are committed to our students, to the exploration of innovative teaching and research modes that draw upon common interests among our languages and disciplines, and to the strengthening of our links to the greater academic community and the community at large.

The Department of Culture and Language Studies offers the following academic programs:

German : Minor, Major, Honours;
German Studies : Minor, Major, Honours;
Linguistics : Double Major, Joint Honours;
Russian and Eurasian Studies : Minor, Major;
Spanish : Minor, Major, Honours; and
World Literature and Culture Studies : Minor, Major, Honours

The Department also offers courses in Japanese and Chinese.

For course listings consult Section H of this calendar or visit the Departmental website at http://www.unbf.ca/arts/Culture_Lang

German

GENERAL INFORMATION

Language Acquisition

A variety of language acquisition courses is offered at all four undergraduate years. Students with no previous experience of German will normally enroll in GER1001 / 1002 . GER 1033 is also a first-year course requiring no previous knowledge of German, and is designed primarily to help students to read German texts in their particular fields of interest. The total sequence of language courses aims at reaching a level of proficiency that would enable a student to be linguistically competent in a German-speaking environment.

Literature and Culture

Students who are not primarily drawn to German language courses, but who still retain a lively interest in the German contribution to Western civilization, may take one of several literature or culture courses in which texts and instruction are in English, and for which no knowledge of German is required. These courses focus on various writers, movements, and aspects of German literature, culture, or film. Students specializing in German will attain a wider knowledge of different cultural models and theories, and will also study a variety of literary masterpieces.

PROGRAMS OF STUDY:

Majors

Students majoring in German (single or double majors), are required to complete 24 advanced ch in German, with no grades below C.

Honours and Joint Honours

Students in Single Honours are required to complete 36 advanced ch in German with no grades below B-. Students in Joint Honours are required to complete 24 advanced ch in German with no grades below B-.

Note: Students majoring or honouring in German normally spend one academic year at a university in a German-speaking country, preferably in their third or fourth year of study. Interested students should consult the undergraduate advisor for German before November 30 of the year prior to the time of departure.

Minors

Students in Minors are required to complete 24 ch in German, taken in the following sequence: GER 1001 / 1002 ; GER 2001 / 2002 ; GER 3011 , and 3022 , and 6 ch from advanced literature, film, or culture courses.

STUDY IN GERMANY

A student who attends language or literature courses either at one of the Goethe Institutes in the Federal Republic of Germany or at a university in a German-speaking country will be awarded up to 12 ch upon departmental recommendation. Students attending the Canadian Summer School in Germany may be awarded up to 6 ch upon departmental recommendation. Students who participate in the Work-and-Study program (Werkstudentenprogramm) may receive 3 advanced-level ch, subject to a departmental evaluation upon return.

For further information on a variety of other summer language programs, consult the undergraduate advisor for German. For a description of study abroad programs (summer term and full year) consult the Departmental website.

German Studies

GENERAL INFORMATION

German Studies is an Interdisciplinary Minor and Major Program offered jointly by the University of New Brunswick and St. Thomas University.

The German Studies Program provides the opportunity to combine the study of the language, literature, history, political science, and various socio-cultural aspects of the German-speaking peoples within the context of a larger Europe. The attainment of proficiency in the German language is an integral part of German Studies at all levels.

The program is administered by a committee drawn from the departments involved in the program. Interested students should contact the Director, who is normally the Chair of the Department of Culture and Language Studies.

PROGRAMS OF STUDY:

Minor in German Studies

A Minor in German Studies (24 ch) consists of:

1. four term courses (12 ch) of first and second year German language acquisition courses;
2. one term course (3 ch) in German Culture: GER/GS 1061 German Culture I or GER/GS 1071 German Culture II;
3. one term course (3 ch) in German history;
4. two term courses (6 ch) from any of the five areas of concentration listed below.

Major in German Studies

A Major in German Studies consists of 42 ch with a minimum of ten term courses (30 ch) mostly, but not exclusively, at the third- and fourth-year levels.

Honours in German Studies

An Honours program in German Studies consists of 48 ch with a minimum of twelve term courses (36 ch) taken at the third- and fourth-year levels with no grades below B-.

PROGRAM REQUIREMENTS

Note: Students in the German Studies Program must successfully complete a total of four term courses (12 ch) in German language acquisition at the first and second year levels or otherwise demonstrate proficiency in spoken and written German.

1. two term courses (6 ch) of third- or fourth-year German language acquisition courses or equivalent (selected from Group A);
2. one term course (3 ch) in the area of German literature, civilization, cultural topics, or linguistics (selected from Group B);
3. one term course (3 ch) in the area of German history (selected from Group C);
4. one term course (3 ch) in the area of German and European politics (selected from Group D);
5. five term courses (15 ch) from any of the five areas of concentration listed below; however, students are encouraged to choose these five courses from only one or two areas of concentration.

Note: Students pursuing Honours in German Studies must take seven term courses (21 ch) from any of the five areas of concentration listed below. A minimum of four term courses (12 ch) must be taken from a single area of concentration. No course must have a grade of below B-.

Areas of Concentration

A. German Language Courses:

GER/GS 3011	Modern German Usage I
GER/GS 3022	Modern German Usage II
GER/GS 4013	Advanced German Usage I
GER/GS 4023	Advanced German Usage II

B. German Literature, Civilization, Cultural Topics, or Linguistics: (+ = offered at St. Thomas University)

+ENGL 3563	Fiction, Drama and Film: Study in Narrative II
GER/GS 1113	Introduction to Modern German Literature in Translation
GER/GS 1061	German Culture I
GER/GS 1071	German Culture II
GER/GS 3043	Introduction to German Literature I
GER/GS 3045	ntroduction to 20th-C German Literature in Translation I
GER/GS 3053	Introduction to German Literature II
GER/GS 3055	Introduction to 20th-C German Literature in Translation II
GER/GS/WLCS 3063	Literature of the Holocaust

GER/GS 3072	Studies in Contemporary German Cinema
GER/GS 3073	Narrative Forms
GER/GS 3083	Seminar I: Genre
GER/GS 4053	Seminar II: Author
GER/GS 4073	Literary Texts

C. German History (+ = offered at St. Thomas University)

HIST 3006	The Protestant Reformation
HIST 3085	Germany 1900-1945
HIST 3095	The Germanies, 1945 to the Present
HIST 3775	History of Music in the Late Baroque and Classical Period
HIST 3785	History of Music in the Romantic Era
HIST 3795	A History of Music in the Twentieth Century
HIST 3796	History of the Music Dramas of Richard Wagner
HIST 4015	The Origin of the Second World War
HIST 5010	Reformation and Revolution in 16th Century Europe
HIST 5015	Reformation and Revolution in 16th Century Europe
HIST 5026	Fascist Movements
HIST 5027	Fascist Regimes
HIST 5035	The Holocaust
HIST 5080	Aspects of German History
+HIST 2043	Modern Europe
+HIST 2233	Early Modern Europe
+HIST 3263	European Social Policy in Comparative Perspective
+HIST 3333	The Age of Dictators
+HIST 3363	German History 1871-1945
+HIST 3373	The Germanies Since 1945
+HIST 4156	Revolutions in the Modern World
+HIST 4336	Germany and Europe in the Age of Total War

D. German and European Politics (+ = offered at St. Thomas University)

POLS 3113	The Foreign Policies of East European States
POLS 3343	The European Union in Transition
POL 3361	Eastern Europe in Transition
POLS 3363	Contemporary Germany
POLS 3432	Europe: East and West
POLS 3433	Late Modern Political Thought
POLS 3483	Hegel and Marx
+POLS 2306	Comparative Politics of the Developed World
+POLS 3363	Contemporary Germany
+POLS 3403	Government and Politics of Western Europe
+POLS 3413	Contemporary Germany

E. German Thought (+ = offered at St. Thomas University)

PHIL 2023	Introduction to 19th Century Existential Thought
PHIL 2024	Introduction to 20th Century Existential Thought
PHIL 3633	Phenomenology
PHIL 3634	Phenomenology of Existence
PHIL 4053	Introduction to the Philosophy of Kant
+PHIL 2163	Modern Philosophy II
+PHIL 2233	Contemporary Moral Philiosophy
+PHIL 3543	Existential Philosophy
+PHIL 3653	Contemporary Continental Philosophy
+PHIL 3763	Martin Heidegger

Course selections must be made in consultation with the Program Director.

Linguistics

GENERAL INFORMATION

The Linguistics Program combines courses in the traditional areas of linguistics and in related disciplines. It is administered by a committee drawn from the departments involved. Interested students should contact the Director of Linguistics or the Student Advisor.

Requirements

Linguistics is offered as part of a Double Major or a Joint Honours in conjunction with another Major or Honours program.

PROGRAMS OF STUDY:

Double Majors:

1. 9 ch from the three Required Courses.
2. 18 ch from Group A and Group B Courses, with not more than 6 ch from Group B.
3. The courses chosen to fulfil prerequisites or major requirements must be completed with a mark of C or better, and may not count towards the other subject of the Double Majors Program.

Joint Honours:

1. 9 ch from the three Required Courses.
2. 24 ch from Group A and Group B Courses, with not more than 6 ch from Group B.
3. The courses chosen to fulfil prerequisites or honours requirements must be completed with a mark of C or better, and may not count towards the other subject of the Joint Honours Program.

COURSES

Note: For course descriptions refer to the appropriate department listings.

Required Courses

LING2401	Introduction to Language
LING3411	Phonetics and Phonemics
LING3422	Morphology and Syntax

Optional Courses

Group A

ED 5078	Foundations of Speech and Language
ENGL/LING 3006	Linguistic Introduction to Canadian English
ENGL/LING 3010	History of the English Language

FR/LING 3404	Introduction à la linguistique
FR/LING 3414	Sociolinguistique
FR/LING 3424	Phonétique et phonologie
FR/LING 3444	La créativité lexicale
FR/LING 3454	Histoire de la langue française
FR/LING 3464	Syntaxe
FR/LING 3484	Questions de psycholinguistique
FR/LING 4414	Français canadien
FR/LING 4444	Sémantique
FR/LING 4464	Théorie linguistique
FR/LING 4465	Morphologie générative
LING 3903	Independent Studies in Linguistics I
LING 3904	Independent Studies in Linguistics II
MATH/LING 4903	Formal Languages
PHIL 2113	Introduction to Symbolic Logic
PHIL 3144	Set Theory and Logic
PSYC 3213	Language Development
PSYC 4215	Individuals with Disabilities

Group B

ABRG	(Micmac language courses at any level)
ABRG	(Maliseet language courses at any level)
ANTH 3412	Language and Culture
ANTH 3434	Cross-Cultural Communication
CHNS	Chinese language courses at any level)
CS 4613	Programming Languages
CS 5905	Topics in the Theory of Computing
ED 3560	Introduction à la didactique du français langue seconde
ED 3561	Introduction to Second Language Education
ED 4568	Le développement langagier en classe de langue seconde
ENGL 3003	Old English I
ENGL 3004	Old English II
FR	(French language courses at any level)
FR 3044	Grammaire et stylistique
FR 3204	Stylistique comparée du français et de l'anglais
GER/GS	(German language courses at any level)
GRK	(Ancient Greek language courses at any level)
JPNS	(Japanese language courses at any level)
LAT	(Latin language courses at any level)
LING 3803	Independent Studies in Language I
LING 3804	Independent Studies in Language II
PHIL 3083	Syntax and Semantics of Formal Systems
PSYC 2203	Foundations of Developmental Psychology
PSYC 3243	Cognitive Development
PSYC 3623	Cognition
RUSS	(Russian language courses at any level)
SPAN 3205	Advanced Translation
SPAN	(Spanish language courses at any level)
SPAN 4204	Spanish Language of the Americas

Note: Language improvement courses may not be counted for Linguistics credit by native speakers.

For more information consult URL:
http://www.unb.ca/web/arts/IDS/Lin/
or contact: Wladyslaw Cichocki, Director of Linguistics,
Phone: 447-3236 Fax: 453-3565 Email: cicho@unb.ca

Russian and Eurasian Studies

GENERAL INFORMATION

Russian and Eurasian Studies is an interdisciplinary major and minor program administered by a committee drawn from the departments involved in the program. Interested students should first contact the Director who is the representative from the Russian section of the Department of Culture and Language Studies.

PROGRAMS OF STUDY:

Major in Russian and Eurasian Studies

A major in Russian and Eurasian Studies shall consist of a minimum of 30 ch of advanced level courses relating to Russia and the former Soviet Union and Eastern Europe. To qualify to enter this program, students must first have satisfactorily completed 6 ch in the Russian language at the introductory level (RUSS 1013 and 1023) and 6 ch at the intermediate level (RUSS 2013 and 2023). The 30 ch for the Major will be selected from the list below and must meet the following requirements:

1. 6 ch in the Russian language (RUSS 3013, 3023)
2. two of: 6 ch in Russian or East European literature, 6 ch in Political Science of Russia, the former USSR and Eastern Europe 6 ch in the History of Russia, the former USSR, and Eastern Europe
3. 12 additional ch (3 ch each):

GEOG 5644	Geography of the USSR
POLS/ECON 3112	The Political Economy of Russia and Ukraine
POLS 3113	The Foreign Policies of East European States
POLS/ECON 3343	The European Union in Transition
POLS/ECON 3361	Eastern Europe in Transition
POLS 3431	Politics of the Former Soviet Empire
POLS 3432	Europe: East and West
POLS 3831	Contemporary China
RUSS 1043	Russian Culture I
RUSS 1053	Russian Culture II
RUSS 3013	Advanced Russian I
RUSS 3023	Advanced Russian II
RUSS 3051	Introduction to 19th Century Russian Literature in Translation
RUSS 3052	Introduction to 20th Century Russian Literature in Translation
RUSS 3083	Seminar I: Genre
RUSS 4053	Seminar II: Author
SPAN/RUS/ WLCS 4043	Literature and Religion in 19th and 20th Century Russia and Spain

Minor in Russian and Eurasian Studies

A minor in Russian and Eurasian Studies will consist of 12 ch of Russian language (RUSS 1013 , 1023 , 2013 , 2023), as well as 6 ch each in two of political science, history or literature from the above listed courses.

Access to the upper year political science and history courses will be contingent upon departmental consent where students in the Russian and Eurasian Studies Program do not have the necessary prerequisites.

Spanish and Latin American Cultures

GENERAL INFORMATION

Texts

Full listings of texts required in every course for the following academic year will be available early in the Spring.

Counselling and Guidance

During registration and after, students are urged to consult the Chair and the other members of the Department on any matters concerning their individual programs.

Prerequisites

There are no prerequisites for Introductory Spanish language course SPAN 1203 , nor for the following courses offered in English (SPAN 2013 , SPAN 3014 , SPAN 3015 , SPAN 3062 , SPAN 3113 , SPAN 3973 , SPAN 3983 SPAN 3984 , and SPAN 4043).

SPAN 2204 is the prerequisite for third year language and literature courses. SPAN 3204 is the prerequisite for SPAN 4203 . Equivalent courses will be considered by the Department.

The Department also offers two courses in Business Spanish, SPAN 1304 and SPAN 2303 . SPAN 1304 may be taken any time after SPAN 1203 has been successfully completed. SPAN 1304 or SPAN 1204 is the prerequisite for SPAN 2203 or SPAN 2303.

INTRODUCTORY AND INTERMEDIATE LEVEL COURSES:

Language: The language courses are a continuous series and must be taken in the normal sequence. Students with some prior knowledge of Spanish should have this assessed in order to be placed at their proper level. The first two years provide students with a solid working knowledge of Spanish. Students may change streams in consultation with the Department.

Civilization: Courses in Spanish and Spanish American civilization (SPAN 2013 , SPAN 3014 , and SPAN 3015) are offered in English and are open to any student.

ADVANCED LEVEL COURSES

Language: SPAN 3203 , SPAN 3204 , SPAN 3205 , SPAN 4203, and SPAN 4204 provide a greater degree of proficiency and specialization in writing, reading, translation and spoken fluency.

Literature: All literature courses are offered at the 3000 level and may be taken in either the third or fourth year. These deal with Spanish and Spanish American literature and are offered either annually or in alternate years. This should be taken into account when planning the junior and senior years. Advanced level course classes are, for the most part, conducted in Spanish to help students achieve oral fluency.

PROGRAMS OF STUDY:

Students must have their programs approved by the Department. Students in Minors and Majors must obtain a grade of C or higher in all required Spanish courses. Honours students must obtain a grade of B- or higher in all required Spanish courses.

Minors

Students wishing to take a minor in Spanish may opt for any one of the following:

1. A Minor in Spanish Language, consisting of SPAN 1203 ; SPAN 1204 or SPAN 1304 ; SPAN 2203 or SPAN 2303 ; SPAN 2204 ; and 12 additional ch in Spanish language courses (SPAN 3203 , SPAN 3204 , SPAN 3205 , SPAN 3563 , SPAN 3564 , SPAN 4203 , SPAN 4204).
2. A Minor in Spanish Civilization, consisting of SPAN 1203 ; SPAN 1204 or SPAN 1304 ; SPAN 2203 or SPAN 2303 ; SPAN 2204 ; and 12 ch in Spanish Civilization (SPAN 2013, SPAN 3014 , SPAN 3015 , SPAN 3113 , SPAN 3563 or SPAN 3564 or SPAN 3903).
3. A Minor in Spanish Literature, consisting of SPAN 1203 ; SPAN 1204 or SPAN 1304 ; SPAN 2203 or SPAN 2303 ; SPAN 2204 ; and 12 additional ch in Spanish and Latin American literature (SPAN 3062 , SPAN 3113 , SPAN 3413, SPAN 3414 , SPAN 3423 , SPAN 3424 , SPAN 3563 , SPAN 3564 , SPAN 3673 , SPAN 3774 , SPAN 3954 , SPAN 3973 , SPAN 3974 , SPAN 3983 , SPAN 3984 , SPAN 3974 , WLCS/SPAN/RUSS 4043).

Majors

Students in Single or Double Majors are required to successfully complete SPAN 3203 and 3204, plus six other advanced Spanish courses, for a total of 24 advanced-level ch in Spanish.

Honours

Students in Single Honours are required to successfully complete SPAN 3203 and SPAN 3204 , plus ten other advanced Spanish courses, for a total of 36 advanced-level ch in Spanish. Students in Joint Honours are required to successfully complete SPAN 3203 and 3204 , plus six other advanced Spanish courses, for a total of 24 advanced-level ch in Spanish.

CERTIFICATE OF PROFICIENCY IN SPANISH.

Persons who are not majoring or honouring in Spanish and who would like to have official recognition of their competence in the language may apply for admission to this program, which is administered for the University by the Department of Culture and Language Studies on the Fredericton campus. The goal of the program is to enable students to acquire a functional command of Spanish, by upgrading, over a four-year period, the five basic language skills: speaking, listening, reading, writing, and translation and interpretation.

The program normally consists of 12 ch of Spanish courses at the Introductory and Intermediate levels, followed by 12 ch at the Advanced level. These will normally be SPAN 1203 or SPAN 1003 , SPAN 1204 , SPAN 1304 or SPAN 1004 , SPAN 2203 , SPAN 2204 , SPAN 2303 , SPAN 3203 , SPAN 3204 , SPAN 3205 , SPAN 4203 , SPAN 4204 . In all of these courses the student is to attain a mark of C or higher, and the certificate is awarded on the basis of a comprehensive examination upon termination of the last course in the sequence. A maximum of six credit hours may be transferred from another program upon consultation with the Department.

Students interested in being considered for the Certificate must seek the approval of the Department of Culture and Language Studies.

Full-time students may take these courses as part of their undergraduate program. Persons not working towards a degree may enroll for the courses as part-time students.

Students must attempt the comprehensive examination within two years of completing the course requirements. Students who fail the comprehensive examination on their first attempt will be allowed to sit again in the following session.

The Certificate of Proficiency in Spanish will be awarded by the University through the Registrar's Office. The student's transcript will bear a separate entry, showing that the Certificate has been awarded, and will record the grades obtained in the four areas of language competence (speaking, listening comprehension, reading comprehension and writing).

These grades are A (very good); B (good); and C (satisfactory) and they may be interpreted as follows:

Speaking:

A:	the candidate can converse with ease
B:	the candidate can converse with some difficulty
C:	the candidate can make himself/herself understood

Listening Comprehension:

A:	can understand lectures in a job-related context, radio, TV, etc
B:	can understand lectures on non-technical subjects and group conversations
C:	can understand what is said to him/her by another person

Translation and Interpretation:

A:	the candidate can correctly translate a text in writing and act as a fluent interpreter in a conversation between two other persons
B:	can translate a text in writing with a few errors and convey ideas between two speakers with a few hesitations
C:	can translate a text in writing with a few more errors and convey ideas between two speakers but occasionally must ask the speakers to explain what they meant

Reading Comprehension:

A:	can understand the main ideas in books, magazines and newspapers without the aid of a dictionary
B:	can read printed material of personal interest with occasional help from a dictionary
C:	can read, with the aid of a dictionary, standard texts written without stylistic difficulties on subjects within his/her interest

Writing:

A:	can write papers, essays, etc., which are acceptable in form and format
B:	can write acceptable resumes, letters, compositions which need only some revision
C:	can write sentences and short paragraphs which are grammatically acceptable

A brochure containing further details is obtainable from the Department of Culture and Language Studies on the Fredericton campus and the Division of Humanities and Languages on the Saint John campus.

World Literature and Culture Studies

GENERAL INFORMATION

The Program in World Literature and Culture Studies is dedicated to the study of literature and cultures in a broad interlingual, intercultural and interdisciplinary framework. It offers students the opportunity to explore various cultures and literatures through the study of texts, either in their original language or in translation and to develop a more global consciousness and awareness. World Literature and Culture Studies introduces students to:

1. The literatures of two or more languages and cultures
2. Questions and theories about literatures and cultures
3. Contemporary and/or historical perspectives on two or more cultures

The study of different texts and cultures will enrich and enhance students' understanding of their own as well as of other cultures. This process is facilitated by the systematic comparison of such questions as literary genres, periods, movements, and dominant themes and motifs, or in the context of the mutual impact of two or more national or regional cultures.

Why World Literature and Culture Studies?

Globalization, democratization, and post-colonial forces continue to powerfully shape our increasingly complex and interconnected world. World Literature and Culture Studies provides a valuable opportunity to study these relationships as expressed in literary and other cultural texts from a variety of perspectives.

Those who would otherwise choose to study one national or regional literature may find here a broader frame of reference for their interest. Students have the opportunity to read intriguing and challenging texts from around the world while discovering the connections between literature and other disciplines and among the various literatures studied in the program; this program offers students the possiblity of exploring the relations between literature and such areas as ideology, colonialism, film and other visual arts, gender studies, political thought, and International Development Studies.

World Literature and Culture Studies allows students to improve their analytical and critical thinking skills, develop their abilities in expository writing and oral communications, expand the context of functionality in a second or even third language. Finally, students not only gain perspective on the world, but also deeper insights into their own culture.

PROGRAMS OF STUDY

General Program Requirements

Students planning to major in World Literature and Culture Studies will normally take the following sequence of courses, with adjustments for Honours or combined programs:

Year I

- Either 6 ch in World Literature (WLCS 1001 and 1002) or 6 ch in Introductory Culture courses. (Both alternatives count as Humanities for first-year Arts requirements)
- 6ch in a second language (Introductory level)

Year II

- Either 6 ch in World Literature (WLCS 1001 and 1002) or 6 ch in Introductory WLCS Culture courses (depending on which of the two were taken in Year I)
- 6 ch in a second language (Intermediate level)
- 3-6 ch recommended (but not required) in related courses, incl ANTH1001, CLAS 1003, 1403, 1413, 1503; HIST 2015; IDS 2001

Year III/IV

- 30 upper level credit hours including at least 6 ch WLCS, 18 ch from Group A, drawn from at least three disciplines, plus 6 ch from Group B. In addition, students are strongly encouraged to continue in the study of at least one second language

MINORS, MAJORS AND HONOURS

Minor

A Minor in WLCS consists of a total of 24ch and must include:

1. Either 6ch in (one) second language OR 6ch of introductory courses in culture
2. WLCS 1001 and 1002
3. 12 additional upper-level ch in literature, culture and/or film courses taken from the Department of Culture and Language Studies

Majors

- WLCS 1001/1002
- 6 credit hours in Introductory Culture courses
- 12 credit hours in a second language
- 30 credit hours in advanced-level courses including: 6-9ch WLCS courses 15-18 ch from Group A 6 ch from Group B

Double Majors

The same as for majors except:

- 24 credit hours in advanced-level courses including: 6-9 ch WLCS courses 9-12 ch from Group A 6 ch from Group B

Honours

The same as for majors except:

- 36 credit hours in advanced-level courses including: 12 ch WLCS courses including WLCS 5000 (Honours Thesis) 18 ch from Group A 6 ch from Group B

Joint Honours

The same as for majors except:

- 30 credit hours in advanced-level courses including: 12 ch WLCS courses including WLCS 5000 (Honours Thesis) 12 ch from Group A 6 ch from Group B

WORLD LITERATURE AND CULTURE STUDIES (WLCS) COURSES

Notes:

1. All readings and lectures are in English.
2. 1000-level courses are open to all students, and have no prerequisites.
3. Upper level courses are open to all students who have completed at least 30 credit hours of university or by permission of the instructor.

Introductory Culture Courses

(See under German, Russian, Spanish for course descriptions)

WLCS / SPAN1013	The Culture of Spain and Latin America I	3 ch (3C) [w]
WLCS / SPAN1014	The Culture of Spain and Latin America II	3 ch (3C) [w]
WLCS 1043 / RUSS1043	Russian Culture I	3 ch (3C) [w]
WLCS 1053 / RUSS1053	Russian Culture II	3 ch (3C) [w]
WLCS /GER/GS 1061	German Culture I	3 ch (3C) [w]
WLCS /GER/GS 1071	German Culture II	3 ch (3C) [w]

Group A

Any advanced-level literature courses from the following disciplines: Classics, English, French, German, Greek, Latin, Russian and Spanish as well as courses in film studies. Individual departmental prerequisites must be met. Course selection should be discussed with and approved by the Chair of the Department of Culture and Language Studies.

Group B

Approved courses (listed below) from other university departments. Individual departmental prerequisites must be met. Other courses may be appropriate for this group as well. Course selection should be discussed with the Chair of the Department of Culture and Language Studies.

ANTH 3412	Language and Culture
ED 5361	Challenging the Authority of Texts
PHIL 2703	Introduction to Issues in Aesthetics
PHIL 2704	Introduction to Classics in Aesthetics
PHIL 3634	Phenomenology of Existence (Heidegger)
SOCI 3243	Sociology and Culture
SOCI 3253	Sociology of the Media
SOCI 4225	Language and Society

ECONOMICS

DEPARTMENT OF ECONOMICS

General Office:	Singer Hall, Room 465
Mailing Address:	Department of Economics University of New Brunswick, P.O. Box 4400, Fredericton, N.B., Canada, E3B 5A3
Phone:	(506)-453-4828
Fax:	(506)453-4514
Email:	econ@unb.ca
Website:	http://www.unbf.ca/arts/econ/

FACULTY

- Cook, Beverly A., BA, MA (UNB), PhD (S.Fraser), Prof - 1980
- Dickson, Vaughan, BA (UNB), MA, PhD (UWO), Prof - 1974
- Farnworth, Mike, BA, PhD (McM), MA (Qu.), Asst. Prof.
- Ferguson, Brian, PhD (ANU, Canberra), Adjunct Prof. - 2002
- Lantz, Van, BA (Car.), MA (Dal), PhD (S.Fraser), Asst Prof (Jt For & Enviro Mgmt) - 2000
- Levine, Larry, BA (Alberta), MA (Tor), PhD (LSE), Prof. Emeritus
- McDonald, Ted, BA (St. F.X.), MCom, PhD (Melbourne), Assoc Prof - 2001
- McGaw, Richard L., BA, MA (UNB), PhD (Manc), Prof - 1974
- Murrell, David, BA (Duquesne),BSocSc, MA (Ott), PhD (Qu), Prof - 1985
- Myatt, Anthony E., BA (Lancaster), MA, PhD (McM), Prof - 1983
- Orati, Vittorangelo, Adjunct Prof - 2003
- Passaris, Constantine E., BA (American U, Cairo), MA (Nfld), PhD (Leicester), Prof & Chair- 1972
- Rezun, Miron, BA (York), MA (Tor), MA, PhD (Geneva), Prof (Jt Political Science) - 1987
- Rowcroft, John E., BSc, MSc (Manc), PhD (S.Fraser), Prof - 1973
- Ruggeri, Giuseppe, MA (Mich), PhD (State Univ of NY), Prof and Vaughan Chair - 2000
- Yevdokimov, Yuri, BSc (Sumy), MA (Academy of Science), MSc (Ill), PhD (Manit.), Asst Prof. (Joint Civil Eng.) - 1999
- Yu, Weiqiu, BSc (Shandong), MA (UNB), PhD (S.Fraser), Assoc Prof - 1993

Programs of Study

The Department of Economics offers two programs: a major in ECONOMICS STUDIES and majors and honours in ECONOMICS.

ECONOMIC STUDIES PROGRAM

The Economic Studies Program is appropriate for those who want a liberal arts background in economics for its own sake, as preparation for professional schools (such as Law), or as a useful complement to related disciplines (such as Anthropology, Education, History, Political Science, Psychology or Sociology), or related programs (such as the Law and Society Program). There is less emphasis in Economic Studies on economic theory, and statistics, and more on policy and applications. Students contemplating graduate work in Economics should take the Economics program rather than Economic Studies. The usual entry level courses are ECON 1001 and ECON 1002 although ECON 1013 and ECON 1023 may be substituted for these courses.

The Economic Studies Program is available to students in the Faculty of Arts and to students pursuing joint (or concurrent) Arts degrees with other faculties. It consists of a minimum of 30 ch in Economics with no restrictions on course selection.

ECONOMICS PROGRAM

The defining feature of the Economics Program are core courses in microeconomic theory, macroeconomic theory and statistics. Honours students are also required to complete courses in mathematical economics, econometrics and advanced theory. The program is designed to provide a grounding in the fundamentals of economics and to introduce students to modern economic issues and problems. It is especially appropriate for those students wishing to pursue graduate studies or employment in economics.

The Economics Program is available to students in the **Arts**, **Administration** and **Science** Faculties and to students pursuing concurrent degrees in Arts and Education and Arts and Computer Science. The usual entry level courses are Economics 1013 and 1023.

The Economics Program is offered at 3 levels of specialization in the Faculties of Arts and Administration: Major level, Major "A" level and Honours. Majors programs combining Economics with Geology or Mathematics are also available in the Science Faculty. (Please see **Science Faculty Programs**). Majors programs for BBA/ADM students are discussed below.

Students following the Major "A" level or Honours must satisfy a mathematics requirement consisting of MATH 1823 and 1833 or MATH 1003 and 1013 . The Mathematics Department requires MATH 1003 and MATH 1013 for those who plan to take advanced courses in Mathematics. Students who intend to become professional economists are strongly advised to take Mathematics courses beyond the first year level.

Majors and Honours

MAJORS

Students normally choose a major in the third year. Persons wishing to major in Economics should register with the Department at the beginning of the academic year. Registration forms may be obtained from the Chair, Department of Economics, or from one of the departmental secretaries, SH465.

i. **Major Level Program**

Major level students must complete not fewer than 30 ch in Economics. These must include ECON3023 , ECON3013 , ADM2623 or ECON3601 or approved substitute; and must not include any POLS/ECON cross-listed courses.

This Major and the Major "A" program are also available to **Business Administration** students. BBA students who enroll in this Major or the Major "A" are permitted to substitute BBA requirements (ADM2623 , 2624) for Department of Economics statistics courses. The Major is earned by completing a minimum of 24 ch in Economics courses (including ECON3013 and 3023) in addition to ADM2623 and ADM 2624 .

ii. **Major: "A" Level Program**

This program is designed for students who wish to specialize in Economics but are not sufficiently committed to enroll in the Honours program. The emphasis on economic theory is less than in the Honours program, and students have a greater number of options. Major "A" students must complete 48 ch in Economics courses or approved substitutes. Compulsory courses are ECON3013 and 3023 ; 4013 and 4023 ; ADM2623 and 2624 or approved substitutes; ECON3665 .

HONOURS

The Honours program is designed mainly for persons who intend to become professional economists, particularly those who plan to do graduate work in Economics at UNB or some other university. The program emphasizes economic theory, mathematical economics and quantitative research methods. Students are advised to take one or more courses in Mathematics beyond the introductory level; many graduate schools now insist that students have some background in mathematical economics and/or quantitative methods.

Applications to read for Honours are reviewed at the beginning of the academic year (September), but may be considered at other times. Students normally enter the program in the third year. Fourth year students may be admitted under special circumstances. Admission is restricted to persons who have earned a grade of B or higher in an introductory Economics or equivalent course (e.g. MATH1003 , or a similar course) and have a cumulative grade point average of at least 2.5. To remain in the Honours program a student must maintain a grade point average of 3.0 in Economics courses and approved substitutes, with no grade lower than B- in a required course.

Persons reading for Single Honours must complete 54 ch in Economics courses or approved substitutes. Additional credit hours in Economics may be taken with the Approval of the Department.

Persons reading for Double honours must complete 48 ch in Economics courses or approved substitutes. Additional credit hours in Economics may be taken with the approval of the Department.

The following Economics courses are compulsory for Honours students: ECON 3013 and 3023 , ADM2623 and 3628 or approved substitutes, ECON3665 , 5665 , 4625 , 4023 and 4013.

An Honours student must complete ECON 3013, 3023, ADM2623 and 3628 or approved substitutes, before entering the fourth year.

Honours programs in Economics and Finance and Economics are also available from the Faculty of Administration. Please see **Business Administration programs**.

Co-operative Education Program

The Department operates a small Co-operative Education (Co-op) Program available to academically qualified Honour and Majors in Economics and Majors in Economic Studies. It is co-ordinated through the Faculty of Administration. This Program offers students the opportunity to undertake paid work-terms, the work to include economic research and analysis beyond classroom instruction. The Program offered within the Department consists of a minimum of three (3) four-month work-term sessions which may or may not be taken consecutively depending on the work-term offer taken. These work-term sessions are in addition to the normal eight semesters of academic study. The Program allows the student to obtain a Major in Economics or Economic Studies or Honours in Economics in addition to Co-op participation. Students normally apply to enter the Co-op program after completing the first year of study, but later admission may be possible.

The following Program rules apply:

1. Admission into the Program is selective. Students must maintain a minimum GPA of 3.0 while participating in the Co-op Program.
2. Students must successfully complete CS1043 Introduction to Computers before entering the Co-op Program. Completion of CS2525 Microcomputer Applications is recommended before entry into the Program.
3. Students must be fully registered at UNB during each work-term so that they can be considered as full-time students while working.
4. A Co-op fee will be charged for each registered 4-month work-term to cover placement and administration costs.
5. Students must undertake a minimum of 3 work-terms. The work-terms may alternate with study-terms, or the terms may run consecutively over two or three terms, depending on employer demand.
6. Each 4-month work term will be monitored directly by the employer, and by the departmental Co-op Director through oral and written communications with the employer and student. The student must complete a work-term report after each 4-month term. Work-term evaluations by the employer and work-term reports must be satisfactory for the Co-op designation to appear on university transcripts. Each successful work-term will appear on the students transcript.
7. Students must complete at least one study-term after their last work-term.
8. The term "Co-operative Education in Economics" will follow the degree designation on the students final transcript.

MINORS

MINOR IN ECONOMICS

In addition to the Majors programs in Economics and Economics Studies, a minor in Economics is also available to students from all Faculties. The minor in Economics shall consist of at least 24 ch in Economics with a grade of 2.0 or better. The courses for the minor must be from a "coherent set of sequence of courses" as called for by the general university regulations for a minor.

MINOR IN PUBLIC POLICY

This is a joint minor proposed by the departments of economics and political science. The minor is open to all students including those majoring in economics and political science.

Students may minor in Public Policy by completing 24ch of courses offered by the Department of Economics and the Department of Political Science. Students are required to complete 24ch as follows:

a. 6ch of introductory economics chosen from: ECON 1001 , ECON1002 , ECON 2515 , ECON 2505 , ECON 2705 , ECON 2905 .
b. 6ch of introductory political science (POLS) courses chosen from POLS 1103 , POLS1203 , POLS 2200 , POLS 2203 .
c. 6ch of advanced economics (ECON) courses from ECON 3055 , ECON 3203 , ECON 3504 , ECON 3702 , ECON 3755 , ECON 3801 , ECON 3815 , ECON 3845 , ECON 3865 , ECON 4775 .
d. 6 ch of advanced political science (POLS) courses from POLS 3211 , POLS 3212 , POLS 3227 , POLS 3251 , POLS 3253 , POLS 3257 , POLS 3282 , POLS 3292 , POLS 3391 , POLS 3461 , POLS 3647 , POLS 3281 .

MINOR IN CULTURE AND ECONOMY

This is a joint minor proposed by the departments of economics and anthropology. The minor is open to all students including those majoring in economics and anthropology.

Economics and anthropology overlap in so far as both disciplines seek to understand humankinds myriad social customs, institutions and behaviour as being the outcome of a rational attempt to avoid costs and reap benefits. Just as anthropology has extended its field of study to include modern capitalist economies, so economics has extended its orbit to include social and political interactions. The commonality of the endeavour suggests that a rich cross-fertilisation is not only possible, but desirable.

Students may minor in Culture and Economy by completing 24ch of courses offered by the Department of Economics and the Department of Anthropology. Students must achieve a grade of C or better in each course for it to be counted as part of the Minor and are required to complete 24ch as follows:

a. 6ch of Economics chosen from: ECON 1001 , ECON 1002 , ECON 2515 , ECON 2505 , ECON 2705 , ECON 2905 .
b. 6ch of introductory Anthropology (ANTH) courses chosen from: ANTH 1001 , ANTH 2114 , ANTH 2144 .
c. 6ch of advanced economics (ECON) courses chosen from: ECON 3055 , ECON 3504 , ECON 3702 , ECON 3724 , ECON 3845 , ECON 3361 , ECON 3633 , ECON 4775 .
d. 6 ch of advanced anthropology (ANTH) courses, chosen from: ANTH 3204 , ANTH 3244 , ANTH 3284 , ANTH 3434 , ANTH 3714 , ANTH 4012 , ANTH 4214 .

Course Substitution

Students in the Major "A" and Honours programs may substitute up to 9 ch of non-Economics courses for non-compulsory Economics courses. Department of Economics approval is required.

Most intermediate and advanced courses offered by the Faculty of Administration in the areas of Accounting, Finance, Quantitative Analysis, and Industrial Relations, may be substituted for non-compulsory Economics courses.

Certain courses offered by the Departments of Mathematics and Political Science may be substituted for Economics courses.

Courses offered by other Departments or universities, that are reasonable equivalents of Department of Economics courses, may be substituted for compulsory courses, with the approval of the Department.

All students who expect to become professional economists are advised to take ECON4625 and ECON5645 (most graduate schools require knowledge of Econometrics).

Course Numbering System

First Digit

The numbers 1 to 5 designate the level of the course, prerequisites, and other conditions of admission.

1	Designates a course with no prerequisites or other restrictions on admission.
2	Designates a course normally open to any student who has completed at least one year of university work.
3	Designates a course with one formal prerequisite; any student who has completed the prerequisite is admitted (normally the student will have completed at least one year of university work).
4	Designates a course with at least one formal prerequisite; any student who has completed the formal prerequisite(s) is admitted if he/she also completed at least two years of university work.
5	Designates a course open only to students with a substantial background in Economics, or the equivalent (normally there is at least one formal prerequisite). All 5 courses are joint undergraduate/ graduate offerings (i.e. are listed as 6 courses in the School of Graduate Studies Calendar). Admission is at the discretion of the instructor.

*Formal prerequisites are specified in the course description. When a prerequisite is listed as recommended, a student without the course must consult the instructor before registering.

Second Digit

The numbers to 9 designate subject classification within the discipline of Economics.

0	Economic Theory
1	Money and Banking
2	Public Economics
3	Economic History
4	International Economics
5	Economic Growth and Development: Regional Economics
6	Mathematical Economics & Quantitative Methods
7	Resource Economics
8	Applied Economics
9	Other Areas

Third and Fourth Digit

These digits identify courses within each subject classification.

AREAS OF STUDY

0 Economic Theory

1001	Economics in the Real World
1002	Introduction to the New Economy
1013	Introduction to Economics: Micro
1023	Introduction to Economics: Macro
1073	Economics for Engineers
2009	Understanding Economics Through Films
2015	The Economics of Strategic Thinking
3013	Economic Theory I: Microeconomics
3023	Economic Theory I: Macroeconomics
3055	Public Policy Analysis
4013	Economic Theory II: Microeconomics
4023	Economic Theory II: Macroeconomics
5013	Topics in Microeconomic Theory
5023	Topics in Macroeconomic Theory

1 Money and Banking

2103	Introduction to Money & Banking

2 Public Economics

2203	Introduction to Public Finance
3203	Public Finance Analysis
3702	Cost-Benefit Analysis
3845	Introduction to Law and Economics
5285	Public Policy Research

3 Economic History

4 International Economics

3401	International Economics: Trade
3412	International Economics: Finance

5 Economic Development & Growth; Regional Economics

3504	Regional Economic Theory and Policy
5515	General Regional Economic Theory

6 Mathematical Economics & Quantitative Methods

3665	Mathematical Econonomics I: Economic Analysis
4625	Econometrics I
5625	Econometrics II
5645	Applied Econometrics
5665	Mathematical Econonomics II

7 Resource Economics

3724	Economics of Human Resources
3744	Recreation Economics
3755	Environmental Economics
3794	Natural Resource Economics I
3865	Energy Economics: Introduction
5794	Natural Resource Economics II
5724	Economics of Human Resources
5755	Environmental Economics II
5775	Econommics of Fisheries Management

8 Applied Economics

3801	Economics of Transportation I
3815	Introduction to Health Economics
5803	Transportation Problems and Policies
5815	Health Economics
5825	Industrial Organization: Theory
5835	Industrial Organization: Policy

9 Other Areas

2505	Information Technology and the Canadian Economy
2905	Contemporary Issues in the Canadian Economy
4775	Economics of Canadian Immigration
5989	Topics in Economics I
5999	Topics in Economics II

ENGLISH

DEPARTMENT OF ENGLISH

General Office:	Carleton Hall, Room 247
Mailing Address:	Department of English The University of New Brunswick P.O. Box 4400, Fredericton, N.B., Canada, E3B 5A3
Phone:	(506) 453-4676
Fax:	(506) 453-5069
Email:	english@unb.ca
Website:	http://www.unb.ca/english/

FACULTY

- Andrews, Jennifer, BA (McG.), MA (Tor), PhD (Tor), Assoc Prof - 1999
- Austin, Diana, BA (UNB), MA (Qu), DPhil (Oxon), Prof - 1983
- Ball, John C., BA, MA, PhD (Tor), Prof - 1995
- Canitz, A. E. Christa, BA, MA (Birmingham), PhD (UBC), Prof - 1993
- Davies, Gwendolyn, BA (Dal), MA, Ed. Cert. (Tor), PhD (York), FRSC, Prof, Dean of Graduate Studies, Associate Vice-President (Research) - 2000
- Doerksen, Daniel, BA (Winn), Bed (Manit), MA, PhD (Wis), Hon Res Prof - 1998
- Falkenstein, Len, BA, MA (Sask), PhD (Alta), Assoc Prof - 1999
- Gants, David L., BA (Wash), MA, PhD (Virginia), CRC Chair in Hum. Computing, Dept. of English/E.T.C., Assoc Prof - 2003
- Jarman, Mark, BA (Vic), MFA (Iowa), Assoc Prof - 2000
- Klinck, Anne, BA, MA (Oxon), MA (McG.), MA, PhD (UBC), Prof - 1990
- Leckie, Ross, BA (McG.), PD/AD (Educ)(Alta), MA (C'dia.), PhD (Tor), Prof - 1997
- Martin, Randall, BA (Tor), MA (Birmingham), DPhil (Oxon), Prof & Univ. Research Prof - 1994
- Mullaly, Edward J., BA (Windsor), MA, PhD (UNB), Hon Res Prof - 1999
- Ploude, Roger J., BA (St Thomas), MA (Dal), PhD (Qu), Prof & Chair - 1972
- Rimmer, Mary P., BA (C'dia.), AM, PhD (Harv), Prof - 1991
- Robbins, Wendy J., BA (Bishop's), MA, PhD (Qu), Prof - 1984
- Snook, Edith, BA, MA (Alta), PhD (UWO), Asst Prof - 2001
- Tryphonopoulos, Demetres, BA, MA, PhD (UWO), Prof & Asst Dean, School of Graduate Studies - 1990

General Information

Students should note that changes are sometimes made after the compilation of the Calendar. For the most up-to-date information on offerings and regulations students should obtain a copy of the Departmental Handbook issued in spring each year.

Students in all courses in English are required to write original essays on assigned topics. The policy of the Department is that marks awarded for these essays are reckoned in determining standing in each course, and any student who fails to complete the essays will be denied credit for the course.

Students who withdraw from a course must inform the Registrar's Office to avoid receiving a failing grade. The deadlines for withdrawing from courses without academic penalty are stated in the academic calendar.

Students should acquire a good dictionary, the revised **Form and Format**, a recent handbook of literary terms, and the handbook of course descriptions issued annually by the Department.

Students may, with the written permission of the Department, take advanced-level courses in English at St. Thomas University in lieu of those listed in this Calendar. This policy does not apply to the regular courses of the introductory and intermediate levels, or to the Honours Seminars.

Introductory and Intermediate-Level Programs: General Regulations and Information

The introductory and intermediate-level programs are designed to give students a fuller appreciation of major works of literature and to improve their ability to write effective English. The programs offer a range of courses intended to be of value both to students who will specialize in English and to students in Arts and other faculties who have a general interest in English.

Course Numbering

Courses beginning with the digit 1 are introductory; those beginning with 2 are intermediate. Advanced-level courses begin with either 3 or 5. Students above the first-year level who have taken a previous university English course must elect intermediate-level courses, except for ENGL 1000 , which may be elected with departmental permission, and ENGL 1103 and ENGL 1104 . Students above the first-year level who have not taken a previous university English course may elect either introductory or intermediate courses except ENGL 2901 and ENGL 2902 .

Apart from the initial numeral indicating the year in which a course is normally taken, the numbering of courses is merely a means of identification and does not indicate that one course is more or less advanced than another. Students must have taken 6 ch at the introductory or intermediate level before enrolling in a course at the advanced level. Any student intending to major or honour in English should take ENGL 2901 and 2902 ; to enter these courses a grade of C or better in ENGL 1000 or equivalent is required. First-year students in faculties other than Arts must elect introductory courses.

Second-year students may not take more than 12 ch of English courses, normally at the intermediate level. Students may not take an intermediate-level course in any subject area in which they have already had an advanced-level course.

It is expected that no student will miss more than four classes per term without good reason.

Please see the Director of First- and Second-Year Studies for more information.

Major, Honours and Minor

Majors and Honours students must complete ENGL 1000 (or equivalent), ENGL 2901 , and ENGL 2902 .

ENGL 3083 (Literary Theory) is recommended for the Majors and Joint Honours programs and required for the Single Honours program.

Majoring in English

Students who wish to major in English should discuss their next year's program with one of the Co-Directors of Majors and Honours in the spring or at fall registration. Students are encouraged to register in the program as early as possible. One of the Co-Directors of Majors and Honours should be consulted about any changes in a student's program.

Single-Major students must complete a minimum of 30 ch of advanced-level English courses, including at least 6 ch in pre-1660 literature in English and at least 6 ch in literature in English, 1660-1900. For a Double Major the requirements are the same

except that the minimum is 24 ch. No course may be counted toward the fulfilment of the minimum Majors requirement unless it is passed with a grade of C or better.

In order to give a recognizable coherence to the regular Majors program, there are regulations regarding the minimum 30 ch (Single Major) or 24 ch (Double Major) of advanced-level courses. No more than a total of 6 ch from the following categories may be included in these minimum requirements: Film Studies,Writing (Creative, Expository, or Screen), Drama or Video Production.

Students transferring credits from another university should note that at least half the advanced-level credits counted towards a UNB Major in English must be from courses taken at the University of New Brunswick.

Optional Major Program: English (Drama)

The Department offers to students wishing to concentrate in drama the following Majors option: English (Drama). The requirements for this program are that a student complete:

1. ENGL 1000 (or equivalent), ENGL 2170 , 2901 , 2902 .
2. at least 30 ch in English literature courses at the advanced level, including ENGL 3170 , at least 6 ch in pre-1660 literature in English, at least 6 ch in literature in English, 1660-1900, and at least 12 ch courses in dramatic literature.

Students wishing to enroll in this program should consult one of the Co-Directors of Majors and Honours.

Optional Major Program: English (Creative Writing)

The Department offers students wishing to concentrate in Creative Writing the following Majors option: English (Creative Writing). The requirements for this program are that a student complete the normal English majors requirements as explained under "Majoring in English," along with courses from relevant creative writing areas, as follows:

1. both of ENGL 2195 , 2196
2. at least two of the following courses: ENGL 3123 , 3143 , 3163 , 3183

Any student who is interested in this program should consult the Director of Creative Writing.

Honours Program

Students enter the Honours program in their third year but may declare their intention of pursuing Honours during their second year. Only in exceptional circumstances will students be admitted in their fourth year. ENGL 1000 (or equivalent) is required of those who wish to enroll in Honours. Students should complete ENGL 2901 and ENGL 2902 by the end of the second year and must have met this requirement by the end of the third year. The student must have achieved an average of 3.3 (B+) in these or other English courses. An average of 3.3 in English courses and of 2.5 in non-English courses must be maintained if the student is to retain Honours standing.

Students taking Single Honours must take a four-year total of at least 60 ch in English; at least 30 ch of the total must be in advanced-level courses other than Honours seminars. Students in Joint Honours must take a four-year total of 36 ch in English; at least 24 ch of this total must be in advanced-level courses, including Honours seminars. Whether taking Single or Joint Honours, the student must complete at least 6 ch of advanced-level courses in pre-1660 literature in English and at least 6ch in literature in English, 1660-1900.

During their third and fourth years, students in Single Honours must complete 18 ch of Honours seminars. Students in Joint Honours must complete at least 12 ch of Honours seminars. All Single Honours students must successfully complete ENGL 3083 .

Honours students may count only 6 ch total of courses drawn from the following group: Film Studies, Writing courses (Creative, Expository, or Screen), Drama or Video Production. Students are required to consult with one of the Co-Directors of Majors and Honours in choosing their courses so as to ensure that they follow a well-balanced program.

Students interested in Honours English are encouraged to discuss the program with one of the Co-Directors of Majors and Honours.

Minor Program

The Minor in English consists of at least 24 ch in English completed with a grade of C or better, at least 12 ch of these from advanced-level (third- and fourth-year) courses. The courses for the Minor must be approved by one of the Co-Directors of Majors and Honours, and must form a "coherent set or sequence of courses" as called for by the general university regulations for the Minor. Students should note that any courses compulsory for their programs may not be counted toward a Minor.

Option in English Language and the Linguistics of English (ELLE)

The Department offers to students who wish to concentrate in English a Majors and an Honours option in English Language and the Linguistics of English.

Students may enter the ELLE option at the beginning of the third year; prospective students should have taken ENGL 1000 (or equivalent) and ENGL 2901 and ENGL 2902 , as part of the overall majors program. Students should discuss their next year's program with the ELLE Program Director in the spring or at registration in the fall.

Major in ELLE

Students in the ELLE program must take at least 30 ch in advanced-level English courses (24 ch for the Double Major), of which at least 18 ch must be drawn from the following:

ENGL 3003	Old English I
ENGL 3004	Old English II
ENGL 3006	Linguistic Introduction to Canadian English
ENGL 3010	History of the English Language
ENGL 3040	Chaucer & Co.
ENGL 3110	Expository Writing
LING 3411	Phonetics and Phonemics
LING 3422	Morphology and Syntax

The last two may be counted as English courses in an ELLE program.

The 30 ch of advanced-level English courses (24 ch for Double Majors) must also satisfy the normal English Majors requirements as explained above under "Majoring in English."

Honours in ELLE

Single Honours students must take at least 21 ch, Joint Honours students at least 18 ch of the above courses. In addition, all students must take 12 ch of Honours seminars, including 6 ch from among ENGL 5000 , ENGL 5004 , ENGL 5005 . Single Honours students must have a further 12 ch, Joint Honours students a further 6 ch, of advanced-level English courses.

Total requirements: 60 ch of courses for Single, 42 ch for Joint Honours. Single-Honours students may make up their remaining requirements in ELLE-related subjects other than English.

Students are not permitted to take a Double Major or Joint Honours in both English Literature and ELLE.

Minor in ELLE

The Minor in ELLE consists of at least 24ch of English courses, of which at least 12ch must be ELLE courses (see list above). Students cannot combine a Minor in ELLE with a Major or Honours in ENGL.

FINE ARTS

Mailing Address:	c/o Faculty of Arts, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4655
Fax:	(506) 453-5102
Email:	arts@unb.ca
Website:	http://www.unbf.ca/arts/FineArts/

General Information

The Fine Arts Interdisciplinary Minor is intended to enable a student who wishes to pursue an interest in Creative Writing, Film/Video or Theatre to choose a coherent program of 24 ch in related courses, 6 of which must be of a practical nature. Studio courses emphasize practice and process, giving students an opportunity to gain hands-on experience. Academic courses develop historical, critical and analytical skills. The Program is administered by the Faculty of Arts.

Eligibility

Admission to the Fine Arts Minor is open to students in any faculty who have successfully completed 60 ch towards a degree. With the permission of the Coordinator of the Fine Arts Program, students may count for credit courses taken before they entered the program. Students in the BA program, in accordance with regulations set by the Faculty of Arts, will select the Minor at the same time as they select a Major.

Program of Study

The Minor consists of 24 ch, selected in consulation with the Director of the program in which the minor is taken and approved by the Coordinator of the Fine Arts Program. A total of 18 ch must be taken from the list of academic courses, at least 12 ch must be drawn from the area of specialization including 6 ch of studio work. Studio work may be taken in a single full-year 6 ch course, or in two term courses of 3 ch, normally spread over two years, or over one year and a summer.

1. **18 ch of course work, selected from the following list:**

General

HIST 3701	Intro to Cultural Studies: From T.V. to the Computer Age
SOCI 3253	Sociology of the Media
PHIL 2073	Intro to Issues in Aesthetics
PHIL 2074	Intro to Classics in Aesthetics
ENGL 3083	Literary Theory and Critical Practice

Drama

ENGL 1163	Intro to Drama
ENGL 2170	Principles of Drama Production
ENGL 2263	An Intro to Shakespeare
ENGL 3170	Advanced Drama Production
ENGL 3260	Shakespeare
ENGL 3263	Shakespeare's Predecessors and Contemporaries
ENGL 3363	Restoration and Eighteenth-Century Drama
ENGL 3877	Modern Drama

Film

ENGL 3193	Film Analysis (I)
ENGL 3194	Film Analysis (II)
ENGL 3966	Intro to Canadian Film
ENGL 3973	Intro to Science Fiction Film

Music

FNAT 2113	Intro to Music (3ch)
FNAT 2123	Music Theory (3ch)
FNAT 2124	Music Theory II (3ch)
FNAT 3113	Intro to Computers in Music (3ch)
FNAT 3123	Musical Composition (3ch)
FNAT 3133	Conducting (3ch)
FNAT 3796	Music of Canada (3ch)
ED 3242	History of Popular Music
HIST 3765	History of Music in Medieval and Renaissance Periods
HIST 3775	History of Music in the Late Baroque and Classical Periods
HIST 3785	History of Music in the Romantic Era
HIST 3795	History of Music in the Twentieth Century
PHIL 3004	The Aesthetics of Music
PHIL 3005	Readings in the Aesthetics of Music
SOCI 3472	The Sociology of Music

Creative Writing

ENGL 3123	Creative Writing: Poetry
ENGL 3143	Creative Writing: Short Fiction
ENGL 3163	Creative Writing: Drama
ENGL 3183	Screen Writing and Writing for the New Media

Visual Arts

CLAS 3303	Classical Archaeology
CLAS 3323	The Art and Architecture of Greece
CLAS 3333	The Art and Architecture of Imperial Rome
CLAS 3353	Greek Art
CLAS 3363	Roman Art

CLAS 3373	Ancient Cities & Civilizations of Western Turkey
CLAS 3383	The Art and Architecture of Asia Minor
CLAS 3913	Love and Sexuality in Greece and Rome
FNAT 3703	The Power of Images
HIST 1715	History of Visual Culture Part 2: Renaissance to Modern
HIST 3701	Approaches to Cultural Studies
HIST 3705	History of Classical Art
HIST 3716	Renaissance Art
HIST 3721	The Body in Western Art, 1300-1700
HIST 3725	History of Baroque Art
HIST 3729	Art Now
HIST 3735	History of Modern Art
HIST 3736	Canadian Art
HIST 3737	The History of Women Artists
HIST 5725	The History of Museums* (Requires approval of Instructor and Director of Honours Program)

2. **6 ch of practical work, designated as FNAT 3000 (6ch), or as FNAT 3001 and 3002 (3ch each), which can be in any one of the following areas:**

Theatre: The theatre studio courses are designed to provide the student with the practical experience of staging a production independent of the two production courses. Coupled with the student production, the drama students are also required to complete an independent study, which can further explore theatre in either a practical or theoretical exercise. Both aspects of FNAT 3000 are completed under the supervision of the Director of Drama. Prerequisites: ENGL 2170 and ENGL 3170 , enrolment in the Fine Arts Minor (Drama), and permission of the Director of Drama.

Film/Video: The studio courses in film/video are designed to enable a student to become actively involved in the making of a film or television program. Students would acquire a knowledge of several different aspects of film-making, and specialize in one or two aspects. The 6 ch would be composed of one major project, or of two or more smaller projects.

Music: Students will complete the studio courses by completing FNAT 3001 "Ensemble" (3ch) wherein the student must participate in ensemble playing in band, choir or chamber orchestra for at least four terms and FNAT 3002 "Private Instruction" (3ch) when students will follow a course of private musical instruction from approved teachers for two terms.

Creative Writing: The practicum in creative writing enables a student who has taken at least two of the advanced 3000-level courses in creative writing to proceed to more specialized training in fiction, poetry, drama, or screen writing and writing for the new media. Prerequisites: any two of ENGL 3123 ; ENGL 3143 ; ENGL 3163 ; or ENGL 3183 .

Visual Arts: The studio component of the minor introduces students to a range of techniques and approaches. This will assist in the development of basic vocabulary and the exploration of personal creativity. Students have the flexibility of selecting courses given at UNB or the New Brunswick College of Craft and Design.

FRENCH

DEPARTMENT OF FRENCH

General Office:	Tilley Hall, Room 231
Mailing Address:	Department of French University of New Brunswick, P.O. Box 4400, Fredericton, N.B., Canada, E3B 5A3
Phone:	(506) 453-4651
Fax:	(506) 453-3565
Email:	french@unb.ca
Website:	http://www.unbf.ca/arts/french/

FACULTY

- Brown, Anne, BA (UNB), MA (McM), PhD (McG.), Prof - 1988
- Carrière, Marie, BA (Ottawa), MA (Qu), PhD (Tor), Assoc Prof - 2001
- Cichocki, Wladyslaw, BSc, MA, PhD (Tor), Prof - 1985
- Horne, Christine, BA (Sainte-Anne), MA, PhD (Dal), Assoc Prof - 1999
- LeBlanc, Doris C., BA, BEd, MEd (M'ton), Prof - 1973
- Viau, Robert, BA, MA, PhD (Ott), Prof - 1989
- Villiard, Pierre, BA, MA (Sher), PhD (Toulouse-Le Mirail), Assoc Prof - 1988

General Information

Courses

Courses are offered in language acquisition at all levels. Advanced-level courses are offered in language acquisition, linguistics and literature. All courses are conducted in French except 1300 , 1324 , 1325 , and 1704 .

Courses whose second digit is "0" form a basic program in language acquisition, proceeding by complementary pairs in which the emphasis falls on different aspects of language learning (Oral communication/Written communication) thus: 1034 / 1044 ; 2034 / 2054 ; 3034 / 3054 ; 4034 / 4054 . Students who intend to work towards the Certificate of Proficiency in French (see the end of this section for details) follow this sequence. Each pair of courses must be completed with a grade of C or higher before beginning the next level.

A different sequence is followed by graduates of Immersion programs, and by francophones (see below, Placement).

Placement

With the exception of francophones, all students registering for a French course for the first time at UNB are required to take the French Placement Test.

First year students normally take the French Placement Test during the pre-registration period (in June/July) or during orientation week. Returning students are encouraged to take the French Placement Test during the pre-registration period (in February/ March) or, at the latest, during orientation week.

Placement testing is done in the French Department Multimedia Laboratory, Singer Hall 156. For assistance please contact Daniel Grant, Laboratory Supervisor in Singer Hall 170. You may also contact the departmental secretary in Tilley Hall Room 231, email: french@unb.ca

The French Placement Test must be completed no later than the end of the first week of classes in September, for the fall

semester, and at the end of the first week of classes in January, for the winter semester. The Department of French cannot guarantee a place in a course until the testing is completed, and reserves the right to remove from the class lists or wait lists students who have not taken the French Placement Test, or who missed three consecutive class hours within the first two weeks of classes.

Students' test results will be a main factor in determining which courses they will be advised to take. Normally students who did not complete Grade XII French will register in 1324 , followed by 1325 then in 1334 . These courses prepare the student for entry into 1034 . Anglophone and other non-francophone students who did complete Grade XII (core) will register in 1034 . Advanced placement will be determined by testing. Credit is not given for the courses bypassed by advanced placement, unless the student took an equivalent course for credit at another institution. High school courses cannot be counted for university credit.

Anglophone and other non-francophone students who have graduated from a French Immersion program are placed in 1184 , followed by 1194 . Francophones are placed in 1124 or 2154 when 1124 is not offered, followed by 2164 , 2174 or 2184 . Any of these pairs are followed by advanced-level courses.

External Credit

Students may elect to take language courses off campus, e.g. in summer school. These courses can be counted for UNB credit only if prior authorization has been obtained from the Department, and only if the Department judges that sufficient progress has been made to merit credit equivalent to a course offered by the Department. Prior authorization can be sought by completing a form available from the departmental office. The student is responsible for providing a detailed description of the course and any other information the Department may require in order to assess it. Retroactive approval of courses not taken at UNB will be granted only in special cases. (This condition does not apply to first-year students who wish credit for a course taken before they enrolled at UNB.) Normally a maximum of 12 External credits at the advanced level will be counted towards the Majors and Honours Programs.

Advanced-Level Courses (first digits 3 or 4)

In order to register for any advanced-level course, a student must be able to demonstrate a competence in French equivalent or superior to that normally attained by the successful completion (C or higher) of FR 2054 .

Advanced-level courses are of three kinds: language acquisition (second digit 0), specialized courses in linguistics (2, 3, 4), and specialized courses in literature (5, 6, 8).

Students honouring or majoring in French are required to choose a number of specialized courses. Students honouring or majoring in another discipline who wish to continue the study of French may take any advanced-level French course, provided they have the necessary competence.

Language Acquisition

Language acquisition courses (3034 , 3044, 3054 , 3064 , 3204 , 4034 , 4054). FR 3054 is the prerequisite for FR 4034 / 4054 . Students who already have credit for FR 3034 / 3054 may take other Advanced Language classes, such as 3044 or 3204 , or they may proceed directly to 4034 . Francophone students may not take 3034 or 4034 ; Immersion graduates may not take 3034

Linguistics

Linguistics (3404 , 3414 , 3424 , 3444 , 3454 , 3464 , 3484 , 4414 , 4464, 4465). FR 3404 is a prerequisite for 3424 , 3444 , 3454 , 3464 , and 4465 . FR 3464 is a prerequisite for 4464 .

Literature

Literature courses are of three kinds:

a. courses offering a variety of critical approaches, not limited to France or Canada (second digit 5);
b. term-courses in various periods of French European literature (second digit 6);
c. term-courses in aspects of French Canadian literature (second digit 8).

Check the time-table to see which courses are being offered in the current session. Fuller descriptions of the courses which are being taught are available from the departmental office. Courses listed here under (b) and (c) may be taken by junior and senior level students. In each course a period of literature will be studied, the principal focus being on a small number of prescribed texts.

Honours and Majors

All students honouring or majoring in French must declare their field of specialization: Linguistics or Literature.

All students must complete a required number of ch in advanced-level courses in French with a grade of C or better.

Single Honours:	42 ch
Single Major:	36 ch
Joint Honours and Double Major:	30 ch

The required courses are of three kinds:

a. a core program of 6 ch composed of FR3404 and one advanced-level literature course. In addition to this, Single Honours students are required to take FR 4902 Honours Report (6ch).
b. 12 ch in the student's field of specialization. Honours students (Single and Joint) are required to take 15 ch in their declared area of specialization.
c. a required number of ch in other advanced-level courses, determined according to a student's program.

Single Honours:	15 ch
Joint Honours:	9 ch
Single Major:	18 ch
Double Major:	12 ch

The minimum number of required credit hours is as follows:

Single Honours:	6 (a) + 15 (b) + 18 (c) + FR4902 = 42 ch
Joint Honours:	6 (a) + 15 (b) + 9 (c) = 30 ch
Single Major:	6 (a) + 12 (b) + 18 (c) = 36 ch
Double Major:	6 (a) + 12 (b) + 12 (c) = 30 ch

Spécialisation et concentration

Les candidat-e-s à une spécialisation ou une concentration en études françaises choisissent entre l'option linguistique et l'option littérature.

Le nombre de crédits à accumuler est déterminé selon le programme. Une note finale de C ou mieux est exigée pourchaque cours de niveau avancé en études françaises.

Spécialisation:	42 cr
Concentration:	36 cr
Double spécialisation ou double concentration:	30 cr

Les cours requis sont de trois types :

a. un tronc commun totalisant 6 cr, composé de FR3404 et d'un cours de littérature de niveau avancé. En plus de ces cours, les candidat-e-s à la spécialisation simple doivent suivre FR 4902 Mémoire de spécialisation (6 cr).
b. 12 cr au sein de l'option choisie (les candidat-e-s à la spécialisation, simple ou double, sont tenus d'obtenir 15 cr dans leur option);
c. des cours complémentaires libres de niveau avancé totalisant un nombre de crédits déterminé selon le programme.

Spécialisation simple:	15 cr
Double spécialisation:	9 cr
Concentration:	18 cr
Double concentration:	12 cr

Le nombre minimum de crédits est fixé comme suit :

Spécialisation simple:	12 (a) + 15 (b) + 15 (c) = 42 cr
Double spécialisation:	6 (a) + 15 (b) + 9 (c) = 30 cr
Concentration:	6 (a) + 12 (b) + 18 (c) = 36 cr
Double concentration:	6 (a) + 12 (b) + 12 (c) = 30 cr

Minor in French

Students who are doing a minor are required to complete 24 credit hours in French with a minimum of 12 credit hours at the advanced level, 3 of which will be in literature or linguistics. A grade of C or better is required in all courses. The program to be followed will depend on the background of the student. Students who have completed grade 12 French second language will normally take FR 1034 / FR 1044 / FR 2034 / FR 2054 and 12 additional credit hours of advanced level courses, 3 of which will be in literature or linguistics.

Students from immersion programs will take FR 1184 / FR 1194 / FR 2154 / FR 2164 , and 12 credit hours of advanced level courses, 3 of which will be in literature or linguistics. (FR 3034 is excluded).

Francophones will take FR 1124 or FR 2154 , followed by either FR 2164 , FR 2174 or FR 2184 , and 18 credit hours of advanced level courses, 3 of which will be in literature or linguistics. (FR 3034 and FR 4034 are excluded).

At the advanced level, students can choose from language, literature, and linguistics courses.

Certificate of Proficiency in French

Students who are not majoring or honouring in French and who are not native speakers of French but who would like to have official recognition of their competence in French as a second language may apply for admission to this program. It is administered for the University by the Department of French on the Fredericton campus and by the Department of Humanities and Languages on the Saint John campus.

The goal of the program is to enable students to acquire a functional command of French by upgrading the four basic language skills over a four-year period. The program normally consists of 12 ch of French courses at the Introductory and Intermediate levels, followed by 12 ch at the Advanced level. These will normally be 3200 and 4200 (Saint John); 3034 , 3054 , 4034 , 4054 (Fredericton). In all of these courses the student is to attain a mark of C or higher, and the certificate is awarded on the basis of a comprehensive examination upon termination of the last course in the sequence. Students who have received advanced standing for Introductory level French need take only three full-year courses (18 ch) to qualify for the comprehensive examination. A maximum of six credit hours may be transferred from another program.

Students interested in being considered for the certificate must seek the approval of the appropriate academic unit, and should register for the program at the beginning of the sequence, or at their earliest convenience. The normal rules governing acceptance to the courses apply; they will be found in the section of the Calendar dealing with the two administrative units concerned. In order to be admitted to the program, students must have Grade 12 French or its equivalent.

Full-time students may take these courses as part of their undergraduate program. Persons not working towards a degree may enrol for the courses as part-time students.

Students must sit the comprehensive examination within two years of completing the course requirements. Students who fail the comprehensive examination on their first attempt will be allowed to sit again in the following session.

The Certificate of Proficiency in French will be awarded by the University through the Registrar's Office. The student's transcript will bear a separate entry showing that the certificate has been awarded and recording the grades obtained in the four areas of language competence (speaking, listening comprehension, reading comprehension and writing).

Speaking:

A:	the candidate participates with ease in conversation
B:	the candidate can participate adequately in conversation albeit with a certain degree of hesitancy
C:	the candidate can make himself or herself understood in conversation

Listening Comprehension:

A:	can understand lectures in a job-related context, and radio and TV news and programs
B:	can understand lectures on non-technical subjects and group conversations
C:	can understand what is said to him or her in individual conversation with one other person

Reading Comprehension:

A:	can understand the main ideas in books, magazines and newspapers without the aid of a dictionary
B:	can read printed material of personal interest with occasional help from a dictionary
C:	can read, with the aid of a dictionary, standard texts written without stylistic difficulties on subjects within his or her interest.

Writing:

A:	can write papers, essays, etc., which are acceptable in form and format
B:	can write résumés, letters, short compositions which are structurally acceptable but which would need some revision
C:	can write sentences and short paragraphs which are grammatically acceptable

Full details are contained in a brochure obtainable from the Department of French on the Fredericton campus and the Department of Humanities and Languages on the Saint John campus.

HISTORY

DEPARTMENT OF HISTORY

General Office:	Tilley Hall, Room 120
Mailing Address:	Department of History, University of New Brunswick, P.O. Box 4400, Fredericton, N.B., Canada, E3B 5A3
Phone:	(506) 453-4621
Fax:	(506) 453-5068
Email:	history@unb.ca
Website:	http://www.unbf.ca/arts/History/

FACULTY

- Bonnett, John, BA (Western Washington), MA, PhD (Ottawa), Adjunct Prof - 2003
- Brown, Jeffrey S., BA (St John Fisher, NY), MA (SUNY- Brockport), MA (York), PhD (Rochester), Asst Prof.- 2002
- Campbell, Gail, BA, MA (UWO), PhD (Clark), Prof - 1989
- Charters, David, BA, MA (UNB), PhD (Lond), Assoc Prof - 1988
- Conrad, Margaret, BA (Acad), MA, PhD (Tor), FRSC, Can. Research Chair in Atl. Canada Studies & Prof. - 2002
- Frank, David, BA (Tor), MA, PhD (Dal), Prof - 1980
- Kealey, Gregory S. BA, MA, PhD, FRSC, FRHistS, Prof and Vice President (Research) - 2001
- Kealey, Linda, BA, BLS, MA, PhD (Tor), FRHistS, Prof - 2002
- Kennedy, Sean, BA (Nfld), MA, PhD (York), Asst Prof - 1999
- McTavish, Lianne, BA (UWO), MA, Cert in Women's Studies, PhD (Rochester), Assoc Prof - 1996
- Milner, J. Marc, BA, MA, PhD (UNB), Prof and Chair - 1986
- Parenteau, William M., BA, MA (Maine), PhD (UNB), Assoc Prof. - 2000
- Tracy, Nicholas, BA, BAHist (Sask), MPhil, PhD (S'ton.), Adjunct Prof - 2002
- Turner, R. Steven, BA (N Carolina), PhD (Prin), Prof - 1971
- Waite, Gary K., BTh (Ont. Bible Col), BA, MA, PhD (Wat), Prof - 1987
- Wiggers, Richard D., BA (Car.), MA (Ott.), PhD (Georgetown), Adjunct Prof. - 2002

General Information

COURSE NUMBERING

- **1000-level courses**
  Courses at this level are suitable for students in their first or second year of University (i.e. in their first 60ch) and are open to Arts students and non-Arts students. Subject to general regulations, these courses may also be taken for credit by students in the upper years of their programs. Students taking History in their first year will normally begin with Hist 1001 followed by another 1000-level 3 ch course, but should note that the regulations are flexible. Future History Majors and Honours students should familiarize themselves with the note on Foundation courses below.
- **2000-level courses**
  Courses at this level are Foundation Courses. Suitable for students at any level, they are open to both Arts and non-Arts students and are intended to serve as introduction into the discipline of History. These courses employ the tutorial method, survey substantial bodies of historical material, and provide more individualized instruction in writing and historiographical method. Students planning to minor, major, or double-major in History or to do Honours are required to complete at least 6ch at this level (see Foundation Courses below). Subject to general regulations, these courses may also be taken for credit by students in the upper years of their program.
- **3000-level courses**
  These courses are suitable for students who have completed at least 60 ch, both Arts and non-Arts students, and for History majors and non-majors.
- **4000-level courses**
  These courses are suitable for students who have completed at least 60 ch, both Arts and non-Arts students, and for History majors and non-majors. Students should normally have completed at least 6 ch in History before enrolling in a 4000-level course. 4000-level courses employ the tutorial system and may have enrolment restrictions.
- **5000-level courses**
  These courses employ the seminar format and are normally open only to History Honours students. Others require permission of the departmental Director of Honours and the course instructor before registering.

History at St. Thomas University

UNB students are advised that upper level history courses offered at St. Thomas University, which are not offered at UNB, may be taken for credit by UNB students. The main areas to which this statement applies are as follows: Medieval, German, and Latin American History. Please see the St. Thomas University Calendar for course descriptions.

Note on Grading

The Department of History requires a "C" grade on individual courses to fulfil prerequisite and Major requirements. All full year History courses carry a 6 ch rating. Term courses carry a 3 ch rating.

Minor, Majors and Honours

Advising

The Director of the Majors Program in History is the advisor of all students in the Majors, Double Majors, or Minors programs in History. In selecting courses, students should consult with the Director, who must approve all Majors, Double Majors, and Minor programs. A student transferring from another faculty into Arts and intending to Major in History, or changing from another Major into History, may do so only with the permission of the Dean of Arts and the Department of History.

Minor Program

A Minor in History requires the completion of 12ch of History at the 1000- or 2000-level, at least 6ch of which must be in Foundation Courses. This must be followed by an additional 12ch at the 3000- or 4000-level. A total of at least 24ch of History courses must be completed. A grade of C or better in each individual course is required for the Minor.

Majors Program

i. At least 6ch must be in Foundation Courses (12ch of Foundation Courses is recommended).
ii. No more than 18ch at the 1000- or 2000 - level, and at least 24ch at the 3000- or 4000- level.
iii. 18 of the 42ch of history courses must be in a field of concentration. At least 12 of these 18ch must be from courses at the 3000- or 4000-level. Fields include Canada, United States, North America, Britain, Europe. Other fields may be arranged in consultation with the Director of Majors.

iv. At least 6 of the 42ch of history courses must deal with history before 1800.

The departmental Director of Majors must approve the program of every majors student.

Double Majors

A Double Major in History requires the completion of 36ch of History courses, with a mark of C or better in each. At least 6ch must be in Foundation courses. At least 24ch of History courses must be completed at the 3000- and 4000-level. Field concentrations and pre-1800 course coverage are not required of Double Majors.

Honours Program

Admission to the Honours Program in History is open to qualified students who have completed 60 ch of courses toward the B.A. degree and who have satisfied the Arts Faculty general requirements for the first and second year. Normally students will have completed 12 ch in History courses at the 1000- or 2000-level, including at least 6 ch in Foundation Courses as listed below. Students should apply for admission to the History Honours Program during their fourth term.

Each student's program of study must be approved by the departmental Director of Honours. The Director of Honours acts as advisor to the Honours students in the selection of courses.

Students holding a BA degree with a single or double Major in History may convert that degree to the equivalent of BA Honours by satisfying the Department's requirements for Honours.

- **Single Honours**
  Single Honours students normally take 48 ch of advanced level History courses, of which 21 ch should be seminars. The seminars must be chosen from at least two fields of History. History 5900 is compulsory for students entering Single Honours, but it is not considered as one of the required seminars. No more than 24 ch in History may be taken in any one year. Six credit hours each year may be taken in approved subjects in other departments.
- **Joint Honours**
  A student reading for Honours in History jointly with another subject must take at least 24 ch of advanced level History courses of which 12 ch must be seminars.

Foundation Courses

Students planning to major, double-major or minor in History, or to do Honours in History, are required to complete at least 6ch of Foundation courses, and are strongly advised to complete at least 12ch. Any Foundation course may be taken in the first or second year, or at a later stage if necessary.

Courses taken at other institutions and presented to satisfy the Foundation course requirement must be approved by the Director of Majors or Honours.

Note: The Foundation Course requirement must be met by the completion of a full 6ch concentration in a given field: Canadian, Medieval, Modern Europe, American, or British history. Students who complete HIST 2100 Modern Europe or HIST 2300 Introduction to Canadian History automatically meet the requirement. Those who wish to present other fields as their Foundation Course must complete the paired 3ch Foundation level courses in that field: HIST 2013 and HIST 2014 for Medieval History; HIST 2023 and HIST 2024 for Early Modern History; HIST 2203 and HIST 2204 for British History; and HIST 2403 and HIST 2404 for American History.

INTERNATIONAL DEVELOPMENT STUDIES

Mailing Address:	International Development Studies Program c/o Faculty of Arts University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4655
Email:	IDS@unb.ca
Website:	http://www.unbf.ca/arts/IDS/Dev/

FACULTY

Director: Dr. Thom Workman (Political Science)

- C. Paponnet-Cantat (Anthropology)
- A. Brown (French)
- J. McFarland (Economics, St Thomas)
- G. Pool (Anthropology)
- M. Rezun (Economics)
- T. Myatt (Economics)
- J. Ball (English)
- G. Whiteford (Education)

General Information

The International Development Studies Program is administered by the Director of a committee made up of members from the Faculties of Arts and Education at UNB, and faculty members of St. Thomas University. Students can do a Minor, Majors or Honours. Majors or Honours must be combined with any other discipline or program in the Faculty of Arts.

A Minor in International Development Studies may be taken by any UNB student. For information on the Minor, Double Major and Joint Honours, see the BA General Regulations.

Admission into the Major or Honours program is open to any student who has successfully completed 60 credit hours towards the BA degree. Students considering International Development Studies as part of a major or honours program should consult with the Director of International Development Studies at UNB.

Inquiries about the International Development Studies Program should be directed to: Dr. W. Thom Workman, Director, International Development Studies, Department of Political Science, 216 Tilley Hall, 458 7305. E-mail: wworkman@unb.ca.

Programs of Study

A grade of C or better on each individual course is required for Minor, Majors and Honours.

Minors

For a minor in International Development Studies a student must complete IDS 2001 and IDS 3002 and 18 ch in relevant advanced-level courses.

Majors

For Majors in International Development Studies IDS 2001 and IDS 3002 as well as 24ch in relevant advanced-level courses must be completed.

Honours

For Honours in International Development Studies IDS 2001 , IDS 3002 and IDS 4900 as well as 24ch in relevant advanced-level courses must be completed.

1. **Required Courses (3 ch each):**

IDS 2001	Intro to International Development Studies
IDS 3002	Seminar in International Development Studies
IDS 4900	Honours Thesis in International Development Studies (6ch)

After acceptance into the Honours program, students must submit a thesis proposal to the Director. After the proposal is accepted, arrangements will be made for a faculty supervisor. Upon completion, a copy of the thesis is to be submitted to the Director of IDS for assessment by a designated committee before a grade is assigned.

2. **Elective Courses:** Courses must be chosen from the list provided annually by the Director. Other pertinent courses from the UNB and STU Calendars may be taken after consultation with the Director.

3. In addition to 1 and 2, Honours students must also complete an honours thesis (IDS 4900). The supervisor for the honours thesis in the departmental discipline cannot supervise the honours thesis in International Development Studies.

LAW IN SOCIETY

Please Note: This program is not currently available.

Mailing Address:	Law in Society Program, c/o Faculty of Arts, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4849
Email:	lcn@unb.ca
Website:	http://www.unbf.ca/arts/IDS/law/

FACULTY

Co-Ordinator: Professor Leslie Neilson (Sociology)

- D. Bedford (Political Science)
- K. Culver (Philosophy)
- D. Duplessis (Administration)
- W. Kerr (Classics and Ancient History)
- C. Poulin (Psychology)
- L. Wisniewski (Sociology)

General Information

Law in Society is an interdepartmental and inter-faculty program involving the Faculties of Administration and of Law, the Muriel McQueen Ferguson Centre for Family Violence Research and, in the Faculty of Arts, the departments of Anthropology, Classics and Ancient History, Economics, History, Philosophy, Political Science, Psychology, and Sociology.

Based on the premise that law and the character and quality of society are interrelated, the program offers a critical academic examination of the role of law in society and of society in law. Students will study these issues from at least three disciplinary perspectives and may include in their studies examinations of the philosophic, historic, economic, political, and social foundations of law. All of the courses explore one common theme: the connections between law and the social order.

Eligibility

Admission to the Law in Society program is open to students who have successfully completed sixty credit hours toward a degree in the Faculty of Arts or the Faculty of Administration. Students must obtain the approval of the department (Arts) or faculty (Administration) in which they major and of a Coordinator of the Law in Society program. With permission of a Co-ordinator, students may count for credit in a LINS Program courses taken before they enter the program. A grade of C or better is required for credit in the Law in Society program. Although not a requirement, students are encouraged to complete PHIL 1005 Critical Thinking before entry into the program.

Programs of Study

Double Major

The Law in Society Double Major consists of 30ch chosen from core and elective courses, as listed below. Of these, 12ch shall be chosen from at least 3 disciplines among the core courses. Additional core courses may be counted as electives. At least 24ch shall be upper level courses (3000 level or above). A grade of C or better is required for credit in the Law in Society program.

Joint Honours

Students intending to complete a Joint Honours must apply in writing to a co-ordinator of the Law in Society program for admission. Normally, students wishing to complete a joint honours will apply before the start of their 3rd year and have a GPA of at least 3.3 or B+. A Joint Honours consists of 36ch including completion of the requirements for a Double Major and completion of LINS 5001 .

Minor

The Law in Society Minor consists of 24ch chosen from core and elective courses as listed below. Of these, 12ch shall be chosen from at least 3 disciplines among the core courses. At least 18ch shall be upper level courses (3000 level or above). A grade of C or better is required for credit in the Law in Society program.

Core and Elective Courses

Program Courses		
LINS 5001	Honours Seminar in Law in Society	3ch
Core Courses		
ANTH 3284	Legal Anthropology	3ch
ADM 3123 (UNBSJ: BA 2703)	Business Law I	3ch
CLAS 3923	Roman Law	3ch
ECON 3845	Introduction to Law and Economics	3ch
LAW 4003	Law and Society	3ch

PHIL 2701	Classics in the Philosophy of Law	3ch
PHIL 2702	Introduction to Contemporary Issues in the Philosophy of Law	3ch
POLS 3494	Theories of Federalism	3ch
POLS 3623	International Organization & Law	3ch
PSYC 3263 (UNSJ only)	Psychology of Criminal Behaviour	3ch
SOCI 2613	Delinquency	3ch
SOCI 3603 (UNBSJ: SOCI 3610)	Criminology	3ch
SOCI 3613 (UNBSJ: SOCI 3610)	Theroies and Perspectives in Criminology	3ch
SOCI 4355 (UNBSJ: SOCI 4613)	Sociology of Law	3ch
Elective Courses		
ADM 4125	Business Law II	3ch
ANTH 4612	Law and Anthropology	3ch
ECON 5835	Industrial Organization: Policy	3ch
ECON 5855	Law & Economic Analysis	3ch
FVI 3005	Family and Criminal Legal Systems	3ch
HIST 3371	Development of Canadian Law	3ch
HIST 3373	Native Issues and Law in Historical Perspective	3ch
HIST 4351	New Brunswick, 1784-1860	3ch
PHIL 3034	Later Greek Philosophy	3ch
PHIL 3103	Philosophical Foundations of Feminism	3ch
PHIL 3803-9	Philosophy of Law Seminar	3ch
POLS 3292	Self-Government and Aboriginal Community	3ch
POLS 3633	International Public Law	3ch
PSYC 3023 (UNBSJ: PSYC2752)	Drugs and Behaviour	3ch
SOCI 2603 (UNBSJ: SOCI 2603)	Sociology of Deviance	3ch
SOCI 3623	White Collar Crime	3ch
SOCI 3634	Violence Against Women	3ch
SOCI 3635	Conflict Resolution	3ch
SOCI 3636	Restorative Justice	3ch
SOCI 3900 (UNBSJ only)	Sociology of Policing	3ch
SOCI 4336	Families, Law, and Social Policy	3ch
SOCI 4603 (UNBSJ only)	Penology and Corrections	3ch
SOCI 4610	Crime and Social Control	6ch

MULTIMEDIA STUDIES

Mailing Address:	c/o Faculty of Arts, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4655
Fax:	(506) 453-5102
Email:	arts@unb.ca
Website:	http://www.unbf.ca/arts/MMS/

General Information

The BA with a major in Multimedia Studies has three essential components: critical, creative and technical. The first places the study of the media in an intellectual and social context by exposing students to theoretical, analytical and critical questions about the social and cultural implications of media. The second encourages the student to develop creatively as an individual and to appreciate the various dynamics of working in a team. The third aspect of the degree seeks to ensure that the student has an appropriate technical awareness and a sufficient level of competence for today's workplace.

MAJORS

The foundation for a Multimedia major is a sequence of introductory and intermediate courses, each of which is the prerequisite for its successor. The requirements in the first two years are designed to provide a progressive experience and for the student to obtain the necessary background to take the advanced courses in Multimedia.

A student choosing to major in Multimedia Studies takes at least 30 ch of upper-level credits drawn from three categories: critical, creative and technical. At the upper level, at least 15 ch must be drawn from the critical category, at least 9 ch from a second category, and at least 6 ch from the third category. Selections must include MM3001 , MM3002 and MM3003 ; other courses are subject to approval by the Director of Multimedia Studies. In addition, all students take MM4980 Senior Project in their final year. No course may be counted toward the fulfilment of the Major unless it is passed with a grade of C or better.

The following introductory and intermediate level courses may be of particular interest to students planning a major in Multimedia Studies:

INTERMEDIATE LEVEL COURSES

See departmental listings for course descriptions:

LING 2401	Introduction to Language
ANTH 2174	Symbolism and Ritual
ENGL 1163	An Introduction to Drama
ENGL 2195	Creative Writing: Poetry and Drama
ENGL 2196	Creative Writing: Fiction and Screen-Writing
ENGL 2170	Principles of Drama Production
ENGL 2263	Shakespeare and Film
FNAT 2703	Visual Arts I
FNAT 2704	Visual Arts II
FNAT 2113	Introduction to Music
FNAT 2123	Music Theory I
FNAT 2124	Music Theory II

FR 2154	Stratégies d'écriture (Writing Strategies)
FR 2164	Analyse textuelle et rédaction (Textual Analysis and Writing)
FR 2184	Aspects de la francophonie canadienne (Aspects of Canada's Francophone Societies)
HIST 1315	Canadian History of Film
HIST 2925	Technology and Society
PHIL 2073	Introduction to Issues in Aesthetics
PSYC 2403	Foundations of Social Psychology
PSYC 3745	Principles of Perception
SOCI 1513	Picturing Society: Image, Meaning and Memory in the Photographic Era
SOCI 1533	Wired: Internet and Society
SOCI 2203	nterpersonal Relations
SOCI 2313	Sociology of Women I
SOCI 2503	Social Movements and Social Revolutions
SOCI 2534	Technology and Social Change
WLCS 1002	An Introduction to 20th Century World Literature

ADVANCED LEVEL COURSES

The content of each of these lists is subject to change.

Critical Group

See departmental listings for course descriptions:

ANTH 3114	Anthropology of Gender
ANTH 3184	Cultural Analysis
ANTH 3413	Language Through Yucatan Culture
ANTH 3434	Non-Verbal Communication: Interdisciplinary Theory and Methodology
CLAS 3303	Classical Archaeology
CLAS 3353	Greek Art
CLAS 3363	Roman Art
CLAS 3443	City and Country in the Graeco-Roman World
ECON 3845	Introduction to Law and Economics
ENGL 3083	Literary Theroy and Critical Practice
ENGL 3193	Film Analysis I: Introduction to Film Analysis
ENGL 3194	Film Analysis II: Film History - An Introduction
ENGL 3260	Shakespeare
ENGL 3966	Introduction to Canadian Film
ENGL 3973	Science Fiction Film
ENGL 3877	Modern Drama
FR/LING 3404	Introduction a la linguistique
FR 3504	Introduction aux etudes litteraires II
FR 3524	Roman et cinema (The Novel and Film)
FR 3534	Ecrits de femmes (Women's Writing)
FR 3554	Survol de la litterature noire dexpresison francaise (Introduction to Black Literature Written in French)
FR 3574	Littérature pour la jeunesse (Literature for Children and Young Adults)
FR 3684	Theatre francaise (French Theatre)
FR 3884	Théâtre et poésie du Canada français (The Poetry and Theatre of French Canada)
GER/GS/WLCS 3072	Studies in Contemporary German Cinema
HIST 3701	Approaches to Cultural Studies: From Television to the Computer Age
HIST 3716	Renaissance Art
HIST 3725	History of Baroque and Rococo Art
HIST 3729	Art Now
HIST 3735	History of Modern Art
HIST 3736	Canadian Art
HIST 3765	History of Music in Medieval and Renaissance Periods
HIST 3775	History of Music in the late Baroque and Classical Periods
LING 3411	Phonetics and Phonomics
MM 3103	Media Ecology
MM 4992	Current and Future Directions in Multimedia
SOCI 3252	Internatioal Media, Culture and Communication
SOCI 3253	Sociology of the Media
SOCI 3472	Sociology of Music
SOCI 4223	Media Policy for an Information Society
SOCI 4253	Sociology of Cyberspace

Creative Group

See departmental listings for course descriptions

ENGL 3110	Expository Writing
ENGL 3123	Creative Writing: Poetry
ENGL 3143	Creative Writing: Short Fiction
ENGL 3163	Creative Writing: Drama
ENGL 3170	Advanced Drama Production
ENGL 3183	Screenwriting and Writing for the New Media
FNAT 3113	Computers in Music, an Introduction
FNAT 3123	Musical Composition
FNAT 3133	Conducting
FNAT 3703	The Power of Images
FR 3054	Redaction I (French Composition I)
FR 4034	Perfectionnement de l'expression orale II (Advanced Oral French II)
FR 4054	Redaction II (French Composition II)
MM 3001	Media Design II
MM 3002	Media Process
MM 4112	Visual Communication for Multimedia

Technical Group

See departmental listings for course descriptions:

MM 3003	Media Tools II
MM 3212	Lens Media
MM 3213	Applied Aspects of Virtual Reality
MM 3362	Digital Sound
MM 3412	The New Publishing
MM 4401	Animation Concepts

Project

See departmental listings for course descriptions:

MM 4980	Senior Project

PHILOSOPHY

DEPARTMENT OF PHILOSOPHY

General Office:	Carleton Hall, Room 209
Mailing Address:	Department of Philosophy, University of New Brunswick, P.O. Box 4400, Fredericton, N.B., Canada, E3B 5A3
Phone:	(506) 453-4762
Fax:	(506) 447-3072
Email:	phil@unb.ca
Website:	http://www.unbf.ca/arts/Phil/

FACULTY

- Ahern, Daniel, BA (St Thomas(NB)), MA (UNB), PhD (McM), Assoc Prof - 1999
- Culver, Keith, BA (Vic BC), MA (McM), PhD (Guelph-McM), Assoc Prof - 1997
- Cupples, Brian W., BA (Cal State Coll), MA, PhD (UWO), Prof and Chair - 1972
- Larmer, Robert A., BA (Car), MA, PhD (Ott), Prof - 1986
- Neill, Warren, BJ (Car), MA (McG), PhD (Georgia), Asst Prof - 2000

General Information

Prerequisites

Any course in Philosophy may be taken in any year, provided that the prerequisites for the course have been met, and subject to the regulations of the student's degree program. The following list gives the general prerequisites for Philosophy courses at each level:

1000 Courses: General introductory courses.

2000 Courses: Courses in specific areas of the subject. They are usually taken by people who have already done some philosophy. They have no formal prerequisites, and are often taken by students beginning the subject who have some special interest or other reason for taking them. They may be taken by first year students.

3000 Courses: 3 ch in Philosophy, or the permission of the instructor, is prerequisite.

4000 Courses: 6 ch in Philosophy, or the permission of the instructor, is prerequisite.

Courses Offered by Saint Thomas University (STU)

Courses offered by the Department of Philosophy, St. Thomas University, may be taken for credit by students registered at the University of New Brunswick with the permission of the Departments of Philosophy at both Universities.

Certain areas of philosophy receive more explicit attention in STU courses than in UNB courses. These include medieval philosophy; philosophers such as Augustine, Aquinas, Marcel, Teilhard, Buber and Lonergan; the philosophy of history; the philosophy of man; concepts of love; and Christian thought. For more specific details of the courses available, consult the STU Calendar.

(Year courses at St. Thomas University will be given 6 ch weighting. Term courses will receive 3 ch weighting.)

Minors, Majors and Honours

Minors

The following Minors programs in Philosophy may be taken by students in any degree program. A grade of C or better is required in each course.

1. A Minor in Philosophy will consist in two 1000 level courses and any other 18 ch in Philosophy.
2. A Minor in Ethics will consist in PHIL 2104 plus 21 ch chosen from PHIL 1001 , 1002 , 1004 , 2001 , 2106 , 2153 , 2701 , 2702, 3105 , 3111-9 .
3. A Minor in the History of Philosophy will consist in two 1000 level courses and 18 ch chosen from at least two of PHIL 3033 , 3034 , 3053 and 3054 and any of PHIL 2023 , 2024 , 2074 , PHIL 2104 , 3041-9 and 4053 . Certain courses in the Department of Classics and Ancient History and in the Department of Philosophy at STU may also be included with the approval of this Department.

Minor in Ancient Philosophy

Students may minor in Ancient Philosophy by completing 24 ch of courses offered by the Department of Classics & Ancient History and the Department of Philosophy. For Classics (CLAS) departmental course descriptions, please consult that departments calendar listing.

Students are required to complete 24ch as follows:

a. 6 ch of introductory philosophy chosen from PHIL 1001 , PHIL 1002 , PHIL 1003 , PHIL 1004 , and PHIL 1005

b. 6 ch of ancient language: GRK 1203 / 1213 or LAT 1103 / 1113 or any other 6ch of Greek and/or Latin

c. 6 ch of advanced philosophy (PHIL) courses, including at least one of PHIL 3033 and PHIL 3034

d. 6 ch of advanced classics (CLAS) courses, including at least one of CLAS 3703 , CLAS 3723 and CLAS 3733

Majors

Students in the BA degree program who wish to take a Major in Philosophy, either singly or with some other subject, should consult with the Chair of the Department on entering the Junior level.

- **Single Major:** a minimum of 30 ch in Philosophy with a grade of C or better of which 24 must be in advanced courses (3000 and above).
- **Double Major:** as for Single Major.

Students qualifying for a degree other than the BA, who meet the above requirements for a Major in Philosophy may request the Registrar to note this fact on their transcript.

Honours

Students in the BA degree program who wish to take Honours in Philosophy may apply in writing to the Chair of the Department at any time after entering the Sophomore level and before entering the Senior level; but they should normally do so before entering the Junior level and should consult with him about their program of study.

- **Single Honours:** a minimum of 36 ch in advanced courses in Philosophy. With the approval of the Department, up to 12 ch in related courses in other departments may be counted as credit hours in Philosophy.

- **Joint Honours:** a minimum of 24 ch in advanced courses in Philosophy. With the approval of the Department, up to 12 ch in related courses in other departments may be counted as credit hours in Philosophy.

All Honours Students must count towards their BA degree at least 3 ch with a grade of C or better from group (a), and at least 6 ch with a grade of C or better from each of groups (b) and (c):

a. **Courses in logic (at least 3 ch)**

PHIL 1005	Critical Thinking
PHIL 2113	Introduction to Symbolic Logic
PHIL 3083	Mathematical Logic

b. **Courses in ethics or aesthetics (at least 6 ch)**

PHIL 2001	Collective Rights
PHIL 2073	Introduction to Issues in Aesthetics
PHIL 2074	Introduction to Classics in Aesthetics
PHIL 2104	Introduction to Ethical Classics
PHIL 2106	Environmental Ethics
PHIL 2153	Ethical Issues in Business
PHIL 3105	Contemporary Issues in Bioethics

c. **Courses in the history of philosophy (at least 6 ch)**

PHIL 3033	Early Greek Philosophy
PHIL 3034	Later Greek Philosophy
PHIL 3053	Modern Philosophy I
PHIL 3054	Modern Philosophy II
PHIL 4053	Introduction to the Philosophy of Kant
STU 2-331-2	Medieval Thought

Honours students should also note the standards required for first or second class Honours degrees. These are stated in the regulations for the Bachelor of Arts degree.

Graduate Study in Philosophy at UNB

To be accepted as a candidate for the degree of MA in Philosophy, applicants will normally be expected to have a letter grade average of at least B in a minimum of 42 credit hours in Philosophy (or equivalent, e.g. a 70% average in seven full courses in Philosophy). Applicants with an average of less than B or fewer than 42 credit hours in Philosophy may be admitted conditionally as graduate students for a qualifying year. Further details may be found in the Calendar of the School of Graduate Studies.

POLITICAL SCIENCE

DEPARTMENT OF POLITICAL SCIENCE

General Office:	Tilley Hall, Room 219
Mailing Address:	Department of Political Science, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4826
Fax:	(506) 453-4755
Email:	polisci@unb.ca
Website:	http://www.unbf.ca/arts/Poli/

FACULTY

- Bedford, David W., CEGEP Dip (Sir G Wms), BA (C'dia), MA, PhD (York), Prof & Chair - 1989
- Howe, Paul, BA (Tor), MSc (London School of Economics & Pol. Sc.), PhD (UBC), Asst. Prof. - 2001
- Murray, Karen, BA (Tor), MA (Tor), PhD (UBC), Asst. Prof. - 2001
- Rezun, Miron, BA (York), MA (Tor), MA, PhD (Geneva), Prof. (Joint Economics) - 1987
- Workman, W. Thom, BA(Car), MA, PhD (York), Prof. - 1994

Minor, Majors and Honours

MINOR

A Minor in Political Science consists of 24 credits in Political Science courses, of which at least 6 credits must be in Introductory level courses (1000 or 2000 level) and 12 credits in Advanced Level courses (3000 or 4000 level).

Minor in Public Policy

This is a joint minor proposed by the departments of economics and political science. The minor is open to all students including those majoring in economics and political science.

Students may minor in Public Policy by completing 24ch of courses offered by the Department of Economics and the Department of Political Science. Students are required to complete 24ch as follows:

a. 6ch of introductory economics chosen from: ECON 1001 , ECON1002 , ECON 2515 , ECON 2505 , ECON 2705 , ECON 2905 .

b. 6ch of introductory political science (POLS) courses chosen from POLS 1103 , POLS1203 , POLS 2200 , POLS 2203 .

c. 6ch of advanced economics (ECON) courses from ECON 3055 , ECON 3203 , ECON 3504 , ECON 3702 , ECON 3755 , ECON 3801 , ECON 3815 , ECON 3845 , ECON 3865 , ECON 4775 .

d. 6 ch of advanced political science (POLS) courses from POLS 3211 , POLS 3212 , POLS 3227 , POLS 3251 , POLS 3253 , POLS 3257 , POLS 3282 , POLS 3292 , POLS 3391 , POLS 3461 , POLS 3647 , POLS 3281 .

MAJORS PROGRAMS

1. The courses offered by the Political Science department, listed later in this Calendar, are grouped into three areas of the discipline. Please take note of these areas when you make up your program.
2. First year courses (those with the first digit of 1) cannot be used to satisfy any of the distribution requirements listed below for the Major or Honours programs. However, second year courses (those with the first digit of 2) are categorized within one of the three areas and can be used to satisfy the distribution requirements.
3. Advanced level courses are courses where the first digit is 3 or 4.

- **Single Major:**

  A student doing a single Major in Political Science shall complete a total of 42 ch in Political Science, 24 ch of which must be in advanced level courses. The student's program must include:

  - POLS 2200 Canadian Government and Politics
  - POLS 3410 Survey of Political Thought
  - A minimum of 3 ch drawn from Canadian Government and Politics
  - A minimum of 9 ch drawn from Comparative/ International/Area Studies
  - A minimum of 3 ch drawn from Political Theory and Analysis

- **Double Major:**

  A student doing a Double Major in Political Science with another discipline shall complete a total of 30 ch in Political Science, 24 ch of which must be in advanced level courses. A student's program must include:

  - POLS 2200 Canadian Government and Politics or POLS 3282 The Canadian Political System
  - POLS 3410 Survey of Political Thought
  - A minimum of 6 ch drawn from Comparative/ International/Area Studies

HONOURS PROGRAMS

In order to be eligible for entry into Honours, students must have:

1. a GPA of 3.0 in Political Science courses
2. a cumulative GPA of 2.5
3. 60 ch of course work completed
4. 12 ch of course work in Political Science completed

Students wishing to read for Honours in Political Science should notify the Departmental Coordinator of Honours and Majors on registration day or immediately thereafter. Approval by the Coordinator, in consultation with the Department, of the programs of successful applicants is required.

Students considering entry to the program are encouraged to contact the Coordinator of Honours and Majors in the term prior to their desired term of entry for further information.

POLS 3533 Research Methods in Political Science, is required for Honours students.

Honours (Single)

A student reading for Honours in Political Science must complete at least 48 ch in Political Science. This shall consist of the 42 ch requirement for a major, 24 ch of which shall be advanced level courses, plus POLS 4000 , Directed Reading and Research in Political Science.

Joint Honours

A student reading for Joint Honours in Political Science and another discipline must complete at least 36 ch in Political Science. This shall consist of the 30 ch requirement for a Double Major plus POLS 4000 , Directed Reading and Research in Political Science.

Honours in Political Science with Specialization in International Relations

A student reading for Honours with a specialization in International Relations shall complete 54 ch of Political Science courses, 30 ch of which must be in advanced level courses. A student's program must include:

- POLS 2703 Introduction to International Relations
- POLS 3410 Survey of Political Thought
- POLS 4600 Directed Reading and Research in International Relations
- A minimum of 3 ch drawn from Political Theory and Analysis
- A minimum of 6 ch drawn from Canadian Government and Politics
- A minimum of 18 ch drawn from Comparative/ International/Area Studies

Joint Honours in Political Science with Specialization in International Relations

A student reading for Joint Honours with a Specialization in International Relations shall complete 48ch of Political Science courses, 30ch of which must be in advanced level courses. A students program must include:

- POLS 2703 Introduction to International Relations
- POLS 3410 Survey of Political Thought
- POLS 4600 Directed Reading and Research in International Relations
- A minimum of 3ch drawn from Political Theory and Analysis
- A minimum of 6ch drawn from Canadian Government and Politics
- A minimum of 15ch drawn from Comparative/ International/Area Studies

COURSE CREDIT:

Students may count courses towards the fulfilment of their program requirements in a Single Major, Double Major or Honours in Political Science only if they receive a grade of C or better. Students must achieve a grade of B- or better in POLS 4000 or POLS 4600 to receive an Honours degree.

PSYCHOLOGY

DEPARTMENT OF PSYCHOLOGY

General Office:	Keirstead Hall, Room 119
Mailing Address:	Department of Psychology, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4707
Fax:	(506) 447-3063
Email:	psyc@unb.ca
Website:	http://www.unbf.ca/arts/psychology/

FACULTY

- Byers, E. Sandra, BA (Roch), MA, PhD (W Virginia), Prof & Chair - 1978
- Clark, David A., BSc (Houghton Col NY), MA (New Sch for Soc Res), MPhil, PhD (Lond), Prof - 1988
- D'Entremont, Barbara, BSc, MSc (Dal), PhD (Qu), Assoc. Prof - 2000
- Donaldson, A. Wayne, BSc, MA (Alta), PhD (Tor), Prof - 1971
- Fields, Donald L., BA (Alta), MEd (Calg), PhD (York), Prof - 1974
- Griew, Stephen, Adjunct Prof. - 2002
- Hiew, Chok Choong, BA, MA, PhD (Colorado), Prof - 1974
- LaChapelle, Diane, BSC (McM), MA, PhD (Regina) - Asst Prof - 2002
- Piercey, Darren, H.B.Sc (Toronto), PhD (Alberta), Asst Prof - 2001
- Poulin, Carmen, BA (UNB), MA, PhD (Qu), Prof - 1991
- Robinson, Gilbert B., BSc (Dal), PhD (McM), Prof - 1987
- Sears, Heather, BSc (Acad.), MA, PhD (Victoria), Assoc Prof - 1995
- Spinner, Barry, BA (Wat), MA, PhD (Manit), Prof - 1981
- Stoppard, Janet M., BSc (Exeter), MSc (Qu-Belf), PhD (Qu-Kingston), Prof - 1979
- Szeligo, Frank, BS (Akron), MS, PhD (Pitts), Prof - 1975
- Voyer, Daniel, BSc, MSc (Montr.), PhD (Wat.), Prof - 2000

General Information

The Department of Psychology offers several undergraduate programs through the Faculty of Arts and the Faculty of Science. Arts students may complete Minors, Majors, Double Majors, Honours, Joint Honours and Specialization in Biopsychology programs. Science students may complete Minors, Majors or Honours in Psychology. Some students may complete degrees in a combined (BASc) program or earn both Arts (BA) and Science (BSc) degrees in a concurrent program. Students in the concurrent program may declare the Major or apply for admission to Honours in Psychology in either Faculty but not both. Students in the combined program may declare the Major (following the Double Major regulations) in Psychology in either Faculty but not both.

Psychology courses generally follow the course numbering system described on page H.1 of the UNB Undergraduate Calendar. The second digit in each course number indicates Teaching Areas within the discipline of psychology. The Areas and the specific course numbers of the courses belonging to each Area are as follows:

0	General	1013 , 1023 , 3023 , 3033 , 3043 , 4003 , 4053 ;
1	Research	2113 , 2123 , 3113 , 3123 , 3150 , 4103 , 4110 ;
2	Developmental	2203 , 3213 , 3233 , 3243 , 3263 , 3273 , 4203 , 4215 , 4223 ;
3	Clinical	2313 , 3313 , 3353 , 3373 , 3383 , 4303 , 4313 ;
4	Personality and Social	2403 , 3403 , 3415 , 3423 , 3463 , 4403 ;
6	Memory, Learning and Cognition	2603 , 3615 , 3623 , 3633 , 4603 , 4613 ;
7	Biological	2703 , 3713 , 3723 , 3733 , 3745 , 3753 , 3773 , 3783 , 4713 , 4743 , 4773 .

The third digit in each course number designates the course within the Teaching Area. Terminal digits of 3 or 5 indicate the course could be offered in any term.

Statement on Web Courses

The Department of Psychology offers some online Web Courses to Part-time students through theCollege of Extended Learning. Web Courses are designed to be asynchronous (students may start at any time) and can be active for up to six months from the starting date. The Department of Psychology has approved these courses as equivalent to regular courses when the first three digits of the course number match those of regular courses. All Web Courses have a four digit course number ending with "4". For example PSYC 1013 and PSYC 1014 are equivalent courses.

In exceptional cases Full-time students may be given permission to enrol in Web Courses as part of their regular course load. Current regulations require Web courses taken by Full-time students during the Winter and Fall terms to be approved by the Dean of the faculty offering the course. Web Courses must be on the list of courses approved by the Department as equivalent to existing courses, must be completed within a single term and must include a proctored grading procedure approved by the Department.

The following Web Courses have been approved by the Department of Psychology as equivalent to regular courses:

PSYC 1014	Introductory Psychology on the WEB- I	3 ch (online)
PSYC 1024	Introductory Psychology on the WEB- II	3 ch (online)
PSYC 2404	Foundations in Social Psychology on the WEB	3ch (online)
PSYC 4054	History of Psychology on the WEB	3ch (online)

Minor, Majors and Honours

Minimum Academic Standards

A grade of C or better must be attained in each of the courses taken to meet the minimum requirements of any of the programs listed below.

Minor

A Minor will consist of 24 ch in Psychology courses and will include the following: PSYC 1013 , PSYC 1023 , PSYC 2113 and two Foundation courses (PSYC 2203 , PSYC 2313 , PSYC 2403 , PSYC 2603 and PSYC 2703). Three additional courses must be selected with the approval of the Department in accord with the principle that the courses should be related to one another and to the degree the student is seeking.

Majors and Honours in Psychology (Arts)

Students wishing to Major or Honour in Psychology will normally apply to the Department following their second year. Acceptance will be based on satisfactory performance in 18 ch of required first and second year courses. The required courses are: Introductory Psychology (PSYC 1013 and PSYC 1023), Research Methods (PSYC 2113 and PSYC 2123 taken concurrently) and two Foundation courses selected from PSYC 2203 , 2313 , 2403 , 2603 , and 2703). Students with an exceptional academic record for the above requirements will be offered an opportunity to enrol in PSYC 3113 and PSYC 3150 in their third year as preparation for the Honours program.

Majors and Honours students will take two additional Foundation courses in years three or four. These two Foundation courses will be considered upper level courses in Psychology for purposes of satisfying the BA and BSc degree regulations. PSYC 4053 is also required and will normally be taken in the fourth year.

Students are advised to carefully plan their selection and sequencing of Foundation courses as each course is a prerequisite for higher level courses within the same Teaching Area. The Department has prepared a number of recommended course sequence plans to help students make their course selections.

Where a student may have completed part of their program prior to the 2002-2003 academic year the following equivalencies will be used: PSYC 1000 will be considered equivalent to PSYC 1013 and 1023 ; PSYC 2103 will be considered equivalent to PSYC 2113 ; PSYC 2903 will be considered equivalent to PSYC 2123 ; and PSYC 3913 will be considered equivalent to PSYC 3113 . The Foundation course requirements may be waived by the Chair of the Department as a degree requirement but instructor permission is required to waive Foundation courses as prerequisites for upper level courses.

Majors

A Single Major in Psychology will consist of 48 ch in Psychology courses including the 27 ch of required courses. Students will select the remaining 21 ch from upper level courses for which they have prerequisites.

A Double Major in Psychology will consist of 42 ch in Psychology courses including the 27 ch of required courses. Students will select the remaining 15 ch from upper level courses for which they have prerequisites. A 42 ch Major program may be approved (by the Department Chair and in advance) in those cases where a students proposed program of study is in accord with the principle that a Double Majors program is best viewed as being interdisciplinary in nature. Two independent or unrelated disciplines will not be eligible for the 42 ch Major program.

Honours

The Honours Program is designed to provide broad exposure to the discipline and develop research skills appropriate for students wishing to pursue graduate studies in Psychology.

Single Honours in Psychology will consist of 57 ch in Psychology courses including all requirements for a Single Major and the following additional requirements: Introduction to Statistical Inference in Experimental Psychology (PSYC 3113), and the Honours Thesis Research Seminar (PSYC 4110). The Honours Thesis will consist of an independent research project, completed in the fourth year, supervised by a Psychology faculty member and organized in the Honours Thesis Research Seminar. Honours students must take one or both Basic Research Seminars (PSYC 3151 , PSYC 3152) in their third year. Applicants to the Honours Program should apply in writing, normally in the third year of their program, to the Honours Research Coordinator, and are encouraged to approach individual faculty members to find a supervisor. Only students with a cumulative grade point average of at least 3.6 in Psychology courses will be considered for the Honours Program.

Joint Honours in Psychology will consist of 48 ch in Psychology courses including the 36 ch of courses required for Single Honours. Students should consider carefully the implications of pursuing Joint Honours for their suitability for admission to a graduate program in Psychology. A 48 ch Honours program may be approved (by the Department Chair and in advance) in those cases where a students proposed program of study is in accord with the principle that a Joint Honours program is to be viewed as interdisciplinary in nature. Two independent or unrelated disciplines will not be eligible for the 48 ch Honours program. Only certain Joint Honours programs will be permitted by the Department.

Specialization in Biopsychology

A Major in Psychology with Specialization in Biopsychology must satisfy the same general requirements as a Single Major in Psychology except that students must include PSYC 2703 , two of the following (PSYC 3713 , PSYC 3745 , PSYC 3773), at least one of the following lab courses (PSYC 3723 , PSYC 3753, PSYC 3783) and at least one of the following seminar courses (PSYC 4713 , PSYC 4743 , PSYC 4773). Students must also take BIOL 1001 / BIO, 1551 , BIOL 1012 / BIOL 1552 and a minimum of any six additional courses in Biology.

Honours in Psychology with Specialization in Biopsychology has the same general requirements as the Major in Psychology with Specialization in Biopsychology with the following additional requirements: Introduction to Statistical Inference in Experimental Psychology (PSYC 3113), and the Honours Thesis Research Seminar (PSYC 4110). The Honours Thesis will consist of an independent research project (normally on a topic represented by Teaching Areas 6 or 7), completed in the fourth year, supervised by a Psychology faculty member and organized in the Honours Thesis Research Seminar.

Majors and Honours in Psychology (Science)

Science students choosing the Psychology Option must follow the regulations provided under Bachelor of Science in Section G of this Calendar.

SOCIOLOGY

DEPARTMENT OF SOCIOLOGY

General Office:	Tilley Hall, Room 20
Mailing Address:	Department of Sociology, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4849
Fax:	(506) 453-4659
Email:	socio@unb.ca
Website:	http://www.unbf.ca/arts/Soci/

FACULTY

- Ameh, Robert, BA (Ghana), BA (Oslo), MPhil (Oslo), MA, PhD (S.Fraser), Asst Prof - 2001
- Bowden, Gary, BA (W. Wash), MA, PhD (Calg), Assoc Prof - 1990
- Harrison, Deborah, BA (Qu), MA, PhD (York), Prof - 1995
- Gill, Carmen, BA, MA, PhD (Qu), Asst Prof & Dir MMF Ctr for Family Violence Study - 2004
- Hornosty, Jennie M., BA (Cal Berkeley), MA (Dal), PhD (York), Prof - 1980
- Kufeldt, Kathleen, BSW, MSW, PhD (Calgary), Adjunct Prof - 1997
- Lautard, Hugh, BA, MA (UNB), PhD (UBC), Prof - 1975
- Low, Jacqueline, BA, MA (Conc.), PhD (McM.), Asst Prof - 2001
- Miedema, Baukje, BA, MA, PhD (UNB), Adjunct Prof - 1996
- Nason-Clark, Nancy BSc (Houghton Col. NY), MA (Wat), PhD (Lond), Prof - 1984
- Neilson, Linda, BA, LL.B (UNB), PhD (Lond), Assoc Prof - 1993
- ODonnell, Susan, BA (Ott), MA (Cardiff), Adjunct Prof - 2004
- Rehorick, David A., BA, MA, PhD (Alta), Prof - 1974
- Rideout, Vanda, BA (Qu), MA, PhD (Car), Assoc. Prof - 1998
- Thériault, Luc, BA (Qu), M.Sc, (Montr), PhD (Tor) - 2004
- van den Hoonaard, Will C., BA (UNB), MA (Nfld), PhD (Manc), Prof - 1979
- Wisniewski, Lawrence J., BA (St John's), MA (N Dakota), PhD (McM), Assoc Prof & Chair - 1974

General Information

First-Level Courses

First-year students in the Faculty of Arts interested in Sociology will normally take any 6 ch of Level 1 Sociology courses. First- and Second-year students enrolled in other Faculties and/or planning to transfer to another university will normally take SOCI 1503 but may, with approval of their Faculty, substitute for SOCI 1503 another Level 1 Sociology course and/or take an additional 3 ch of Level 1 courses.

After completion of 60 ch of their program, students may not enroll in Level 1 Sociology courses but may enroll in Level 3 or 4 Sociology courses without having taken Level 1 Sociology courses. After completion of 30 credit hours of their program, students may enroll in Level 2 courses without having taken Level 1 Sociology courses. Students must satisfy the prerequisites (if any) of advanced-level Sociology courses.

Minimum Academic Standards

A grade of C or better must be attained in each of the courses taken to meet the minimum requirements of any of the programs listed below.

Upper Level Courses

Teaching methods and approaches are not tied to level but will vary from year to year depending on class size and the preference of the instructor for lecture, seminar or other formats.

Minor, Majors and Honours Programs

Minor

The Minor in Sociology consists of 24 ch in Sociology, approved by the Director of Undergraduate Studies. 12 ch must be advanced-level courses.

Majors and Honours

Students intending to Major or Honour in Sociology should complete at least 12 ch of Sociology courses in Sociology prior to entering their third year.

Majors

1. Single Majors must complete a minimum of 39 ch of Sociology, of which 24 ch must be advanced-level courses. Double Majors must complete a minimum of 30 ch of Sociology of which 15 ch must be advanced-level courses. Permission may be obtained to count an advanced-level course in a related subject as one of the Sociology options. Both Single and Double Majors must have their program approved by the Director of Undergraduate Studies of the Sociology Department.
2. The following courses are compulsory for Single and Double Majors: 6 ch of Level 1 Sociology courses, SOCI 3004 , SOCI 3014 , SOCI 3103 .

Honours

1. A minimum of 48 ch in Sociology is required for Single Honours. At least 33 ch must be advanced-level Sociology courses of which at least 6 ch must consist of Level 4 Sociology courses. A minimum of 42 ch of Sociology is required for Joint Honours. At least 27 ch must be advanced-level courses of which 3 ch must consist of Level 4 Sociology Courses. Students seeking admission to a Single or a Joint Honours program are directed to the General Regulations of the Arts Degree, BA (Honours), and must make written application to the Director of Undergraduate Studies. Both Single Honours and Joint Honours must have their program approved by the Director of Undergraduate Studies.
2. Compulsory courses for both Single and Joint Honours are 6 ch of Level 1 Sociology courses, SOCI 3004 , SOCI 3014 , SOCI 3100 , SOCI 3123 , SOCI 5000 and SOCI 5200 . For Single Honours 6ch of Level 4 Sociology courses and for Joint Honours 3 ch of Level 4 Sociology courses are required. SOCI 3004 , SOCI 3014 and SOCI 3100 , are prerequisites for Level 5 courses.
3. An Honours Essay is required in the final year. The paper will be completed as SOCI 5200 .

WOMEN'S STUDIES

Mailing Address:	c/o Faculty of Arts, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 447-3232
Email:	brwn@unb.ca
Website:	http://www.unbf.ca/arts/ws/index.htm

FACULTY

Co-ordinator: Dr. Anne Brown (French)
Acting Co-ordintor, 2004-2005 : Dr. Linda Kealey (History)

- David Bedford, PhD, Political Science
- Anne Brown, PhD, French
- Lynda Eyre, PhD, Education
- Anna Hamling, PhD, Culture and Language Studies
- Deborah Harrison, PhD, Sociology
- Jennie Hornosty, PhD, Sociology
- Linda Kealey, PhD, History
- Lianne McTavish, PhD, History
- Koumari Mitra, PhD, Anthropology
- James Murray, PhD, Classics
- Nancy Nason-Clark, PhD, Sociology
- Carmen Poulin, PhD, Psychology
- Wendy J. Robbins, PhD, English
- Charlene Shannon, PhD, Kinesiology
- Janet M. Stoppard, PhD, Psychology
- Gillian Thompson, PhD, History (retired June 2005)
- Melanie Wiber, PhD, Anthropology
- Thom Workman, PhD, Political Science

General Information

The interdisciplinary Women's Studies Program, established in 1986, offers students the opportunity to study the experiences and achievements of women, with a view to gaining a more complete and balanced understanding of women's and men's lives, both historically and in contemporary society.

Eligibility

Admission to the Women's Studies Program is open to students in any faculty who have successfully completed 60 ch towards a degree. With the permission of the Coordinator of Women's Studies, students may count for credit courses taken before they entered the program.

Students have the option of taking a Minor, Double Major or Joint Honours degree in Women's Studies.

Programs of Study

Minor

A Minor consists of 24 ch of course work, selected in consultation with the Coordinator of Women's Studies. These include WS2003 , WS4004 , and an additional 15 ch at the upper level. At least 12 ch will be chosen from the list of core courses. The remaining 6 ch will be chosen from the list of core courses or a list of designated supplementary courses.

Double Major

A Double Major consists of 30 ch of course work, selected in consultation with the Coordinator of Women's Studies. These include WS2003 , WS4004 and an additional 21 ch at the upper level. At least 18 ch will be chosen from the list of core courses. The remaining 6 ch will be chosen from the list of core courses or a list of designated supplementary courses.

Joint Honours

Joint Honours consists of 36 ch of course work, selected in consultation with the Coordinator of Women's Studies. These include WS2003 , WS4004 , WS4900 and an additional 21 ch at the upper level. At least 18 ch will be chosen from the list of core courses. The remaining 6 ch will be chosen from the list of core courses or a list of designated supplementary courses.

Students enrolled in a Joint Honours program must maintain an overall G.P.A. of 2.5 and a G.P.A. of 3.0 in the courses taken to fulfill the Women's Studies degree requirements.

Core Courses

ANTH 3114	Anthropology of Gender
ANTH 3704	South Asia
ANTH 4502	Issues in Medical Anthropology
ANTH 4702	Gender and Health
ANTH 5051	Gender Relations
CLAS 3903	Women in Ancient Greece: Portrayals and Realities
ED 5181	Feminist Theory and Education
ENGL 3883	Women's Writing in English
ENGL 5104	Medieval Lyric *
ENGL 5117	Milton on Gender and Imperialism*
ENGL 5156	The Brontes: Texts and Contexts *
ENGL 5165	The Lady and the Wanton: The Presentation of Women in Medieval Literature
ENGL 5178	British Women Writers*
FR 3534	Écrits de femmes / Women's Writing
FR 3834	Écrivaines québécoises contemporaines / Contemporary Québécois Women Writers
HIST 1021	Women in History
HIST 3003	European Women 1450-1800
HIST 3255	Women's Voices in the Western World
HIST 3325	A History of Sexualities
HIST 3606	Women in Modern Asia
HIST 3737	History of Women Artists
HIST 4001	Heretic and Witches in Europe (1350-1650)
HIST 4242	Victorian Britain
HIST 4313	History of Women in Canadian Society
HIST 4323	The Family in North America
HIST 5245	Women in Industrial Britain 1700 - 1880 *
HIST 5245	Women in Industrial Britain 1700-1880
PHIL 3103	Philosophical Foundations of Feminism
POLS 3443	Women in the History of Political Thought
POLS 3613	Gender and International Relations
PSYC 3263	Psychology of Women
PSYC 3383	Women and Mental Health

PSYC 4223	Sex and Gender: Difference and Similarities
RSS 4242	Gender, Sport and Physical Activity
RSST 4003	Russian Women Writers
SOCI 1543	Men and Women: Then and Now
SOCI 2303	Sociology of the Family
SOCI 2313	Sociology of Women (1)
SOCI 3335	Religion, Gender and Society
SOCI 3543	Sociology of Gender Relations
SOCI 3634	Violence Against Women
SOCI 4005	Feminist Theory
SOCI 4116	Feminist Social Research Methods
SOCI 4336	Families, Law & Social Policy
SOCI 4345	Sociology of Women (2)
SOCI 4555	Gender and Organization
SPAN 3062	Love and Religion
WLCS 4063	20th Century Women Writers

* courses numbered 5XXX are Honours courses usually only open to Honours students; non-Honours students with very good grades may be admitted on occasion.

Several of these courses have departmental prerequisites which must be met.

Consult the Coordinator of Women's Studies for the most recent lists of core and supplementary courses. Because Minors are subject to University-wide regulations, courses on women offered in other Faculties, such as ED 5181 Feminist Theory and Education and NURS4274 Iconography of the Nurse, may be counted as core courses for the Women's Studies Minor, although they may not be eligible for Arts Faculty credit. Arts students seeking credit for Women's Studies courses outside their Faculty must ensure that they have Arts Faculty approval before they register for such courses.

CONCURRENT DEGREE PROGRAMS

Concurrent Degrees in Arts and Science (BASc/BSc)

Increasingly in today's world, many career and professional programs recognize and value the combination of in-depth scientific education with the understanding of people and the sophisticated analytic and critical skills acquired in an Arts degree. The Faculties of Arts and Science at UNB in Fredericton are co-operating to make it possible for a student to combine Arts and Science in several interesting and innovative ways.

To be admitted to the Arts and Science program, students must meet the entrance requirements of both BA and BSc degrees given in the chart of pp B.4 and B.5. Students who enter the Arts and Science program may opt to move into either Arts or Science at any time. With the exception of labs, all courses taken during the first two years can be counted towards either a BA or a BSc (or both). Approved specialized Science labs count towards the BASc or BSc degree.

By continuing in Arts and Science for a further two years (four years in all), students can earn a Bachelor of Arts and Sciences (BASc) degree with a specialization in an Arts subject and a Science.

Instead of a BASc, students may continue for a fifth year to earn both a BA and a BSc, two degrees, with a major (or honours) in an Arts discipline and in a Science - for example, BA (History) and BSc (Physics).

Within Science, students can specialize in one of Biology, Chemistry, Geology, Mathematics and Statistics, Physics. Within Arts, students can concentrate in any of Anthropology, Classics and Ancient History, Classical Studies, Economics, English, French, German, History, Multimedia Studies, Philosophy, Political Science, Psychology, Russian and Eurasian Studies, Sociology, Spanish or World Literature and Culture Studies. In addition, interdisciplinary programs in International Development Studies, Law in Society, Linguistics, and Women's Studies are available for study, and as part of a double major.

These are ideal programs for students with a strong interest in one of the Sciences and one of the Arts disciplines. They are also demanding programs, which require a serious commitment from the student from the outset and throughout the degree (s).

The joint programs are designed so that if a student decides to opt for either degree part way through the program, the adjustments can be made. The breadth of the program also makes it an excellent pre-professional program to prepare for study in dentistry, medicine, veterinary medicine, optometry and physiotherapy.

Students in the joint program are able to count many of their courses toward the requirements of both degrees so it is important to select courses carefully from the outset. Advice is available from both faculties at every level from pre-entry enquiries through to graduation.

PROGRAM OF STUDY

First Year

1. ARTS 1000 Development of Western Thought
2. 6 term lecture courses in first year science, 4 accompanied by labs. The choice of lecture courses and labs is dictated by the particular science degree program intended. MATH1003 or 1053 included.
3. 6 ch (in any one discipline) chosen from either Humanities (Classics, English, History, Philosophy, World Literature and Culture Studies), Languages (French, German, Greek, Japanese, Latin, Russian, Spanish) or Social Sciences (Anthropology, Economics, Political Science, Psychology, Sociology)

Students will normally select their Science specialization at this point. Specialized lecture or laboratory science courses may be taken, if approved. Throughout the program, advice is available on the options and course requirements. Students may have written pre-approval from the appropriate Arts and Science advisors for all programs and course selection.

Second Year

1. Two more term lecture courses in first year science. These need be accompanied by labs ONLY if the students particular Science program requires them, e.g. the Pre-Professional program.

2. 12 ch (6 ch in each of 2 disciplines) chosen from Arts, including at least one discipline from a group (Humanities, Languages, Social Sciences) not chosen in the first year.
3. At least 18 ch of science courses chosen in consultation with the students Science advisor.

Students will normally select their Arts specialization (s) or major (s) at this time. Your advisor can discuss the options with you and introduce you to specialized advisors in each Arts program.

The exact content of years 3, 4 and 5 (if taken) will depend upon the particular Arts and Science disciplines chosen. Students take advanced courses to give them a thorough understanding of their specializations and prepare them for an immediate career or further work at graduate school. Students who elect to take honours in Arts and/or Science may extend their program beyond the five years, depending on the subjects chosen.

Third Year

1. Six term courses (min. 18 ch) in Science chosen in consultation with, and approved by, your Science advisor.
2. 18 ch chosen in consultation with, and approved by, your Arts major(s) advisor.

Fourth Year

1. Six upper-level term courses (min. 18 ch) in Science chosen in consultation with, and approved by, your Science advisor.
2. 18 upper-level ch chosen in consultation with, and approved by, your Arts major (s) advisor.

Graduation for students taking BASc option

Fifth Year

1. Six upper-level term courses (min. 18 ch) in Science chosen in consultation with, and approved by, your Science advisor.
2. 18 upper-level ch chosen in consultation with, and approved by, your Arts major (s) advisor.

Graduation for students opting for both BA and BSc

Concurrent BA/BEd Degree Program

General

The BA or BA/BSc and BEd Concurrent Degree model is designed as a five year program to allow students to complete a degree program in Arts or Arts and Science and Education that prepares them to teach in a variety of learning environments.

Admissions Procedures

1. Students will apply for entry to the BA or BA/BSc degree program upon completion of the high school program.
2. Students may apply to the Faculty of Education Concurrent Program during their second term at UNB and, upon successful completion of all Year I requirements, may be admitted to the Concurrent Program.
3. Students may enter the Concurrent Program later in their program; however, late entry may require more than five years to complete both degrees.

CONCURRENT PROGRAM REQUIREMENTS -Total 168 ch

1. 60 ch approved by the Faculty of Education.
2. 120 ch approved by the Faculty of Arts which include all of the Arts or Arts and Science core requirements. 12 ch in Core Studies from Education may be counted toward this requirement, as elective courses in the BA degree.
3. Under Arts Regulations, students may take a maximum of 6 ch of approved education courses in Year II.
4. A student cannot get a BEd Degree by itself in this program; if a student withdraws from the Concurrent Program back into the BA Degree, a maximum of 12 ch of education courses may be transferred for Arts credit.

Concurrent Degree in Arts and Computer Science

Many career opportunities demand a combination of in depth scientific training with the understanding of people and the sophisticated analytic and critical skills acquired in an Arts degree. The Faculties of Arts and Computer Science at UNB in Fredericton are cooperating to make it possible for a student to graduate with both a BA and a BCS in five years.

Several specializations are available in Computer Science, including Hardware Systems, Software Systems, Numerical and Statistical Computation, Information Systems and Computing Theory. All Arts students concentrate on a major or honours program in their third and fourth years chosen from any of the following disciplines: Anthropology, Classics and Ancient History, Economics, English, French, German, Greek, History, Latin, Linguistics, Multimedia, Philosophy, Political Science, Psychology, Russian and Eurasian Studies, Sociology, Spanish or World Literature and Culture Studies.

This is an ideal program for students with an interest in Computer Science and one of the Arts disciplines. It is also a demanding program which requires a serious commitment from the student from the outset and throughout the degree.

The joint program is designed so that if a student decides to opt for either degree alone part way through the program, the adjustments can be made easily.

Students in the joint program are able to count many of their courses toward the requirements of both degrees so it is important to select courses carefully from the outset. Advice is available from both faculties at every level from pre-entry inquiries through to graduation.

Admissions Requirements

Students must have an average of at least 75% in the appropriate high school courses, with a minimum of 65% in the mathematics and science courses and 60% in the other admission courses. English 122, Mathematics 112, 120, and Physics 122 or Chemistry 122. Students holding Canada Scholarships are also eligible for admission.

Application and Admission

Students wishing to pursue the Joint Program should apply for admission to the Faculty of Arts of the University of New Brunswick, specifying on the application form an interest in the Joint Program in Arts and Computer Science. Further

information on the program is available from the office of the Dean of the Faculty of Computer Science and that of the Dean of the Faculty of Arts.

Faculty Affiliation

Students in the Joint Program will be registered as joint BA/BCS students. They will be assigned to academic advisors in the Faculty of Computer Science and in the Faculty of Arts.

PROGRAM OF STUDY

Year I

1. ARTS 1000
2. MATH 1003 and 1013 (or enriched MATH 1053 and 1063)
3. CS 1073 and 1083
4. ECON 1013 /ECON 1023 or ECON 1073
5. Humanities or Languages, 6 ch

Student wishing to take an additional Social Science will select the course from the First Year Arts listings in Social Sciences.

Year II

1. CS 1303 , 2013 , 2023 , 2333
2. MATH elective
3. PHYS 1040 and 1045 (or 9 ch of approved science)
4. 9 credit hours of appropriate Arts courses

Year III

1. CS 2513 , 2813 , 3113
2. MATH 2213 and approved third year Math course
3. 18 credit hours of appropriate Arts courses

Year IV

1. CS 3323 , 3413
2. STAT 3083 and 3093
3. 18 ch of appropriate Arts courses

Year V

1. CS 3503 , 3813 , 3913 , 4613 , 4983 or 4997 , fourth year CS elective.
2. 18 ch of appropriate Arts courses

CERTIFICATE PROGRAMS

Certificate in Family Violence Issues

The UNB Certificate in Family Violence Issues is a 8-course program offered by the Muriel McQueen Fergusson Centre for Family Violence Research in the Faculty of Arts and the College of Extended Learning. The program is aimed primarily at individuals who encounter family violence issues through their work and who are seeking to broaden their knowledge in this field. It would normally be followed on a part-time basis, but is also available to qualified full-time students. The primary goals of the certificate program are to sensitize participants to family violence issues; to help them develop competencies in recognizing family violence and in assisting survivors; and to promote multidisciplinary approaches to solving this complex social problem. Upon completion of the program, participants will

a. recognize signs of family violence and be able to identify and assess family violence situations
b. be knowledgeable about central issues related to family violence
c. question societal beliefs and attitudes that can perpetuate violence
d. have increased competencies in assisting survivors of family violence
e. have increased competencies in determining and using culturally appropriate approaches
f. have increased awareness of the need for multi-disciplinary approaches to dealing with family violence situations.

Prerequisites

Of the 24 credit hours required, 6 credit hours must come from introductory courses (namely FVI 2001 , 2002 , 3001) and FVI 4002 is to be considered a required course. The remaining 15 credit hours may be taken from any of the listed courses. Students who complete all eight courses will be awarded the Certificate in Family Violence Issues.

Prerequisites for any course can be waived with the permission of the instructor. Enrolment in courses may be limited at the discretion of the instructor, with priority given to students registered in the Certificate Program.

A grade of C is required to meet the minimum requirements for a prerequisite.

Students who work full-time are strongly advised to take a minimum of two courses per term.

Certificate in Film Production

The Certificate in Film Production can be taken as a stand-alone certificate program or in conjunction with a degree program, with the approval of the appropriate faculty. Candidates for admission to the Certificate Program must meet the university's requirements for admission to the Faculty of Arts or for admission as a mature student. Enrollment in the Certificate in Film Production is limited

The required courses for the Certificate in Film Production will be scheduled in late afternoon or evening time slots in order to make the program available for part-time studies. Full-time students should be aware that at the present time some courses must be taken during intersession.

The Certificate in Film Production program consists of 30 credit hours. Of these, 24 credit hours are from required courses; the remainder is from electives. Normally a grade of C or better is required for each course in the program.

Program Structure

Required Courses		
ENGL 3183	Screenwriting and Writing for New Media	(3 ch)
ENGL 3193	Film Analysis I: Introduction to Film Analysis	(3 ch)
ENGL 3194	Film Analysis II: Film History--An Introduction	(3 ch)
ENGL 3980	Directing and Acting for Film and Television	(6 ch)
ENGL 3990	Advanced Film Production	(6 ch)
ENGL 3999	Film and Video Production	(3 ch)

Elective Courses		
Three credit hours of:		
ENGL 3966	An Introduction to Canadian Film	(3 ch)
ENGL 3973	Science Fiction Film	(3 ch)
Plus one 3 credit-hour elective course in Film Fine Arts (FNAT) or Multimedia (MM) or any film-related university course approved by the Director of Film.		

Certificate of Proficiency in French

The certificate of Proficiency in French is awarded upon examination to students who have completed a program of 24 ch in French Language courses. Details can be found in the Bachelor of Arts **Programs of Study** Section under French.

ARTS AND LAW

Students may be admitted to the Faculty of Law after they have successfully completed three years of the BA program. For further information regarding admission to the Faculty of Law, please consult the Faculty of Law Calendar or visit the Faculty of Law website at http://law.unb.ca/.

Students accepted into the Law program must actually complete the major, double-major, honours or joint honours courses required by their discipline(s), as time permits. Only approved LAW courses will count as upper level electives for the BA, and students may count a maximum of 12 ch towards the BA.

Students will normally graduate with both the BA and LL.B. at the same time.

BACHELOR OF APPLIED ARTS (CRAFT AND DESIGN)

General Information

This articulated degree program offers a unique combination of academic and practical study. It is a four-year degree program that offers the advanced reasoning, research and writing skills of a traditional liberal arts education at UNB along with the hands-on experience of studio art courses offered by the New Brunswick College of Craft and Design, one of Canada's most respected fine craft and design schools.

Eligibility

Admission to the Bachelor of Applied Arts program is a two-step process. Applicants must meet the admission requirements for the BA degree and will follow the normal admission procedures of the University of New Brunswick. In addition, applicants must meet the admission requirements for the New Brunswick College of Craft and Design, and will follow the admission procedures for the Foundation of Visual Arts Certificate. You must indicate on both admission forms which institution you wish to attend first. Deadline to apply is March 31.

Prospective applicants and students wishing to transfer into the program with advanced credit should contact the office of the Dean of Arts or the BAA program advisors at either UNB or the New Brunswick College of Craft and Design.

Program of Study

Students will complete a total 123 credit hours of which 60 credit hours will be taken at UNB and 63 credit hours at NBCCD. Students may start at either institution, can attend each school in alternate years, or complete the requirements of one before moving on to the other.

Year 1 at UNB:

The first-year program requirements are identical to those of the BA degree. They consist of 30 ch at the introductory level. Students may be advised to take certain courses that relate to their interest in craft and design or to their future career plans.

Courses required are as follows:

- 6 ch in Arts 1000
- 6 ch in each of three disciplines chosen from the four groups identified in the BA level one program
- 6 ch in one or two disciplines not already represented above

Year 2 at UNB:

The second year at UNB will consist of 30 ch of lecture courses or seminars of which at least 24 ch must be chosen from the 3000-4000 level in consultation with the program advisor. Normally, students may not take independent study, reading or thesis courses. The course selection should support the student's interest in craft and design. Courses required are as follows:

- 12 ch in Cultural Studies and Art History
- 6 ch in humanities, social sciences, fine arts (critical or theoretical), or interdisciplinary studies
- 6 ch in skill development: math, language, multimedia, science, English(creative or expository writing)
- 6 ch optional from any of the above or others as approved

Year 1 at NBCCD:

Students will take the basic first-year program requirements for the Foundation Visual Arts Certificate as specified by the New Brunswick College of Craft and Design. Students will take 33 ch of level-one required and elective courses as follows:

- 1 ch Portfolio Fundamentals
- 2 ch Colour Study
- 4 ch Basic Design Concepts I
- 4 ch Basic Design Concepts II
- 4 ch Formal and Expressive Drawing
- 4 ch Introduction to the Figure and Exploring Materials
- 2 ch History Culture and Ideas I
- 2 ch History Culture and Ideas II
- 8 ch Introductory Studios
- 2 ch Media Explorations

Year 2 at NBCCD:

Students will take 30 ch from the first year of the two year diploma.

- 2 ch 3D Design I
- 2 ch 3D Design II
- 2 ch Intermediate Drawing I
- 2 ch Intermediate Drawing II
- 16 ch Level II Studios Major
- 6 ch electives

BACHELOR OF BUSINESS ADMINISTRATION

Faculty of Administration

General Office:	Singer Hall, Room 255
Mailing Address:	Faculty of Administration , University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 451-6817
Fax:	(506) 453-3561
Email:	fadmin@unb.ca
Website:	http://www.unb.ca/fredericton/fadmin/

FACULTY

Dean:	Daniel F. Coleman, BA, PhD,
Associate Dean International Programs):	Devashis Mitra, BA, CA, PhD
Associate Dean (Programs):	Hugh Whalen, BSc, BBA,, PhD, CA
Associate Dean (Research & Accreditation):	Barry E.C. Boothman, BA, MBA, PhD

- Abekah, Joseph Y., BScAdmin (Ghana), MSc (Boston), MAc (BGSU), PhD (UNL), Assoc Prof - 1991
- Angeles, Rebecca, BA (Philippines), MBA (South Dakota). PhD (Memphis), Assc Prof - 2003
- Askanas, Wiktor, BA (Poznan), MBA, PhD (Warsaw), Prof - 1983
- Betts, Norman, BBA (UNB), PhD (Qu),FCA, Assoc Prof - 1992
- Boothman, Barry E.C., BA (Brock), MBA, PhD (York), Prof and Assoc. Dean, Res. & Accreditation - 1986
- Coleman, Daniel, BA, PhD (SUNY-Buffalo), Prof and Dean - 1986
- Du, Donglei, BSc (Fudan), MSc (Shandong), PhD (Chinese Acad of Sci)PhD (Texas), Asst Prof - 2003
- Dunnet, Jane, BSc, MBA (UNB), PhD (Qu.), Asst Prof - 2000
- DuPlessis, Dorothy, BComm, LLB, MBA (Dal), LLM (Lond), Prof - 1982
- Eiselt, Horst A., BA (Hannover), MBA, PhD (Georgia Augusta), Prof - 1986
- Flint, Douglas, BA (S. Fraser), MSc (McM.), MASc (Wat.), PhD (Tor.), Asst Prof - 2001
- Gaudes, Andrew, BEnv, Master of Facilty Mgmt, PhD candidate (Manit), Asst Prof - 2003
- Grant, E. Stephen, BBA (UNB), MBA (Maine at Orono), PhD (Memphis), Prof - 1993
- Kabadi, Santosh N., BS (Bom), MTech (IIT/B), PhD (Texas), Prof - 1985
- Laughland, Alan R., BSc, MSc (Guelph), MBA (McM), CMA, Assoc Prof - 1971
- Maher, Elin, BBA (UWO), MBA (Maine at Orono), CA, Assoc Prof - 1988
- Maher, Robert, BSc (UNB), MBA (McG.), CA, FCA, Prof - 1988
- Mitra, Devashis, BA (Delhi), CA, PhD (Mass-Amherst), Prof - 1991
- Nasierowski, Wojciech, MScEng(Ind Eng), BAEngME (Warsaw Univ. of Tech), PhD (Warsaw - Mgmt. Inst. for Organization Develop), DSc (Poland), Prof - 1991
- Nevers, Richard, BA (St Thomas (NB)), MBA (UNB), Lecturer - 2000
- Otchere, Isaac, ICA, BScAdmin (Ghana), MA, MMS(Fin) (Car), PhD (Tas), Assoc Prof - 2003
- Otuteye, Eben, BA (Ghana), MA (UNB), PhD (Qu), Prof - 1987
- Ouyang, Ming, BEng (Tsinghua), MA (UBC), PhD (Manit.), Assoc Prof -2001
- Post, Patricia, BA, MEd, PhD (UNB), Sr Instructor - 2003
- Rahim, Mohammed, BSc, MSc (Dacca), DS (Rome), MSc (Ott), PhD (Windsor), Prof - 1983
- Rashid, Muhammad, MA (York), PhD (Qu), Prof - 1985
- Ritchie, Pamela, BA (UNB), MSc (Sask), PhD (Lanc), Prof - 1989
- Roy, Judy Ann, BPR (Mt.St.Vin.), MBA, DipUT, PhD (UNB), Sr.Teaching Assoc. - 1993
- Sharma, Basu D., BA, MA (Tribhuvan) AM, PhD (Ill), Prof - 1985
- Sheppard, Reginald, BEd, BSc, BA (Nfld.), MEd, MBA (UNB), PhD candidate (Univ of Bath), Asst. Prof - 1999
- Simyar, Farhad, AA (Tehran), BS (Abadan Inst of Tech), MBA (Tehran), MAcc, DBA (S Calif), CPA, CGA, FCGA, Prof - 1996
- Srinivasan, Gopalan, BComm (Madurai), MComm (S Venkat), Fellow (IIM Ahmedabad), CGA, Prof - 1987
- Thomas, Mark, BSc (Dal), BBA, LLB (UNB), MBA, PhD (Tor), Asst Prof - 1999
- Tolliver, James M., BS, PhD (Ohio), Prof - 1981
- Trenholm, Barbara A., BComm (Mt.All.), MBA (Maine at Orono), CA, FCA, Prof - 1980
- Whalen, Hugh, BSc, BBA (UNB), PhD (U. of Minnesota), CA, Sr. Teaching Assoc and Assoc Dean (Programs) - 1992
- Wielemaker, Martin, BSc (UBC), MSc (Tech. Univ. Delft), PhD (Erasmus), Asst. Prof. - 2002
- Zuluaga, Luis, BS, MS (U. of Los Andes (Colombia)), MS, PhD (Carnegie Mellon)

General Information

Through the cooperation of New Brunswick business firms and professional associations, the Department of Business Administration was created in the Faculty of Arts during 1951 to service the needs of Canadian business for men and women with specialized training in the field of management. A School of Administration superseded the Department in 1975 and the Faculty of Administration was established during 1980. The Faculty's operations since 1987 have been based in Ethel Francis Singer Hall, a building named in memory of the first Jewish woman (BA35, MA 38) to graduate from the University of New Brunswick.

The four-year program leads to the degrees of Bachelor of Business Administration (BBA) or Honours BBA. The course of studies is designed to ensure that students receive a broad-based education, by requiring a variety of courses from across the University, as well as courses from the functional areas within the Faculty of Administration. Students will be made aware of the economic and environmental context within which modern business operates, as well as learning about administrative principles and practices.

Administration courses include accounting, electronic business, finance, general management, human resource management, law, management information systems, marketing, operations management, organizational behaviour, and quantitative analysis. Lectures, class discussions, laboratory work, essays, and case studies are used depending upon the requirements of the subject.

1. Business Administration and Accounting

A number of professional accounting organizations award certificates in accounting to students who fulfill the required terms of service in the profession and who pass the required examinations. Most organizations also provide courses of study to enable students to prepare for the examinations. Candidates who are considering entering the accounting profession are invited to discuss the matter with members of the Faculty. Calendars and other information from the accounting organizations are available.

Holders of the BBA degree from UNBF will normally be exempt from part of the course of study, and some of the examinations prescribed by the organizations. Since education is a provincial responsibility, the requirements for accounting certificates and the exemption policies often differ somewhat among the provinces. A student therefore should consult the provincial organization in the province in which he or she plans to pursue studies. For New Brunswick a student should write to:

Certified General Accountant--CGA
CGA Association of New Brunswick Commerce Bldg. Box 5100, 236 St. George St., Moncton, N.B. E1C 8R2

Chartered Accountant--CA
Atlantic School of Chartered Accountancy, P.O. Box 489, Halifax, N.S. B3J 2R7

Certified Management Accountant-CMA
CMA Canada, 371 Queen St., Suite 203, Fredericton, N.B. E3B 1B1

2. Business Administration and Law

BBA students who have completed three years of the BBA program maybe admitted to the Faculty of Law and may qualify for the BBA degree by successfully completing the first year of the Law program. In order to qualify for the BBA, the students must have credit for all of the REQUIRED courses specified for the BBA degree, with the exception of ADM 3123 . Students must apply to and be accepted by the Faculty of Law.

3. Graduate Study in Administration

The Faculty of Administration offers an MBA (Master of Business Administration) degree program. Information regarding the program may be obtained from the School of Graduate Studies.

Most universities in Canada and in the United States which offer graduate programs in Administration (MBA, MPA, etc.) require applicants to submit the results of the Graduate Management Admission Test. Students who think they might wish to enter a graduate program in Administration should arrange to write this test in their senior year. Application forms (which must be sent to Princeton, N.J.) are available from the Faculty and should be mailed at least a month in advance of the test date. Educational Testing Service charges a fee for this test.

An undergraduate degree in business administration is **not** required for admission into the MBA program.

4. Graduates of a Community College or Equivalent System

Graduates of the New Brunswick Community College in a two year Business Technology program with a 75% average or equivalent standing over the normal two years (or equivalent standing from comparable institutions), will be granted 30 ch toward the BBA degree and will be required to successfully complete at least another 96 ch in order to qualify for the BBA. Students who have partially completed such programs may be granted credits toward the BBA. Entering students will be advised of their status, as provided for in the General Regulations of the University.

5.Certificate Programs

The Faculty of Administration offers, through the University's College of Extended Learning, degree credit courses leading to Certificates in Business Administration and in Public Administration. Students may take these programs on a part-time or full-time basis.

A. **Business Administration Certificates**

i.Certificate in Business Administration Level I
ii.Certificate in Business Administration Level II

B. **Public Administration Certificates**

i.Certificate in Public Administration Level I
ii.Certificate in Public Administration Level II

C. **Certificate in E-business**

i.Certificate in E-business, Level I

Information on the Certificate programs, including the regulations and course requirements, is available in a booklet entitled "Certificate Programs in Administration". It may be obtained by writing to either the Faculty of Administration, or to the College of Extended Learning, P.O. Box 4400, Fredericton, N.B. E3B 5A3.

First Nations Business Administration Certificate

This Certificate gives Aboriginal students who are interested in learning about the business world an opportunity to learn about Business Administration, with the further possibility of earning a BBA degree. The program will be of interest to those individuals coming directly out of High School, as well as those who are currently working. Students must satisfy the admission requirements for the Certificate in Business Administration programs. Students not meeting these requirements may be eligible for UNB's Bridging Year Program, run by Micmac-Maliseet Institute in the Faculty of Education. Students successfully completing the First Nations Business Administration Certificate are eligible to continue in the BBA degree program. All courses successfully completed in the Certificate will count toward the BBA degree. For further information on the Bridging Year and the Micmac-Maliseet Institute, see Section D of this Calendar.

The Certificate consists of 66 credit hours, which can be completed in two academic years with full-time study. The Certificate may also be completed on a part-time basis. To earn the Certificate, a student must have successfully completed the number of credit hours in approved courses specified for the Certificate, achieved a grade of at least C in all specified required courses, and achieved a cumulative grade point average of at least 2.0. ED 3872 and ADM 3445 may not both be counted toward certificate credit.

The required courses for the Certificate, in their normal sequence, follow:

YEAR 1		Ch
Fall Term		
ABRG 1411	Introduction to Finite Mathematics	3
ABRG 4664	Aboriginal Entrepreneurship	3
ECON 1013	Introduction to Economics: Micro	3
ADM 1113	Administration	3
ENGL 1103	Fundamentals of Clear Writing	3

Winter Term		
ABRG 1412	Introduction to Calculus	3
ABRG 3363	Communications: Speaking Practice	3
ADM 2213	Financial Accounting	3
ECON 1023	Introduction to Economics: Macro	3
ENGL 1104	Fundamentals of Effective Writing	3
SOCI 1503	Elements of Sociology	3
	YEAR 2	
Fall Term		
ADM 2223	Managerial Accounting	3
ADM 2313	Principles of Marketing	3
ADM 2623	Quantitative Analysis I	3
CS 1043	Introduction to Computers	3
PHIL 2153	Ethical Issues in Business	3
Winter Term		
ADM 2413	Principles of Finance	3
ADM 2513	Organizational Behaviour	3
ADM 3123	Business Law I	3
ADM 3713	MIS	3
	Plus 6 credit hours in Aboriginal Business or other appropriate courses, selected in consultation with the Faculty of Administration	6
Total Credit Hours		**66**

6. University Regulations

Any point covered in the following regulations will be governed by the General University Regulations in Section B of this Calendar. Questions concerning the regulations should be directed to the Registrar in writing.

Conditions Regarding Admission to the BBA Program

All admissions are on a competitive basis and are subject to availability of space. Satisfaction of minimum requirements does not guarantee admission.

A student who is not registered in the BBA program may not take more than 24 ch of ADM courses without approval from the Faculty of Administration.

Transfer Students

1. A student's scholastic record normally must satisfy the general admission requirements of the Faculty of Administration specified in Section B.1.
2. A minimum cumulative GPA of 2.0 normally is required for a student to be considered for transfer into one of the Faculty's programs.
3. A student normally will not be allowed to transfer into the Faculty mid-way through the academic year.
4. Application is by special form available from the Registrar's Office and must be submitted to the Registrars Office by 31 March.
5. Upon admission, transfer students must take ADM 1113 during their first term of studies.

7. BBA for Students with Another Bachelor's Degree

(See also REQUIREMENTS FOR A SECOND UNDERGRADUATE BACHELOR'S DEGREE, Section B of this Calendar.)

Students who obtained a G.P.A. of 3.0 or better in their undergraduate degree program should consider applying for the MBA program (see Section 3).

A. **Graduates of UNB and of Other Universities**

Graduates of UNB are required to complete successfully a minimum of 30 additional ch and to have credit for all the required courses (or their equivalent) in the BBA program. In addition, students must maintain a session grade point average of at least 2.0 (see Section B on **Degree Standing on Graduation** below).

Graduates of other recognized universities must also have credit for all of the courses specifically required for the BBA but must, in addition, have successfully completed a minimum of 63 ch at UNB. In addition, students must maintain a session grade point average of at least 2.0 (see **BBA Regulations 8D, 8E** and **9**.)

B. **Degree Standing on Graduation**

Students taking the BBA program as a second degree may graduate with First, Second, or Third Division standing but not with Distinction.

i. Students who have a UNB undergraduate degree and are thus required to take a minimum of 30 additional ch (and to have credit for all the required courses in the BBA program) will have their division standing calculated on the basis of all the courses they take while registered for the BBA degree, plus all of the required courses for the BBA for which they received grades from UNB in their other undergraduate degree at UNB.

ii. Students whose first undergraduate degree is from another university are required to complete at least 63 additional ch and to have credit for all required courses in the BBA program. Their division standing will be calculated on all of the courses they have taken while registered at UNB.

8. BBA Regulations

A student who had been registered in the BBA program and who withdrew while on probation or who was required to withdraw from the program will not be eligible to re-enter the program without the approval of the Faculty of Administration.

The regulations in respect to the BBA degree are expressed in terms of letter grades, credit hours and grade point averages. These are referred to below.

A. **Letter Grades**

A candidate's final standing in a course is indicated by one of the letter grades stated in Section B (Grading System and Classification) of this Calendar. A grade of C or better meets the prerequisite standards for Administration courses.

B. **Credit Hours**

The number of credit hours assigned each course is stated in Section F of this Calendar. Due to differences in the methods used by the various Faculties in the calculation of credit hours, students who elect to register for courses taught outside of the Faculty of Administration should note the following:

i. For purposes of the BBA degree, any course taught outside of the Faculty of Administration, which has a course number ending in zero and which is taught over the full academic year, will receive the number of credit hours normally assigned by the Faculty in which the course is taught, up to a maximum of 6.

ii. For purposes of the BBA degree, any course taught outside of the Faculty of Administration, which has a course number ending in other than zero and which is offered in one term of the academic year, will receive the number of credit hours normally assigned by the Faculty in which the course is taught up to a maximum of 3.

C. **Grade Point Averages**

i. The method of calculating grade point averages is explained in Section B (Grading System and Classification) of this Calendar.

ii. Students registered in the BBA program must maintain an assessment grade point average of at least 2.0 throughout the program. (See Section B of this Calendar for further details of G.P.A., standing and promotion requirements).

iii. To earn a degree, a student must have successfully completed at least 126 ch (see Section 10) in approved courses. A grade of at least C must be attained in all the courses specifically required for the degree.

iv. Laboratory courses normally will not be counted in the ch total or in the calculation of the grade point average.

D. **Credits Required at UNB**

At least 63 ch for the BBA degree must be taken at UNB and must normally include all the required courses in the BBA degree program. (Under extraordinary conditions, a student may be permitted to take some of those courses elsewhere with the prior consent of the Faculty of Administration and the Registrar.)

E. **Changes in Degree Requirements**

Improvements in the BBA program may lead to changes in the requirements for the degree. The University reserves the right to require candidates already enrolled to meet the revised requirements where practicable.

F. **Majors and Concentrations**

i. A student qualifying for the BBA degree who has met the requirements for a Single or Double Major in the Bachelor of Arts program may apply to the Registrar to have noted on the student's transcript that the Major requirement in the external discipline has been met.

Students are advised that Major programs must be approved by the relevant Department in the Faculty of Arts. Many Business Administration students choose to do a Major in Economics. Please see the Courses - Economics section of the Calendar for requirements.

ii. BBA students may concentrate in a particular area of Administration (Accounting, Finance, Human Resource Management, International Business, Marketing, or Operations Management) by selecting appropriate optional courses, and meeting additional credit hour requirements. See Sections 10, 11, and l2.

iii. Students may select a Joint Concentration in Finance and Economics by selecting appropriate optional courses. See Sections 12 and 13.

iv. Students who elect to seek the Honours BBA degree must complete a major in an area of Administration. A Major requires the successful completion of at least 24 ch of advanced level courses designated by the Faculty of Administration. See Sections 10, 11, and 14.

9. Degree Standing on Graduation

In order to qualify for a degree, a student in the regular degree program must have successfully completed at least 126 ch of approved course work including a grade of at least C in all the courses required for the BBA degree. A student must complete at least 132 ch of approved course work including a grade of C in all the courses required for the Honours BBA degree and must meet the conditions specified in Sections 8F and 10C. At graduation all successful candidates for the degree of Bachelor of Business Administration and Honours Bachelor of Business Administration shall be listed in alphabetical order within the appropriate degree category as stated below:

A. **Distinction** A student who attains a cumulative grade point average of at least 3.8 over the final 60 ch of course work and no grade less than C over the final 90 ch of course work shall graduate with Distinction.

B. **First Division** A student who attains a cumulative grade point average of at least 3.5 over all courses attempted in the program at the University shall graduate in First Division.

C. **Second Division** A student who attains a cumulative grade point average of at least 2.5 but less than 3.5 over all courses attempted in the program at the University shall graduate in Second Division.

D. **Third Division** A student who attains a cumulative grade point average of less than 2.5 over all courses attempted in the program at the University shall graduate in the Third Division.

For the award of a first-class Honours degree, a grade point average of 3.6 is required in the courses of a major subject (see Section 14). For the award of a Honours degree, an average of 3.0 is required in these courses. Averages in an Honours subject are calculated on the basis of the minimum number of credit hours required for the major subject and credit hours successfully completed above this minimum are treated as non-required courses.

10. Business Administration Curriculum

A. **General Information**

1. **Choice of program**: For Upper level students, two program paths are available: BBA and Honours BBA. Upon the successful completion of 66 ch, students must declare their intent to follow one or the other of these two paths. Their decisions must be made in consultation with the academic advisors of the Faculty of Administration. The Honours degree is designed for candidates with a high level of ability who wish to undertake intensive study of an area within business administration. Students who satisfy the requirements for an Honours degree will have that designation included on their final transcript.

2. **Approval of courses**: Students are expected to consult with the academic advisors of the Faculty of Administration in the development of their program of

study. Students must follow the course sequence outlined in this Calendar and complete prerequisites prior to enrolment in intermediate- or upper-level courses. Approvals for any exceptions to this policy will occur only under extraordinary conditions.

3. The normal course load for all BBA students is 33 ch in each of the first two years of the program. Students who take the BBA degree complete 30 ch in each of the last two years. Students who take the Honours BBA degree must complete a further 6 ch in the last two years.
4. A full-time student is one whose work load consists of a minimum of 12 ch in each term (or 24 ch for two terms in the regular session). Students may enroll for a maximum of 36 ch in any year of the program provided they obtained at last a 2.5 grade point average on at least 30 ch in the immediate preceding year at university. Students who do not obtain at least a 2.5 grade point average on at least 30 ch in the immediate preceding year at university are advised to take no more than 30 ch of course work. Students should take no more than 12 ch per term of course work in a year following placement on academic probation, or upon re-entering university after being required to withdraw. Part-time students are subject to the maximum course loads permitted in Extension, Intersession, or Summer Session.
5. Candidates must obtain a grade of at least C in the courses required for the BBA degree. This includes all required Administration courses, all first or second year electives from Groups A, B, and C (see Section 11). As outlined below, students who seek to complete a concentration or Major within Administration must also obtain a minimum cumulative GPA on the courses designated for the concentration or major.
6. *Transition Provisions*: Students accepted into the BBA program prior to September 1992 must fulfil specific course requirements and may obtain a concentration by fulfilling certain conditions (see BBA, Section 10.A.3, 2000-2001 Undergraduate Calendar). Candidates admitted into the BBA program prior to September 2001 normally will be expected to meet the conditions for the BBA degree outlined in the 2000-2001 Undergraduate Calendar but may be required to meet revised requirements where practical, per Section 8E above.
7. At least 45 ch of electives must be chosen from courses beyond the introductory level. These normally include courses for which there are prerequisites. Prerequisites include both specific courses and/or specific credit hour specifications.
8. At least 12 of the 45 ch in 10.A.7 must be courses beyond the introductory level from within a single faculty other than the Faculty of Administration. Students should select those electives in consultation with the academic advisors of the Faculty of Administration. The courses should constitute a logical and coherent set of studies.
9. It is the responsibility of a student to ascertain that elective courses are acceptable for BBA or Honours BBA degree credit. Service courses offered by other faculties are not acceptable for degree credit. In addition, various courses (such as those in statistical methods) duplicate some of the material in required Administration courses and will not be accepted for credit. The following courses are not allowed for BBA or Honours BBA credit: CE 3963, CE 5623, ECON 3601, ECON 3612, EDCI 2414, EDVO 1845, EDVO 1846, FE3231, FE 3601, FE 4623, F0R 3006, ME 3232, PSYC 2903, PSYC 39I3, SOC1 3123, and the following STAT courses: 1213, 2253, 2263, 2264, 2593.

B. **BBA Degree**

1. Students taking a BBA must complete at least 126 credit hours (ch) of approved course work and maintain an assessment year grade point average of at least 2.0 in order to qualify for the BBA degree.
2. Not more than 15 ch of electives in a specific area of Administration (Accounting, Finance, Marketing, etc.) may be counted for degree credit.
3. Not more than 30 ch of Administration electives may be counted for degree credit.
4. Concentrations are offered in Accounting, Finance, Human Resource Management, International Business, Marketing, and Operations Management. (See Section 12.)

C. **Honours Degree**

1. Students must apply for Honours after the completion of 66 ch. Students subsequently will be permitted to enter the Honours BBA only under exceptional circumstances. Entrance into the Honours BBA requires that a student shall have demonstrated a high level of ability in first- and second-level courses. The Faculty of Administration will normally refuse to admit to Honours students whose cumulative GPA is below 3.0 at the completion of 66 credit hours or whose grades in relevant courses are below B. Students should note that admission is competitive and meeting minimum requirements does not guarantee admission.
2. Students taking the Honours BBA path must complete at least 132 ch of approved course work, including at least 24 ch in courses for a designated major within Administration. (See Section 14).
3. Students must maintain an assessment year grade point average of at least 2.5 in order to qualify for the Honours BBA. Students also must achieve a cumulative GPA of 3.0 or above on the courses designated for a major.
4. Honours candidates who are able to fulfill the requirements laid down for a Double Majors, in a discipline outside the Faculty of Administration, may, if they choose, register for a supplementary Major. Their transcripts will record that they have fulfilled the requirement for a Major in that subject. Registration for the supplementary Major shall normally be completed no later than the completion of 96 ch.
5. Not more than 36 ch of Administration electives may be counted for degree credit.
6. Concentrations. Students completing an Honours BBA may also take a concentration in another area of Administration but may need additional Administration electives in order to complete the concentration (See Section 12 below.)

11.Curriculum Requirements

Students are responsible for ensuring that they meet all the requirements specified for the degree. These include the minimum credit hour requirements, grades of at least C in the required courses and all first year elective requirements from Groups A. B, and C (see below). A cumulative GPA of 3.0 or above must be achieved on the courses designated for a concentration or a major. Students are advised to consult Section F of this calendar for detailed course descriptions including the number of credit hours assigned to each course.

Students will normally take their courses in the following sequence:

0 - 33 Credit Hours

A. 18 ch of required courses
- Computer literacy course (either term: see Note (1) below)
- ECON 1013 (first term)
- ECON 1023 (second term)
- MATH 1833 (first term; see Note (2) below)
- MATH 1823 (second term; see Note (2) below)
- ADM 1113 (either term; see Note (3) below)

B. 15 ch of electives
- 6 ch in group "A" of Psychology, Sociology, Anthropology or Political Science.
- 3 ch in group "B" of Classics, English, History and Philosophy
- 6 ch in group "C" of of non-English language courses. Includes Chinese, French, German, Greek, Japanese, Latin, Russian, and Spanish. Normally a student will be expected to complete 6 ch in a single language. Excludes cultural awareness courses or courses from those departments which are taught in English. Native speakers must choose courses in an alternate language

34 - 66 Credit Hours

A. 27 credit hours of required courses
- ADM 2163 (either term; see Note (3) below)
- ADM 2164 (either term; see Note (3) below)
- ADM 2213 (first term)
- ADM 2223 (second term)
- ADM 2313 (either term)
- ADM 2413 (second term)
- ADM 2513 (either term)
- ADM 2623 (first term; see Note (3) below)
- ADM 2624 (second term; see Note (3) below)
- PHIL 2153 (either term); see Note (3) below)

B. 3 ch of electives (see 10.A.8 above)

67 - 96 Credit Hours (BBA)
67 - 96 Credit Hours (Honours BBA)

A. 9 ch of required courses
- ADM 3123 (either term)
- ADM 3573 (either term)
- ADM 3713 (first term)

B. 21 ch of electives from Administration or other faculties (see 10.A.2 above).

97 - 126 Credit Hours (BBA)
97 - 132 Credit Hours (Honours BBA)

A. 3 ch of required courses
- ADM 4143 (either term)

B. Candidates for a BBA must take 27 elective credits from Administration or from other faculties (see 10.A.7, 10.A.8, 10.B2, 10.B.3). Students completing an Honours BBA must complete an additional 6 ch of Administration electives during their final year of studies (see 10.A.7, 10.A.8, 10.C.2, 10.C.5).

Notes:

1. Upon registration in the BBA program, the computer literacy of a candidate will be assessed and the student will be required to take an appropriate course designated by the Faculty of Administration. Normally students will take CS 1043 or 1073. Enrolment in CS 1073 is recommended for students with significant background knowledge and or who plan to do more than the minimum requirements in Computer Science.
2. Students who plan to do more than the minimum requirements in Mathematics are advised to take MATH 1003 followed by MATH 1013 in their first year. These students should then take MATH 2003 to complete the Mathematics requirements for the BBA. (Note: Students cannot receive credit for both MATH 1833 and MATH 2003 .) Students who wish to continue in Mathematics must then take MATH 2013 since it is a prerequisite for other Mathematics courses.
3. Course sequencing: BBA students are required to complete ADM 1113 during the first 33 ch. PHIL 2153 , ADM 2163 , ADM 2623 , and ADM 2164 , must be completed during the first 75 ch.

12.Concentration Courses

Concentrations are offered in Accounting, E-Business, Finance, Human Resource Management, International Business, Marketing, and Operations Management. Concentrations are completed by achieving a cumulative GPA of at least 3.0 for 12 ch of approved electives in the area of interest. Approved courses for each subject of concentration are as follows:

Accounting

Students must take ADM 3215 , ADM 3216 , ADM 3225 , and at least one additional elective to earn a concentration in Accounting. Available electives in Accounting are: ADM 4215, ADM 4216 , ADM 4218 , ADM 4275 , ECON 4203 , ECON 4213 , ADM 4245 .

Aviation and Operations Management

Students must take four electives from the following to earn a concentration: ADM 3626 , ADM 3627 , ADM 3685 , ADM 4615 , ADM 4616 , ADM 4645 , ADM 4655 , ADM 4856 , ADM 4675 , ADM 4677 , ADM 4685 , ADM 4686 , ADM 4687. Note: Open to students pursing the BBA in Aviation and Operations Management (see Section 19 below).

E-Business

Student must take ADM4725 , ADM4732 and two electives to earn a concentration in E-Business. Available electives in E-Business are: ADM4715 , ADM4716 , ADM4771 , ADM4772 , ADM4773 , ADM4776 .

Entrepreneurship

Students must take ADM 4175 , ADM 4435 , and 6 credit hours of electives to earn a concentration in Entrepreneurship. Available electives in Entrepreneurship are: ADM 4115 , ADM 4336 , ADM 4350 , ADM 4773 , ADM 4995 , TME 3313 .

Finance

Students must take ADM 3415 , 6 ch of approved Finance electives, and , and 3 ch of either approved Finance or non-Finance electives to receive a concentration. Available electives for the Finance concentration are: ADM 3435 , ADM 3445 , ADM 4415 , ADM 4416 , ADM 4421 , ADM 4425 , ADM 4426 , ADM 4445 , ADM 4450 (SIF), ADM4455 . A list of permissible non-Finance electives is available from the Faculty of Administration.

Human Resources Management (IR/HRM)

Students must take ADM 3815 and three HRM electives to receive a concentration. Available electives in HRM are: ADM 3875 , ADM 4825 , ADM 4826 , ADM 4835 , ADM 4836, ADM 4845 , ADM 4846 , ADM 4855 , ADM 4856 , ADM 4878, ADM4895 , ECON3724 .

International Business

Students must take ADM 3155 and three electives to earn a concentration. Available electives are: ADM 4355 , ADM 4455 , ADM 4855 , ECON 3401 .

Marketing

Students must take ADM 3315 , ADM 3345 , ADM 4235 , and a Marketing elective to receive a concentration. Available electives are: ADM 4315 , ADM 4335 , ADM 4345 , ADM 4355 .

Operations Management

Students must take four electives from the following to earn a concentration in Operations Management. Available electives in Operations Management are: ADM3625 , ADM3626 , ADM3627 , ADM3685 , ADM4615 , ADM4616 , ADM4645 , ADM4655 , ADM4656 , ADM4675 , ADM4677 , ADM4685 , ADM4686 , ADM4687 , ADM 4690 .

13.Joint Concentration in Finance and Economics

The Joint Concentration in Finance and Economics is completed by passing (a cummultive GPA of 3.0 or better) 33 ch of approved electives as follows:

37 - 69 Credit Hours

ECON 3013	ECON 3023

70 - 135 Credit Hours

ADM 3435	ECON 3665
ADM 4416	ECON 4045
ADM 4425	ECON 4035
ADM 4455	ECON 4625

plus 3 ch of Economics electives selected from the following:

ECON 2103	ECON 2203
ECON 3401	ECON 3412
ECON 5645	ECON 5665

14.Major Courses

Honours BBA students must complete a major in a designated subject. A major is completed by achieving a cumulative average GPA of 3.0 for at least 24 ch of approved courses in the area of interest, with a minimum grade of 2.0 for any individual course. Students wishing to undertake a major must consult with advisers in the Faculty of Administration and should note that some electives may not be available in a session. Courses entailing internship or independent study require prior approval and are subject to faculty and placement availability. Approved courses for each major subject are as follows:

Accounting

21 ch comprised of: ADM 3215 , ADM 3216 , ADM 3225 , ADM 4215 , ADM 4216 , ADM 4245 , and ADM 4275 . At least 3 ch from: ADM 3435 , ADM 3445 , ADM 4218 , ADM 4295 , ADM 4296 , ADM 4445 , ADM 4416 , ADM 4425 , ADM 4426 , ADM 4445 , ADM 4455 , ADM 4475 , ECON 4203 , ECON 4213 .

Economics

18 ch comprised of: ECON 3013 , ECON 3023 , ECON 3665, ECON 4013 , and ECON 4023 , ECON 4625 , and ECON 5665 . An additional 6 ch of other Economics electives beyond the introductory-level.

Finance

6 ch comprised of ADM 3415 and ADM 4445 . 3 ch comprised of ADM 3628 or approved equivalent. At least 15 ch from the following Groups A and B, with a minimum of 9 ch from Group A.

Group A: ADM 3435 , ADM 4416 , ADM 4425 , ADM 4426, ADM 4455 , ADM 4450 , and ADM 4475 (or MATH 4853).

Group B: ADM 3445 , ADM 3626 , ADM 4218 , ADM 4415, ADM 4421 , ADM 4495 , ADM 4496 , ECON 3013 , ECON 3023, ECON 3401 , ECON 3665 , and MATH 3813 . Note: Group B may include another 3 ch advanced-level university course, subject to the prior approval of the Faculty of Administration.

Finance and Economics

6 ch comprised of ADM 3415 and ADM 4455 3 ch comprised of ADM 3628 or approved equivalent. 9 ch from: ADM 3435 , ADM 4416 , ADM 4425 , ADM 4426 , ADM 4421 , ADM 4450, ADM 4455 , and ADM 4475 (or MATH 4853). 15 ch comprised of: ECON 3013 , ECON 3023 , ECON 4013 , ECON 4023 , and ECON 4625 . 3 ch from: ECON 2103 , ECON 2203 , ECON 3401 , ECON 3412 , ECON 3665 , ECON 5625 , ECON 5645 , ECON 5665 .

Human Resources Management

6 ch comprised of ADM 3815 , ADM 3875 . At least 18 ch of additional electives from: ADM 4525 , ADM 4526 , ADM 4536, ADM 4815 , ADM 4825 , ADM 4826 , ADM 4835 , ADM 4836 , ADM 4845 , ADM 4846 , ADM 4855 , ADM 4856 , ADM 4878 , ADM 4895 , ADM 4896 , ADM 4990 , ECON 3724 , SOCI 3635 .

Marketing

9 ch comprised of: ADM 3315 , ADM 3345 , ADM 4325 . At least 15 ch. of electives from: ADM 3155 , ADM 3525 , ADM 4155 , ADM 4315 , ADM 4326 , ADM 4335 , ADM 4345 , ADM 4350 , ADM 4355 , ADM 4395 , ADM 4396 , ADM 4615, ADM 4990 , RSS 4081 , SOCI 3252 , SOCI 3253 .

15.Co-operative Education Option

The Faculty of Administration offers a Co-operative Education (Co-op) program that is available to academically qualified BBA students who have completed one year of study. Co-op is practical education which extends the learning process beyond the classroom into the workplace by alternating academic study terms with paid periods of career related work experience. The Co-op Program in Administration consists of eight study terms and three work terms of four months each. This program is normally completed in four calendar years, compared to four academic years for the regular BBA degree. The Co-op Program allows students to complete concentrations or majors per degree requirements (see Sections 10B, 10C, 11, 12), in addition to Co-op. Students normally apply for entry to the Co-op program during their second term of study. Later application and entry into the program may be possible.

a. Admission to the Co-op program is competitive. Students must achieve a GPA of at least 3.0 in the study term preceding their application for employment. Students are advised to contact the Faculty of Administration Co-op Coordinator for additional acceptance criteria.

b. Students must register for each work term in order that they be considered full-time students while working.

c. A work term fee will be charged for each 4 month work term registered.

d. Students progress on work terms will normally be jointly monitored by the employer and through on-site visits by the Co-op Coordinator. As well, the employer will complete an evaluation of the student. The student must discuss these evaluations with the Coordinator upon returning to UNBF from the work term.

e. Students must have a minimum of 3 work terms, alternating with study terms, with satisfactory employer evaluations and work term reports to meet the requirements of the Co-op option. Upon graduation with the BBA degree, Co-op students meeting these requirements will have the designation Co-operative Education following the degree designation on their transcript.

f. Students will normally have at least one study term after their last work term.

g. Each successful work term will be noted on the students transcript

h. Upon successful completion of three work terms, students will be registered in ADM 4195 , Managment Internship.

16.Concurrent BBA/BEd Degree Program

The BBA and BEd Concurrent Degree model is designed as a five year program to allow students to study business and to develop skill in teaching in a variety of environments.

Admissions Procedures

1. Students will apply for entry to the BBA degree program upon completion of the high school program.
2. Students may apply to the Faculty of Education Concurrent Program during their second term at UNB and, upon successful completion of at least 30 ch, may be admitted to the Concurrent Program. Students should be able to complete both degrees within five years.
3. Students may enter the Concurrent Program later in their program however, late entry may require more than five years to complete both degrees.

17.Minor in Business

The Minor in Business is designed for students from outside the Faculty of Administration interested in a coherent package of Business Administration courses.

The Minor in Business will consist of 24 credit hours of approved Business Administration courses. Students planning to minor in Business will be required to take ADM 1015 and 21 additional credit hours chosen in consultation, and in advance, with the Faculty of Administration. At least 12 of the 24 credit hours must be from the 3000 and 4000 level courses. A grade of C or better is required in each course used towards the Minor in Business.

18.ROYTEC and SAMS Option

The UNB Faculty of Administration offers a BBA in participation with two organizations: the Royal Bank Institute of Business and Technology (ROYTEC) in Trinidad, and the Sadat Academy for Management Sciences in Egypt (SAMS). Further information is available from the Faculty of Administration.

19.BBA in Aviation and Operations Management Option

The Faculty of Administration, in conjunction with the College of Extended Learning and Capital Airways, offers a BBA in Aviation and Operations Management. This degree option integrates commercial flight training with essential business and management skills. Successful applicants must meet the Faculty of Administrations entrance criteria for the BBA degree and have a Category 1 Medical+ designation from Transport Canada. Candidates must complete the normal 126 ch of the BBA degree, including the concentration in aviation and operations management. Upon the completion of pilot training, 15 ch in transfer credits will be given by the Faculty of Administration, which may be applied to the non-BBA elective requirements of the degree. Further information is available from the Faculty of Administration or the College of Extended Learning.]

BACHELOR OF COMPUTER SCIENCE

Faculty of Computer Science

General Office:	Gillen Hall, Room E-128
Mailing Address:	Faculty of Computer Science, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4566
Fax:	(506) 453-3566
Email:	fcs@unb.ca
Website:	http://www.cs.unb.ca/

FACULTY

Dean: Virendrakumar C. Bhavsar, BEng, MTech, PhD
Assistant Dean (Undergraduate Studies): Steven W. Rauch, BSc, PhD

- Aubanel, Eric, BSc (Trent), PhD (Qu.), Asst Prof - 2002
- Belacel, Nabil, Adjunct Prof (Joint Appt: Dept Mathematical Sciences UNBSJ) - 2003
- Bhavsar, Virendrakumar C., BEng (Poona), MTech, PhD (IIT/B), Prof & Dean - 1983
- Boley, Harold, MSc, PhD (Hamburg), Adjunct Prof. - 2002
- Bremner, David, BSc (Calg), MSc (S.Fraser), PhD (McG.),
- Assoc Prof - 1999
- Cooper, Rodney H., BMath, MMath (Wat), Prof (Cross Appt-Chem)- 1975
- DeDourek, John M., BS, MS (Case), Prof - 1970
- Deslongchamps, Ghislain, BSc (Sher), PhD (UNB), Assoc Prof (Cross Appt-Chem) - 1992
- Du, Weichang, Bsc (Beijing), MSc, PhD (UVic), Prof - 1991
- Dueck, Gerhard, BSc, MSc, PhD (Manit), Prof & Asst Dean (Graduate Studies) - 1999
- Evans, Patricia, BscCS(Alta), MscCS, PhD (UVic), Asst Prof - 1997
- Fleming, Michael, BSc (Mt.All.), MMath, PhD (Wat.), Asst Prof - 2003
- Fritz, Jane M., BSc (McG.), MScCS (UNB) DPhil (York, Britain), Prof - 1982
- Ghorbani, Ali Akbar, BS (Tehran), MS (GWU), PhD (UNB), Prof - 1999
- Goldfarb, Lev, Dipl Math & CS (USSR), PhD (Wat), Assoc Prof - 1982
- Horton, Joseph D., BSc (Manit), MA (York), PhD (Wat), Prof - 1981
- Hyslop, William F., BScE, MSc(CS) (UNB), PhD (Tor), Sr.Teaching Assoc - 1991
- Iturriaga, Claudia, BMat (Nat. Univ. of Mexico), MScCS (Ott), PhD (Wat), Adjunct Prof - 1999
- Kent, Kenneth, BSc (MUN), MSc, PhD (UVic), Asst Prof - 2002
- Kurz, Bernd J., Dipl Ing (Stuttgart), MScE, PhD (UNB), Prof -1979
- Lopez-Ortiz, Alejandro, BMath (Natl Univ Mexico), MMath, PhD (Wat), Adjunct Prof - 1998
- Lumsden, Joanna, BSc (Software Engineering), PhD (Glas), Adjunct Prof. - 2002
- MacIsaac, Dawn, BPE (McM.), BEd (Qu.), BEng (McM.), MScE (UNB), PhD (UNB), Asst Prof (Joint ECE) - 2002
- Macneil, David G., BEng, MEng (NSTC), PEng, Prof - 1971
- McAllister, Andrew, BA, MSc(CS)(UNB), PhD (Sask), Assoc Prof - 1994
- Marsh, Stephen, BSc, PhD (Stir), Adjunct Prof - 2003
- Munro, Ian, BA (UNB), MSc (Br Col), PhD (Tor), Adjunct Prof - 2005
- Nickerson, Bradford G., BScE, MScE (UNB), PhD (Rensselaer Polyt Inst), PEng, Prof - 1986
- Pochec, Przemyslaw, BEng (Warsaw), MSc(CS), PhD (UNB), Assoc Prof - 1989
- Rauch, Steven W., BSc (Rensselaer Polyt Inst), PhD (Maryland), Assoc Prof & Asst Dean (Undergraduate Studies)- 1970
- Sarno, Riyanarto, MSc, PhD (UNB), Adjunct Prof. - 2004
- Spencer, Bruce, BSc (Dal), MMath, PhD (Wat), Adjunct Prof. - 1990
- Ware, Colin, BSc (Durham), MA (Dal), MMath CS (Wat), PhD (Tor), Adjunct Prof - 1985
- Webber, Natalie, BSC, MCS (UNB), Sr. Instructor - 2001
- Wightman, Richard, BScF, MScF (UNB), Sr Instr - 2001
- Yuhong, Yan, BE (China), MS (China), PhD (China/Germany) Adjunct Prof - 2004
- Zhang, Huajie, BSc (China), MSc (China), PhD (WOnt), Asst Prof - 2002

General Information

The Faculty of Computer Science was established at UNB on May 1, 1990, thereby becoming the first such faculty in Canada. Computer Science at UNB was established as a Department in 1968 and offered only the graduate MCS degree. Subsequently, in 1973, Computer Science became a School, administratively affiliated with the Faculty of Engineering, and offered the undergraduate BCS degree, conferring its first such degree in 1974. The Ph.D. program was approved in 1987, with its first degree awarded in 1990.

The Faculty offers a four-year undergraduate program leading to the degree of Bachelor of Computer Science. Honours and Majors degree programs are also offered. The program of studies is designed to enlarge the student's view of the world as well as to provide the background and qualifications to pursue careers in the field of computing. It is based on a set of core subjects which are intended to develop problem solving ability and provide a basic understanding of concepts fundamental to information processing. Students, through a choice of electives, may deepen their knowledge in computing subjects or develop an understanding in some complementary discipline.

Co-operative Education Program

1. The Faculty operates a full Co-operative Education (Co-op) Program that is available to academically qualified Computer Science students who have completed one year of study. Co-op is "hands-on" education extending the learning process beyond the classroom into the workplace by alternating academic study terms with paid periods of career related work experience. This allows students to put classroom knowledge to practical and profitable use in the Canadian workplace. At UNB the Co-op Program in Computer Science consists of eight study terms and six work terms of four months each. This program is normally completed in five years compared to the regular four year program and allows students to obtain a Majors or Honours designation in addition to Co-op. Students normally apply for this program during their second term of study and enter the program at the end of their first year although later application and entry into the program is possible.
2. Co-op is a designated option within the BCS, BA/BCS, BCS/BSc, BCS/BEd, BSSWE, and BCS/GGE programs in Computer Science.
3. Students must normally have achieved a minimum of a 2.7 gpa in the study term preceding their application for employment.

4. Students must register for each work term in order that they be considered as full-time students while working.
5. A work term fee will be charged for each 4 month work term registered.
6. The overall assessment of the work period is the responsibility of Faculty of Computer Science . The work period assessment shall consist of two components: 1) student performance as evaluated by a coordinator, given input from the employer, and 2) a work report graded by a coordinator or a member of faculty.
7. Students must have a minimum of 4 work terms, alternating with study terms, with satisfactory employer evaluations and work term reports in order that the Co-op designation appear on their transcripts.
8. Students will normally have at least one study term after their last work term.
9. Each successful work term will be noted on the student's transcript.
10. Upon graduation with the BCS degree, Co-op students will have the designation "Co-operative Education" following the degree designation on their transcript.
11. Students must be registered as full-time students in order to be eligible to apply for Co-op jobs.

Professional Experience Program (PEP)

This program adds flexibility to the work experiences available our students by providing opportunities to work for employers who prefer the PEP model over the Co-op model. Moreover, many transfer students into Computer Science find it easier to fit a PEP with their academic program than a traditional sequence of Co-op work terms.

Program Description

1. The PEP requires an extended period of continuous work experience, the duration of which may vary from 12 to 16 months.
2. A Co-op coordinator provides the necessary liaison and support activities for students in this program.
3. The overall assessment of the PEP experience is the responsibility of the Faculty of Computer Science . The work period assessment shall consist of two components: 1) student performance as evaluated by a coordinator, given input from the employer, and 2) a work report graded by a coordinator or a member of faculty.
4. While no specific course credit will be assigned to the PEP, a negotiated component of a PEP project may form an integral part of the student's senior project, based on a written proposal, progress reports, and faculty supervision in accordance with standard CS 4983 regulations.

Program Registration

1. The PEP is a designated option within the BCS, BA/BCS, BCS/BSc, BCS/BEd, BSSWE, and BCS/GGE degree programs in Computer Science.
2. The PEP will be open to all Computer Science students with good academic standing (GPA >2.7), who will have completed between 90 and 130 credit hours at the beginning of the PEP work term, including having completed 50% of the required Computer Science courses, and have completed at most 2 Co-op work terms.
3. Students may transfer from CS Co-op to PEP under the restrictions of not having completed more than 2 Co-op work terms. Students who have registered for a PEP normally will not be eligible to enter, or reenter, the CS Co-op program.
4. Registration in this option is contingent upon receiving an offer of employment from an approved PEP employer and will depend on the number of PEP positions available. Each student normally will be allowed only one such PEP registration during his/her degree program.
5. Official University registration is required for each student in the PEP. This will enable PEP students to remain on the Registrar's list in good standing during the time encompassed by their off-campus PEP period.
6. Each student in this program will be charged a PEP fee.
7. A suitable notation will be placed on each student's transcript in recognition of this PEP option.

University Regulations

Students are strongly advised to read the General University Regulations, Section B of this Calendar, and in particular the subsection headed "Grading System and Classification". Any point not covered in the following regulations will be governed by the General University Regulations.

Students applying for a second undergraduate bachelor's degree, transferring from other institutions, or changing degree programs are particularly advised to consult Section B of this Calendar. Questions concerning the application of regulations should be directed to the Registrar in writing.

General Regulations

1. To earn a degree a student must obtain a minimum of 150 ch. Credit hours are specified with course descriptions in Section H of this Calendar.
2. In order to graduate with a BCS degree, all core courses, all courses offered for Majors or Honours, and all courses offered for the degree must be passed with a minimum grade of C.
3. Developments in the BCS program may lead to changes in the requirements for the degree. The University reserves the right to require candidates already enrolled to meet the revised requirements where practicable.

Curriculum

The basic curriculum (core courses) comprises approximately 75 per cent of the BCS program. The basic curriculum and six areas of specialization are given below to assist the student in planning a program of studies.

Students will typically take 5 or 6 courses per term to complete the program in 8 study terms. Students whose grade point average drops below B- should restrict their course load to 5 courses, or fewer.

Every student must complete at least 14 ch of courses with an extensive English writing component with a minimum grade of C. These courses are indicated with a W in the Calendar. ENGL 1010 , ENGL 1011 , and ENGL 1012 will not count for credit towards the BCS degree, nor will they count towards the writing component requirement.

CORE CURRICULUM (Required)

Science Core Requirement

9 ch of science (not including math or stats) offered by the Faculty of Science, which must include a laboratory component.

Breadth Core Requirement

6 ch as defined by:

a. 3 ch chosen from Business (ADM), Science (not math or stats), or Engineering (See General Notes 6. below).
b. 3 ch chosen from Economics or Business (ADM)

Arts Core Requirement

12 ch offered by the Faculty of Arts:

a. at least 6 ch at the second year level or above in the Faculty of Arts;
b. 6 ch unrestricted Arts electives, with the following provisos:
   i. no more than 3 ch of 1st year Economics may be counted towards the Arts requirement,
   ii. ENGL2010 counts as 1st year Arts, but not as second year Arts,
   iii. PHIL2113 may not be counted for Arts Core requirement but does count as an unrestricted elective.
   iv. Note that courses in the Business Faculty do not count as Arts courses.

Mathematics and Statistics Core Requirement

1.	MATH 1003	Intro to Calculus I
2.	MATH 1013	Intro to Calculus II
3.	MATH 1503	Introduction to Linear Algebera or MATH 2213 Linear Algebra I
4.	STAT 3083	Probability and Mathematical Statistics I
5.	STAT 3093	Probability and Mathematical Statistics II
6.	**One of:**	
	MATH 3003	Applied Analysis
	MATH 3033	Group Theory
	MATH 3043	Nonlinear Differential Equations, Stability and Chaos
	MATH 3103	Analysis I
	MATH 3093	Elementary Number Theory
	MATH 3333	Combinational Theory
	MATH 3343	Networks and Graphs
	MATH 3363	Finite Math
	MATH 4063	Advanced Geometry (Exotic Spaces)
	STAT 3353	Game Theory
	An approved MATH/STATS/3-4xxx elective	
7.	(MATH 2003 and MATH 2013) or an approved MATH/STATS/3-4xxx elective.	

Computer Science Core Requirement

CS 1073	Intro to Computer Programming in Java
CS 1083	Computer Science Concepts (Java)
CS 1303	Discrete Structures
CS 2013	Software Engineering I
CS 2023	Procedural Program Development
CS 2333	Computability and Formal Languages
CS 2513	Intro. to Information Systems
CS 2813	Computer Organization I
CS 3113	Intro to Numerical Methods
CS 3323	Intro to Data Structures
CS 3413	Operating Systems I
CS 3503	Systems Analysis and Design I
CS 3813	Computer Organization II
CS 3913	Algorithms I
CS 3997	Professional Practice
CS 4613	Programming Languages
One of:	CS 4983 Senior Technical Report
	CS 4997 Honours Thesis
4 ch from 4000 or 5000 level CS courses.	

COMMON FIRST YEAR (5 courses each term)

CS 1073	Intro to Computer Programming in Java
MATH 1003	Intro to Calculus I, or MATH 1053 Enriched Intro to Calculus I
MATH 1013	Intro to Calculus II, or MATH 1063 Enriched Intro to Calculus II
CS 1083	Computer Science Concepts (Java)
CS 1303	Discrete Structures I

Three term courses selected from:

a. Two terms of an approved Arts course (e.g. English, History).
b. One term course from ECON or ADM

One of:

a. PHYS 1940 and 1945 (lab)
b. Another approved full year Science course, including its lab component, i.e. Biology, Chemistry or Geology.

First-year students who have a B average at the end of the first term are encouraged to take a 6th course in their second term, usually CS 2513 .

GENERAL NOTES

1. In general the first digit of a course number reflects the year (two terms) that the course is taken. However, in some cases, courses may be taken one term or year earlier.
2. Credit is not given for MATH 1823 , MATH 1833 , ADM 2623 (BA 2603), ADM 2715 , ADM 3713 (BA 3101), PHIL 1053 , CHE 1014 , CHEM 1553 .
3. Credit will not be given for both CS 1303 and MATH 2203 .
4. Credit will not be given for (CS 2803 or CS 2813) and EE 2213 .
5. Credit will not be given for both pairs BA 3623 , 4624 and STAT 3303 , STAT 3313 ; either pair alone is acceptable.
6. An upper year Business, Science, or Engineering elective used to satisfy a Major/Honours elective may be used as part of the 12 ch Business, Science, or Engineering requirement.

Areas of Specialization and Electives

To assist students in planning a program of studies, some recommended courses for areas of specialization, and elective groupings, are given at the end of this section. The suggested first year, and to some extent the second, are common to the six recommended areas. First and second year electives should be carefully chosen to include courses which are prerequisites to courses intended to be taken in the third and fourth years. Students are not bound in any way to follow an area of specialization, but each student must have their program approved by the faculty. Students are advised to check carefully on course prerequisites in preparing a program. For strong students, a more formal approach to each area is available in the form of the Honours or Majors designation. The six areas are:

Area One--Hardware Systems
Emphasizes digital systems logic, communications and organization.

Area Two--Software Systems
Emphasizes program design, applications and systems software.

Area Three--Information Systems
Emphasizes the data and information processing area of computer applications including data base management and systems.

Area Four--Theory and Computation
Emphasizes the theoretical basis for several important areas of computer science development.

Area Five--Multimedia Systems
Emphasizes the technical and creative aspects of multimedia systems development.

Area Six--Geographic Information Systems (GIS)
Emphasizes the application of computers to the storage, retrieval, and processing of geographically referenced information.

REQUIRED COURSES FOR AREAS OF SPECIALIZATION

Hardware Systems
EE 2723 , 2 from CS 4805 , CS 4815 , CS 4825 , CS 4835 , CS 5865 ; 2 from CS 4405 , CS 4745 , CS 4805, CS 4815 , CS 4825 , CS 4835 , CS 4865 , CS 5865; 1 from groups A, B, or C.

Software Systems
CS 3013 , 1 from CS 4405 , CS 4905 ; 1 from CS 4405 , CS 4905 , CS 4015 , CS 4025 , SWE 4103 , SWE 4203 ; 1 from CS 3025 , CS 4735 ; 1 from group A

Information Systems C
S3013 , CS3513 , CS4525 , ADM2213 (or BA2203) or ADM2513 , plus 2 ADM (or BA equivalent) courses chosen from Group D.

Theory and Computation
CS 4935 , MATH 3343 , 2 from Group E (1 of which must be CS), 1 from Group A or E.

Multimedia Systems
CS 3025 , CS 3703 , CS 4735 , 3 from: MM(in Arts), Drama, Film, Music, and FNAT.

Geographic Information Systems
CS 3513 , CS 4735 , GGE 2413 , GGE 4403 ; 2 from CS 3025 , CS 3413 , CS 4525 , GGE 5413 , GGE 3342 .

GROUPS:

Group A:	Approved non-core CS 3000, 4000, and 5000 level courses, excluding CS 3903 .
Group B:	Approved courses, at the 2000 level and above, taken from PHYS, EE, or CMPE.
Group C:	Approved courses taken from MATH and STAT 3000 and 4000 level courses, excluding those taken to satisfy core requirements.
Group D:	ADM3573 , ADM3625 , ADM3626 , ADM3627 , ADM3815 , ADM4175 , ADM4525 , ADM4535 , ADM4615 , ADM4616 , ADM4686 . (Note that many of these courses are not available each year. Also, STAT3083 / STAT3093 can be used in place of ADM2623 as a prerequisite.)
Group E:	CS 4535 , CS 4725 , CS 4905 , CS 4965 , CS 5015 , CS 5905 (more than one offering), MATH 3363 , MATH 3333 , STAT 3353 , STAT 4333 . Other approved Math/ CS courses.

Honours and Majors Degrees

Students in Computer Science may elect, after first or second year, an Honours or a Majors degree program within one of the areas of specialization. Students who satisfy the requirements for an Honours or Majors degree will have that designation included on their final transcript.

A course used to satisfy core is not allowed to satisfy a requirement of the Majors or Honours. It is allowed for anything else: minors (as long as the home department agrees), certificates and diplomas.

A student may only graduate with one Major/Honours. The CS program does not support double majors.

Requirements for a Majors Degree:

1. Completion of all courses in an area of specialization.
2. A cumulative grade point average of 2.5 or above

All courses in (1) are over and above any core (basic curriculum) courses required for the BCS degree.

Requirements for an Honours Degree:

In addition to the requirements for a Majors degree, a student must have:

1. CS 4997 (Honours Thesis) with a grade of C or better.
2. A cumulative grade point average 3.0 or above

Students satisfying the requirements for an Honours degree will receive "First Class Honours" if their CGPA is 3.5 or above, and "Second Class Honours" if their CGPA is 3.0 or above and less than 3.5.

Minor in Computer Science

To complete a Minor in Computer Science, a student will complete 8 term courses in Computer Science, including CS 1073 , CS 1083 , CS 1303 , (MATH 2203 may be used as an equivalent), CS 2013 , CS 2023 , and CS 3323 . Of the remaining two courses, one must be at second year level or above; with the second of those being at the third year level or above. Courses of 1 or 2 credit hours cannot be counted for credit towards the Minor. CS courses that are designated for

non-CS students will not count towards the Minor. A grade of C or better is required in all courses offered for the minor. CS courses that are designated for non-CS students will not count towards the minor.

The following groupings of courses are suggestions that students might follow, depending on their interests, although a student may choose any combination of 3 elective CS courses. Students working towards a Minor in Computer Science must make their intentions known to the Faculty of Computer Science.

Information Systems Stream:	CS 2513 , CS 3013 , CS 3503 , CS 3513 , CS 4525 .
Operating Systems Stream:	CS 2023 , CS 2813 , CS 3013 , CS 3413 , CS 4405 , CS 4865 .
Systems Organization Stream:	CS 2813 , CS 2875 , CS 3013 , CS 3813 , CS 4835 , CS 4865 .
Multimedia Systems:	CS 2513 , CS 3025 , CS 3703 , CS 4735 .
Theoretical Computing:	CS 2303 , CS 3913 , CS 4725 , CS 4935 .

Concurrent BCS/BEd Degree Program

The BCS and BEd Concurrent Degree model is designed as a five year program to allow students to complete a degree program in Computer Science and Education that prepares them to teach Computer Science in a variety of learning environments. This program is based on the integration of the BCS degree without Majors/Honours and the new BEd Program. Students may choose an area of specialization but this will add at least one semester to their program.

Admissions Procedures

1. Students will apply for entry to the BCS degree program upon completion of the high school program.
2. Students may apply to the Faculty of Education Concurrent Program during their second term at UNB and, upon successful completion of at least 30 ch, may be admitted to the Concurrent Program.
3. Students may enter the Concurrent Program later in their program; however, late entry may require more than five years to complete both degrees.
4. Concurrent students may participate in the Co-op Program but can expect to have difficulty scheduling their course requirements for both degrees. This combination would take at least six years.

Concurrent Program Requirements - Total 186 ch

1. 60 ch from the Faculty of Education.
2. 150 ch approved by the Faculty of Computer Science which include all of the Computer Science core requirements. 24 ch from item 1 may be counted toward this requirement as elective courses for the BCS degree.
3. A student cannot get a BEd Degree by itself in this program; if a student withdraws from the Concurrent Program back into the BCS Degree, a maximum of 9 ch of education courses may be transferred for Computer Science credit.

Concurrent BA/BCS Degree Program

The Faculty of Computer Science, in cooperation with the Faculty of Arts, offers students the opportunity to obtain both a BCS degree and a BA degree by selecting a well-planned choice of courses making up 180 ch over a five year period. In order to meet the requirements for this program, it is necessary for the student to obtain advice from both faculties. By completing this program the student will meet the core requirements for the basic BCS degree; selection of a Majors/Honours program in CS or participation in the Co-op program will lengthen the student's program. For specific details on course planning, see the Faculty of Arts sections of the Calendar.

Concurrent BCS/GGE Degree Program

Emerging career opportunities in the information technology sector demand a combination of in-depth computer programming and database management education with the understanding of positioning, mapping, geographic information systems (GIS) engineering and spatial analysis acquired in geodesy and geomatics. The Department of Geodesy and Geomatics in the Faculty of Engineering and the Faculty of Computer Science at UNB in Fredericton are cooperating to make it possible for a student to graduate with fully-accredited Bachelor degrees in both programs in six years. Graduates from this select program enter the work force with an understanding of computer hardware and software systems, computing theory, database management and programming. In addition to their professional engineering core studies, they will possess a solid grounding in geodesy, satellite positioning, remote sensing, ocean mapping, GIS, advanced surveying and land administration. On completion, graduates will be eligible for Canadian Professional Engineering accreditation with a specialization in this discipline.

This is an ideal program for students interested in applying a strong background in Computer Science tot he development, testing and management of positioning, measurement, mapping and spatial analysis systems in high-technology organizations. The concurrent program is designed so that if a student decides to opt for either degree alone partway through the program, the adjustments can be made easily. Students in the concurrent program are able to count many of their courses toward the requirements of both degrees so it is important to select courses carefully, in consultation with an advisor, from the outset.

Admission Requirements:

Students must have an admission average of at least 75%, with a minimum of 65% in mathematics and science and a minimum of 60% in the other admission subjects. Required courses are ENGL 122 , MATH 112 / MATH 122 , Adv. MATH 120 , PHYS 122 , CHEM 122 , 1 elective. Students with marks under 70% in high school Chemistry and Physics may be required to take additional courses. Requirements for entry from outside New Brunswick are found in Section B of the UNB Undergraduate Calendar.

Typical Course Selection

Students should consult with their Faculty advisors in both the Faculty of Computer Science and the Department of Geodesy and Geomatics.

Concurrent BCS/BSC Degree Program

Most scientific careers now require a thorough background in computing. Many careers in the computing field require primary knowledge in a scientific application area. The Faculty of Science and the Faculty of Computer Science offer students a program in which to pursue a science major and a complete computer science education. Students may enroll in a concurrent degree program in which at the end of 5 years of study a student will graduate with both a BSc with a major in Biology, Chemistry, Geology, Mathematics, or Physics, and a BCS. Selection of a Majors/Honours program in CS or participation in the Co-op program will lengthen the student's program. The program is designed so that if a student decides to opt for BCS alone, the adjustments can be easily made. Students in the concurrent degree program are able to count many of their courses toward the requirements of both degrees so it is important to select courses carefully from the outset, in consultation with an advisor.

Admission requirements:

Students must satisfy the admission requirements for both BCS and BSc as given in Section B.

Course Selections

While the first and second years given below are typical, the third, fourth and fifth year will depend on the CS and Science degree programs chosen (Major, Honours, etc.)

Year 1	CS 1073, 1083, MATH 1003, 1013, (or 1053, 1063) plus six term lecture courses in first year science, four of which are accompanied by labs, chosen from Biology, Chemistry, Physics, and Geology. The particular sciences and labs chosen will depend on the intended Science program.
Year 2	CS 1303 or MATH 2203, CS 2013, CS 2813, MATH 2213, one of CS 2333, CS 2513, or CS 2023, plus MATH 2003, plus 6 term courses in Science (minimum 18 ch) chosen in consultation and with the approval of the advisor in your chosen Science discipline. Students planning to major or honour in Mathematics are strongly recommended to choose MATH 2203 rather than CS 1303. Note: Credit will be given for only one of CS 1303 and MATH 2203.
Year 3,4,5	These must be arranged in consultation with your CS and Science advisors and will be different for each student.

Certificate in Computer Telephony Integration

The Faculty of Computer Science offers a program leading to a Certificate in Computer-Telephony Integration, which provides individuals with the background required to participate in the implementation of CTI solutions in a business environment. This program is available to students enrolled in undergraduate degree programs, particularly computer science, engineering, and business, and also to working adults. The program may be taken part-time or as part of a full-time program. It is expected that applicants will have a familiarity with programming basic applications of computers in business before applying to the program. Credits earned in the certificate program may be counted towards a degree program, in consultation with the relevant faculty advisor.

The program consists of 3 required courses and 2 elective courses.

Required courses are:

CS2875	Intro to Computer Telephony Integration
CS4875	Intro to Interactive Voice Response Systems
CS4885	Computer Telephony Applications

The CTI courses may be offered as evening courses to provide access to part-time students. These courses include a significant component of laboratory work in our CTI Studio. Note that some of these courses have prerequisites which may be waived at the discretion of the instructor based on a student's previous experience.

Two elective courses will be chosen in consultation with the program advisor in the Faculty of Computer Science. One elective must be chosen from approved Business Administration courses. The remaining elective will be chosen from approved Business Administration courses, TME courses (Technology Management, and Entrepreneurship), and CS4865 (Data Communications).

Certificate in Software Development

General

This certificate program is designed to provide individuals, especially working adults, with an opportunity to acquire the formal background necessary to become effective participants in the Information Technology industry. This program is directed towards people who are not currently enrolled in an undergraduate degree program at UNB. It is expected that applicants will have good command of high school mathematics. If not, they will have to take MATH 0863 (pre-calculus math) before applying to the program. Credits earned in the certificate program may subsequently be recognized for credit in an undergraduate degree program.

The program consists of 6 core courses and 4 elective courses. The elective courses are divided into themes to illustrate concentrations of courses. For example, if a student is pursuing a career in business information systems development, he or she would be advised to follow the Information Systems theme of electives. A student does not need to pursue a particular theme of electives, but must have the elective courses approved by an advisor. This program is intended as a part-time program. All the courses will be available as evening offerings and summer offerings on a continuous or rotating basis. The program can be completed in 16 months with effort. Sample schedules can be found below.

Core Courses

CS 1073	Introduction to Computing with Java
CS 1083	Computing Concepts with Java
CS 1303	Discrete Structures I
CS 2013	Software Engineering I
CS 2023	Procedural Program Development
CS 3323	Data Structures

Suggested Electives: (choose 4 in consultation with advisor)

These courses are grouped by theme, but a student may choose **any** combination of 4 electives from the following offerings:

Operating System Stream:	CS 2023, CS 2813, CS 3413
System Organization Stream:	CS 2813, CS 2875, CS 3013, CS 3813
Information System Stream:	CS 2513, CS 3503, CS 3513
Multimedia Stream:	CS 2513, CS 3703

Fastest Possible Completion Schedule (16 months):

Fall:	CS 1073, CS 1303.
Winter:	CS 1083, (one or two of CS 2513 , CS 2813)
Summer:	CS 2023, (one or two of CS 2813 , CS 3813)
Fall:	CS 2013 , CS 3323 (one elective if still outstanding)

Two courses per term (20 months):

Fall:	CS 1073 , CS 1303 .
Winter:	CS 1083 , CS 2513
Summer:	CS 2023 , one elective
Fall:	CS 2013 , one elective
Winter:	CS 3323 , one elective

Work-Term Component

An optional four month work term for students in the Undergraduate Certificate in Software Development is available as specified by the following regulations:

1. The work term will be administered by the CS Co-op Program. A work term evaluation and work term report will be part of the experience.
2. Certificate students are eligible for at most one work term, available only between September and April.
3. Certificate students must have achieved a minimum of a 2.7 gpa on all courses taken relevant to the Certificate Program.
4. Students must have completed at least 8 ch in the Certificate Program before being eligible to apply for a work term.
5. Students may not have more than 28 ch completed towards the Certificate Program while on a work term.
6. There will be a work term fee associated with the work term experience. This fee will be the same as the work term fee for a Co-op work term.

BACHELOR OF EDUCATION

Faculty of Education

General Office:	Marshall D'Avray Hall, Room 327
Mailing Address:	Faculty of Education, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-3508
Fax:	(506) 453-3569
Email:	educ@unb.ca
Website:	http://www.unbf.ca/education/

FACULTY

Dean: TBA
Associate Dean
(Undergraduate Studies): Keith Radford. BPE, BEd, MA, PhD

- Allen, Paul H., BBA, BBE (StFX), MEd (Maine), Assoc Prof - 1985
- Belczewski, Andrea, Lecturer - 2002
- Berry, Kathleen, BA (York), MEd, DPhil (Alta), Prof - 1991
- Bezeau, Lawrence, BSc, MEd (Alta), MA, PhD (Stan), Prof - 1982
- Blatherwick, Mary, BA(Ed), BFA (NSCAD), MA (UBC), PhD (Roehampton), Asst. Prof. 2000
- Burge, Elizabeth, ALAA (Lib. Assoc. of Australia), BA (Adel), Grad Dip Ed Tech (U of South Aust), MEd, EdD (Tor), Prof - 1993
- Carusetta, Ellen, BA (McM), MEd (Brock), PhD (Tor), Assoc Prof - 1993
- Cashion, Marie, BSc, BA (MTSTV), MEd (UNB), Prof - 1982
- Conrad, Dianne, BA, Hon., Dip. Bus. Admin. (Lakehead), MEd, PhD (Alta), Assoc. Prof. - 2002
- Cooper, Timothy G., BMus, MMus (Tor), DMA (UGA), Prof - 1978
- Dicks, Joseph, BA, BEd (Nfld), MEd, PhD (Ott), Prof & Assoc. Dean (Grad. Studies, Res. & International Dev.) - 1998
- Doige, Lynda, BA, BEd, MEd (UNB), PhD (Nottingham), Asst Prof, Mi'kmaq-Maliseet Institute - 2001
- Eyre, Linda, Cert. of Ed (Northern Counties College), BA, MAHED (Mt.St.Vin), PhD(UBC), Prof - 1992
- Gill, Barbara Ann, Cert. of Ed (Ripon Col), BEd (Alta), MMus (Oregon), MEd (Regina), PhD (Sask), Prof - 1992
- Grant McLoughlin, John, BMath (Wat), MSc Teaching (Tor), PhD (SUNY Buffalo), Assoc. Prof. (Cross Appt - Math & Stats)- 2002
- Haley, George T., BA (St.FX), MA (UNB), MScEd (Indiana), Hon Res Prof - 1999
- Hughes, Andrew, BA, MA (Dub), BEd, MEd (Acad), PhD (Alta), Univ. Teaching Prof - 1983
- Latchford, Sandra, BA (Guelph), MEd (UNB), Assoc Prof - 1986
- Leavitt, Robert, BA, MAT (Harv), Prof and Dir., Mi'kmaq-Maliseet Institute - 1981
- McFadden Charles F., BSc (UBC), BEd (SMU), MSc (UBC), PhD (UWO), Adjunct Prof - 2001
- McKenna, Mary, BSc (Fd Sci) (McG.), MSc (Nutn)(Cornell), PhD (Nottingham), Assoc Prof - 1993
- Morrison, Ruth, BMus, DPhil (McG.), MEd (UNB.), Assoc. Prof. - 2002
- Morrison, William, BEd, MEd, (UNB.), PhD (Alberta), Asst. Prof. - 2002
- Myers, Sharon, Bed, BA (UPEI), MEd (Ott), MEd, EdD (Harvard), Prof - 1996
- Nason, Pamela N., MA (Stan), Cert of Ed (Birm), Prof - 1974
- Paul, Lissa, BA (Tor), MA, PhD (York), Prof - 1987
- Pazienza, Jennifer, BA (Wm Patterson), MEd, PhD (Penn), Prof (Cross Appt-Renaissance College) - 1989

- Plaice, Evelyn, BA (Oxf.), MA (Nfld), PhD (Manc), Assoc Prof (Jt Anthropology) - 1999
- Radford, Keith, BPE, BEd (Manit), MA (Birm), PhD (Oregon), Prof and Assoc Dean (Undergraduate Programs) - 1987
- Randall, Lynn, BPE (Brock), BEd, MEd (UNB), PhD (Ohio State), Asst Prof - 2000
- Rehorick, Sally, BA, MA (Alta), DA (Grenoble), CAS (Harv), Prof - 1987
- Rose, Ellen, BA, BEd (Victoria), MEd, DPhil (UNB), Assoc Prof (Joint Arts) - 2001
- Sears, Alan, BEd, MEd (UNB), PhD (UBC), Prof - 1988
- Sloat, Elizabeth, BEd (UNB), MEd, PhD (McG.), Assoc. Prof - 1999
- Small, Marian S., BA (Adelphi), MA, EdD (UBC), Prof - 1973
- Soucy, Donald A., BA, MA (NSCAD), PhD (UBC), Prof - 1984
- Stewart, John, BA, BEd (Acad), MEd (UNB), EdD (OISE), Prof - 1990
- Stirling, Mary Lou S., BA (UNB), MEd (Tor), EdD (Penn), Hon Res Prof - 1999
- Sullenger, Karen, BSc (Towson), MSc (Morgan), MNRM (Duke), DPhil (Georgia), Prof - 1990
- Wagner, David, BRS (Mennonite Brethren), BA (Winn), BEd, MEd (Alta), PhD Candidate, Asst Prof - 2004
- Whiteford, Gary, BA (Tor), MA (Clark), PhD (Okla), Prof - 1974
- Whitty, Pam A. M., BA (McM), BEd, MEd (UNB), EdD (Maine), Prof - 1991
- Willms, Jon Douglas, BEng (Royal Military College and Kingston), MA (UBC), MSc, PhD (Stanford), Prof - 1995
- Winslow, Katherine M., BSc (St FX), MS (N. Dakota), PhD (Minn), Assoc Prof- 1987

Statement of Purpose

The Faculty of Education prepares students to assume leadership roles in education. Graduates are ready to begin a professional career and to broaden and deepen their professional expertise through continuing study. Through a sequence of educational experiences integrating theory and practice, the faculty and its partners in education provide opportunities for the academic and professional development of teachers, guidance personnel, and administrators at all levels in public school systems, community colleges, and other learning environments. Students acquire the knowledge, ethical standards, skills, dispositions, and flexibility needed to address current problems in education both creatively and effectively, and to think critically about professional practice. In all its work, the Faculty seeks to prepare educators who understand the past, delight in the challenges of the present, and look optimistically to the future.

Students have access to centres in the Faculty which provide teaching, research, and educational services to schools and communities. These include centres established for the study of aboriginal education, administration, early childhood, mathematics education, second language learning, social studies and special education.

Degrees in Education

The BEd degree is awarded upon successful completion of 60 credit hours of study in Education, taken concurrently, i.e., along with another Bachelor's degree, or consecutively, i.e., following another Bachelor's degree. Students who have completed courses at another university may apply to transfer into the concurrent degree program.

The **concurrent** BEd degree (i.e., a BEd earned in conjunction with another Bachelor's degree at UNB) consists of 60 ch of study. Cooperating faculties are Arts (BA), Administration (BBA), Computer Science (BCS), Kinesiology (BKIN), Bachelor of Recreation and Sports Studies (BRSS), and Science (BSc).

Note: See the description of each concurrent degree program under the cooperating faculty heading in section E of this calendar. Please Note: In order to qualify for a level 5 New Brunswick teaching license, a concurrent degree program must contain a minimum of 168 ch.

The consecutive BEd degree program described in this section consists of 60 ch of study following the completion of another Bachelor's degree, which may be completed on a full-time or part-time basis.

BEd program requirements are the same for both the concurrent and the consecutive degree.

Students entering the school years pattern will be accepted into one of the following:

1. Program Option 1: Early Years/Middle Years
2. Program Option 2: Middle Years/Young Adult Years

Students must apply in writing to the Associate Dean for Undergraduate Studies to change programs.

General Information

All students wishing to follow degree credit programs in Education must obtain permission to enrol from the Admissions Office of the University. Students will normally only be accepted into the Faculty in September. Please refer to Section B of this calendar for more information on Admission requirements.

Those wishing to follow a graduate studies program should write the Dean of the School of Graduate Studies.

Students may take some courses for teacher certification credit without being formally admitted to a degree program. However no degree credit will be granted for any course until formal admission to the Faculty has been granted; courses taken before formal admission will not necessarily be accepted for degree credit.

Graduates of the BEd program are pursuing careers in education in many jurisdictions in Canada, the United States, and in other parts of the world. Students who successfully complete the school year pattern program requirements, including the internship, are eligible to apply for a New Brunswick teacher's licence. This licence is recognized by other Canadian Provinces and most US states. Nevertheless, students should ensure that the specific programs they are following will qualify them for teacher cetification in the province, state or country where they hope to work.

Note: The Province of New Brunswick Teacher Certification Regulations under the Education Act states that only Canadian citizens or those holding landed immigrant status or a work visa are eligible for teacher certification in the Province of New Brunswick.

Prerequisites to the Program

To be admitted to the Consecutive BEd Early Years Program, students must have at least 30 credit hours of course work in teachable subjects involving courses in at least four different teachable subjects and including at least 3 credit hours in each of English, mathematics, a science, and one of history, economics, political science, or geography.

To be admitted to the Consecutive BEd Middle or Young Adult programs, students must have a major of 30 credit hours in one teachable subject and 18 credit hours in another teachable subject or a double minor of 24 credit hours in two different

teachable subjects.

Teachable subjects are: Biology, Business Administration, Canadian Studies, Chemistry, Classics, Commerce, Computer Science, Drama, Economics, English, Environmental Science, Family Studies, French, Geography, Graphic Arts and Design, Health, History, Home Economics, Information Technology, Languages, Mathematics, Music, Physical Education, Physics, Political Science, Technology Education, Theatre Arts, Visual Arts.

To be admitted to courses in French second language education, students must possess a high level of French competency. Students must provide evidence of this competency in one of the following ways: a) francophone applicants must provide a copy of their diploma showing graduation from a francophone high school or university; b) non-francophones from New Brunswick must provide a copy of an Oral Proficiency Interview certificate with a minimum level of Advanced. Non-francophones from other provinces or countries must provide comparable evidence or arrange for the Oral Proficiency Interview prior to admission to the French second language education courses.

The New Brunswick Department of Education requires that all BEd students entering schools (for field studies or individual course requirements), must provide evidence of a Police Background Check. Students are responsible, at their own expense, to have evidence of the Police Background Check available to present to school officials. Students should apply for a Police Background Check in their area of residence before attending the U.N.B. faculty of Education.

Costs

In addition to those costs listed in Section C of this Calendar, students are responsible for all travel and accommodation costs related to the required student teaching experiences throughout the entire concurrent BEd or consecutive BEd programs.

The Faculty of Education may make arrangements at a limited number of faculty approved locations for students seeking out-of-province Field Studies Practicums. Students undertaking out-of-province placements will be assessed an out-of-province intern differential fee of $500.00. Further information is available from the Department of Field Studies.

University Regulations

Students are urged to read the General University Regulations, Section B of this Calendar, and in particular the subsection headed *Grading System and Classification*.

Any point not covered in the following regulations will be governed by the General University Regulations.

Students applying for a second undergraduate bachelor's degree, transferring from other institutions, or changing degree programs are particularly advised to consult Section B of this Calendar. Questions concerning the application of regulations should be directed to the Registrar in writing.

GENERAL REGULATIONS

Student Standing

a. Letter grades are assigned in accordance with University regulations.

b. A grade of C shall meet the requirements for Bachelor of Education courses unless otherwise stated in the Calendar.

c. In course offerings of other Faculties/Departments, students must meet the prerequisite requirements of that Faculty/ Department

d. A grade of C shall be the minimum acceptable grade in courses taken to meet requirements for the Bachelor of Education degree.

e. A BEd degree shall be awarded to a student who successfully completes the number of credit hours and approved courses indicated in the program outlined. In addition, students must successfully complete the Field Studies placements and practicum required by the degree program unless this has been waived in accordance with University regulations.

Credit Hours

a. The normal credit hour load for a concurrent BEd student (full-time) is 18 ch per term (36 ch) per academic year). The normal credit hour load for a consecutive BEd student (full-time) is 15 ch per term (30 ch per academic year.

b. The maximum number of approved credit hours for which a student may register is normally 18 in any term (36 ch per academic year). Students may take up to 9 ch in Intersession. Students may take up to 9 ch in summer session.

c. Once admitted to the concurrent degree program a full-time student must strive to maintain an appropriate balance of Education and other-faculty courses, normally no fewer than 9 ch per year in either faculty.

Standing and Promotion Requirements

Per University Regulations (see Section B of the Calendar).

Divisions and Distinctions

a. BEd degrees are awarded in divisions as stated in the University Regulations.

b. A student in the BEd program having a minimum cumulative grade point average of 3.8 in Faculty of Education courses, and no grade below C, and whose Field Studies practicum is deemed satisfactory for this degree by the Dean of Education after consultation with the faculty members who supervised the student's practicum, shall be awarded the BEd degree with Distinction.

Repeating Courses

Per University Regulations (see Section B of the Calendar).

Field Experiences Placements and Practicum (Student Teaching)

The Faculty of Education places students in school settings at the discretion of the public school system. Although the Faculty cannot guarantee a placement in that system, it will makes its best effort to find an initial placement for any student eligible for the practicum (subject to approval by the University).

a. In order to complete the BEd degree with a recommendation for New Brunswick Teacher Certification, a student must successfully complete both the Field Studies Placements I and II (ED 4001 and ED 4002 ; or ED 4003 and ED 4004) and the Field Studies Practicum (ED 5000) required in the

program. For concurrent students the second one week placement (ED 4004) will take place at the end of the last Winter term before the individuals internship; the first one week placement (ED 4003) will take place at the end of the previous Winter term.The Field Studies placements and practicum are evaluated on a pass/fail basis. If an intern is removed from ED 5000 by the Faculty of Education a grade of NCR will be assigned. (A grade of W, withdrawal, shall not be assigned after this point.)

b. In their field experiences students participate in teaching and learning activities in an educational setting approved by the faculty. Responsibility for arranging and approving student teaching placements and practica rests within the Faculty of Education.

c. Before entering the 15 week Field Studies practicum, prerequisites must be met (see course: ED 5000) .

d. Students admitted to the BEd degree program who do not wish to qualify for a New Brunswick Teacher's License will normally be required to substitute approved credit hours in courses other than the Field Studies practicum.

e. With the approval of the Dean of Education, courses other than the Field Studies practicum may be taken to meet degree requirements provided the student authorizes the Dean in writing to recommend to the provincial licensing authorities that a New Brunswick Teacher's License not be granted to the student upon completion of the BEd program. Any later request for registration in the Field Studies Practicum must be submitted in writing to the Dean of Education. In such cases there is no obligation on the part of the Faculty to place the student in an internship at a later date.

f. Students are responsible for all travel and living expenses incurred.

g. Re-registration

1. Students who have withdrawn from the Field Studies practicum must establish that the factors necessitating withdrawal have changed and that there is reason to assume that a further attempt would be successful. The request for re-registration must be submitted in writing and must satisfy the Dean of Education. Any later request for registration in the Field Studies Practicum must be submitted in writing to the Dean of Education. In such cases there is no obligation on the part of the Faculty to place the student in an internship.

2. Students who have failed the Field Studies practicum (that is, received a grade of NCR) must establish that the factors causing the failure have changed and that there is reason to assume that a further attempt would be successful. Following failure, students will not be permitted to re-register for the practicum until at least one full academic year has elapsed. The request for re-registration must be submitted in writing and must satisfy the Dean of Education. In such cases there is no obligation on the part of the Faculty to place the student in an internship.

h. Students who apply for the Field Studies practicum within 3 years of having completed the BEd degree without the practicum normally will be allowed to register for the practicum without taking any further courses. If more than 3 years has elapsed, the Dean may require specific courses (in subject areas and methodology) to be taken prior to registration in the practicum.

i. Students wishing to be placed in an ESL or French Immersion classroom for their internship must have completed a minimum of three credit hours in second language education.

j. To teach a subject in middle school or high school during the internship a student must have a minimum of nine credit hours of methods in the subject area.

k. Any appeal with regard to the final grade or the decision of the Faculty to remove a failing student in the Field Studies Practicum will be considered by the Faculty of Education Field Studies Committee. A student may choose a Faculty member to represent her/him on the committee. (See also Section B. VIII, Item H: Review of Grades)

NOTE: Consistent with the New Brunswick Department of Education's "Policy 701 on Pupil Protection," students planning to complete a teaching internship will be required to provide a background check, (choose options # 3 and # 4 indices check on the Consent for Disclosure of Criminal Record Information Form). Students must also provide letters of reference attesting to their suitability to work with pupils in the public school system. Further information is available from the Field Studies Department, Faculty of Education.

Residency Requirements

Students must normally complete a minimum of 45 ch in Education, including Field Studies, from the University of New Brunswick as students in the BEd degree program.

Time Limit

Concurrent Degree:	the maximum time permitted between the first registration and the completion of the BEd degree (concurrent) in accordance with the regulations in effect at the time of first registration shall normally be 10 years.
Consecutive Degree:	the maximum time permitted between the first registration and the completion of the BEd degree (consecutive) in accordance with the regulations in effect at the time of first registration shall normally be 5 years.
BEd in Adult Education:	the maximum time permitted between the first registration and completion of the BEd in Adult Education in accordance with the regulations in effect at the time of the first registration shall normally be 8 consecutive calendar years.

Course Selection

Students should consult with Faculty of Education advisors and, if applicable, concurrent faculty advisors to confirm that all courses meet degree requirements. Students in a school years program may not take more than 3 credit hours of Education courses outside the school years program i.e ABRG, FNAT, Adult Education.

Transfer Credits

Students may obtain advanced credit of up to 15 credit hours toward the BEd for education courses which have been taken at this or another institution, where the grade received is 'C' or higher, and which meet program requirements.

The BEd Degree Program

The BEd degree is awarded upon successful completion of 60 credit hours of study in Education, taken concurrently, i.e., along with another Bachelor's degree, or consecutively i.e., following another Bachelor's degree. Students who have completed courses at another university may apply to transfer into the concurrent degree program. Advance credits may be granted for studies completed in Education prior to enrolment in either the concurrent or the consecutive BEd, in accordance with University regulations. (Consult the Faculty of Education for full details.)

Students elect one of three distinct patterns in the BEd program: 1) School Years Education, 2) Adult Education, or 3) Non-school Programs. All patterns consist of the following components:

Core Studies: Courses chosen from Core Studies listings in the Fredericton Courses section of the Calendar

Field Studies: Field Experiences (Practicum)

Areas of Study: Listed in the Fredericton Courses Section of the Calendar. Students completing the Field Studies practicum in an approved school setting are eligible to receive a New Brunswick teaching licence upon successful completion of the BEd degree.

PROGRAM PATTERN	CORE STUDIES	FIELD STUDIES	AREAS OF STUDY	OUTCOME
School Years	3 ch in each of: -Human Development and Learning -School Law -Exceptional Learners -Social, Cultural and Political Contexts of Education History, Philosophy and Practice of Education	Two 1 week placements and a 15 week practicum (15 ch)	See BEd (School Years Pattern) for details	Certification to teach in the public schools
*Students not seeking provincial teaching certification may individualize their program with approval of the Associate Dean, Undergraduate Studies.				
Adult Education	ED 3024, ED 3010 . Additional approved Adult Education options may be taken from human development and learning; exceptional learners, history, philosophy, and practice; social, cultural, and political contexts.	3 ch practicum (ED 3015); may be in settings other than formal institutions.	Consult the Faculty for requirements and options	Preparation for teaching adult learners or for coordinating, developing, or managing programs of adult learning.
Non-schools Programs	As for School Years, but with alternative courses where appropriate	Consult the Faculty for requirements and options	Consult the Faculty for requirements and options	Preparation for working in non-school education programs

BEd (School Years Pattern)

The School Years pattern focuses on all aspects of the education of children between the ages of 4 and 19, including schooling, community education, family education, and educational intervention. Particular emphasis is placed upon developmentally appropriate practice, the integration of subject area content and methodology, and the design of curriculum. The School Years pattern has the following components.

Core Studies: one course from each of the following areas (see listings in the Fredericton Courses Section of this Calendar): Human Development and Learning School Law Exceptional Learners Social, Cultural and Political Contexts of Education History, Philosophy and Practice of Education

Field Services:The school-based experiences component of the BEd program involves 17 weeks of school placements constituting 15 ch. These field experiences involve two one-week placements (one during each of the fall and winter terms) and a 15-week practicum. The two one-week placements must be successfully completed before entering the 15-week practicum.

Areas of Study: courses about the teaching of school subjects, enabling teachers to specialize in particular subjects if desired; courses about particular learner levels; courses which focus on the integration of subject matter, methodologies, or educational concepts across the curriculum

Students can focus on a particular learner level or range of learner levels by choosing relevant courses in designing their BEd program.

Building upon their previous experience and learning, students develop a program of study which prepares them to meet the responsibilities they will encounter in their professional careers. This program must be approved by Faculty of Education advisors. Students must design their program of study in one of two ways:

PROGRAM OPTION 1:

Early Years/Middle Years is designed for prospective teachers who wish to be knowledgeable in teaching the broad range of subjects reflected in the elementary/middle school curriculum. Students take the following courses in eight (8) subject areas and should consult with Faculty Advisors when a specific course is not listed.

1. Art Education - ED 3211
2. Literacy/Drama Education
3. Mathematics Education - ED 3424
4. Music Education- ED 3241 or ED 4241
5. Physical Education - ED 3475
6. Science Education- ED 3511
7. Social Studies Education - ED 3621
8. Health Education - ED 3063 or ED 4451

Students may also choose a concentration consisting of at least 12 ch of approved courses in one of the areas listed below.

PROGRAM OPTION 2:

Middle Years/Young Adult Years is designed for prospective teachers who wish to specialize in teaching one or more of the subjects reflected in the middle/secondary school curriculum. Normally, students choose at least 2 concentrations in the areas listed below. The first concentration shall consist of 12 ch or more of approved courses, according to the area chosen. The first concentration must be in one of the areas starred below. A second and/or third concentration may consist of 9 ch or more

Concentrations for Program Options 1 and 2

- Aboriginal Education
- Art Education*
- Business/Information Technology Education*
- Early Childhood Education
- French Second Language Education*
- Geography Education*
- Health Education
- Literacy/Drama Education*
- Mathematics Education*
- Music Education*
- Physical Education*
- School Counselling
- Science Education*
- Social Studies Education*
- Special Education
- Technology Education

Consult the Faculty of Education for details of concentration requirements.

Art Education-	ED 3211 , ED 5154 , plus two other approved education courses
Business/Information Technology Education-	ED3862 , ED 4862 , ED 4863 , ED 4864 .
French Second Language Education-	ED 3562 , and three of ED 4075 , ED 4567 , ED 4568 , ED 4569 . For Immersion, consult the Faculty.
Geography Education-	four approved education courses.
Health Education-	ED 4451 and three of ED 3063 , ED 4791 , ED 5065 , ED 5451 .
Literacy/Drama Education-	ED5353 , ED 5354 , plus one of ED 5313 , ED 5358 , ED 5361 , ED 5363 , ED 5684 , and one other approved literacy education course.
Mathematics Education-	at least one of ED 3415 or ED 3416, at least one of ED 5422 or ED 5423, and two other approved math education courses.
Physical Education-	ED 3494 , ED 4488 , ED 4494 , plus one other approved course.
School Counselling-	ED 5065 , ED 5141 , ED 5142 , ED 5143 .
Science Education-	ED 3511 , ED 4511 , and one of ED 3512 or ED 3513 , plus a science education course at the 4000 or 5000 level.
Social Studies Education-	ED 3621 , ED 4620 , plus one of the following: ED 4621 , ED 4622 , ED 5621 , ED 5622 , ED 5623 , or an approved alternative education course.
Special Education-	ED 3031 , plus three of the following courses: ED 5096 , ED 4089 , ED 5091 , ED 5094 , ED 5086 .
Technology Education-	ED 3943 , ED 4923 , ED 4973 , ED 5977 .

BEd (Non-School Programs Patterns)

The Non-school Programs pattern is designed for students who are preparing for professional education careers in non-school settings such as day-care or industry, and who may wish to obtain the BEd degree without qualifying for a New Brunswick teaching license. Consult the Faculty for details.

BEd in Adult Education (4-Year)

The BEd in Adult Education consists of a minimum of 138 ch of accumulated study. This program is open to individuals who qualify as mature students. The Program consists of three major elements, with credits normally assigned as follows:

Arts/Science Courses	30 ch	
Education Courses	60 ch	Core Studies (9 ch), Field Studies (3 ch), Approved Courses (48 ch)
Occupational/ Technical/Academic Specialization Courses	48 ch	Approved electives or credit for prior experience.

At least half the credits for the BEd degree must be UNB credits. Of the 138 ch required for the four year BEd in Adult Education a maximum of 48 ch is allowed for prior learning.

BEd in Adult Education (Consecutive BEd Only)

Please Note: **consecutive** degree only. The Adult Education pattern in the BEd degree program focuses on all aspects of teaching adult learners. In consultation with Faculty of Education advisors, students choose appropriate courses according to the following requirements.

Core Studies	ED 3024 ED 3110	Additional approved Adult Education options may be taken from human development and learning; exceptional learners, history, philosophy, and practice; social, cultural, and political contexts.
Field Studies	ED 3015 (3 ch)	Approved practicum, seminars, and independent study; site of the practicum to be negotiated.
Curriculum Studies	48 ch	Approved courses about the development and delivery of adult education programs in institutions of learning, workplaces, and society; about adult learning and development; about the nature, scope, and field of adult education. Up to six (6) credit hours for prior learning may be granted in consultation with Faculty of Education advisors and in accordance with PLA regulations.

BEd for Aboriginal Students

The Mi'kmaq-Maliseet Institute (see Section D) has administered the BEd for Aboriginal Students at UNB since 1977. Students enrol in the BEd concurrently with a bachelor's degree program in Arts, Business Administration, Computer Science, Kinesiology, or Science; or they may enter the BEd following completion of another bachelor's degree. Students may also elect a concentration in Aboriginal Education.

For full details, including program content and admission requirements and procedures, consult the Mi'kmaq-Maliseet Institute at UNB.

Core Studies

Exceptional Learners		
School Years:	ED3031	The Education of Exceptional Learners
Adult Education	ED 4032	Adult Learners with Special Needs
Field Studies		
School Years	ED 4000	Student Teaching for BEd (4 year) Program
	ED 4001	Field Experience I for BEd Consecutive Students
	ED 4002	Field Experience II for BEd Consecutive Students
	ED 4003	Field Experience I for BEd Concurrent Students
	ED 4004	Field Experience II for BEd Concurrent Students
	ED 5000	Field Studies Practicum for Consecutive/Concurrent BEd Programs
	ED 5566	Field Experiences in TESL
Adult Education	ED 3015	Practicum in Adult Education
	ED 5011	Preparing for Prior Learning Assessment
History, Philosophy and Practice		
School Years:	ED 3041	The Theory & Practice of Education
	ED 3042	History of Educational Ideas
	ED 3044	History of Childhood
	ED 4164	Techniques of Teaching
	ED 5044	The School and Society
	ED 5045	Philosophies of Education
Adult Education	ED 3011	Professional Ethics for Practitioners of Adult Education
	ED 4042	Introduction to Adult Education
	ED 4051	The Community College
Human Development and Learning		
School Years:	ED 3021	Human Development and Learning: An Overview
Adult Education:	ED 3024	Understanding the Adult Learner
	ED 4102	Transition to Adulthood
	ED 5022	Transformative Learning
Independent Studies		
	ED 4191 ED 5191	Independent Studies
	ED 5013 ED 5033 ED 5043	Special Topics in Education
School Law		
	ED 3051	School Law and Organization (*not required for students not seekeing teacher certification)
Social, Cultural and Political Contexts of Education		
School Years:	ED 3033	Teaching in a Cultural Context
	ED 3043	Aboriginal Education
	ED 3061	Students, Schools, Equity and Social Justice
	ED 4031	Toward Diversity in the Classroom
	ED 4075	Bilingualism and Education
	ED 5031	Creating Supportive Environments for Learning
	ED 5032	Inclusion from the Early Years
	ED 5062	Cultural Constructions of Childhood
	ED 5181	Feminist Theory and Education
	ED 5313	Cultural Studies through Theatre
Adult Education:	ED 3114	Introduction to Workplace Learning
	ED 4012	Bridging Difference: Diversity and Inclusion in Adult Learning
	ED 4045	Train the Trainer: Theory and Practice
	ED 4061	Advising and Mentoring Adult Learners
	ED 5063	Societal Trends for Adult Education
	ED 5156	Trends and Issues in Training and Development
	ED5157	Community Professionals as Agents of Change
	ED 5183	Diversity in Adult Learning Styles

Area Studies

Aboriginal Education	
ABRG3688	Contemporary Canadian Aboriginal Children's Literature
ED3022	Aboriginal Identity and Development in Education
ED3043	Aboriginal Education
ED4686	Teaching the Aboriginal Learner
ED4688	Teaching Aboriginal Childrens Literature
ED5162	Integrated Curriculum for the Aboriginal Learner
ED5683	Aboriginal Education Seminar
ED5684	The Anthropology of Literacy and Learning
ED5685	Teaching Aboriginal Language
Adult Education Note: Additional courses in Adult Education are listed throughout the following areas of study	
ED3110	Methods and Strategies in Adult Education: An Introduction
ED3113	Communication Practices for Adult Education
ED4110	Methods and Strategies in Adult Education: Theory and Practice
ED4113	Introduction to Distance Learning in Adult Education
ED5155	Entrepreneurship in Adult Education
Art Education	
ED3211	Introduction to Art Education
ED3212	Art Media for Schools
ED3218	Visual Arts Studio I
ED3219	Visual Arts Studio II
ED4211	Integrated Learning through Art
ED4212	Developmental Theories in Art Education
ED5154	Power of Images
ED5211	Histories of Art Education
ED5212	Curriculum Development in Art Education
ED5213	Issues in Art Education
Business/Information Technology Education	
ED3862	Information Processing I
ED4862	Information Processing II
ED4863	Microcomputers in the Classroom
ED4864	Software Analysis
Classroom Practices	
ED4164	Techniques of Teaching
ED4182	Applied Learning
ED5053	Middle Level Education
ED5164	Education and Technology
ED5165	Cooperative Learning
ED5193	The Design and Delivery of Middle School Curriculum
ED5194	Issues in Middle Level Education
ED5272	Changing Teaching Practice
ED5273	Interdisciplinary Instruction
Critical Studies	
ED5151	Autobiography and Education
ED5154	Power of Images
ED5166	Cultural Studies and Critical Pedagogy
ED5181	Feminist Theory and Education
ED5684	The Anthropology of Literacy and Learning

Curriculum Development	
ED5161	Curriculum Theory
Early Childhood Education	
ED5032	Inclusion from the Early Years
ED5062	Cultural Constructions of Childhood
ED5101	Senior Seminar in the Early Years
ED5102	Curriculum and Evaluation in the Early Years
ED5105	Connecting Home and Schooled Literacies
ED5167	Interpreting Play for Curriculum Development
ED5172	Holistic Models of Curriculum
ED5182	Problem Solving with Young Children
ED5184	Parental Involvement in Schooling
ED5362	Symbolic Representation in Children's Play, Pictures and Print
Geography Education	
ED3641	Geography in Education
ED4641	World Regional Geography I
ED4642	World Regional Geography II
ED4643	Geography of Canada
ED4644	Geography of the United States
ED5641	Geography of Natural Resources
ED5642	World Settlement Patterns
ED5643	Political Geography
ED5644	Geography of China and Japan
Health Education	
ED3063	Health Promotion in Schools
ED4451	Health Education
ED4773	Families and Society -Family Development
ED4791	Nutrition Concepts
ED5065	Personal Growth and Helping
ED5451	Special Topics in Health Education
Internet	
ED3361	Internet Literacy
ED5364	Issues in Online Learning
ED5365	Designing Web Resources to Meet User Needs
ED5366	Teaching Online
Literacy Education	
ED3362	Access to Literacy
ED4352	Poetry K-12
ED4354	Literacy Learning in Early Years
ED4355	Literacy Learning in the Middle School
ED4356	Literacy Learning in the Young Adult Years
ED4569	Enseignement des arts langagiers en français langue seconde à lélémentaire
ED5105	Connecting Home and Schooled Literacies
ED5313	Cultural Studies through Theatre
ED5314	Drama Across the Curriculum
ED5315	Dramatization of Literature
ED5352	Teaching Writing
ED5353	Teaching Secondary English I
ED5354	Teaching Secondary English II
ED5355	The English Curriculum
ED5357	Media Literacies
ED5361	Challenging the Authority of Texts

ED5362	Symbolic Representation in Children's Play, Pictures and Print
ED5363	(T)roping the Primitive and the Child
ED5358	Critical/Cultural Literacy
ED5684	The Anthropology of Literacy and Learning
Mathematics Education	
ED3415	Developing Numeracy
ED3416	Developing Geometrical Concepts
ED3421	Teaching Mathematics in the Elementary School: Field Based
ED3424	Elementary Mathematics I
ED4404	Trends in Mathematics Education
ED4405	Ethnomathematics
ED5422	Teaching High School Mathematics
ED5423	Teaching Middle School Mathematics
ED5428	Mathematics Across the Curriculum
ED5429	The Role of Language in the Teaching of Mathematics
Measurement and Evaluation	
ED5171	Assessing Adult Learning
ED5173	Educational Statistics
ED5174	Introduction to Standardized Measurement and Evaluation
ED5175	Classroom Assessment
Multimedia Studies	
ED5698	Multimedia Studies in Education
ED5699	Cultural Studies Through Multimedia
Music Education	
ED3241	Music for the Classroom Teacher
ED3242	The History of Popular Music
ED4241	Music in the Elementary School
ED4242	Music in the Middle School
ED4243	Music in the Senior School
ED5241	Philosophy of Music Education
ED5242	Special Topics in Music Education
FNAT2113	Introduction to Music
Physical Education	
ED3475	Movement Education for the Elementary Teacher
ED3476	Teaching Creative Dance
ED3486	Movement Education for Older Children
ED3494	Introduction to the Teaching of Secondary Physical Education
ED4488	Teaching of Games for the Secondary Physical Education Teacher
ED4494	Teaching Methods in Secondary Physical Education
ED5494	Teaching Physical Education
School Counselling	
ED5065	Personal Growth and Helping
ED5141	Orientation to Counselling
ED5142	Career Guidance
ED5143	Group Theory and Skills
Science Education	
ED3511	Introduction to Science Education
ED3512	The Nature(s) of Science: Implications for Teaching Science
ED3513	Science Education Policy and Practice
ED3514	Instructional Intelligence and the Science Teacher
ED4511	Advanced Studies in Science Education I
ED5511, 5512, 5513	Special Topics in Science Education I, II, III
ED5521	Science Education Seminar and Project
Second Language Education **Note:** All courses listed in this section with French titles/ descriptions are offered in French. Students may be required to take a language proficiency test before permission is granted to enroll	
ED3561	Introduction to Second Language Education
ED3562	nitiation à la didactique du français langue seconde (FLS)
ED4075	Bilingualism and Education
ED4562	Advanced Studies in ESL Education
ED4567	Enseignement du français langue seconde (FLS) aux niveaux intermédiaire et secondaire
ED4568	Le développement langagier en classe de langue seconde
ED4569	Enseignement des arts langagiers en français langue seconde à lélémentaire
ED5566	Field Experience in TESL
Social Studies Education	
ED3621	Introduction to the Social Studies
ED4620	Introduction to Teaching Social Studies
ED4621	Learning to Learn in Social Studies and Science
ED4622	Global Education
ED5621	Senior Project in Social Studies
ED5622	Comparative Social Studies Education
ED5623	Teaching Canadian Studies
Special Education	
ED3031	The Education of Exceptional Learners
ED4089	Gifted Education: Introduction
ED5026	Educational Psychology
ED5027	The Psychology and Education of the Adolescent
ED5046	Educating At-Risk Students
ED5078	Communication Disorders in the Classroom
ED5086	Tutoring Practicum
ED5091	Learning Disabilities: Introduction
ED5094	Program Design for Students with Significant Learning Difficulties
ED5096	Behavioural/Emotional Disorders: Introduction
Technology Education	
ED3943	Introduction to Technology
ED3976	Technology Education for Special Students
ED4945	Graphic Communications Systems
ED4975	Technology Laboratory Organization and Management
ED5947	Computer Aided Drafting
ED5975	Presentation Strategies in Technology Education
ED5976	Instructional Technology Across the Curriculum
ED5977	Program Development in Technology Education
ED4973 , 5973	Special Topics in Technology Education

CERTIFICATES AND DIPLOMAS

Bridging Year Program

The Faculty of Education offers a Bridging Year Program for Aboriginal students who are preparing for admission to a UNB degree program. Applications for the program are welcome from:

1. High school graduates.
2. Students with Grade 11 who have been out of school for at least 3 years.
3. Mature students as defined in the UNB undergraduate Calendar.

Admissions are competitive. Satisfaction of the minimum criteria will not guarantee acceptance. The deadline for applications is March 31. Late applications can be considered only if spaces remain unfilled.

In their Bridging Year students register for four courses each term, at least one of which must be a university credit course (See Bridging Year courses in Section H of the Calendar). Course schedules are individually planned in consultation with the Faculty in which a student wishes to enrol the following year.

The maximum time permitted between the first registration and the completion of the Bridging Year in accordance with the regulations in effect at the time of first registration shall be two consecutive academic terms. Students who complete the Bridging Year with a minimum of 24 ch or the equivalent of 8 term courses and with a grade of CR in all BY courses and a GPA of 2.0 or higher in other courses will be guaranteed admission to the degree program for which the Bridging Year was designed. Students who do not succeed in meeting these requirements will not be permitted to continue in the Bridging Year program and will not be transferred to a degree program.

Certificate in Adult Education

The Faculty of Education offers degree credit courses leading to a Certificate in Adult Education. The certificate program is open to individuals who have met normal admission requirements for the BEd. The certificate requires a total of 36 ch. Consult the UNB Certificate Program Coordinator for a listing of appropriate courses.

Certificate in French Immersion Teaching / in Core French Teaching

Program Description

Candidates in a BEd degree program who wish to have official recognition of their proficiency in teaching in an immersion or core French program may apply for the appropriate certificate. Interested students should seek the approval of the Second Language Education Centre (SLEC) of the Faculty of Education at the earliest convenient moment. Full-time students may work toward the certificate as part of their undergraduate program. Persons having completed the BEd may work towards the certificate as part-time students.

Requirements

Certificates will be awarded to BEd students who meet the following requirements:

i. a minimum of 12 ch of approved courses related to teaching in immersion or core French with a minimum GPA of 3.0 and all grades of C or better.
ii. at least 50% of the teaching practicum (ED5000) in a French immersion or core French setting
iii. a minimum proficiency of Advanced for the Core French Certificate and Advanced Plus for the French Immersion Certificate

Admission to the Program

Students will be admitted to the program as per regulations governing general admission to the Bachelor of Education degree programs. Candidates must have sufficient mastery of the French language to be able to teach in French, to be determined by the SL unit of the Faculty. The Certificate will be awarded by the University through the Registrar's office. The students' transcripts will have a separate entry showing that the Certificate has been awarded and identifying the courses undertaken to complete the certificate.

Certificate in Teaching English as a Second Language

Program Description

This Certificate Program is designed to provide participants with knowledge and skills necessary to become effective teachers of English as a second language (ESL). The CTESL requires successful completion of:

1. Three compulsory courses:
   - ED 3561 - Introduction to Second Language Education
   - ED 4075 - Bilingualism and Education
   - ED 4562 - Advanced Studies in ESL Education
2. One approved course in the area of language education, cultural studies or literacy, and
3. Practicum in TESL (ED 5566 or equivalent)

Eligibility

In order to be eligible to enroll in the CTESL, candidates must either have completed an undergraduate degree or be currently enrolled in a BEd program. Candidates whose first language is not English must also demonstrate a high level of English language proficiency as evidenced by:

1. A score of 600 or better on the TOEFL
2. And a score of 55 or better on the TSE (Test of Spoken English)
3. And a score of 5.5 or better on the TWE (Test of Written English)

Equivalent tests may be considered.

Practicum

Students applying for the CTESL, must successfully complete ED5566 - Field Experience in TESL. This is a 3 credit hour practicum that involves approved short-term experience working in an ESL setting. Students enrolled in a BEd program may request that ED5566 be waived if they have had equivalent practical experience in ESL education during their regular BEd teaching internship. Recognition for any such equivalent experience must be approved in advance.

Note: Students wishing to obtain both the certificate in French Immersion Teaching and the Certificate in Teaching English as a

second language must take 12 ch of different courses. In other words, the same courses may not be applied to both certificates.

The Faculty of Education places students in school settings at the discretion of the public school system. Although the Faculty cannot guarantee a placement in that system, it will makes its best effort to find an initial placement for any student eligible for the practicum (subject to approval by the University).

Diploma in Advanced Undergraduate Study (DAUS)

The DAUS is a 36 ch program designed for students with a degree in Education who wish to gain additional teaching qualifications. Students may choose a general pattern (Professional Growth) or a specific area of specialization from the following:

1. Business /Information Technology Education
2. Early Childhood
3. Elementary Education
4. School Counselling and Special Education
5. Home Economics Education
6. Literacy Education
7. French Second Language Education
8. French Immersion Education
9. Mathematics Education
10. Science Education
11. Social Studies Education
12. Technology Education

Consult the Faculty for course requirements.

Regulations for DAUS Not Covered by General University Regulations

1. **Admission**
   Students who hold a BEd degree or the equivalent (e.g. certified teachers with a BA or BT) are eligible for admission to the DAUS.
2. **Student Standing**
   a. A grade of D shall meet the prerequisite requirements for DAUS courses unless otherwise stated in the Calendar.
   b. In course offerings of other Faculties/Departments, students must meet the prerequisite requirements of that Faculty/Department.
   c. A grade of C shall be the minimum acceptable grade in courses for the DAUS.
   d. No course can be credited without prior approval of a faculty advisor.
3. **Residency Requirements** Students must normally complete a minimum of 24 ch of work for the DAUS on campus as full or part-time students.
4. **Transfer Credits** Students may not transfer more than 12 ch of work from another university for credit toward the DAUS. No surplus credits from the BEd other than extra courses taken in the final year may be transferred in for credit. No courses taken prior to enrolment in the BEd may be transferred in for credit. When applying for the DAUS, students may transfer only 12 ch taken prior to admission to the program.
5. **Time Limit** In accordance with the regulations in effect at the time of registration, the maximum time permitted between the first registration and completion of the DAUS will be six years.

ENVIRONMENTAL STUDIES PROGRAMS

General Information

Environmental Studies interdisciplinary programs provide an academic framework for understanding the growing body of literature and scholarship on environmental problems. Students will learn about major environmental problems facing contemporary society, and acquire the interdisciplinary tools required to analyze, critique, and solve them. Both theoretical and applied approaches will be emphasized to varying degrees within the curriculum.

Eligibility:

Environmental studies courses are open to any student in any faculty where permitted as electives, towards a Minor, or towards a Secondary Major. Admission to the Environmental Studies Minor or Secondary Major is open to students in any faculty where permitted who have successfully completed 30ch towards a degree. With the permission of the Coordinator of Environmental Studies, students may count the following for credit in the Minor and Secondary Major programs: (i) UNB course credits taken prior to entering the Minor or Secondary Major program; and (ii) course credits from other universities which have been approved by the relevant Faculty at UNB.

Programs of Study

Environmental Studies Minor:

The Environmental Studies Minor consists of 24ch of core and elective courses, selected in consultation with the Coordinator of Environmental Studies. Students are required to take:

1. 12ch of core Environmental Studies (ENVS) courses.
2. 12ch of course work chosen from a list of approved elective courses (provided below). One elective course must be taken under each of four discipline headings specified in the list of elective courses.

Environmental Studies Secondary Major:

The Environmental Studies Secondary Major consists of 30ch of core and elective courses, selected in consultation with the Coordinator of Environmental Studies. Students are required to take:

1. 12ch of core Environmental Studies (ENVS) courses.
2. 18ch of course work chosen from a list of approved elective courses (provided below). All 18ch shall be upper level courses (the 2000 level courses are available for credit toward the Minor only), and at least one course from each of the four discipline headings specified in the list of elective courses must be taken. A grade of C or better in each course is required for credit in the Environmental Studies Secondary Major program.

Courses:

CORE COURSES		
ENVS 2003	Introduction to Environmental Studies	3ch
ENVS 2023	Understanding Environmental Issues	3ch
ENVS 4001	Applied Environmental Problem Solving	3ch
ENVS 4002	Stakeholder Approaches to Environmental Problem Solving	3ch

ELECTIVE COURSES:	
Science Group	
BIOL 2113	Ecology
BIOL 3459	Economic Botany
BIOL 4233	Conservation Biology (A)
BIOL 4352	Climate Change and Environmental Response
BIOL 4191	Wildlife Management
BIOL 4861	Environmental Biology
FOR 3445	Forest Ecology: Populations
FOR 3455	Forest Ecology: Communities and Ecosystems
FOR 3456	Forest Watershed and Forest Fire Management
FOR 4576	Forest Hydrology and Aquatic Habitats
GEOL 3442	Environmental Geology
PHYS 2503	Physics and Society
PHYS 2543	Environmental Physics
Applied Science	
CE 3403	Introduction to Environmental Engineering
CE 5411	Water Supply and Wastewater Removal
CHE 4314	Air Pollution Control
CHE 5004	Thermodynamics of Waste Heat Recovery
CHE 5314	Chemical Process Industries: Overview & Env. Impact
FOR 2006	Forest Dynamics and Management
FOR4656	Wildlife Habitat
FOR 5095	Conservation (A)
GE 5153	Waste Geotechnics
GEOL 4452	Environmental Impact Assessment
GGE 5533	Environmental Policy, Law and Information Mgmt.
GGE 5543	Marine Policy, Law, and Administration
RSS 3303	Parks and Protected Spaces
RSS 4331	Outdoor Recreation: Interpreting the Environment (A)
Humanities Group	
FOR 2933	Bioethics in Forestry
HIST 2925	Technology and Society*
HIST 5342	Environmental History of North America
HIST 5343	Natural Resources, Industrialization and the Environment in Atlantic Canada
PHIL 2106	Environmental Ethics
PHIL 3201-9	Selected Topics in Environmental Philosophy
Social Sciences Group	
ANTH 5032	Environment and Society
ECON 3755	Environmental Economics
ECON 3794	Natural Resource Economics I
GEOG 5641	Geography of Resource Management
POLS 1603	Politics of Globalization
POLS 3453	Politics and Technology*
SOCI 2534	Technology and Social Change*
SOCI 3553	Sociology and the Environment

* Credit granted for one of : SOCI2534 , HIST2925 , POLS3453

Note: Additional courses can be included in the above list, provided approval is granted by the Faculty involved and the Coordinator of Environmental Studies. However, any course required by a students primary major cannot be used as an Environmental Studies course elective. Students should also be aware that some courses listed above have prerequisites.

BACHELOR OF INTEGRATED STUDIES

Contact:	Bachelor of Integrated Studies c/o UNB College of Extended Learning 6 Duffie Drive, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 458-7617
Fax:	(506) 453-3572
Email:	extend@unb.ca
Website:	http://www.unb.ca/extend/bis/

General Information

The Bachelor of Integrated Studies (BIS) degree program was developed in response to the needs of working adults who have some post-secondary educational experience and/or have obtained credit through a prior learning assessment. To help adult learners achieve their specific personal, educational, and professional goals, the Bachelor of Integrated Studies will integrate their educational experiences and career and personal objectives with an approved plan of study. Although BIS academic plans are individualized, there are expected outcomes that each graduate of the BIS program will attain.

This degree program is jointly coordinated and administered by Renaissance College (RC) and the College of Extended Learning (CEL) with academic participation by various UNBF Faculties. Renaissance College, with its strength in interdisciplinary and leadership programs and with the learning portfolio component, will be responsible for the academic oversight of the program (admissions, transfer credit review, curriculum changes, graduation and portfolio approvals). The College of Extended Learning, with its expertise in adult learning, distance education, workplace learning, prior learning assessment, and marketing of programs, will provide the infrastructure for the program and the administrative support. The UNBF Faculties will contribute expertise in the areas of the students chosen Minor programs.

Expected Outcomes

Although each individual program of study may include learning outcomes specific to that plan, student-learning outcomes that are general to the BIS degree program include:

- Communication skills: graduates will be able to listen or read, synthesize, draw conclusions and effectively communicate the results in both oral and written form.
- Critical and analytical thinking: graduates will be able to absorb and analyze complex material from a variety of disciplinary perspectives.
- Problem solving: Because of their increased ability to critically analyze the complexities of an issue or problem from multiple perspectives, graduates will have developed the ability to make discerning judgments and decisions.
- Intellectual and research skills: Graduates will have generalized intellectual and research skills, which will also develop the students capacity for lifelong learning.
- Interdisciplinary leadership: Graduates will be able to set a direction, create and maintain commitment to that direction, and face adaptive challenges. As well, graduates will have

an interdisciplinary awareness of current social, political, and economic concerns, the leadership qualities required to assume the challenges of citizenship, and the capabilities to facilitate change.

University/General Regulations

The General University Regulations covered in Section B of this Calendar will govern any point not covered by the General Regulations of the Bachelor of Integrated Studies. Questions concerning the application of regulations should be directed in writing to the Registrar.

Normally, applicants to the Bachelor of Integrated Studies program without a prior degree must meet the following requirements:

- Been out of high school a minimum of seven years; during this time applicants may have worked and/or acquired post-secondary education credit or professional training
- Completed an interview with the Bachelor of Integrated Studies Coordinator to assess their suitability for the program
- Have acquired a minimum of 30 credit hours of transferable credit (or the equivalent through prior learning assessment) of post-secondary study.

Potential applicants with a degree should refer to existing regulations in the UNB Calendar regarding second degrees and should consult the BIS Coordinator.

To earn a Bachelor in Integrated Studies a student must complete the following requirements:

1. **dividualized academic plan**: Each learner will be assisted by the BIS Coordinator in preparing an academic plan that includes:
   - a transfer credit application and/or evidence of prior learning to be used for formal prior learning assessment (PLA),
   - periodically revised individual plans of study to meet the combined objectives of the BIS degree program,
   - and, finally, graduation audit reports

   The standing RC BIS Committee (composed of one RC faculty member, the BIS Coordinator and the RC College Coordinator) will review and make recommendations to RC Dean or Council for approval of PLA, transfer credit, periodic plans of study and graduation.
2. **Plan of study**: Included in the academic plan is the plan of study. Adult learners wishing to enroll in the BIS will be required to meet with the BIS Coordinator to prepare a plan of study that builds upon their interests and previous study and that responds to their learning needs. Each individual plan of study will include a statement of objectives written by the learner, a list of courses taken and/or to be taken, and a description of how each component will contribute to achieving the students learning objectives. This plan will also include the main academic elements of the BIS degree program:
   - Personal learning portfolio started in the Prior Learning Assessment process and continued through a Renaissance College portfolio course;
   - University Minor, which may be offered through a Faculty or Department or may be a University interdisciplinary Minor;
   - 9 credit hours of Renaissance College interdisciplinary integrative courses.
3. **University Minor**: A required element of the BIS program is the University Minor. Requirements will vary depending on the Minor chosen and are as outlined in the University calendar for each Minor Program. Responsibility for approval of the Minor lies with the appropriate Faculty.
4. **Personal learning portfolio**: The personal learning portfolio will serve several purposes in the BIS degree program. The development of the portfolio will begin with the application process and assist in the applicants prior learning assessment. By reflecting on past experience and learning as well as current interests, learners will identify goals and objectives for their studies that will be integrated in their plan of study. The portfolio will be treated as a living document and the learner will continue to develop it throughout their studies and perhaps beyond. A portfolio review will take place at appropriate times to allow the learner to recognize and reflect on progress toward their objectives and as part of continuing assessment of the learners progress regarding the BIS program outcomes. It will not be merely a list of things done, but a substantial meta-analysis summarizing key events and activities and their contribution to both personal growth and progress toward the BIS program outcomes. Finally, the portfolio will be reviewed prior to graduation for credit toward a Renaissance College portfolio course (RCLP 3030 Integrated Learning Portfolio (3ch)).
5. **Interdisciplinary integrative component**: To build program coherence and to explore interdisciplinary and integrated learning approaches to issues, each learner will participate in at least 9 credit hours of integrative interdisciplinary courses through Renaissance College during their studies.
6. **Other degree requirements include**:
   - Total of 120 credit hours
   - Minimum cumulative grade point average of 2.0
   - Minimum of 39 credit hours (one-third of the program) must be completed at the 3000 and/or 4000 level
   - Normally 45 credit hours of the program must be completed at UNB. This provision may be waived by the Registrar in consultation with Renaissance College and the College of Extended Learning.

Curriculum

Core Courses:

RCLP 3030	Integrated Learning Portfolio	3 ch
9 credit hours of RC interdisciplinary integrative courses normally chosen from the following list:		
RCLP 1111	Integrative Forum I	6 ch
RCLP 1112	Integrative Forum II	6 ch
RCLP 2014	Public Policy Special Topics I	3 ch
RCLP 3015	Public Policy Special Topics II	3 ch
RCLP 4017	Renaissance Leadership and Public Policy Seminar	3 ch
RCLP 4778	Selected topics in Interdisciplinary Leadership	3 ch

Other Curriculum Requirements:

A minimum of 120 credit hours must be completed of which 39 credit hours (one-third of the program) must be completed at the 3000 and/or 4000 level and normally 45 credit hours of the program must be completed at UNB. These 120 ch must include an approved university minor. Minor and elective courses chosen should fit within the framework of the plan of study that was designed in consultation with the students program advisor.

BACHELOR OF LAWS

FACULTY OF LAW

General Office:	Ludlow Hall, Rm 202
Mailing Address:	Faculty of Law, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4669
Fax:	(506) 453-4604 / 453-4548
Email:	law@unb.ca
Website:	http://www.law.unb.ca

FACULTY

Dean: Phillip Bryden, BA, BA, BCL, LLM
Associate Dean: John R. Williamson, BBA, LLB, LLM

- Bell, David G., BA, MA (Qu), LLB (UNB), LLM (Harv), Prof - 1985
- Bird, Richard W., QC, BBA, BCL (UNB), LLM (Col), Prof - 1968
- Bladon, Geoffrey L., BA (Manit), LLB (Qu), Prof - 1987
- Bryden, Philip L., BA (Dal), BA, BCL (Oxon), LLM (Harv), Prof and Dean - 2004
- Chatterjee, Aloke, BSc, LLB (Dal), LLM (Harv), Asst Prof - 2003
- Craik, Neil, BA (McG), LLB (Dal), LLM (Edin), Asst Prof - 2004
- Dore, Karl J., QC, BBA, BCL (UNB), LLM (Yale), Prof - 1984
- Fleming, Donald J., BA (Mt A), LLB (UNB), LLB (Cantab), Prof - 1977
- Gochnauer, Myron L., BA (Roch), MA, PhD (UWO), LLB (Tor), LLM (York), Assoc Prof - 1980
- Kuttner, Thomas S., QC, BA, MA, LLB, LLM (Tor), Prof - 1979
- La Forest, Anne W., BA (Ott), LLB (UNB), LLM (Cantab), Prof - 1996
- Mathen, Carissima R., BA (McG), LLB (York), LLM (Col), Asst Prof - 2002
- McCallum, Margaret E., LLB, BA, MA, PhD (Tor), Prof - 1990
- McEvoy, John P., BA (STU), LLB (UNB), LLM (York), Prof - 1980
- Pearlston, Karen, LLB (York), LLM (UBC), Asst Prof - 2001
- Penney, Steven M., BA, LLB (Alta), LLM (Harv), Assoc Prof - 1998
- Siebrasse, Norman V., BSc, LLB (Qu), LLM (Chic), Assoc Prof and Univ Research Prof - 1993
- Townsend, David A., BA (StM), LLB (Dal), LLM (York), Prof - 1979
- Veitch, Edward, MA, LLB (Edin), Prof - 1979
- Williamson, John R., BBA, LLB (UNB), LLM (Harv), Prof and Assoc Dean - 1974

The Faculty of Law offers a full-time three-year course leading to the degree of Bachelor of Laws (LL B). Established in 1892, the Faculty has about 230 students from across the country.

For detailed information on admissions policy and procedure, a description of the school and program, please consult the Faculty of Law, Admissions Guide, available from the Law Admissions Office, Faculty of Law, PO Box 44271, Fredericton, NB, E3B 6C2. Phone: 506-453-4693. email to: lawadmit@unb.ca or visit our website at http://www.law.unb.ca.

For the Faculty of Law Regulations and Course Descriptions, see the Faculty of Law Calendar, available from the Law General Office, Faculty of Law, PO Box 4400, Fredericton, NB, E3B 5A3. Phone: 506-453-4669. or visit our website at http://www.law.unb.ca

BACHELOR OF NURSING

Faculty of Nursing

General Office:	MacLaggan Hall, Room 106
Mailing Address:	Faculty of Nursing, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506)-453-4642
Fax:	(506) 447-3057 / 453-4519
Email:	nursing@unb.ca
Website:	http://www.unbf.ca/nursing/

FACULTY

Dean: Cheryl Gibson, BN, MScN, PhD
Assistant Dean (BN/RN Program): Kathryn Lewis, BN, BEd, MEd
Assistant Dean: Karen Tamlyn,
Assistant Dean (Humber College): Heather MacDonald, BN, MScN

- Amirault, Debra, BN, MN (UNB), Sr. Inst - 1999
- Aquino-Russell, Catherine, BScN (Lakehead Univ), MN (Man), PhD (Curtin, Australia), Asst. Prof. - 2002
- Barclay, Katherine, BSc (UNB), MSc (Wat.), PhD (Guelph), Sr. Inst (Joint Biology and Kinesiology) - 2001
- Connell, Mary, Inst - 2001
- Cruttenden, Kathleen, BScN (Tor), MHSc (McM.), PhD (Wat.), Asst Prof - 2001
- Didyk, Andy, BA, PhD (UNB) Asst Prof Moncton/Bathurst Campuses (Joint Biology) - 1999
- Doiron-Maillet, Nancy, BN (UNB), MN (Dal), Sr. Inst - 1991
- Doucet-Clark, Celia, BN (UNB), Inst (Bathurst) - 2001
- Duffy, Lynne, Dip Nursing (Moncton Hosp), BScN (M'ton), MEd (UNB), PhD (Walden), Assoc Prof - 2003
- Dykeman, Margaret, BNRN (UNB), MS (ILL), PhD (UIC), Prof - 1998
- Ellingsen, Roberta, BN (UNB), MN (Dal), MSA (Michigan), Sr. Inst (Bathurst) - 1995
- Furlong, Dolores, BN (Nfld), MScN (UWO), PhD (Tor), Professor - 1997
- Getty, Gracie A.M., BN (Manit), MN (Dal), Prof - 1980
- Gibson, Cheryl H., BN (UNB), MScN (Tor), PhD (Boston), Prof and Dean - 1979
- Haddon, Debra, Inst - 2001
- Haller, Lorraine, BScN (Ott), MScN (UWO), Assoc Prof - 1987
- Hodgins, Marilyn, BSN (UWO), MN, PhD (Alta), Assoc Prof - 1998
- Letourneau, Nicole, BN (UNB), MN, DPhil (Alta), Assoc Prof - 2003
- Lewis, Kathryn E., BN, BEd, MEd (UNB), Prof and Asst Dean BN/RN Proram - 1976
- MacDonald, Heather, BN (UNB), MScN (Tor), Assoc Prof & Asst Dean (Humber College)- 1990
- MacIntosh, Judith, BN (Dal), MScN (McG.), PhD (UNB), Prof - 1990
- Mallet-Boucher, Monique, BScN, BEd, MEd (M'ton), MN (UNB), Sr. Inst, Moncton Campus- 1995
- McKay, Aileen, BN (UNB), BEd (Mt. Allison), MN (UNB), Sr. Inst, Moncton-1997
- Merritt-Gray, Marilyn, BN (UNB), MSN (Wash), Prof - 1987
- Noel, Julia, BA (UNB), MN (Dal), Sr Teaching Assoc - 1988
- Onyskiew, Judee, PhD (Alta), Assoc Prof & Canada Research Chair - 2003
- Ouellet, Louiselle L., BSN (M'ton), MSN (UBC), Prof - 1986
- Paterson, Barbara RN, BN, MEd, PhD (Manit.), Prof and Canada Research Chair - 2004
- Pelletier-Hibbert, Maryse, BN (UNB), MN (Dal), Prof - 1985
- Robinson, Pamela, BN (UNB), Inst - 1990
- Rogers, Ada, BN, MN (UNB), Sr. Inst - 1999
- Sangster-Gormley, Esther, BSN (N. Florida), MSN (S. Florida),

Senior Inst - 2001
- Savoie, Daniel, BScN (M'ton), MSc(A) (McGill), Asst. Prof. - 1997
- Seaman, Patricia, BN (UNB), MN (Dal), Sr. Inst. - 2001
- Storr, Gail, BN, MEd (UNB), MN (Dal), PhD (Edinburgh), Prof - 1982
- Tamlyn, Karen, BN (UNB), MN (Dal), CON (C), Prof and Asst Dean - 1987
- Trail, Marcia, BN (UNB), BEd (M'ton), MN (UNB), Sr. Inst - 1999
- VanSlyke, Stephen, BN, MN (UNB), Sr. Inst. - 2003
- Weaver, Kathy, BN (Dal), MN (UNB), Sr. Inst - 1991
- Williamson, Joan, BN, BA, MN (UNB), Sr. Inst, Bathurst Campus - 1999
- Wilson, Kathryn, BN (UNB), MN (Dal), Asst. Prof. - 1991
- Woodside, Reida, BN (McG.), MScN (UWO), Assoc Prof - 1985
- Wuest, Judith, BScN (Tor), MN (Dal), PhD (Wayne State), Prof - 1987

Mission Statement

The Faculty of Nursing Promotes leadership in nursing education, research and practice in New Brunswick. The Faculty achieves this goal through commitment to:

- Questioning, developing, applying and sharing nursing knowledge
- Creating a climate for the advancement of excellence in nursing practice
- Implementing a curriculum grounded in the principles of primary health care, social justice, and caring
- Engaging diverse communities as full participants in inquiry, caring and decision-making related to health.

The Faculty of Nursing contributes to enhancing peoples health and the advancement of the profession and discipline of nursing.

General Information

The Faculty of Nursing was established in 1958 through the financial generosity of the W.K. Kellogg Foundation and the provincial government. It was the result of the recognized need for better education for professional nurses by this University and individuals and organizations in the health fields. This program has built a solid reputation across Canada and internationally over the years.

The Nurses' Association of New Brunswick established a Task Force which led in 1989 to the endorsement of the Baccalaureate degree in Nursing as the entry level to the profession by the year 2000. In Dec., 1994 the total responsibility for nursing education in N.B. was transferred to the universities. In the fall of 1995, UNB admitted first year students to the four year program on 4 campuses: Fredericton , Saint John, Moncton and Bathurst. In fall of 2000, the Faculty began a collaborative relationship to offer the basic baccalaureate program at the Humber Institute of Technology and Advanced Learning.

The Faculty of Nursing offers three programs leading to a baccalaureate degree. The basic degree program covers four years of general and professional education. The Advanced Standing degree program is two and one half years in length and begins in January of each year. On completion of either program, graduates are eligible to write the Canadian Nurses Association registration examinations in the Province of New Brunswick. Those who are successful are eligible to apply for registration across Canada and in other countries by reciprocity. The third program is designed for registered nurses seeking baccalaureate education.

Nursing students practice in a variety of clinical facilities and health agencies. All students will be expected to travel out of town for some clinical experiences. In some instances, accommodation will be required. Students may also be expected to complete clinical experiences during evenings, nights, and Saturdays to accommodate availability of clinical facilities and/or instructorsNormally Intersession clinical courses are completed by the end of May (BN program) and the end of June (ASP program). However, depending on the availability of clinical facilities and/or instructors, these time frames may need to be extended. Students will be provided with notice of clinical scheduling as soon as it is feasible.

All Bn and BN ASP students must provide proof of required immunizations. Clinical agencies may not permit students who are not fully immunized to access facilities and may ask students at any time to provide proof of the following mandatory immunizations: Diptheria, Pertussis, Tetanus, Polio, Haemophilus Influenza type B, Measles, Mumps, and Rubella; appropriate Diptheria and Tetanus boosters; and the series of Hepatitis B immunizations and titre status. Students also must have an initial 2-step Mantoux test for Tuberculosis and subsequent yearly Mantoux tests. Further details are contained in the relevant Faculty policy.

Additionally, in order to participate in nursing lcilnical courses, students must have current SPR Certification Basic Rescuer (Level C) and must have completed a suicide intervention course.

Costs

Costs in addition to those listed in Section C of this Calendar are: room and board for off-campus and off-site placements/course requirements, uniforms, books, photocopying, equipment, CPR Certification, RN Examination, nursing pin, professional meetings, immunizations, Suicide Intervention program and travel costs to and from the practice areas. Many agencies now require criminal record checks, at the student's expense, for access to clinical practice.

University Regulations

It is advisable to read carefully Section B of this Calendar, General University Regulations, and in particular the subsection headed Examinations, Standing and Promotion.

Any point not covered in the following regulations will be governed by the General University Regulations.

Transfer and mature students are particularly advised to consult Section B. Transfer students and students applying for Nursing as a second undergraduate degree will take Nursing courses and in addition, those Arts and Science courses required by the Faculty if they have not already taken them. Questions concerning the application of regulations should be directed to the Assistant Dean of Nursing.

GENERAL REGULATIONS

1. A student whose assessment grade point average (the May/April period; for definition, see Standing and Promotion Requirements in Section B of this Calendar) falls:
   a. below 2.0 but above 1.6 will be placed on academic probation; if in any subsequent period the grade point average falls below 2.0 the student will be required to withdraw from the program.

   b. below 1.7 will, subject to review by the Nursing Faculty, be required to withdraw from the program

2. A student who twice fails to achieve at least a "C" or "CR" grade in any Nursing course will be required to withdraw from the Nursing program.

3. A student must receive at least a "C" or clinical "CR"
   a. in each Nursing course before proceeding to ensuing Nursing courses and
   b. in all additional required non-nursing courses before proceeding to the next year of Nursing courses.
   c. in nursing electives

4. A "D" grade is accepted only in non-nursing open electives (a nursing elective taken as an open elective requires a "C" grade for credit).

5. Normally, students must complete all courses in a given year before proceeding to the next year of the program.

6. A student repeating a Nursing course may, at the discretion of the Nursing Faculty, also be required to repeat and pass the Nursing course that immediately preceded it.
   a. Basic degree students and full-time BN/RN students must complete the program within 6 years of enrolment in the Faculty of Nursing.
   b. Advanced Standing Degree Program students must complete the program within 5 years of enrollment in the first term of the program (January - April).
   c. Part-time BNRN students must complete the program within 10 years of enrolling in the first Nursing course.

7. The requirements for the Basic degree are 103 ch in courses taught by the Faculty of Nursing and 35 ch in other faculties; for the Advanced Standing Degree Program students must complete 88 credit hours in Nursing and 4 credit hours in Biology; for the BN/RN program 39 ch in Nursing and 18 ch in other courses are required.

Curriculum for BN Students

YEAR I	
Term 1:	NURS 1011 (3ch), NURS 1032 (3ch), BIOL 1711 (4ch), Open Elective (3 ch), Writing elective (English or Writing designated Course) (3 ch).
Term 2:	NURS 1225 (3ch), NURS 1235 (4ch), BIOL 2782 (4ch), Open Elective (3 ch), restricted elective (Psychology)(3 ch).
YEAR II	
Term 1:	NURS 2132 (3 ch), NURS 2135 (3 ch), NURS 2145 (3 ch), NURS 2155 (4 ch), BIOL 2501 (3 ch).
Term 2:	NURS 2041 (4 ch), NURS 2177 (3 ch), NURS 2187 (4 ch), BIOL 2512 (3 ch), STAT 2263 (3 ch).
Intersession:	NURS 2063 (5 ch).
YEAR III	
Term 1:	NURS 3052 (3 ch), NURS 3065 (4 ch), NURS 3066 (4 ch), NURS 3092 (3 ch), BIOL 2253 (3 ch) or BIOL 3251 (3 ch).
Term 2:	NURS 3031 (3 ch), NURS 3072 (3 ch), NURS 3073 (6 ch), 3082 (3 ch).
Intersession:	NURS 3103 (5 ch).
YEAR IV	
Term 1:	NURS 4111 (3 ch), NURS 4121 (3 ch), NURS 4123 (6 ch), open or Nursing elective (3 ch).
Term 2:	NURS 4165 (2 ch), NURS 4175 (3 ch), NURS 4185 (3 ch), NURS 4152 (7 ch).

Curriculum for BN for Students in the Advanced Standing Degree

The Advanced Standing degree Program in Nursing is intended for applicants with a university degree (or 60 credit hours or more of courses) who wish to become professional nurses.

To be eligible for the Advanced Standing BN program, applicants must have completed a minimum of 60 credit hours of university courses with an admission average of 3.0 ("B" or 70% average) or higher. For applicants who have completed more than 60 credit hours, the admission average will be calculated on the most recent 60 credit hours of course work. The grades for all courses taken within an academic term will be included in this calculation, even if this results in exceeding the 60 credit hour requirement. Preference is given to those with a background in the human sciences and/or human behaviour.

Program Prerequisites Are:

1. BIOL 1711 : Human Anatomy I (4 ch)
2. BIOL 2253 or BIOL 3251 or equivalent: Microbiology (3 ch)
3. STAT 2263 or equivalent: Any introductory Statistics course (3 ch)
4. A restricted elective (Psychology 3 ch)
5. BIOL 2501 : (Pathophysiology I (3 ch)

YEAR I	
Term 1:	Is not a Nursing semester, however, it may be used to complete prerequisite courses.
Term 2:	NURS 1121 (3 ch), NURS 1136 (4 ch), NURS 1135 (4 ch), NURS 1142 (4 ch).
Intersession:	NURS 2171 (2 ch) and NURS 2172 (7 ch) and NURS 2133 (3 ch).
YEAR II	
Term 1:	NURS 3065 (4 ch), NURS 3066 (4 ch), NURS 3092 (3 ch), BIOL 2512 (3 ch).
Term 2:	As per Year III, Term 2 of the Basic Degree Program.
Intersession:	As per Year III of the Basic Degree Program.
YEAR III	
Term 1:	As per Year IV, Term 1 of the Basic Degree Program, plus NURS 3052 (3 ch).
Term 2:	As per Year IV, Term 2 of the Basic Degree Program.

Curriculum for BN for Students who are Registered Nurses (BN/RN)

This program is for graduates of diploma nursing programs. Requirements for admission are as stated in the University Regulations for Nursing and the BN/RN Program Brochure.

Nursing Courses

NURS 3134 (3 ch), 3144 (3 ch), 3164 (3 ch), 3174 (3 ch), 3211 (3 ch), 3212 (3 ch), 3215 (3 ch), 3222 (3 ch), 3225 (3 ch), 3234 (3 ch), 3244 (3 ch). NURS 4002 ** (3 ch), 4012 ** (3 ch).

** Prerequisites for NURS4002 and NURS4012 include: NURS 3212, 3134, 3164, 3234, 3222, & 3225 . Pre or Co-requisite: NUS 3211 & 3215 .

In NURS 4012, clinical practice will be selected by students in consultation with faculty members teaching the course.

Non-Nursing Courses

- Pathophysiology (3 ch)
- English (3 ch)
- Open Electives (9 ch)
- STAT 2263 (or equivalent) must be completed prior to enrollment in NURS 3244 (Research).

Many students choose to pursue this degree on a part-time basis. Part-time students are advised to apply for admission to the BN/RN Program as soon as they take their first university course.

Credit Hour Requirements for Nursing Programs

Basic Degree Program	Minimum 138 ch
Advanced Standing Degree Program	Minimum 92 ch
BN/RN Program	Minimum 57 ch

Nursing Electives

Nursing Electives (Available in all BN programs)

A series of electives in both clinical and non-clinical areas will be developed based on faculty expertise and societal trends. (Subject to enrollment limitations and faculty resources, these Nursing electives may be OPEN to upper level non-nursing students). All nursing electives may not be available each academic year.

Students may choose from the following Nursing electives:

NURS 3124	Core Concepts & Issues in Cancer Nursing Practice	3 ch
NURS 3154	Peer Education for Healthy Behaviors I	3 ch
NURS 3214	Women's Health Issues	3 ch
NURS 3224	Promotion, Support and Protection of Breastfeeding in an Industrialized Society	3 ch
NURS 3254	Peer Education for Healthy Behaviors II	3 ch
NURS 3255	Professional Nursing Practice in a Nursing Home Setting	3 ch
NURS 4055	Nursing Informatics	3 ch
NURS 4095	Operationalizing Advanced Nursing Practice	3 c
NURS 4118	Professional Ethics	3 ch
NURS 4234	ndependent Study	3 ch
NURS 4244	Healthful Lifestyles	3 ch
NURS 4254	ssues in Transcultural Health	3 ch
NURS 4264	Complementary Healing Approaches	3 ch
NURS 4274	Iconography of the Nurse	3 ch
NURS 4284	Parent, Child and Nurse	3 ch
NURS 4294	Nursing Care of Older Adults and Families	3 ch
NURS 4335	Nursing & Nurses' Images in the Media:Unintended Consequences	3 ch
NURS 4604	Caring for the Critically Ill and Their Families	3 ch
NURS 4801	Psych/Mental Health Nursing I	3 ch
NURS 4802	Psych/Mental Health Nursing II	3 ch
NURS 4812	Psych/Mental Health Nursing Practicum	3 ch

Certificate in Critical Care

The UNB Certificate in Critical Care program consists of UNB courses some of which are taught by four or five hospital corporations using distance modalities. The program consists of 8 COURSES (24ch) including a 4 week preceptorship. All courses in the Critical Care Certificate receive credit in the BN/RN Program at UNB-F. The Critical Care Courses are designed to be distanced to major regional centres in NB. Some travel will be required in NURS4606 (eg., to Saint John or Moncton). Corporation instructors participate in teaching as part of their agreed contribution in relation to government funding. The clinical course, NURS4606 , is integrated with the theory courses. One additional option may be to offer the Certificate for full-time study depending on funding and need.

This full-time (17 week) certificate program for Registered Nurses or BN prepared nurses with at least one year of general nursing experience is designed to provide an intensive, comprehensive standardized critical care program for New Brunswick nurses. For working nurses, funding may be available for salary and replacement purposes. For further information, contact the College of Extended Learning at UNB-F.

Required Courses for the Certificate in Critical Care :

(See course descriptions for details and prerequisites)

NURS 4601	Intro to Critical Care Nursing	3 ch
NURS 4602	Care of Clients With Critical Cardiovascular Alterations	3 ch
NURS 4603	Care of Clients With Critical Pulmonary, Renal, Immunological & Hematological Alterations	3 ch
NURS 4604	Care of Clients With Critical Neurological, Endocrine, and Gastro-Intestinal Alterations	3 ch
NURS 4605	Care of Clients with Multiple Body System Alterations and Special Populations	3 ch
NURS 4606	Clinical Experiences in Critical Care Nursing	3 ch (3L)
NURS 4607	Caring for Critically Ill and Families: Practicum	2 ch (2L)
NURS 4608	Preceptored Experience with Critically Ill	4 ch (4L)

Certificate in Holistic Care

(For Registered Nurses only)

This certificate program for Registered Nurses with at least one year of general nursing experience who are also pursuing their Certificate in Critical Care is designed to develop an holistic appreciation of basic nursing and critical care experiences. The

program consists of 5 courses (15 ch) from the BN/RN Program, distanced to sites throughout the province.

Required Courses for the Certificate in Holistic Care for Registered Nurses also pursuing the Certificate in Critical Care: Fredericton Campus.

NURS 3212	Paradigms and Frameworks for Nursing	3 ch
NURS 3134	Caring Communications	3 ch
NURS 3234	Trends and Leadership in Nursing	3 ch
NURS 3222	Family Nursing	3 ch
NURS 3225	Family Nursing: Practicum	3 ch (3L)

Certificate in Mental Health Nursing

The Certificate Program in Mental Health Nursing is designed for Registered Nurses who have some experience in psychiatric nursing. The program builds upon the participants basic level of psychiatric/mental health education and work experiences. Individuals accepted into the program are challenged to take responsibility for achieving personal learning goals. Nursing faculty members serve as resource persons as required, and periodic student-faculty contacts are expected. The program consists of nine courses, all of which may receive university credits towards a Baccalaureate degree in Nursing for RNs at UNB (BN/RN degree). Students already accepted into the UNB BN/RN Program may opt to fulfil the requirements for the certificate within the BN/RN framework and without the stipulation of prior experience in the field of PMHN. [The first Mental Health course is available as an elective to undergraduate BN students with the permission of the instructor].

Required Courses

FREDERICTON CAMPUS		
NURS 3211	Family Systems Nursing	3 ch
NURS 3212	Paradigm and Frameworks for Nursing	3 ch
NURS 3215	Practicum: Family as Client	3 ch
NURS 3834	Reflective Ethical Practice	3 ch
OR		
SAINT JOHN CAMPUS		
NURS 2011	Concepts for Professional Practice	3 ch
NURS 4111	Nursing of Families	3 ch
NURS 4112	Clinical Practice: The Family	3 ch
NURS 2831	Reflective Ethical Practice	3 ch
BOTH CAMPUSES		
NURS 4801	Psych/Mental Health Nursing I	3 ch
NURS 4802	Psych/Mental Health Nursing II	3 ch
NURS 4803	Psych/Mental Health Nursing III	3 ch
NURS 4812	(RNs)Psych/Health Nursing Practicum	3 ch
OR		
NURS 4813	(BNs) Psych/Mental Nursing Practicum	4 ch
Counseling Elective		3 ch
Total Credit Hours		**27 ch**

BN or BN/RN Graduates

Nurses who have already completed their degrees and who wish to obtain their certificate in MH are required to take only NURS 4801, NURS 4802, NURS 4803, NURS 4813 and a Counselling Elective. BN graduates may want to take NURS 4801, NURS 4802, or NURS 4803 at the masters level (ie NURS 6801, 6802, and 6803).

For further information and to apply for the Certificate in Mental Health Nursing contact the BN/RN Program, UNBF.

BACHELOR OF PHILOSOPHY IN INTERDISCIPLINARY LEADERSHIP

Renaissance College

General Office:	811 Charlotte Street
Mailing Address:	Renaissance College, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 447-3092
Fax:	(506) 447-3224
Email:	rc@unb.ca
Website:	http://www.unb.ca/renaissance/

FACULTY

Dean: Pierre Zundel, BScF, MScF, PhD

- Clarke, Gerald M., BA (Kenyon), MAT (Fordham), DA (Carnegie-Mellon), Prof (Cross Appt- Education) - 1975
- Haggerty, Terry, BA, BPHE (Qu), Dip Educ, MA (UWO), PhD (SUNY-Buffalo), Prof (Cross Appt-Kinesiology) - 1991
- Pazienza, Jennifer, BA (Wm Patterson), MEd, PhD (Penn State), Prof (Cross Appt- Education) - 1989
- Sharp, Allan R., BSc (McM), MSc, PhD (Wat), Prof and Dean of Science (Cross Appt-Physics) - 1975
- Valk, John, BA (Calvin) MA (St. Michaels) PhD (Toronto) (Cross Appt-Campus Ministry)
- Zundel, Pierre, BScF, MScF (Tor), PhD (Laval), Prof and Univ Teach Prof and Dean (Cross Appt- Forestry) - 1991

General Information

The Renaissance College Undergraduate Leadership Program is a rigorous 132 credit hour program that has approximately sixty percent of the learning experiences available in Renaissance College seminars, forums, modules, and internships, with the remaining forty percent of the program available in other UNB courses. Graduates of the Bachelor of Philosophy (in Interdisciplinary Leadership Studies) will have learning experiences in leadership, depth in one discipline equivalent to at least a UNB minor, and an interdisciplinary approach to issues.

Program Features

- An understanding of leadership in different situations and cultures
- A breadth in interdisciplinary knowledge in the social sciences, natural sciences, humanities and fine arts
- A wide selection of elective courses providing students with the opportunity for depth in a disciplinary or professional area
- An opportunity with an additional period of study to graduate from a disciplinary or professional unit
- An emphasis on experiential forms of education to enhance learning
- Activities to enhance the student's physical, emotional,

spiritual, intellectual, and social aspects of personal well-being

- An intentional approach to meeting designated knowledge-based and experiential learning outcomes
- An international placement designed to foster multiple cross-cultural perspectives on issues
- Intensive summer modules for internships and international placements reduce the calendar length of the eight semester B. Phil. degree program from the typical four years of study to three years plus two summers
- Financial assistance for summer internships and international placements make the program accessible for all students
- Community-based resource people share their special expertise and will help to situate learning in a practical context

General Regulations

Any point not covered by the General Regulations of Renaissance College, will be governed by the General University Regulations stated in Section B of the Undergraduate Calendar. Questions concerning the application of university regulations should be directed to the Registrar in writing.

1. To earn a Bachelor of Philosophy degree (in Interdisciplinary Leadership Studies) a student must demonstrate in a summative portfolio, development and competence in each of the programs designated learning outcomes. During the three years prior to graduation, students will show development and competency in a formative personal portfolio. At the end of three years students submit a summative portfolio that documents development and competency in all of the RC learning outcomes. Within the context of Interdisciplinary Leadership Studies, the learning outcomes to be achieved are in the following main areas: Understanding of Self and Others, Citizenship, Problem Solving, Discerning and Decision-making, Multi-literacy, Personal Well-Being, and Social Interaction. No letter grade is assigned to the summative portfolio, rather the portfolio is assessed as acceptable, acceptable with minor revisions, acceptable with major revisions, or not acceptable at this time.
2. The Renaissance College degree program is designated as a limited enrolment program and meeting the minimum requirements does not guarantee admission. Normally, not more than twenty-five students will be admitted in any academic year.
3. Requests, in writing, for part time study after the first year of study will be considered by the Dean.
4. The maximum time period between the first registration in the Renaissance College program and the completion of the degree will normally be seven (7) years.
5. Few prerequisites are specified; it is expected that students will ordinarily take courses in the normal sequence and exceptions will require the permission of the Dean and instructor of the course.
6. In exceptional circumstances, and with the approval of the Dean, alternative arrangements may be made in lieu of the Internship or International Placement to meet degree requirements.
7. Where the educational objectives of a course will be best served by limiting enrolment in the course, the Dean may approve a limited enrolment for the course.
8. In course offerings of other Faculties/Departments, students must meet the prerequisite and other requirements of that Faculty/Department.
9. Each student's program of study must be approved by a College advisor.

Curriculum

Core Courses

RCLP 1010	Formative Learning Portfolio I	1 ch
RCLP 1011	Comparative Study of Cultures and World Religions	3 ch
RCLP 1021	Concepts of Enhancing Personal Well-Being	3 ch
RCLP 1031	Images and Insight	3 ch
RCLP 1111	Renaissance College Integrative Forum I	6 ch
RCLP 1042	Natural Science, Technology and Society	3 ch
RCLP 1052	Mathematical and Economic Approaches to Problem-Solving	3 ch
RCLP 1062	Citizenship and Community Issues	3 ch
RCLP 1112	Renaissance College Integrative Forum II	6 ch
RCLP 2013	Introduction to Leadership Theories and Concepts	3 ch
RCLP 2023	Canadian Internship	12 ch
RCLP 2014	Public Policy Special Topics Forum I	3 ch
RCLP 2020	Formative Learning Portfolio Module II	2 ch
RCLP 2024	Leadership in Theory and Practice I	3 ch
RCLP 3015	Public Policy Special Topics Forum II	3 ch
RCLP 3035	Leadership in Theory and Practice II	3 ch
RCLP 3036	Global Cross-Cultural Perspectives of Leadership	3 ch
RCLP 3046	International Internship	12 ch
RCLP 4017	Renaissance Leadership and Public Policy Seminar	3 ch
RCLP 4028	Community Problem-Solving and Research Project	6 ch
RCLP 4040	Summative Learning Portfolio Module III	3 ch

Total credit hours of core courses is 87 ch

Electives

Electives shall constitute a minimum 45 credit hours, with at least 24 ch assigned to a concentration equivalent to a UNB Minor Program.

BACHELOR OF RECREATION AND SPORTS STUDIES

Faculty of Kinesiology

General Office:	Lady Beaverbrook Gym
Mailing Address:	Faculty of Kinesiology University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4575
Fax:	(506) 453-3511
Email:	phed@unb.ca
Website:	http://www.unbf.ca/kinesiology/

NOTE: For Faculty listing please see the Bachelor of Science in Kinesiology program section.

General Information

The Faculty of Kinesiology offers two degree programs: Bachelor of Recreation and Sport Studies (BRSS) and Bachelor of Science in Kinesiology (BScKin). The four year BRSS program provides a solid foundation in theories and applications in the social-psychological aspects of recreation, sport and physical activity. Students may select the Recreation and Sport Studies program or may choose to focus in an area of interest by selecting one of the following minors: Recreation and Sport Management (with Business Minor), Outdoor Recreation, Tourism, or Recreation and Aging. The curriculum is designed to prepare students for a variety of vocational careers and/or further study at the graduate level.

Students interested in becoming elementary or secondary physical education teachers and coaches in school systems can select either the BRSS or the BScKin degree program and must apply to the Faculty of Education for the respective concurrent program. Students who are interested in the Arts and Humanities as a teachable minor, should select the BRSS degree program, while students who are interested in the Sciences as a teachable minor, should select the BScKin degree program. The application deadline for the concurrent programs is January 31 of each year. Students who, after completing the BRSS or BScKin degree program, decide they wish to teach, may apply to the consecutive BEd degree program. The BEd degree program taken after the BRSS or BScKin degree program normally requires 60 ch of study at UNB.

University Regulations

Any point not covered in the following regulations will be governed by the General University Regulations as stated in Section B of this Calendar. Questions concerning the application of regulations should be directed to the Registrar in writing.

Conditions Regarding Admission to the BRSS Program

All admissions are on a competitive basis; satisfaction of minimum requirements does not guarantee admission. Normally, no more than 100 students will be admitted to first year in the Faculty of Kinesiology in any academic year.

Transfer Students

1. A minimum session grade point average of 3.0 is required for a student to be considered for transfer into one of the Faculty's programs.
2. Normally a student will not be allowed to transfer into the Faculty mid-way through the academic year.
3. In addition to scholastic record, a transfer applicant's record of participation and interest in the "Kinesiology", "Recreation", and "Sport Science" field is also considered for admission.
4. Students presently registered in the Faculty will continue to be governed by the regulations in effect when they first registered. Students who were formerly in the Faculty and apply for re-admission, if accepted, will be governed by the regulations in effect at the time of their re-admission.

Time Limitation

The maximum time period permitted between the first registration in the BRSS degree program and the completion of the BRSS degree shall normally be eight (8) years. Normally, students who are re-admitted within this time frame must complete the degree requirements in effect at the last re-admission. Effective for incoming students, 1993.

BRSS as a Second Degree

In addition to the University's regulations for a second undergraduate bachelor's degree as specified in the UNB Undergraduate Calendar, the Faculty of Kinesiology requires that any student accepted into the BRSS degree program as a second undergraduate bachelor's degree be required to: (a) Complete at least thirty-six (36) credit hours of courses, and (b) Complete the requirements of the selected program within the BRSS degree.

General Regulations

Grade Point Averages

1. The method of calculating grade point averages is explained in Section B (Grading System and Classification) of this Calendar.
2. To earn a BRSS degree, a student must have successfully completed 130 ch of approved courses.
3. Students should refer to Section B of this Calendar for regulations regarding academic probation and withdrawal.

Policy on Grades

BRSS students must obtain a grade of "C" or better in required degree program courses. These courses include:

a. all first year required courses

b. all required core courses

Note: KIN 1001 is considered to be pre-requisites or co-requisites to all other KIN and RSS courses. Students receiving a final grade of "D" in KIN 1001 may repeat KIN 1001 as a co-requisite to other second year KIN and RSS courses.

Repeating Courses

1. Regulations pertaining to repeating courses can be found in Section B of this Calendar.
2. Any required courses not successfully completed during a given year must be attempted not later than the next academic year, except by special permission of the Director of Undergraduate Studies.

Intersession / Summer Session Courses

BRSS students who wish to take Intersession and/or Summer Session courses that are to be credited towards their degree should first consult with their Faculty Advisor and then must obtain permission in advance of course registration from the Faculty's Director of Undergraduate Studies or designate.

Practica and Directed Studies

1. Normally, students may elect a maximum of twelve (12) ch from practica/internship courses, i.e., RSS 3913 (3), RSS 3914 (3), KIN 3950 (6), RSS 4910 (6), KIN 4950 (6), and RSS 3100 (12).
2. Normally, students may elect a maximum of six (6) ch from directed study courses, i.e., RSS 4093 (3), RSS 4094 (3), and from Special Activity courses, i.e., KIN 2831 (1), KIN 2832 (1), KIN 3831 (2), KIN 3832 (2), and from Leadership courses, i.e., KIN 2861 (1), KIN 2862 (1), KIN 3861 (2), and KIN 3862 (2).

Approval of Elective Courses

Advice concerning elective courses will be provided by members of the Faculty. All elective courses require approval of the Faculty.

Normal Workload

A "normal" student workload is considered to be 19-20 ch per term, or 38-40 ch per year (not including Intersession and Summer School). Permission from the Director of Undergraduate Studies is required to exceed 20 ch per term or 40 ch in any given academic year.

BRSS Year Designation Based on Credit Hours

For the purposes of on-line registration and administrative operations BRSS students shall be considered as in:

1. Second year after the student has successfully completed 27 ch toward their BRSS.
2. Third year BRSS after the student has successfully completed 57 ch toward their BRsS.
3. Fourth year BRSS after the student has successfully completed 87 ch towards their BRSS.Curriculum

General Notes

1. It is the students responsibility to complete the degree program curriculum for the year in which they enrol.
2. All students take a common core (first year and years 2-4) listed in section A AND either the Recreation/Sport Studies program or one of the Minors listed in section B.
3. The minimum credit hour total to graduate is 130 ch.
4. Students must complete at least 48 ch of 3000, 4000 level courses in order to graduate.

A. CORE PROGRAM (total 73 ch)

First Year (32 ch)		
RSS 1001	Introduction to Kinesiology	3 ch
BIOL	1551 / 1552 / 1923 / 1711 / 1752 / 2792	6 ch
ENGL	1033 / 1144 / 1145	3 ch
Psychology /Sociology / Philosophy		6 ch
2 of	RSS 2042 / RSS 2081 / KIN 2093	6 ch
Non RSS/KIN	Electives	6 ch
KIN	Activities	2 ch
YEARS 2 - 4 (41 ch)		
1 of	RSS 2042 / RSS 2081 / KIN 2093	3 ch
1 of	RSS 2023 / RSS 2021	3 ch
KIN 2032	Intro. to Sport and Lesiure Psychology 3 ch	3 ch
KIN 3093	Intro. to Ethics of Sport and Recreation	3 ch
RSS 2011	Intro Sport & Rec Management	3 ch
RSS 2032	Recreation Program Planning	3 ch
RSS 3061	Recreation & Sport Delivery Systems	3 ch
RSS 3072	Planning Principles and Processes	3 ch
RSS 4092	Senior Seminar in Recreation and Leisure Studies	3 ch
RSS 4412	Leadership Principles and Practices	3 ch
KIN	Activity Labs	2 ch
RSS 3001	Introduction to Research Methods in Kinesiology	3 ch
STAT 2043	Statistics for Social Scientists I	3 ch
STAT 3043	Statistics for Social Scientists II	3 ch

B. PROGRAM / MINORS: (each program / minor is 57 ch)

BRSS students select either the Recreation/Sport Studies Program OR one of the following Minors: Recreation & Sport Management, Outdoor Recreation, Tourism, and Recreation and Aging.

RECREATION/SPORT STUDIES GENERAL PROGRAM			
Select courses from each of the following categories:			**12 ch**
History-Cultural Category	Choose 1		
	RSS 3002	Sport History in Canada	
	RSS 3042	History of Parks and Recreation in Canada	
	RSS 3011	Comparative Programs in Physical Education, Recreation and Sport	
Psycho-social Category	Choose 2		
	KIN 3031	Exercise Psychology	
	RSS 3062	Psychological Aspects of Leisure	
	KIN 3032	Sport Psychology	
	RSS 3022 :	Power & Ideology in Recreation and Sport Institutions	
	RSS 2021 :	Sociology of Leisure	
	RSS 3123 :	Careers of Elite Athletics: Sociological Analysis	
	RSS 3223 :	Sport & Religion: A Sociological Perspective	
	RSS 4242 :	Gender, Sport and Leisure	
Management Category	Choose 1		
	RSS 3051	Advanced Management	
	RSS 3052	Recreation, Sport and the Law	
	RSS 4011	Facility Planning and Design for Physical Education and Recreation	
	RSS 4053	Financial Management	
	RSS 4081	Marketing of Recreation and Sport Services	
RSS/KIN ELECTIVES (select 15 ch from unused courses above or courses below)			**15 ch**
	RSS 3011	Professional Internship (12 ch)	
	RSS 2052	Foundations of Tourism	

	RSS 2113	Use of Computers in Sport & Recreation Management
	RSS 2302	Outdoor Recreation
	KIN 3041	Adapted Physical Activity
	RSS 3141	Wellness in Aging: An Holistic Approach
	RSS 3213	Leisure Education and Facilitation Techniques
	RSS 3242	Physical Activity & the Older Adult
	RSS 3303	Parks and Protected Spaces: Planning and Management
	KIN 4041	Movement Disorders
	RSS 4201	Entrepreneurship & Small Business in Recreation & Sport
	RSS 4311	Outdoor Recreation: Interpreting the Environment
NON RSS/KIN ELECTIVE		**15 ch**
Either RSS/KIN ELECTIVES or NON RSS/KIN ELECTIVES		**15 ch**
TOTAL:		**130 ch**

RECREATION & SPORT MANAGEMENT (Business Minor)			
Required Courses			**27 ch**
	ADM 2313	Principles of Marketing (3 ch)	
	RSS 3051	Advanced Management (3 ch)	
	RSS 3100	Internship (12 ch)	
	RSS 4081	Marketing (3 ch)	
	RSS 4053	Financial Management of Recreation & Sport Org (3 ch)	
	RSS 3052	Recreation, Sport & Law (3 ch)	
Business Minor			**21 ch**
RSS/KIN or NON RSS/KIN ELECTIVES			**9 ch**
TOTAL			**130ch**

OUTDOOR RECREATION MINOR			
Required Courses			**18 ch**
	ADM 2313	Principles of Marketing (3 ch)	
	RSS 3051	Advanced Management (3 ch)	
	RSS 3100	Internship (12 ch)	
Minor Courses			**24 ch**
	RSS 2302	Outdoor Recreation (3 ch)	
	RSS 3303	Parks & Protected Spaces (3 ch)	
	RSS 4311	Facilities (3 ch)	
	RSS 4331	Interpretation (3 ch)	
	BIOL 2113	Ecology (3 ch)	
	FOR/BIOL/ECON/ENV Approved Electives (9 ch)		
RSS/KIN or NON RSS/KIN ELECTIVES			**9 ch**
TOTAL			**130 ch**

TOURISM MINOR			
Required Courses			**24 ch**
	ADM 2313	Principles of Marketing (3 ch)	
	RSS 3051	Advanced Management (3 ch)	
	RSS 3100	Internship (12 ch)	
	RSS 4081	Marketing (3 ch)	
	RSS 4053	Financial Management of Recreation & Sport Org (3 ch)	
Minor Courses			**24 ch**
	ECON 1023	Intro to Economics: Macro (3 ch)	
	RSS 2052	Foundations of Tourism (3 ch)	
	Tourism Courses at UNBSJ (18 ch)		
RSS/KIN or NON RSS/KIN ELECTIVES			**9 ch**
TOTAL			**130 ch**

RECREATION AND AGING MINOR			
Required Courses			**21 ch**
	ADM 2313	Principles of Marketing (3 ch)	
	RSS 3051	Advanced Management (3 ch)	
	RSS 3100	Internship (12 ch)	
	KIN 4093	Seminar on Health Care Ethics (3ch)	
Minor Courses			**24 ch**
	RSS 3141	Wellness & Aging (3 ch)	
	RSS 3242	Phys Act & Older Adult (3 ch)	
	GERO 2013	(3 ch)	
	GERO 2023	(3 ch)	
	GERO/SOCI/PSYCH Approved Electives (12 ch)		
RSS/KIN or NON RSS/KIN ELECTIVES			**12 ch**
TOTAL			**130 ch**

Honours Program : BRSS

Students with a minimum CGPA of 3.5 may apply to enter the Honours program in the BRSS degree after completing at least 57 ch of their degree program.

To graduate with a BRSS Honours students must meet the following requirements:

1. Maintain a minimum CGPA of 3.5 in all required courses in the BRSS, and
2. Maintain a minimum CGPA of 3.5 in all advanced (3000 & 4000) level courses, and
3. Complete RSS 4900 : Honours Research Project, and
4. Complete a minimum of 48 ch of courses at or above the 3000 level (KIN /RSS and/or non-KIN/RSS courses).
5. Complete KIN 3001 as a prerequisite, or as a co-requisite to RSS 4900 .

Concurrent Bachelor of Recreation and Sport Studies / Bachelor of Education Program (BRSS/BEd)

The BRSS and BEd Concurrent program is designed as a five year program to allow students to complete a degree program in Recreation/Sport Studies and Education that prepares them to teach physical education in a variety of learning environments. This program is based on the integration of the BRSS and BEd programs. Students should complete a teachable minor in addition to Recreation and Sport Studies with the appropriate selection of elective courses.

Admission Procedures

1. Students apply for entry to the BRSS degree program upon completion of their high school program.
2. Students may apply to the Faculty of Education Concurrent Program during their second term (deadline is January 31) and, upon successful completion of at least 30 ch, may be admitted to the concurrent BRSS/BEd degree program. Students should be able to complete both degrees within five years.
3. Students may enter the Concurrent program later in their academic program, however, late entry may require more than five years to complete both degrees.

CONCURRENT PROGRAM REQUIREMENTS

1. Students in the BRSS/BEd concurrent program will follow the BRSS (Sport/Recreation Studies Concentration), and in

addition will complete 60 ch of Education courses. Fifteen (15) ch of Education courses may be Non-RSS/Kin Elective courses.

2. A student cannot receive a BEd degree by itself in this program. If a student withdraws from the concurrent program back into the BRSS degree a maximum of 15 ch of education courses may be transferred for BRSS credit.

Required BRSS Core: (total 68 ch)

First Year (35 ch)		
KIN 1001	Introduction to Kinesiology	3 ch
BIOL	1711 and 2792	7 ch
ENGL		3 ch
Psychology/Sociology/Philosophy		6 ch
2 of	RSS 2042 / RSS 2081 / KIN 2093	6 ch
Non RSS/KIN	Electives*	9 ch
KIN	Activities	1 ch
Years 2 - 4 (33 ch)		
1 of	RSS 2042 / RSS 2081 / KIN 2093 (remaining course not taken in 1st yr)	3 ch
1 of	RSS 2023 or RSS 2021	3 ch
KIN 2032	Intro. to Sport and Leisure Psychology	3 ch
RSSS 2011	Intro Sport & Rec Management	3 ch
RSS 2032	Recreation Program Planning	3 ch
KIN 3001	Introduction to Reserach Methods in Kinesiology	3 ch
STATS 2043	Statistics for Social Scientists I	3 ch
STATS 3043	Statistics for Social Scientists II	3 ch
RSS/KIN	Restricted Electives (from Recreation/Sport Studies Concentration)	9 ch

Required BRSS/KIN & BEd Courses (total 119 ch)

Years 2 - 4		
KIN 2051	Prevention and Care of Athletic Injuries	4 ch
KIN 2062	Introductory Biomechanics	3 ch
KIN 2072	Introduction to Motor Control and Learning	3 ch
KIN 3081	Introductory Exercise Physiology	3 ch
KIN 3041	Adapted Physical Activity	3 ch
RSS / KIN	Activity Labs	7 ch
Non RSS / KIN	Electives*	36 ch
Education	Courses	60 ch

Note: *24 ch of the 45 ch of Non-RSS/KIN courses must be teachable courses

Minor in Recreation and Sports Studies

The Minor in Recreation and Sports Studies is designed for students from outside the Faculty of Kinesiology interested in a coherent package of Recreation and Sports Studies courses. Students interested in the minor, must apply through the Undergraduate Degree Program Office, Faculty of Kinesiology. Enrolment is limited.

The Minor will consist of 24 credit hours of approved Recreation and Sports Study courses. Students enrolled in the Minor will be required to take 12ch of introductory courses and 12ch of 3000 & 4000 level courses chosen in consultation, and in advance, with the Faculty of Kinesiology. A grade of C or better is required in each course used towards the Minor.

BACHELOR OF SCIENCE

FACULTY OF SCIENCE

General Office:	I.U.C. - Physics & Administration Building, Room 109
Mailing Address:	Faculty of Science, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4586
Fax:	(506) 453-3570
Email:	science@unb.ca
Website:	http://www.unb.ca/fredericton/science/
Dean:	Allan R. Sharp, BSc, MSc, PhD
Assistant Dean :	David Crowe, BA, PhD
Assistant Dean:	Bruce Benton, BSc, MSc.
Assistant Dean:	Paul Munro, BSc, BEd, MSc

General Information

The first year curriculum is common to all students entering the Faculty. Commencing in second year students must select one of the available options. Six of these options lead to specialization in a single subject area while eleven interdepartmental options involving specialization in two subject areas are offered. Majors and Honours programmes are available in these options. Pass degree programmes are also available in Physics and Geology. Co-operative programmes are also available which combine the academic studies with work terms in university, industry or government laboratories. The remaining degree option, General Science, offers a broader, more flexible programme. Honours is not available in General Science but students achieving a high academic performance are awarded Distinction upon graduation.

At the time of registration all students entering the Faculty of Science will be advised by members of the Faculty regarding selection of non-compulsory courses (electives). It should be noted further that as students register for the second, third and fourth years, the particular Departments concerned and the Dean will consider and approve the student's choice from the several options available and the courses to be taken under a chosen option in the year concerned.

Students are strongly recommended to read the General University Regulations, Section B of this Calendar, and in particular the subsection headed Grading and Classification. Any point not covered in the following regulations will be governed by the General University Regulations.

A student who holds a BSc degree from UNB may obtain, following further studies, a second specialization. See regulations below. BSc degree holders from another university may apply for admission to and follow a programme towards a second BSc degree. Further details can be found in the general regulations in Section B of this Calendar.

Students who have completed three full years of a BSc programme with the University of New Brunswick and enter a programme leading to a degree in a science-based health profession at a recognized school may be granted the BSc

degree. To be eligible for consideration under this policy; (1) a student must be enrolled in a professional programme that includes the equivalent of at least 7 term courses in science which are recognized by the Faculty of Science at UNB to be of upper level science material; (2) a student must have successfully completed at least 7 of these recognized course equivalents.

The Faculty has determined that these requirements can be satisfied by students who have successfully completed two years of Medicine, Dentistry or Veterinary Medicine, or three years of Pharmacy, or graduated from Optometry.

Students wishing to be considered for a BSc general degree who satisfy the above conditions must apply in writing, complete with official transcripts, to the Registrar. Students in professional programmes not specifically listed above who are interested in being considered for the BSc degree, should contact the Office of the Dean of Science. Such students are expected to provide detailed descriptions of courses in their programmes and any further information requested by the Faculty. Students who have not completed a full three years of a BSc programme before entering a Professional School will be considered on an individual basis.

UNB recognizes a number of field courses offered at the Huntsman Marine Science Centre, and other similar institutions, which may be used as part of the degree requirements for students at UNB subject to the approval of the relevant Department or Division.

Students should note that in the Science Faculty the minimum acceptable grade in any course which is required by a particular programme, or in any course which is being used to meet a prerequisite, is normally a "C". Any student who fails to attain a "C" or better in such a course must repeat the course (at the next regular session) until a grade of "C" or better is attained. Students will not be eligible for graduation until such deficiencies are removed, unless the course is a normal part of the final year of that programme, and is being taken for the first time in the final year.

This rule applies to courses such as CHEM 1001 / 1006 / 1012 / 1017, MATH 1003 / 1013, and PHYS 1040, 1045 and all other required courses. It also applies to a 1st term course, which normally precedes the 2nd term component i.e. MATH 1003 (MATH 1013), CHEM 2401 (CHEM 2422) etc., if these courses are required for a particular programme. The second course in the pair may not be attempted until the first is passed.

Valid WHMIS (Workplace Hazardous Materials Information System) certification is required for all students who wish to take Chemical laboratory courses. WHMIS certification workshops will be provided. Please contact the Chemistry Department at least two weeks prior to the start of each term for schedule.

Advanced Placement Tests

Advanced Placement Tests in selected first year Science courses will be available to students achieving a grade of 90% in the appropriate Level 1 high school course or 95% in the appropriate Level 2 high school course.

Advanced placement in Math will require high school Calculus 120 or equivalent with a minimum grade of 90%.

The grade obtained on a placement test will not be included in a student's GPA calculation. It will be equivalent to transfer credit. A fee would be charged for each placement test.

Regulations for Granting a Second UNB Bachelor of Science Degree

BSc graduates of UNB may apply for admission to and follow a programme towards a second BSc undergraduate bachelors degree under the following regulations:

- The general regulations of the University and the regulations of the degree programme concerned must be satisfied.
- Degree and departmental regulations concerning option, concentration, Major or Honours must be satisfied.

Normally, the minimum number of credit hours which must be successfully completed beyond the work required for the previous degree would not be less than the normal load of the final academic year in the degree programme concerned. More than the minimum number of credit hours, or courses, may be required.

The courses taken must be approved by the Dean and the Department, or Departments, under which the option, concentration, Major or Honours, falls.

The general regulation that at least half the credit hours for a degree must be taken at this University will apply.

Candidates for a second undergraduate degree may not choose a Major, or option, or Honours, or concentration using the same Departmental discipline as in the first undergraduate degree, whether the discipline was part of a single or an interdepartmental programme. (For example, a student with a BSc in Biology-Chemistry could not return and get a BSc in Chemistry. A student with a BSc in Geology could not return and get second BSc diploma in Environmental Geochemistry.)

Students with a UNB BSc degree are not eligible to get a second degree under the special provisions for granting a BSc after a professional school.

Students may be permitted to upgrade a Minor or a Major from the first degree under the following conditions:

- A Minor from the first degree may be upgraded to a Major or Honours after completion of the first degree.
- A Major from the first degree may be upgraded to an Honours after completion of the first degree.
- In either case, a notation only will be included on the student record and a second degree will not be awarded.

Students will not be permitted to include a Minor in the second degree.

Students must make specific application to the Associate Registrar/Admissions for entry to the second degree programme.

Only in special circumstances will students be admitted to a third undergraduate degree programme.

The final decision on the course work requirements for a second undergraduate bachelors degree shall be a matter of agreement between the Registrar and the Dean after consultation with the Chairs of Departments concerned.

Cooperative Education Programnes in Science

The Faculty of Science offers students an opportunity to engage in related work experiences throughout their undergraduate programme. Partnerships between UNB Science and companies, government agencies and other institutions have been established so that students will receive quality work experience while receiving paid employment. A faculty coordinator plus a departmental coordinator will normally provide the necessary liaison and support for the students in the Co-op programme. Student assessment will be a joint effort of the departmental and faculty coordinator in conjunction with the employer. Reports submitted by both the students and the employers will aid in the final assessment.

Programme Information:

Participation in the cooperative education programmes is contingent upon the approval of the students department/ programme, and the availability of work term positions. Students must meet the academic requirements of the respective department/program.

Co-op programmes are currently available in Biology, Chemistry, Geology, Mathematics, Physics and Statistics. Programme details can be found in the regulations for each discipline in this section of the Calendar. Students are advised to consult the Science Office about the availability of interdepartmental Co-op programmes.

Students should contact the departmental coordinator of the discipline they are interested for entry points, work term and study schedules. Study schedules will be designed to coordinate with work terms.

The Co-op programme requires the completion of a minimum of 16 months of work experience interspersed throughout the degree programme. Additional planned work experience may be possible in some departments. Work terms may be of four or eight month duration and will normally begin after a student has completed two full years of academic study. All Co-op programmes in the Science faculty will conclude with a study term prior to graduation.

Official university registration is required for each student in the Co-op programme. This enables students to remain registered at the University during their work term. Co-op students will be charged a fee for each 4-month work term.

Where students are completing an honours or senior research project as part of their academic programme, it may be possible to incorporate some related component of a work study experience with the academic project. If so, prior negotiations will be necessary between the student, employer and academic supervisor to determine the extent of this interaction.

Science Minors

Minor programmes are offered to broaden a student's educational background and complement a Major or Honours programme. Science Minors are offered in six disciplines: Biology, Chemistry, Geology, Physics, Mathematics and Statistics. The Minors follow the University guidelines outlined in B.9 and B.10 of the Calendar and consist of a sequential and coherent grouping of courses totalling at least 24 credit hours with a grade of C or better, approved by the department offering the Minor. Courses which are required courses in the student's degree programme may not normally be counted toward the Minor.

Curriculum

First Year

The minimum requirement for first year science (which must be completed before graduation) is 8 term lecture courses in first year science, 4 of which must be accompanied by labs, plus 6 ch of electives. In meeting first year requirements, full year courses such as PHYS 1040 and PHYS 1045 count as two term courses. MATH 1003 or 1053 must be included. (38 ch minimum) The particular first year science lecture and lab courses should be chosen to fit into the students future degree programme.

The courses making up the 8 term courses of lectures and 4 term courses of labs must have minimum grades of C in order to be counted toward the first year requirements. No more than two term courses of lectures in any one discipline may be counted toward first year requirements. Some programmes require labs in three sciences and in those cases the 4 ch from the third lab will reduce the number of additional electives needed to 2 ch of electives.

Besides MATH 1003 or 1053 , the 7 additional term lecture courses in first year science are normally* chosen from

- BIOL 1001 , 1012
- CHEM 1001 , 1012
- GEOL 1001 , 1012
- MATH 1013 or MATH 1063
- PHYS 1040 (two term courses) or 1050 (two term courses)

* Any exceptions allowed in a particular programme will be noted in the programme requirements. Courses such as CHEM 1882 , PHYS 1913 , BIOL 1551 and unassigned first level transfer credits in science disciplines could be used in some circumstances.

BIOLOGY OPTION

DEPARTMENT OF BIOLOGY

General Office:	Bailey Hall, Room 29
Mailing Address:	Department of Biology, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4583
Fax:	(506) 453-3583
Email:	biology@unb.ca
Website:	http://www.unb.ca/fredericton/science/biology/

FACULTY

- Baird, Donald J., BSc, PhD (Glas), Visiting Res. Prog. -2003
- Barbeau, Myriam, BSc (McG.), PhD (Dal), Assoc Prof - 1999
- Barclay, Katherine, BSc (UNB), MSc (Wat.), PhD (Guelph), Sr Instructor (Joint Kinesiology and Nursing) - 2001
- Baird, Donald J., BSc, PhD (Univ. Glasgow, UK) (Visiting Res. Prof.) - 2003
- Benfey, Tillmann, BSc (McG.), MSc (Nfld), PhD (UBC), Prof - 1989
- Campell, Douglas A., BSc (Acad.), PhD (UWO), Adjunct Prof - 2001
- Cashion, Peter J., BSc (Boston Coll), PhD (Tufts), Prof - 1972

- Chardine, John, BSc (Guelph), MSc (Brock), PhD (Durham), Adjunct Prof - 1998
- Clark, Denise V., BSc (UBC), PhD (S. Fraser), Prof - 1994
- Cone, David, BSc (Guelph) MSc (Guelph) PhD (UNB), Adjunct Prof - 2003
- Coombs, David H., BA (Dartmouth), PhD (UCLA), Prof - 1980
- Crowe, David G., BA, PhD (UNB), Sr Teaching Assoc, Dir, Animal Care & Asst. Dean - 1973
- Culp, Joseph, BSc (Oklahoma Univ.), MSc, PhD (Calg.), (Cross Appt. - Visiting Res. Prof.) - 2002
- Cunjak, Richard, BSc (Guelph), MSc (Nfld), PhD (Wat), - Prof and Canada Research Chair in River Ecosystem Science (Joint Forestry) - 1997
- Curry, Allen, BES (Wat), MSc (Trent), PhD (Guelph), Assoc Prof, Recreational Fisheries (Joint Forestry) - 1997
- Cwynar, Les C., BSc, MSc, PhD (Tor), Prof - 1988
- Diamond, Antony W., BA (Cantab), MSc, PhD (Aberd.), Prof and Chair, Atlantic Coop Wildlife Ecology Res Network (Joint Forestry)- 1994
- Didyk, Andy, BA PhD (UNB), Asst Prof, Moncton/Bathurst Campuses (Joint Nursing) - 1999
- Durnford, Dion, BSc (Dal), PhD (UBC), Assoc Prof - 1997
- Fleming, Lesley C., BA (Mt.All.), PhD (UNB), Sr Teaching Assoc - 1980
- Forbes, Graham, BA (York), MA, PhD (Wat), Assoc Prof (Joint Forestry) - 1997
- Gordon, Karen J., BSc (UNB), Sr Teaching Assoc - 1980
- Heard, Stephen, BSc (Wat), PhD (Pennyslvania), Assoc Prof & Chair- 2002
- Keppie, Daniel M., BS (Wis), MS (Ore), PhD (Alta), Prof (Joint Forestry) - 1974
- Lawrence, Janice, BSC, PhD (Dal), Asst Prof - 2003
- Marcogliese, David, BSc Honours (C'dia), MSc (Dal), PhD (Wake Forest Univ.), Adjunct Prof - 2003
- Mayes, Charlene, BSc, MS (S.Fraser), BCIDP (Vancouver Community College), Sr Teaching Assoc - 1997
- Nedelcu, Aurora, BSc (Romania), PhD (Dal), Asst Prof - 2002
- Patten, Cheryl, BSc, PhD (Wat), Asst Prof 2004
- Peake, Stephan, BSc General, BSc Honors (Guelph), MSc (Wat), PhD (S.Fraser), Asst Prof - 2002
- Pelletier, Yvan, BSc, MSc (Laval), PhD (Penn State), Adjunct Prof - 2000
- Riding, Richard T., BS (Maine), MS (Wis), PhD (U of Cal, Davis), Prof - 1972
- Saunders, Gary W., BSc, MSc (Acad.), PhD (S. Fraser), Prof & Canada Research Chair in Molecular Systematics & Biodiversity - 1995
- Sharp, Lisa, BSc (UBC), MSc (Vic. BC), Instructor - 2001
- Sivasubramanian, Pakkirisamy, BSc, MSc (Annamalai), MS, PhD (Ill), Prof - 1975
- Symonds, J., BSc (Hons) (Newcastle), PhD (ANU), Adjunct Prof - 2004
- Whoriskey, Fred, BSc (Ariz), PhD (Laval), Adjunct Prof - 1998

GENERAL INFORMATION

The Biology Department offers the following programs: Honours (by Thesis or by Course), Major and Minor.

Either of the **Honours programs** provides students with the preparation required for graduate work in Biology, while pre-professional students will usually find that they can adapt the Honours by Course Program to meet the prerequisites for admission to professional schools.*

The **Major program** is designed to provide concentration in Biology while maximizing a student's access to the offerings of other Departments and Faculties. It will therefore be of use to students with interdisciplinary educational and career objectives. With care, pre-professional students should be able to use this to satisfy prerequisites to many professional schools.*

These programs have common lower level (Year I and Year II) requirements totalling 74 ch.

The **Minor program** is structured to meet the individual needs of the student and will complement his/her major program.

Admission to these programs is by application to the Chair of Biology. Minimum cumulative grade point average (CGPA) requirements and prerequisites may be required for admission.

An advisor, assigned to each successful applicant, must approve course selections according to the guidelines given below.

Students are reminded that courses offered by other Departments form an important complementary part of the overall program of studies. A minimum of 12 ch of electives selected from the course offerings of the Faculty of Arts are required in the Honours and Major programs.

Note:* In addition to their Biology advisor, Pre-professional students must consult the Assistant Dean of Science for information about prerequisites and advice on program planning.

Lower Level (Year I and Year II) Requirements

Year I (38 ch minimum)

1. BIOL 1001, 1006, 1012, 1017; CHEM 1001, 1006, 1012, 1017; MATH 1003 or 1053 and one of MATH 1013, 1063 or STAT 2264 .
2. 2 more term courses of first year science lectures (Physics or Geology).
3. 6 ch electives

Year II

1. CHEM 2401 (3 ch) and STAT 2264 (3 ch)* (see Note 4)
2. (10 ch) Cellular Core Module: BIOL 2025 Research Foundations in Cellular Biology (4 ch) plus two of:

BIOL 2033	Biochemistry	(3 ch)
BIOL 2043	Cell Biology	(3 ch)
BIOL 2053	Genetics	(3 ch)

3. (10 ch) Organismal Core Module: Required to take any two of the following:

BIOL 2073	Bacteriology	(5 ch-3C/3L)
BIOL 2083	Botany	(5 ch-3C/3L)
BIOL 2093	Zoology	(5 ch-3C/3L)

4. (10 ch) Ecology/Evolution Core Module: BIOL 2105 (Research Foundations in Ecology/Population Biology) (4 ch) plus :

BIOL 2113	An Introduction to Ecology	(3 ch)
BIOL 2143	Evolution	(3 ch)

NOTES:(*)

1. Students in all Biology programmes will not be allowed to take any third or fourth year Biology courses, until they have passed (C minimum) all first year requirements for Biology programmes.
2. Students should plan ahead and anticipate upper level course prerequisites when choosing courses to satisfy the lower level requirements.
3. While the Department of Biology will attempt to maximize

and optimize course offerings, circumstances are such that the Department cannot guarantee to offer all courses in any particular year. Students should therefore try to take important or essential courses at the first practical opportunity.

4. If STAT 2264 is counted as a first year requirement, an extra 3 ch of Biology must be taken..

Upper Level (Year III and IV) Requirements

The Department of Biology offers four main programs: Major, Honours by Course or by Thesis, and a Minor Program. Their specific requirements are outlined below. Applications for admission to these programs can be made to the Chair of Biology as early as preregistration at the end of Year I, or at any appropriate time thereafter.

The Honours and Major Programs differ in their admission requirements, upper level biology course content, electives and total credit hours expected.

1. **Major Program:**

   To receive a Major in Biology, each student must complete a total of 132 ch, including the Year I and II requirements (74) plus completion of 28 additional ch of Biology courses beyond the Level I and II requirements. Acceptable courses include Year II core courses in excess of the minimum requirement, and upper level courses as outlined in this Calendar*. Students must complete a total of 30 ch of electives, of which a minimum of 12 ch must be Arts electives.

   Notes: Students must take one of the following lecture plus lab combinations: BIOL 3521 ; 3801 plus 3908 ; (3031 or 4082) plus 4056 ; or (3261 or 3491) plus 3206 .

2. **Honours Program:**

   To receive Honours in Biology, each student must complete a total of 150 ch, including the requirements for the Major Program, plus an additional 18 ch of acceptable Biology courses, as described for the Major Program.

   The two Honours Programs differ as follows.

   Honours by Course: Students must have (and maintain) a minimum cgpa of 3.3 to be accepted into (and remain in) this program.

   Honours by Thesis: Students must have (and maintain) a minimum cgpa of 3.5 to be accepted into (and remain in) this program. The initial application to this Program is normally made to the Chair of Biology before preregistration at the end of Year III. Students must make arrangements to complete their dissertation research with a Faculty member in the Department of Biology, and to obtain a letter of support from their intended supervisor to file with the Chair at the time of application. BIOL 4090 (Honours Thesis Project) is required and the course description should be consulted for further information and specific procedures.

3. **Minor Program:**

   The Minor in Biology is designed for students in other Departments of the Faculty of Science, and outside the Science Faculty, who are interested in a coherent package of Biology courses. The Minor follows the University guidelines in B.9 and B.10 of the calendar and consists of a sequential grouping of courses totalling at least 24 credit hours with a grade of C or better, approved by the Department.

***Notes:**

1. Some upper level courses (3000 and 4000 level) have limited enrolment. Students should register in the Winter term for these courses, since assignments will be made in May following pre-registration. Priority for admission is as follows: Year IV Honours, Year IV Majors, Year III Honours, Year III Majors. Within each category, students will be selected based on cgpa (and at the discretion of the instructor). If space permits, students in a Minor program may also enroll in these courses
2. Some Biology courses are designed for non-Science students. Students enrolled in Biology programs may take these courses but they can only be considered as electives for the purposes of the Biology Programs. Such courses include: BIOL 2501 , 2512 , 2752 , 2792 , and 3251 . For courses offered see Description of Courses, Biology.

Co-operative Work Experience in Biology

1. Admission to the Program is selective and will be approved by the Departmental Co-operative Program committee. Students must have (and maintain) a cgpa of 3.0 to be admitted and retained in the Program. Refer to the description in the Biology Option for degree requirements of a major or honours program.
2. Students must successfully complete Year II in Science to be accepted into either the Co-op Biology Major or Honours Programs.
3. Students must be fully registered at the University of New Brunswick (Fredericton) during each work-term so that they can be considered as full-time students while working.
4. A fee will be charged for each registered 4-month work-term to cover placement and administrative costs.
5. Students must undertake a minimum of 4 work-terms during the course of their program. The work-terms may alternate with study-terms, or the terms may run consecutively over two terms. Students must complete at least one study-term after their last work-term.
6. Each 4-month work term will be monitored directly by the employer and Departmental Co-operative Program Director through oral and written communications with the employer and student. The student is required to complete a report after each 4-month work-term. Work-term evaluations by the employer and work-term reports must be satisfactory to remain in the program and for the Co-op designation to appear on University transcripts. Details of each successful work-term will appear on the students transcript.
7. Co-operative Education in Biology will follow the degree designation on the students final transcript.

Concentrations

In addition to the general biology concentration, a variety of special concentrations are available to those electing to honour or major in Biology. These concentrations are designed to give students more concentrated education in specific areas. The concentrations are suggested course sequences. Each of the concentrations has a basic portion, which should be taken, and an elective portion, from which students may select courses best suited to their future goals.

Aquaculture and Fisheries Biology Concentration	
Basic program:	BIOL 3383 or 3173 , 3703 , 3801 , 3873 , 3908 , 4741 , 4861 , 4992 .
Primary electives:	BIOL 2133 , 3031 , 3673 , 4223 , 4570 .
General Zoology Concentration	
Basic program:	BIOL 3602 , 3703 , 3801 , 3908 .
Highly recommended:	BIOL 3173 and/or BIOL 3383 .
Primary electives:	BIOL 3181 , 3673 , 3873 , 4162 , 4723 , 4732 , 4741 .
Molecular and Microbiology Concentration	
Second Year:	CHEM 2422 , MATH 2003 , 2213 , or 2503 / 2513 .
Third and Fourth Years:	BIOL 3031 , 3132 , 3206 , 3261 , 3491 , 4056 , 4151 , 4272 , CHEM 3503 , 3523 .
Parasitology Concentration	
Basic program:	BIOL 3602 , 3673 , 3688 , 3703 , 3801 .
Primary electives:	BIOL 3873 , 4992 .
Physiology Concentration	
Basic program:	BIOL 3521 , 3801 , 3873 , 3908 , 4863 .
Primary electives:	BIOL 3031 , 3132 , 3206 , 3261 , 4162 .
Plant Biology Concentration	
Second Year:	BIOL 2043 , 2053 , 2083
Advanced Courses:	BIOL 3301 , 3321 , 3332 , 3342 , 3521 , 3541 , 4223 , 4363 , BIOL 2422 (This last course counts only as an elective).
Wildlife, Ecology and Conservation Concentration	
Second Year:	BIOL 2053 , 2083 , 2093
Advanced Courses:	BIOL 3541 , 3703 , 3873 , 4191 , 4233 (OR FOR 5095), 4352 , 4723 , 4732 , 4741 , 4863 , 4899
Field courses:	BIOL 3173 , 3383 , 4443 , BIOL 6183

CHEMISTRY OPTION

DEPARTMENT OF CHEMISTRY

General Office:	F.J. Toole Hall, Room 15
Mailing Address:	Department of Chemistry, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4781
Fax:	(506) 453-4981
Email:	chem@unb.ca
Website:	http://www.unb.ca/fredericton/science/chem/

FACULTY

- Adam, Allan G., BSc, MSc (UWO), PhD (Wat), Prof (Cross Appt - Physics)- 1991
- Balcom, Bruce, BSc (Mt.All.), PhD (UWO), Prof (Cross Appt - Physics) - 1993
- Banks, Jeffrey, BSc (UPEI), PhD (Ottawa), Assoc. Prof. - 2003
- Bottomley, Frank, BSc, MSc (Hull), PhD (Tor), DSc (Hull), FCIC, Hon Res Prof - 1999
- Calhoun, Larry, BSc, MSc, PhD (UNB), Sr Research Assoc - 1994
- Cooper, Rodney H., BMath, MMath (Wat), Prof (Cross Appt Computer Science)- 1975
- Decken, Andreas, Dip (Duisburg), PhD (McM), Sr. Research Assoc - 1995
- Deslongchamps, Ghislain, BSc (Sher), PhD (UNB), Prof (Cross Appt- C.S.) - 1992
- Findlay, John A., BSc, PhD (UNB), FCIC, Hon Res Prof - 1995
- Grein, Friedrich, BSc, MSc (Goett), PhD (Fran), FCIC, Hon Res Prof - 1995
- Kang, Guojun, BS (Nankai), PhD (McG.), Research Assoc - 1993
- Kassimi, El Bakal, BS (Morocco), MS, PhD (Paris), Sr. Inst - 2000
- MaGee, David I., BSc, PhD (UNB), Prof and Chair - 1990
- Mattar, Saba M., BSc (Alexandria), MSc (Amer U Of Cairo), PhD (McG.), Prof - 1986
- McGrady, Sean, BA, DPhil (Oxon), Assoc Prof - 2003
- Munro, Paul, BSc, BEd, MSc (UNB), Sr Teaching Assoc and Asst Dean - 1990
- Neville, John, BSc (UNB), PhD (UBC), Assoc Prof - 1999
- Ni, Yonghao, BEng (Northwest Inst of Light Industry), MEng, PhD (McG.), Prof and Chair in Pulping Tech. (Joint Chemical Eng) - 1993
- Passmore, Jack, BSc, Dipl Ed (Brist), PhD (UBC), DSc (Brist), FCIC, Prof - 1969
- Penner, Peter, BSc, MSc (Manit), PhD (Qu), Sr Teaching Assoc - 1995
- Strunz, George, Adjunct Prof - 2001
- Thakkar, Ajit, BSc, PhD (Qu), FCIC, University Research Prof - 1984
- Tong, James P.K., BSc (McG.), PhD (Car), Sr Teaching Assoc - 1979
- Villemure, Gilles, BSc, PhD (Ott), Prof - 1990

GENERAL INFORMATION

There are five chemistry degree programs: Major, Medicinal Chemistry Major, Honours, Medicinal Chemistry Honours and Honours Co-op. Three of these programs, Major, Honours and Honours Co-op, have national accreditation under the Canadian Society for Chemistry. The Honours and Honours Co-op programs are recommended for students pursuing graduate studies and careers in chemistry. The Medicinal Chemistry Honours program is recommended for students pursuing

graduate studies leading to careers in the pharmaceutical industry. A Minor program is offered for students in other departments of the Faculty of Science and outside the Science Faculty who are interested in a coherent package of chemistry courses.

Valid WHMIS (Workplace Hazardous Materials Information System) certification is required for all students who wish to take CHEM laboratory courses. WHMIS certification workshops will be provided. Please contact the Chemistry Department at least two weeks prior to the start of each term for schedule.

First Year

- CHEM 1001, CHEM 1006, CHEM 1012, CHEM 1017, MATH 1003, MATH 1013 (or MATH 1053 , MATH 1063), PHYS 1040, PHYS 1045, BIOL 1001, BIOL 1012, plus 6 ch electives.

The minimum credit hour requirements beyond first year are:

- **Major:** 72 chemistry, 3 biology, 6 mathematics, 18 approved electives.
- **Honours:** 76 chemistry, 3 biology, 6 mathematics, 18 approved electives.
- **Honours Co-op:** 76 chemistry, 3 biology, 6 mathematics, 18 approved electives, two work terms.
- **Medicinal Chemistry Major:** 68 chemistry, 3 biology, 6 mathematics, 18 approved electives.
- **Medicinal Chemistry Honours:** 74 chemistry, 3 biology, 6 mathematics, 18 approved electives.

Note: A minimum of twelve (12) ch of the twenty-one (21) ch of approved electives must be from the Faculty of Arts. Six (6) ch of the Faculty of Arts courses must be chosen from ENGL 1103, ENGL 1144, ENGL 1145, HIST 2905, HIST 2915, HIST 2925, HIST 3915, HIST 3935, HIST 4905, PHIL 1005, PHIL 2113, or PSYC 3023 .

Major Program

Second Year

CHEM 2201 , CHEM 2222 , CHEM 2237 , CHEM 2401 , CHEM 2422 , CHEM 2416 , CHEM 2601 , CHEM 2622 , CHEM 2637 , MATH 2003 , MATH 2213 or equivalent (approved by the Chemistry department), plus approved electives.

Third Year

CHEM 3001 , CHEM 2111 , CHEM 3132 , CHEM 3202 , CHEM 3236 , CHEM 3401 , CHEM 3602 , BIOL 2033 , plus approved electives.

Fourth Year

CHEM 3221 , CHEM 3416 , CHEM 3421 , CHEM 3616 , CHEM 3621 , two of CHEM 4112 , CHEM 4222 , CHEM 4422 , CHEM 4622 and either CHEM 4007 and CHEM 4017 or CHEM 4000 (subject to Departmental approval), plus approved electives.

Honours Program

Entry into the Honours program is allowed after second year provided that a minimum CGPA of 3.2 has been attained for all subjects taken in the degree program. A CGPA of 3.2 must be maintained in subsequent years. The graduating honours student must achieve a minimum CGPA of 3.7 for First Class Honours standing and a minimum of 3.2 for Second Class Honours standing. A student completing all the course requirements for Honours but with a CGPA below 3.2 will be given a Major degree. Students must notify the Director of Undergraduate Studies at the end of second year of their intent to follow an Honours Program for appropriate academic advising.

Second Year

CHEM 2201 , CHEM 2222 , CHEM 2237 , CHEM 2401 , CHEM 2422 , CHEM 2416 , CHEM 2601 , CHEM 2622 , CHEM 2637 , MATH 2003 , MATH 2213 or equivalent (approved by the Chemistry department), plus approved electives.

Third Year

CHEM 3001 , CHEM 2111 , CHEM 3132 , CHEM 3202 , CHEM 3236 , CHEM 3401 , CHEM 3602 , BIOL 2033 ,plus approved electives.

Fourth Year

CHEM 3221 , CHEM 3416 , CHEM 3421 , CHEM 3616 , CHEM 3621 , CHEM 4000 , CHEM 4112 , CHEM 4222 , CHEM 4422 , CHEM 4622 , plus approved electives.

Honours Co-op Program

The Honours Co-op Program in Chemistry at UNBF is available for qualified Honours students. The five year program consists of eight study terms and two work terms of eight month duration each. The paid work terms are in the chemical industry, government or research laboratories and will begin in third year.

The Honours Co-op program in Chemistry follows the same regulations as in the Honours Chemistry program with respect to entry into the program, continuation in the program and standing at graduation.

Second Year

CHEM 2201 , CHEM 2222 , CHEM 2237 , CHEM 2401 , CHEM 2416 , CHEM 2422 , CHEM 2601 , CHEM 2622 , CHEM 2637 , MATH 2003 , MATH 2213 , plus approved electives.

Third Year

CHEM 2111 , CHEM 3001 , CHEM 3236 , CHEM 3401 , BIOL 2033 , CHEM 3903 , plus approved electives.

Fourth Year

CHEM 3202 , CHEM 3221 , CHEM 3416 , CHEM 3421 , CHEM 3602 , CHEM 3616 , CHEM 3621 , CHEM 4000 , two of CHEM 4112 , CHEM 4222 , CHEM 4422 , CHEM 4622 , plus approved electives.

Fifth Year

CHEM 3132 , CHEM 4903 , remaining two of CHEM 4112 , CHEM 4222 , CHEM 4422 , CHEM 4622 , plus approved electives.

Note: It is strongly recommended that Honours Chemistry students choose CHE 1004 , CHE 2004 , CHE 2503 and CS 1003 among their electives.

Medicinal Chemistry Major Program

Second Year

CHEM 2201 , CHEM 2222 , CHEM 2237 , CHEM 2401 , CHEM 2422 , CHEM 2416 , CHEM 2601 , CHEM 2622 , CHEM 2637 , MATH 2003 , MATH 2213 or equivalent (approved by the Chemistry department), plus approved electives.

Third Year

CHEM 3001 , CHEM 3003 , CHEM 3401 , CHEM 3503 , CHEM 3513 , CHEM 2857 , CHEM 3602 , BIOL 2033 , plus approved electives.

Fourth Year

CHEM 2111 , CHEM 3621 , CHEM 3523 , CHEM 4003 , CHEM 4422 , one of CHEM 4013 , CHEM 4112 , CHEM 4622 plus approved electives.

Medicinal Chemistry Honours Program

Second Year

CHEM 2201 , CHEM 2222 , CHEM 2237 , CHEM 2401 , CHEM 2422 , CHEM 2416 , CHEM 2601 , CHEM 2622 , CHEM 2637 , MATH 2003 , MATH 2213 or equivalent (approved by the Chemistry department), plus approved electives.

Third Year

CHEM 3001 , CHEM 3003 , CHEM 3401 , CHEM 3503 , CHEM 3513 , CHEM 2857 , CHEM 3602 , BIOL 2033 , plus approved electives.

Fourth Year

CHEM 2111 , CHEM 3421 , CHEM 3621 , CHEM 3523 , CHEM 4000 , CHEM 4003 , CHEM 4422 , one of CHEM 4013 , CHEM 4112 , CHEM 4622 plus approved electives.

ENVIRONMENTAL BIOLOGY OPTION

TThe Environmental Biology Option is offered as an Honours Program through the Department of Biology. The program requires the student to take a minimum of 150 credit hours, including 74 ch of Years I and II requirements, 44 ch of Years III and IV requirements (see below), and 32 ch of electives (which include a minimum of 12 ch of courses in the Faculty of Arts). Students must sustain a minimum CGPA of 3.3. Students maintaining a minimum CGPA of 3.5 are eligible to apply for BIOL 4090 (Honours by thesis).

NOTE: Students must consult their Environmental Biology advisor for information about prerequisites, electives, and program planning.

Year I (34 ch)

1. MATH 1003 or MATH 1053 (3ch) STAT 2264 (3ch)
2. BIOL 1001 , BIOL 1006 , BIOL 1012 and BIOL 1017 (10ch)
3. CHEM 1001 , CHEM 1006 , CHEM 1012 and CHEM 1017 (10 ch)
4. GEOL 1001 , GEOL 1012 and GEOL 1017 (8ch)

Year II (40 ch)

1. CHEM 2111 (5 ch)
2. Cell/Molecular module (10 ch) 2 of BIOL 2033 , BIOL 2043 , and BIOL 2053 plus BIOL 2025
3. Ecology/Evolution module (10 ch) BIOL 2113 , BIOL 2105 , BIOL 2143
4. Organismal module (15 ch) BIOL 2073 , BIOL 2083 , BIOL 2093.

Years III and IV (44 ch minimum required plus electives)

1. BIOL 4861 (4ch)
2. 2 of ENVS 2003 , ENVS 2023 , ENVS 4001 , ENVS 4002 (6 ch)
3. 1 of BIOL 3801 (3 ch), BIOL 3521 (5 ch), BIOL 3261 (3 ch)
4. 1 of BIOL 3173 , BIOL 3383 , BIOL 4443 , or equivalent (4 ch)
5. Minimum 12ch from Group A courses (see below)
6. Minimum 15ch from Group B courses
7. Electives to bring total credit hours in program to 150 ch minimum.

NOTE: Credit for a course will only be counted once toward degree requirements.

Group A Courses (Plants and Microbes)		
BIOL 3206	Advanced Microbiology Laboratory	(4 ch)
BIOL 3261	Microbial Physiology	(3 ch)
BIOL 3301	Taxonomy of the Flowering Plants	(5 ch)
BIOL 3321	Plant Anatomy	(5 ch)
BIOL 3521	Concepts in Plant Physiology	(5 ch)
BIOL 3541	lant Ecology	(5 ch)
BIOL 4223	Diversity, Evolution and Ecology of Marine Plants	(5 ch)
BIOL 4352	Climate change and environmental response	(3 ch)
Group B Courses (Animals and Ecology)		
BIOL 3541	Plant Ecology	(5 ch)
BIOL 3602	Invertebrate Zoology	(5 ch)
BIOL 3703	Vertebrate Zoology	(5 ch)
BIOL 3801	Animal Physiology	(3 ch)
BIOL 3873	Ethology	(3 ch)
BIOL 3883	Entomology	(4 ch)
BIOL 3908	Laboratory Studies in Vertebrate Physiology	(3 ch)
BIOL 4191	Wildlife Management	(4 ch)
BIOL 4233	Conservation Biology	(3 ch)
BIOL 4352	Climate change and environmental response	(3 ch)
BIOL 4723	Ornithology	(5 ch)
BIOL 4732	Mammalogy	(4 ch)
BIOL 4741	Fish Biology	(4 ch)
BIOL 4899	Population Analyses	(3 ch)
BIOL 4992	Aquaculture in Canada	(4 ch)
FOR 4602	Ecology of Forest Insects	(3 ch)
FOR 4656	Wildlife: Scale and Forest Landscapes	(3 ch)
BIOL 4773	Aquatic Ecology	(3 ch)
BIOL 5473	Experimental design and data analysis in Biology and Forestry	(3 ch)

ENVIRONMENTAL GEOCHEMISTRY OPTION

This option provides geology students who have an interest in environmental science with a background to pursue careers or graduate studies in environmentally related geoscience fields, especially in areas related to water resources, contamination and remediation.

REQUIRED COURSES

First Year

GEOL 1001 , 1012 at least one of (GEOL 1006 , 1017 , 1026, 1036) MATH 1003 , 1013 . A minimum of 4 term courses of lectures chosen from BIOL 1001 , 1012 , CHEM 1001 , 1012 , PHYS 1040 (2 terms). A minimum of 3 term courses of labs chosen from BIOL 1006 , 1017 , CHEM 1006 , 1017 , an additional Geology lab, PHYS 1045 (2 terms), an additional 6 ch (38 ch minimum).

Students are required to successfully complete BIOL 1001 / 1006 , 1012 / 1017 , CHEM 1001 / 1006, 1012 / 1017 , and PHYS PHYS1040 / PHYS1045 prior to graduation. These courses need not be completed in the first year of study. It is strongly recommended that this requirement be completed by the end of the second year of study.

Second Year

GEOL 2131 , 2142 , 2212 , 2321 , 2602 , 2703 , MATH 2003/2013 , CHEM 2601 / 2622 , CS 1003 .

Third Year

CHEM 2111 , 2401 , 3132 , GEOL 3442 , 3631 , 3713 , STAT 1213 , advanced Biology (one of BIOL 2073 , 2113 , 3251 , 4352), plus a minimum of 2 electives.

Fourth Year

GE 5753 , GEOL 4452 , plus sufficient electives to meet program requirements. Honours students are required to take GEOL 4900 (Thesis Project) in addition to the above courses.

ELECTIVES

In addition to the required courses, the program requires four (4) term course equivalents from the Chemistry/Geology elective list, comprising CHEM 2201 , CHEM 2222 , CHEM 2422 , CHEM 4111 , CHEM 4132 , GEOL 3621 , GEOL 4122 , GEOL 4611 , GEOL 4612 , plus five (5) term course equivalents of free electives, of which 3 are to be chosen from disciplines outside of Science and Engineering.

GEOLOGY OPTION

DEPARTMENT OF GEOLOGY

General Office:	Forestry & Geology Building, Room 112
Mailing Address:	Department of Geology, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4804
Fax:	(506) 453-5055
Email:	geology@unb.ca
Website:	http://www.unb.ca/fredericton/science/geology/

FACULTY

- Al, Tom, BSc, MSc (Nfld.), PhD (Wat), Assoc Prof - 1996
- Broster, Bruce, BSc (Wat), PhD (UWO), Prof - 1987
- Butler, Karl, BSc (Qu), MSc, PhD (UBC), Assoc Prof - 1999
- Donovan, Stephen, BSc (Manchester), PhD, DSc (Liv.), Adjunct Prof - 2000
- Grieve, Richard, BSc (Aberd.), MSc, PhD (Tor), MA (Brown), Dsc (Aberd.), Adjunct Prof - 1995
- Lentz, David Richard, BSc, MSc (UNB), PhD (Ott), Assoc Prof - 2000
- McCutcheon, Steven, Adjunct Prof - 2001
- Park, Adrian, Instructor - 2002
- Pickerill, Ronald K., BSc, PhD (Liv), Prof - 1975
- Shaw, Cliff, BSc (Goldsmith), MSc, PhD (Western), Asst Prof - 2002
- Spray, John G., BSc (Cardiff), PhD (Camb), Prof - 1986
- Susak, Nicholas John, BS (Penn State), MA, PhD (Prin), Assoc Prof - 1982
- White, Joseph C., BSc, PhD (UWO), Prof and Chair - 1981
- Williams, Paul F., BSc (Durh), MSc (NSW), PhD (Syd), Prof - 1980

General Information

Geology is the natural science that deals with Earth, the interior make-up, and surficial features, its formative and destructive processes, its age, history and development through time. Earth is the natural habitat of all life including mankind. Urban and land-use planning and efforts to clean up our environment require a sound knowledge of geology and geological processes. Geologists are concerned with a diverse range of issues such as the origin, migration and quality of groundwater, river and coastal erosion, desert-dune migration, the origin and evolution of oceans and continents, of mountain ranges, valleys and canyons. Studies concerning the causes and effects of natural hazards, such as those created by land and rock slides, earthquakes, floods and droughts, and volcanic eruptions all fall within the realm of Geology.

Geologists research the origin of Earth's natural resources, and are extensively involved in the discovery, development, and conservation of the metallic minerals we use, the clay, sand, gravel, cement, and fertilizer we need to improve our living conditions, the water we drink and the coal, oil and natural gas we use to serve our energy requirements.

Geology includes studies on the origin, history and evolution of life through time. Most importantly, Geology is concerned with the special set of circumstances that makes life on Earth possible and Planet Earth so unique in our Solar System if not in the Universe.

Geochemists deal with the chemical make-up of magmas and rocks in the earth's crusts, and are concerned with using geochemical techniques in the discovery of new ore reserves and in addressing environmental concerns. Geophysicists measure and study the gravity, magnetic and electrical fields of the earth and record and analyse seismic waves generated by earthquakes and man made sources. This information is used to investigate the nature and form of the Earth's interior, from the near surface to the inner core, in mineral and petroleum exploration, engineering site investigations, and in the solution of environmental geology problems.

Biogeologists are concerned with the taxonomy, biogeography and behavioral evolution of fossils, paleoecological aspects of ancient life forms, history and evolution of life and establishing a relative time frame for past geological events. Mineral economics is mainly concerned with applying economic principles to the unimpeded and ordered supply of metals and energy resources for an expanding society on a global basis.

Geologists, geochemists, geophysicists, biogeologists and mineral economists find employment in the mineral industry, including exploration for oil, metals, and industrial minerals, in government surveys, in University teaching and research, and as independent consultants to the mining industry and engineering and environmental organizations.

W.E. Hale Fund

In addition to the required field schools, the Department supports non-credit field trips through the W.E. Hale Fund. This fund partly defrays the cost of student-initiated field trips. These field trips are generally scheduled during spring break or at the end of term. In the past the Hale Fund has sponsored trips to southern British Columbia and the Mt. St. Helens region of Washington, to the Grand Canyon and the Basin and Range Province of the southwest USA, to Cape Breton Island and Newfoundland, and Iceland. This fund was established by the friends and colleagues of the late Dr. W.E. Hale, a Professor and former Chair of the Department of Geology.

Geology Programs

Three programs are offered to students starting their second year in Science and wishing to specialize in Geology: Honours, Major, and Pass. Honours students follow the Major Program and are only identified as Honours students in their final year. Students must consult with the Director of Undergraduate Studies of the Geology Department prior to selecting programs and courses.

1. **Honours Program:** This program is designed for properly qualified students entering the final year of their undergraduate studies who wish to explore in some detail a geological subject area of particular personal interest and to gain practical experience in research and in presentation of the results in a written form. The minimum course requirements are the same as the Geology Majors Program with the following exceptions. Geology electives must include one course each of geophysics, Quaternary geology and resource geology. Math courses as listed in the Majors Program must be completed. GEOL 4900 must be taken in Addition to the Major course requirements. Entrance to the Geology Honours Program requires a cumulative grade point average of at least 3.0 overall, by the end of the year prior to the student's final year. A written request for admission to this program must be submitted to the Departmental Chair. For graduation with an Honours degree, a minimum cumulative grade point average overall of 3.0 and a grade of B- or higher in GEOL 4900 are required. Students failing to meet these requirements will be awarded a Major degree. The Honours degree is the standard for professional registration in New Brunswick. Inclusion of a professional practice course, available through the Faculty of Engineering, as a non-geology elective may simplify the registration process.
2. **Major Program:** This is the program selected by students specializing in Geology. Minimum course requirements are given below.
3. **Pass Program:** This program is designed for those students who are looking for a minimal specialization in Geology and the opportunity of taking more elective courses outside the Geology Department. Minimum course requirements are given below.

Students are reminded that courses offered by other Departments can form an important complementary part of the overall course of studies.

Major and Honours Programs

First Year

GEOL 1001 , 1012 at least one of (GEOL 1006 , 1017 , 1026, 1036) MATH 1003 , 1013 . A minimum of 4 term courses of lectures chosen from BIOL 1001 , 1012 , CHEM 1001 , 1012 , PHYS 1040 (2 terms). A minimum of 3 term courses of labs chosen from BIOL 1006 , 1017 , CHEM 1006 , 1017 , an additional Geology lab, PHYS 1045 (2 terms), an additional 6 ch (38 ch minimum).

Students are required to successfully complete BIOL 1001/ 1006 , 1012 / 1017 , CHEM 1001 / 1006 , 1012 / 1017 , and PHYS 1040 / 1045 prior to graduation. These courses need not be completed in the first year of study. It is strongly recommended that this requirement be completed by the end of the second year of study.

Second Year

GEOL 2131 , 2142 , 2201 , 2212 , 2321 , 2602 , 2703 , MATH 2003 / 2013 or 2503 / 2513 , CS 1003 or 1043 .

Third and Fourth Year

GEOL 3131 , 3322 , 3703 , 4312 (plus GEOL 4900 for the Honours Program), a minimum of 35 ch of approved Geology electives, plus a minimum of 12 ch of approved courses outside of the Department of Geology, plus a minimum of 15 ch of approved electives that may include Geology courses.

In consideration of specific related program requirements, substitution by another approved MATH or STAT course for MATH 2013 or MATH 2503 is possible with permission of the Department.

Pass Program

First Year

GEOL 1001 , 1012 , at least one of (GEOL 1006 , 1017 , 1026 , 1036), MATH 1003 , 1013 . A minimum of 4 term courses of lectures chosen from BIOL 1001 , 1012 , CHEM

1001 , 1012 , PHYS 1040 (2 terms). A minimum of 3 term courses of labs chosen from BIOL 1006 , 1017 , CHEM 1006 , 1017 , an additional Geology lab, PHYS 1045 (2 terms), an additional 6 ch (38 ch minimum).

Students are required to successfully complete BIOL 1001 / 1006 , 1012 / 1017 , CHEM 1001 / 1006 , 1012 / 1017 , and PHYS 1040 / 1045 prior to graduation. These courses need not be completed in the first year of study. It is strongly recommended that this requirement be completed by the end of the second year of study.

Second, Third and Fourth Year

GEOL 2131 , 2142 , 2122 , 2321 , 2602 , 2703 , 3131 , 4312, CS 1003 , plus at least 25 ch of approved Geology courses, plus at least 45 ch of other approved electives (which may include Geology courses).

Note: All of the 2000 level Geology courses listed above need not be taken in the second year of the program but students should be aware that most of these courses are prerequisite to many 3000 and 4000 level courses. See Description of Courses, Geology for prerequisite requirements for specific courses.

Co-op Program

MAJOR AND HONOURS ONLY

The Department of Geology operates a Co-operative Education (Co-op) Program that is available to academically qualified Geology students who have completed two years of study. The program allows students to put classroom knowledge to practical and profitable use in the Canadian workplace. At UNB the Co-op Program in Geology consists of eight study terms of four months each and two work terms of eight months each. This program is normally completed in five years compared to the regular four year program and allows students to obtain a Majors or Honours designation in Geology. Students normally apply for this program during their third term of study and enter the program at the end of their second year.

1. Students must normally have achieved a minimum of a 2.7 gpa in the study term preceding their application for employment.
2. Students must register for each work term in order that they be considered as full-time students while working.
3. A work term fee will be charged for each 8 month work term registered.
4. The overall assessment of the work period is the responsibility of the Department of Geology. The work period assessment shall consist of two components: 1) student performance as evaluated by a coordinator, given input from the employer, and 2) a work report graded by a coordinator or a member of faculty.
5. Students will normally have at least one study term after their last work term.
6. Students must be registered as full-time students in order to be eligible to apply for Co-op jobs.

First Year

GEOL 1001 , 1012 at least one of (GEOL 1006 , 1017, 1026, 1036) MATH 1003 , 1013 . A minimum of 4 term courses of lectures chosen from BIOL 1001 , 1012 , CHEM 1001 , 1012 , PHYS 1040 (2 terms). A minimum of 3 term courses of labs chosen from BIOL 1006 , 1017 , CHEM 1006 , 1017 , an additional Geology lab, PHYS 1045 (2 terms), an additional 6 ch (38 ch minimum).

Students are required to successfully complete BIOL 1001 / 1006 , 1012 / 1017 , CHEM 1001 / 1006 , 1012 / 1017 , and PHYS 1040 / 1045 prior to graduation. These courses need not be completed in the first year of study.

Second Year

GEOL 2131 , 2142 , 2201 , 2212 , 2321 , 2602 , 2703 , MATH 2003 / 2013 or 2503 / 2513 , CS 1003 or 1043 .

Third, Fourth and Fifth Year

GEOL 3131 , 3322 , 3703 , 4312 (plus GEOL 4900 for the Honours Program), a minimum of 35 ch of approved Geology electives, plus a minimum of 12 ch of approved courses outside of the Department of Geology, plus a minimum of 15 ch of approved electives that may include Geology courses.

Courses must be selected such that Work Term #1 (GEOL 3803) starts in the winter term of the third year and terminates at the end of summer term of the third year. Work Term #2 (GEOL 4803) will start in the summer term of the fourth year and terminate at the end of the fall term in the fifth year.

GEOL 3703 must be taken in the Fall Term of the Third year.

MATHEMATICS AND STATISTICS OPTIONS

DEPARTMENT OF MATHEMATICS AND STATISTICS

General Office:	Tilley Hall, Room 418
Mailing Address:	Department of Mathematics and Statistics, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4768
Fax:	(506) 453-4705
Email:	dept@math.unb.ca
Website:	http://www.unb.ca/fredericton/science/math/

FACULTY

- Barclay, David W., BSc (Car), MMath (Wat), PhD (UWO), Prof - 1975
- Dasgupta, Arundhati, BSc (Calcutta), MSc (Anna), PhD (Madras), Asst Prof - 2004
- Gegenberg, Jack D., BA (Colorado), MSc (UBC), PhD (S.Fraser), Prof - 1985
- Grant McLoughlin, John, BMath (Wat.), MSc Teaching (Tor), PhD (SUNY Buffalo), Assoc. Prof. (Cross Appt - Education)- 2002
- Husain, Viqar, BSc (Manchester), PhD (Yale), Prof - 1999
- Ingalls, Colin, BSc (Dal), PhD (MIT), Assoc Prof - 2000
- Jones, Caroline, BA, MSc, BEd (UNB), Inst - 2001
- Kucerovsky, Dan, BSc (UWO), DPhil (Oxon), Assoc Prof - 1999
- Lemire, Daniel, Adjunct Prof - 2004

- Ma, Renjun, BS, MSc (Wuhan), PhD (UBC), Assoc Prof (Joint CRISP) - 2000
- Mason, Gordon R., BSc (Bishops), MSc, PhD (McG), Hon Res Prof - 1969
- McKellar, Robert J., BMath, MMath (Wat), PhD (Ariz), Assoc Prof - 1984
- Monson, Barry R., BSc (Sask), MSc, PhD (Tor), Prof - 1979
- Mureika, Roman A., AB, MA, PhD (CUA), Prof - 1976
- Ni Chuiv, Nora, BA, MA (NUI), MS, PhD (Wash), Prof - 1973
- Picka, Jeffrey, BASc, BSc, MSc (Tor), PhD (Chicago), Assoc Prof - 2003
- Small, R. Donald, BASc (Tor), MS, PhD (Cal Tech), Prof - 1973
- Stockie, John, Adjunct Prof - 2003
- Tasic, Vladimir, BSc (Novi Sad, Yugoslavia), PhD (Manit), Prof - 1995
- Thomas, Hugh, BSc (Tor), MS, PhD (Chicago), Asst Prof - 2004
- Thompson, Jon H., BSc (UNB), MA, PhD (Tor), Prof and Chair - 1970
- Tingley, Daryl, BSc, MA (Dal), MSc, PhD (Mich State), Prof - 1985
- Tingley, Maureen A., BA (Adelaide), MA (Dal), MAT, MSc (Mich Stat), PhD (Dal), Prof - 1986
- Toms, Andrew, BScH (Qu), MSc, PhD (Tor), Asst Prof - 2004
- Tupper, Brian O.J., BSc, PhD, DSc (Lond), FIMA, Hon Res Prof - 1998
- Turner, T. Rolf, BA (Vic.(BC)), MSc (Qu), PhD (Mich), MStat (UNSW), Prof - 1988
- Watmough, James, BASc, MSc, PhD (UBC), Assoc Prof - 2000

GENERAL INFORMATION

The Department of Mathematics and Statistics offers Honours and Majors BSc and BA degrees in Mathematics and in Statistics. Requirements for the BA degrees are available from the Department. Minors are also offered.

MATHEMATICS OPTION

Introductory Level Courses

Introductory Mathematics courses are organized into the following sequences:

1. MATH 1003 and 1013 , Introduction to Calculus I and II (or MATH 1053 and 1063): these courses are required for a degree in Mathematics or Statistics and are prerequisites for intermediate and upper-level courses in Mathematics and Statistics. Students who intend to pursue a degree in Mathematics or Statistics should take these courses in their first year. Grade 12 Mathematics is the normal prerequisite.
2. MATH 1823 and 1833 , Mathematics for Management Sciences I and II: this sequence provides a mathematical background for quantitative work in Business Administration and in the social sciences. These courses do not provide the preparation for most intermediate and upper-level courses in Mathematics and Statistics.

A grade of C or better is normally necessary in all required and prerequisite courses.

Minors Program

The Minor in Mathematics consists of 24 ch in Mathematics courses. Credit must be obtained for MATH 1003 and MATH 1013 , or MATH 1053 and MATH 1063 . The remaining 18 ch of the minor must consist of Mathematics courses at the second year level or above that are electives in the student's degree program. Credit must also be obtained for MATH 1503 or MATH 2213 , either as part of this 18 ch or as part of the student's degree program. A maximum of 6 ch of Statistics may count towards the 18 ch.

Preparation for Actuarial Studies

The Department offers several courses which aid in the preparation for examinations of the Society of Actuaries. Interested students should consult the Department.

Mathematics Degree Program

The Mathematics major degree is designed to prepare students for careers in industry, government or education. Mathematics students are urged to obtain some expertise in an area of application such as the physical sciences, computer science, engineering or business.

General Requirements

STAT 3083 , 3093 and two approved Computer Science term courses are required courses for all Mathematics degrees. CS 2525 and 1043 will not be approved.

First Year

First year required courses are listed under the BSc general regulations. MATH 1013 or 1063 must be included. Suggested electives are STAT 1213 , CS 1073 , 1083 .

Second Year

MATH 2003 , 2013 , 2203 , 2213 , and approved electives equivalent to 6 term courses.

Third and Fourth Years

Students normally choose an Honours or a Majors degree in the Third Year. Students must apply to the Department Chair for admission to the Honours program. The Honours degree is the normal prerequisite for graduate study in the mathematical sciences. However, unless the undergraduate program is chosen carefully, a student may have to take certain undergraduate courses before entering or as part of their graduate program. Students with a Majors degree generally will be required to complete a qualifying year before being admitted to graduate study.

All Mathematics Majors and Honours students must have their course selections approved by the Department.

Honours Program

1. MATH 3033 , 3213 , 3243 , 3103 , 3113 , and at least six 3000-4000 level Mathematics term courses including at least two 4000 level term courses, totalling at least 33 ch. STAT 3303 and STAT 3313 may count as Mathematics courses for this requirement.
2. A total of at least 27 ch is required in approved 3-4000 level courses selected from Science (excluding Mathematics but including Statistics), Arts, Business Administration, Computer Science, or Engineering. STAT 3083 , 3093 must be included.
3. A total of 130 ch is required to complete the degree.

For the award of a first-class Honours degree, in addition to the Science Faculty general regulations, a grade point average of 3.5 is required in 3-4000 level Mathematics courses; this average is calculated on the minimum number of specified Mathematics courses as stated in 1.1 above. Credit hours obtained above the minimum will not be used in calculation of the average.

For a second-class Honours degree an average of 3.0 is required.

Majors Program

1. MATH 3003 , 3213 , 3033 , 3243 , and at least five 3000-4000 level Mathematics term courses, totalling at least 27 ch. STAT 3303 and STAT 3313 may count as Mathematics courses for this requirement.
2. A total of 27 ch is required in approved 3-4000 level courses selected from Science (excluding Mathematics but including Statistics), Arts, Business Administration, Computer Science, or Engineering. Of these 27 ch, STAT 3083 , 3093 must be included, a maximum of 6 ch from a list of approved Education courses may be included, and at least 9 ch must be taken from one coherent field of study, excluding Statistics.
3. A total of 130 ch is required to complete the degree.

Co-op Program

The Co-op Program in Mathematics is available for qualified Honours and Majors students. The five year program consists of eight four month study terms and a minimum of 16 months work experience normally grouped into two work terms of eight months duration each. Students may apply to enter the program after the completion of first year, but must complete at least four study terms before beginning a work term. A minimum CGPA of 3.0 (3.5 for Honours) must be attained for entry into the program and must be maintained in the following years. Regulations for the Co-op program in Science also apply.

A variety of permutations of work and study terms are possible. However, care must be taken in choosing courses to ensure the degree can be completed in five years.

STATISTICS OPTION

Introductory and Service Courses

In addition to degree programs in Statistics, the Department of Mathematics and Statistics offers a number of courses, both introductory and upper level, aimed at non-specialists whose discipline requires them to obtain some knowledge of statistics. The introductory courses are: STAT 2253 , STAT 2263 , and STAT 2264 (prerequisite Grade 11 Mathematics), and STAT 2593 (prerequisite MATH 1013).

Note that a grade of C or better must normally be obtained in all required or prerequisite courses.

Minors Program

The Minor in Statistics consists of 24 ch in Statistics and Mathematics courses. Credit must be obtained for MATH 1003 and MATH 1013 , or MATH 1053 and MATH 1063 . The remaining 18 ch of the minor must consist of courses at the second year level or above that are electives in the student's degree program. At least 15 ch of the minor must be Statistics courses, 12 ch of which must be at the 3000 level or above (MATH 3843 may be counted as a Statistics course).

Statistics Degree Program

General Information

All programs must be approved by the Department of Mathematics and Statistics.

The study of statistics involves the application of mathematics and computing to the analysis and interpretation of data. Hence there are substantial requirements of mathematics and computing courses in the Statistics degree programs. The requirements are specified explicitly below.

The degree programs in Statistics are designed to prepare students for careers in industry or government as well as to provide a background for graduate study. Statistics students are urged to obtain some expertise in an area of applications such as the physical sciences, forestry, or computer science.

Students who have an interest in, or who envisage employment which involves the design and implementation of statistical algorithms, are strongly encouraged to take MATH 3003 , and CS 3113 .

The Honours degree is the normal prerequisite for graduate study in Statistics. Students with a Majors degree generally will be required to complete a qualifying year before being admitted to graduate study.

It should be noted that STAT 3083 and 3093 form the core of the Statistics degree programs. These courses are prerequisites for most of the upper year Statistics courses. It is strongly recommended that students take these courses in second year to facilitate flexibility of their programs in Third and Fourth Years.

Majors Program

The basic structure of the majors program is as follows:

First year requirements

As specified by the Science Faculty regulations.

MATH 1013 or 1063 must be included.

General Requirements

i. At least 8 ch of approved Computer Science courses. CS 2525 and CS 1043 will not be approved.

ii. A total of 130 ch, of which at least 48 must be at the 3000 level or above. These credit hours include those specified below; the balance is to be made up of approved electives.

Science Elective Requirements

At least 16 ch of approved Science courses, at the 2000 level or above, taken outside the Department of Mathematics and Statistics. At least eight of these credit hours must be at the 3000 level or above.

Second Year Course Requirements

MATH 2003 , 2013 , and 2213 .

Students are strongly encouraged to take a second year Science course (outside Mathematics & Statistics) in their second year in order to make sure they have the prerequisites for Third Year Science electives.

Third and Fourth Year Course Requirements

i. STAT 3083 and 3093 . (Note: These courses may be taken in second year.)

ii. At least 21 more credit hours of approved 3-4000 level Statistics courses, giving a total of 27 ch of Statistics courses at the 3000 level or above. Up to 12 ch chosen from MATH 3003 , 3043 , 3103 , 3113 , 3413 , 3473 , 3803 , 3813 and 3843 may count as STAT courses for this requirement.

Honours Program

Students normally choose between an Honours or Majors degree in Third Year. They must apply to the Department Chair for admission to the Honours program.

For the award of a first-class Honours degree a grade point average of 3.5 is required in 3-4000 level statistics courses. This average is calculated on the basis of the courses, meeting the minimum requirements specified in (i), (ii), and (iii) below, in which the student has the highest marks. For a second-class Honours degree an average of 3.0 is required. i

The basic structure of the Honours program is as follows:

First Year Course Requirements:

General requirements:

i. As for the Majors program.

ii. A total of 130 ch, of which at least 60 must be at the 3000 level or above. These credit hours include those specified below; the balance is to be made up of approved electives.

Science Elective requirements:

As for the Majors program.

Second Year Course Requirements:

As for the Majors program, plus MATH 2203 .

Third and Fourth Year Course Requirements:

A total of 39 ch of approved STAT and MATH courses at level 3-4000, with more ch in STAT than in MATH. These ch must include the following:

i. STAT 3083 and 3093 . (Note: These courses may be taken in second year.)

ii. At least 12 ch of Stat at 4000 level.

iii. MATH 3003 , 3103 and at least one of MATH 3033 , 3043 , 3113 , 3243 .

Co-op Program

The Co-op Program in Statistics is available for qualified Honours and Majors students. The five year program consists of eight four month study terms and a minimum of 16 months work experience normally grouped into two work terms of eight months duration each. Students may apply to enter the program after the completion of first year, but must complete at least four study terms before beginning a work term. A minimum CGPA of 3.0 (3.5 for Honours) must be attained for entry into the program and must be maintained in the following years. Regulations for the Co-op program in Science also apply.

A variety of permutations of work and study terms are possible. However, care must be taken in choosing courses to ensure the degree can be completed in five years. Students must take STAT 3083 and STAT 3093 in their second year.

PHYSICS OPTION

DEPARTMENT OF PHYSICS

General Office:	I.U.C. - Physics & Administration Building, Rooms 206/209
Mailing Address:	Department of Physics, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4723
Fax:	(506) 453-4581
Email:	physics@unb.ca
Website:	http://www.unb.ca/fredericton/science/physics/

FACULTY

- Adam, Allan G., BSc, MSc (UWO), PhD (Wat), Prof (Cross Appt - Chemistry)
- Balcom, Bruce, BSc (Mt.All.), PhD (UWO), Prof (Cross Appt - Chemistry) & Canada Research Chair -1993
- Benton, J. Bruce, BSc, MSc (UNB), Sr Teaching Assoc 1983
- Ghosh, S.N., BSc (Calc), MSc (Calc & Nfld), PhD (UNB), Sr Teaching Assoc and Asst Dean ..- 1978
- Hamza, Abdelhaq, BSc (Algiers), MSc, PhD (MIT), Prof - 1995
- MacMillan, Bryce, BSc (UNB), MSC (Wat), PhD (UNB), Research Assoc - 2003
- Mastikhin, Igor, MSc, PhD (Novosibirsk State), Asst. Prof. - 2002
- Newling, Benedict, BA, PhD (Camb.), Asst Prof - 2002
- Ross, Stephen, BSc (Tor), MSc, PhD (Car), Prof - 1988
- Sharp, Allan R., BSc (McM), MSc, PhD (Wat), Prof (Cross Appt-Renaissance College) and Dean - 1975
- Tokaryk, Dennis, BSc (Sask), MSc (Guelph), PhD (Guelph) - Asst Prof - 2002
- VanderLinde, Jacob, BSc, PhD (UBC), Prof & Chair - 1973
- Ward, William, BSc (UWO), PhD (York) - Assoc Prof - 2001
- Yan, Zong-Chao, BSc (Shanghai Teachers U.), MSc (Tongji), MSc (Nfld), PhD (Windsor), Assoc Prof - 1999
- Zhao, Saibei, BSc, MSc, PhD (UNB) Sr Teaching Assoc - 2000

GENERAL INFORMATION

Programs are offered at four different levels:

1. **Honours:** These programs are designed primarily for qualified students intending to pursue a post graduate education In general, the Honours programs require more specialization and a greater overall course load than the Major programs. A Co-op program is available.
2. **Major:** The Major programs allow a wider choice of courses outside the Physics Department and a somewhat reduced course load.
3. **Pass:** A Pass degree is intended for students who require a basic foundation in Physics to undertake further study in another area (such as X-ray technology, medical imaging technology, etc.) It has fewer requirements than a Major in Physics.
4. **Minor:** A Minor in Physics follows the general regulations for a Science Minor.

A student may do a Major, Honours or Honours Co-op program in Physics, Applied Physics, or Physics (Biology).

Students entering second year from Engineering must complete the requirements of First Year of their physics program before graduation. CHEM 1801 may replace CHEM 1001 . CHEM 1882 may replace CHEM 1012 , 1017 . PHYS 1913 , 1918 , CE 1013 , EE 1713 may replace PHYS 1040 , 1045 . Courses must have a minimum grade of C to be used to satisfy first year requirements.

The Applied Physics program is not an Engineering program and does not satisfy the requirements for a P.Eng. qualification.

Honours Program

A student intending to take Honours should have a agpa of at least 3.5 on the work of the first two years.

All students in Honours Programs are required to complete an Honours Project (PHYS 4102). Students must have arranged with the Department for an appropriate project by October 15 of their final year and must submit a report to the Department by March 15.

To remain in and graduate in Honours, the student must meet certain minimum standards in the course work beyond second year.

1. In each **term** of study beyond second year, the student must have a GPA of at least 3.0 calculated from the grades of the courses taken that term.
2. The student must have a minimum GPA of 3.0 in the **required** upper level physics courses and a minimum grade of B- in PHYS 4102 .
3. The minimum CGPA for First Class Honours is 3.5 and for Second Class Honours is 3.0.

When students apply to graduate in Honours, records will be checked for compliance with 1, 2 and 3 above and students offering all the courses necessary for the Honours program but failing to meet the qualifications outlined in 1, 2 and 3 above will receive Major degrees provided they have a minimum cgpa of 2.0.

HONOURS PHYSICS

First Year:

PHYS 1040 , 1045 or 1050 , 1055 , MATH 1003 , 1013 or 1053 , 1063 , CHEM 1001 , 1006 , 1012 , 1017 plus two more term lecture courses chosen from BIOL 1001 , 1012 , GEOL 1001 , 1012 , plus 6 ch of electives.

Note: Students are reminded that to go into the second year of any PHYSICS program, they must have completed MATH 1013 or 1063 , (minimum grade C) since second year math must be taken with the second year physics courses.

Second Year:

PHYS 2011 , 2021 , 2026 , 2032 , 2041 , 2052 , 2057 , 2072, 2077 , MATH 2003 , 2013 , 2213 , CS 1003 .

Third Year:

PHYS 3011 , 3023 , 3031 , 3043 , 3051 plus additional approved physics electives totaling at least 9 ch, plus MATH 3243 , plus CS 3113 , plus approved electives totaling at least 6 ch.

Fourth Year:

PHYS 4021 , 4051 , 4071 , 4102 , plus approved physics electives totalling at least 9 ch, plus STAT 3083 , plus additional approved electives totaling at least 6 ch.

Physics Major

First Year:

PHYS 1040 , 1045 or 1050 , 1055 , MATH 1003 , 1013 or 1053 , 1063 , CHEM 1001 , 1006 , 1012 , 1017 plus two more term lecture courses chosen from BIOL 1001 , 1012 , GEOL 1001 , 1012 , plus 6 ch of electives.

Note: Students are reminded that to go into the second year of any PHYSICS program, they must have completed MATH 1013 or 1063 , (minimum grade C) since second year math must be taken with the second year physics courses.

Second Year:

PHYS 2011 , 2021 , 2026 , 2032 , 2052 , 2057 , MATH 2003, 2013 , 2213 , CS 1003 , plus approved physics electives totaling at least 3 ch plus approved electives totaling at least 3 ch.

Third and Fourth Years:

PHYS 2041 , 2072 / 2077 , 3011 , 3023 , 3031 , 3043 , 3051, MATH 3243 , CS 3113 plus approved physics electives totaling at least 18 ch plus approved electives totaling at least 18 ch. Recommended electives include PHYS 2503 , 2543 , 2872 / 2877 , 3122 , 3152 , 3162 , 3183 , 3193 , 4122, 4142 , 4172 , 4193 or any of the courses listed below under make-up year.

Make-Up Year:

Physics Major students who decide to prepare themselves for graduate studies in Physics at UNB would be required to take a further year of study composed of the following: PHYS 4021 , 4051 , 4071 , 4102 , + STAT 3083 + 3 ch Math/ Stats electives + 9 ch of approved electives.

Applied Physics Program (Honours or Major)

First Year:

PHYS 1040 , 1045 or 1050 , 1055 , MATH 1003 , 1013 or 1053 , 1063 , CHEM 1001 , 1006 , 1012 , 1017 plus two more term lecture courses chosen from BIOL 1001 , 1012 , GEOL 1001 , 1012 , plus 6 ch of electives.

Note: Students are reminded that to go into the second year of any PHYSICS program, they must have completed MATH 1013 or 1063 , (minimum grade C) since second year math must be taken with the second year physics courses.

Second Year:

PHYS 2011 , 2021 , 2026 , 2032 , 2041 , 2052 , 2057 , 2072, 2077 , MATH 2003 , 2013 , 2213 , CS 1003 *.

Third and Fourth Years:

PHYS 3011 , 3023 , 3031 , 3043 , 3051 , 3122 , 4021 , 4051, 4071 , 4122 , 4102 , MATH 3243 , an approved course in Statistics plus approved electives which should include engineering and/or computer science courses totaling at least 24 ch.

Electives may be chosen to prepare the student for specialization in various aspects of applied Physics. Some possible examples are:

Applied Physics (Nuclear Emphasis):	PHYS 3193 , 3162 , 4963 , CHE 5724 , 5834 , courses in fluid mechanics and heat transfer.
Applied Physics (Materials Science):	PHYS 4142 , MATH 4413 , GEOL 2131 , 2142 , 3122 , CHE 2503 or ME 2503 , 2121 .
Applied Physics (Fibre Optics Option):	EE 3513 , EE 4243 , EE 4253 , EE 4863 , PHYS 4172 , PHYS 5173 , PHYS 5273 .
Applied Physics (Computer Option):	3113 plus approved CS courses, courses in Mathematics and Statistics may be included. MATH 2203 can substitute for CS 1303 and CS 2303 .

*Students choosing the Computer Option can substitute CS 1073 for CS 1003 in the second year so that they can meet prerequisite requirements in other CS courses.

Note: In choosing electives students must ensure that they satisfy prerequisite requirements for desired electives.

Physics (Biology) Program

First Year

PHYS 1040 , 1045 or 1050 , 1055 , MATH 1003 , 1013 or 1053 , 1063 , CHEM 1001 , 1006 , 1012 , 1017 , BIOL 1001 , 1006 , 1012 , 1017 , plus at least 2 ch of electives. Students are reminded that to go into the second year of any PHYSICS program, they must have completed MATH 1013 or 1063 (minimum grade of C) since second year math must be taken with the second year physics courses.

Second Year

PHYS 2011 , 2021 , 2026 , 2041 , 2052 , 2057 , BIOL 2033 , 2043 , 2025 , MATH 2003 , 2013 , 2213 , CHEM 2401 .

Third and Fourth Years

PHYS 2072 , 2077 , 2032 , 3011 , 3023 , 3031 , 3043 , 3051 , 3193 , 4193 , STAT 3083 , CS 1003 , 2635 , BIOL 2053 , plus 9 ch of approved Physics, plus 12 ch of approved Biology, plus 6 ch of approved electives. Students in Honours take PHYS 4021 and 4071 as their Physics electives and MATH 3243 and CS 3113 replace approved electives. As well as the requirements listed, students in Honours take PHYS 4102 (Thesis Project).

Honours Physics Co-op Program

In the Co-op program, students can gain some work/research experience while earning their Honours degree. Honours Physics Co-op is a five year program which would have the student fulfil all the course and graduation requirements of any one of the possible Honours Physics programs, i.e. Honours Physics, Honours Applied Physics, or Honours Physics (Biology), in eight study terms plus completion of two eight-month work terms. Students would apply at the end of the second year of study and, if accepted, would start the first work term in the winter term of third year, continuing through the spring and summer. The student would spend the fourth year, fall and winter terms, back at UNB and then the second work term would begin in May of fourth year and continue through the fall term of fifth year. The student would return for the winter term of fifth year. Note that careful timetabling of the Co-op program is necessary to allow students to complete all the degree requirements within five years. Students who deviate from the prescribed timetable outlines provided by the Physics Department must ensure that such changes do not interfere with the overall program.

Normally, a minimum cgpa of 3.5 at the completion of the courses of the first two years would be required for entry into the Honours Physics Co-op program.

Pass Program

A pass degree is intended for students who require a basic foundation in Physics to undertake further study in another area (such as X ray technology, medical imaging technology, etc.). The requirements are those of second year Honours Physics plus at least 30 ch of approved physics electives plus a minimum of 15 ch of approved electives. A minimum of 126 credit hours are required for graduation.

PSYCHOLOGY OPTION

The Department of Psychology offers both a Majors and Honours BSc degree. Each degree program requires a minimum of 132 credits including requisite lab courses. Course selection for each program should conform to the following pattern:

First Year (38 ch minimum)

1. PSYC 1013 , PSYC 1023 ; BIOL 1001 , BIOL 1006 , BIOL 1012 , BIOL 1017 and MATH 1003 or MATH 1053 , MATH 1013 .
2. Two more term courses of first year science lectures with labs (either Chemistry or Physics).
3. 6 ch of approved electives.

Second Year

1. PSYC 2113 , PSYC 2123 .
2. Two term courses of first year science lectures with labs (whichever of Chemistry or Physics not taken in first year).
3. PSYC 2603 , PSYC 2703 and 12 ch chosen from List A.

Third and Fourth Years

1. PSYC 4053
2. Two of: PSYC 2203 , PSYC 2313 , PSYC 2403
3. 24 ch of Advanced Psychology electives.
4. 12 ch chosen from List A (6 ch must be at advanced level).
5. 15 ch of approved electives.

List A: Biology, Chemistry, Computer Science, Geology, Mathematics, Physics, Statistics

Minor, Major and Honours Programs

Minor Program

A Minor will consist of 24 ch in Psychology. For details see the Psychology description in the COURSES- Fredericton Campus section of the Calendar.

Major Program

A student must successfully complete a minimum of 132 credit hours, including requisite lab courses, conforming to the above pattern. The minimum acceptable grade in all required courses is a C.

Honours Program:

An Honours BSc has requirements beyond those outlined above. Both PSYC 3113 (in second or third year) and PSYC 4110 (6 ch) must be taken.

Application to the Honours Program is normally made during pre-registration at the end of the third year. Applicants should apply in writing to the Psychology Honours Undergraduate Program Coordinator and are encouraged, at this time, to approach individual faculty to find a potential supervisor. A limited number of students will be accepted into the Honours program each year. Acceptance will be based on the student's academic standing and the availability of faculty to supervise student research work.

To be eligible for admission to the program a student should have a minimum cumulative grade point average of 3.6 in psychology courses. To graduate with an Honours degree, a cumulative grade point average of 3.6 is needed in all required Psychology courses.

An Honours student must successfully complete an Honours Thesis (PSYC 4110). An Honours Thesis is normally completed during the student's final year of study and typically requires the student to plan, perform and report a research project under the supervision of a faculty advisor.

INTERDEPARTMENTAL PROGRAMS

Eight interdepartmental programs are available based on existing courses in the four Science and Mathematics and Statistics Departments in an attempt to meet the needs of students proceeding into an interdisciplinary area. These Majors programs are not truly interdisciplinary but are extracted from the specialized offerings of two Departments in each case.

These programs are administered jointly by the two departments concerned, and students should refer to both departments for counselling.

Note: In individual cases certain modifications to these programs may be recommended by the Chairs of the Departments concerned.

Honours in Interdepartmental Programs

Application for Honours in the interdepartmental programs is made prior to registration in the final year to the appropriate Department Chair. The Honours content of interdepartmental programs consists of content in addition to that prescribed for the corresponding Majors program, usually in the final year. Normally this will be in the form of one of the departmental honours project or lab courses (i.e. BIOL 4090 , CHEM 4000 , GEOL 4900 , PHYS 4100), but in some instances it may consist of such other courses as may be prescribed. Requirements for qualified students will be approved by the two Departments responsible for the program, in consultation.

Note: In individual cases certain modifications to these programs may be recommended by the Chairs of Departments concerned.

BIOLOGY-CHEMISTRY OPTION

The interdepartmental Biology/Chemistry Program provides a comprehensive curriculum covering biochemistry and molecular biology. It combines core courses from Biology, Chemistry and Math with a selection of other courses in Biology and Chemistry and electives in any discipline. Two levels are offered; the Major (130 ch) and Honours (148 ch). Students are encouraged to enter the Honours program and to switch to the Major program if circumstances warrant. Students will normally enter the Biology/ Chemistry program after completing the Year I science curriculum (38 ch). A minimum CGPA of 3.0 is required to enter the Biology-Chemistry program. Students must consult with the Biology/Chemistry advisor in Biology or Chemistry to enter the program and obtain an approved program of study.

Core Requirements

Year I (38 ch)

BIOL 1001 , 1006 , 1012 , 1017 , CHEM 1001 , 1006 , 1012, 1017 , MATH 1003 , 1013 (or MATH 1053 , 1063), PHYS 1040 , plus 6 ch electives.

Year II (36 ch)

BIOL 2025 , 2033 , 2043 , 2053 , 2073 , CHEM 2201, CHEM 2222 , 2401 , 2422 , 2601 , MATH 2003 .

Years III-IV (35 ch)

BIOL 3031 , 3491 , 4056 or 3206 , 4082 , 4151 or 4272 , CHEM 2622 , 2416 , 2857 , 3401 or 3421 , 3503 , 3523 , MATH 2213 , and one of CHEM 3513 or BIOL 4272 .

MAJOR AND HONOURS

Major (130 ch)

Completion of the Core Requirements plus 21 ch of electives (in addition to 1st year electives) constitutes a Major (130 ch) in Biology/Chemistry.

Honours by Course (148 ch)

Students must have a cgpa of 3.3 to qualify for Honours by Course in Biology/Chemistry. In addition to the requirements for a Major listed above, the students must complete either CHEM 3513 or BIOL 4272 , (whichever was not done as part of the major) and 15 ch chosen from the following list of Biology/ Chemistry courses:

- BIOL 3132 , 3151 , 3162 , 3261 , 3311 , 3521 , 3801 , 3206 or 4056 , 4149 , 4363 , 4533 .
- CHEM 2111 , 2637 , 3001 , 3003 , 3132 , 3401 or 3421 , 4003 , 4422 , 4909 or 4919 .

Note: The 15 ch should normally include both Biology and Chemistry courses. This list of electives is flexible. Courses on this list are compatible with the current Biology/Chemistry core timetable. Courses not listed here may be approved after consultation with the faculty advisor.

Honours by Thesis (148 ch)

The same 148 ch requirement applies, but the student must have a cgpa of 3.5 for acceptance into the program, and make application to the Chair of the appropriate Department to take the thesis courses (BIOL 4090 or CHEM 4000) as part of the additional 15 ch of electives required by the Honours program.

BIOLOGY-MATHEMATICS/STATISTICS OPTION

First Year

First year required courses are listed under the BSc general regulations. BIOL 1001 , 1006 , 1012 , 1017 , CHEM 1001 , 1006 , 1012 , 1017 , MATH 1003 or 1053 , 1013 or 1063 must be included. Suggested electives are STAT 2264 and CS 1003 or CS 1073 . CS 1003 or CS 1073 , and STAT 2264 , if not taken in first year must be taken later in the program.

Second Year

BIOL 2053 , 2113 , MATH 2203 , 2213 , MATH 2003 , 2013 , plus 6 ch in Biology or Math/Stat plus approved electives totaling at least 11 ch. It is recommended that students select some electives from courses in the areas of Arts and Humanities; all Biology students must have at least 12 ch in the Faculty of Arts in order to graduate.

Note: Currently the areas of biology in which Math/Stats are most prominent center on genetics, ecology, and population biology. Students interested in more molecular aspects of biology and hoping to direct the component of their program towards biochemistry, biophysics, etc. may be given permission to take BIOL 2025 , 2033 , 2043 as electives. Careful planning of the program will be required to avoid timetable problems in this case.

Third and Fourth Years

Approved Biology courses for a total of 24 ch in Biology, MATH 3003 , 3473 , STAT 3083 , 3093 , plus a total of 12 ch approved Math/Stat courses, plus additional approved electives totalling 16 ch.

A minimum of 138 ch, including is required for completion of this program.

Notes:

1. Students should consider the following courses in selecting Mathematics/Statistics courses. Analytical Orientation: MATH 3503 , 3043 , 3073 , 4423 , CS 3113 Statistical Orientation: STAT 4053 *, 4073 , 4083 , 3373 *, 3383 * (Courses marked with an * are particularly recommended)
2. MATH 3473 and BIOL 4899 are offered in alternate years. Special care is required in scheduling.

BIOLOGY-PHYSICS OPTION

First Year

BIOL 1001 , 1006 , 1012 , 1017 , CHEM 1001 , 1006 , 1012, 1017 , MATH 1003 / 1013 or 1053 / 1063 , PHYS 1040 , 1045 or 1050 , 1055 , plus at least 2 ch of electives.

Second Year

BIOL 2025 , two of 2033 , 2043 or 2053 ; PHYS 2011 , 2041, 2052 / 2057 ; MATH 2003 / 2013 or 2503 / 2513 : STAT 2264 or 2593 ; plus 8 ch approved electives.

Third and Fourth Years

Two of BIOL 2073 , 2083 or 2093 , plus BIOL 2113 and 2143 , plus 20 ch of third and fourth year BIOL courses which include one of the following combinations: BIOL 3801/ 3908 or 3521 , or one of 3031 , 3132 , 3261 , 3491 , together with one of 3206 or 4056 ; CHEM 2401 ; PHYS 2021 / 2026 , 2872 / 2877 or 2072 / 2077 , 3011 , 3023 , 3031 , 3043 , 3051 , 3193 , 4193 .

Note: If the student wishes to pursue a concentration in upper year Biology courses in the Organismal or Ecology concentrations rather than in Cellular Biology concentrations, the appropriate core courses should be completed in second year and the Cellular core module be postponed until third or fourth year.

CHEMISTRY-PHYSICS OPTION

The Chemistry-Physics Option offers a challenging program for strong students. This interdepartmental program provides a solid core of courses in both Chemistry and Physics. It is set up in such a way that a student may opt for the single disciplines of Chemistry or Physics after the second year. A BSc in this joint program would allow students to continue studies at the graduate level in either Physics or Physical Chemistry.

Careful choice of electives in first and second year will make any change from the joint program into a single discipline program easier.

First Year

CHEM 1001 , 1006 , 1012 , 1017 , PHYS 1040 , 1045 or 1050 , 1055 , MATH 1003 , 1013 (or MATH 1053 , 1063) plus two more term lecture courses chosen from BIOL 1001, 1012 , GEOL 1001 , 1012 , plus 6 ch electives.

Note: Students must have a minimum AGPA of 3.5 to enter second year of this program and they must maintain the 3.5 AGPA at the end of second year to proceed to third year. Students must have passed MATH 1013 or MATH 1063 before entering the second year of this program. Because of the challenging nature of the program, some students may plan to spread the required courses over five years.

Second Year

CHEM 2401 , 2422 , 2601 , 2622 , 2637 , MATH 2003 , 2013, PHYS 2011 , 2021 , 2026 , 2032 , 2052 , 2057 plus 3 ch approved electives.

Third Year

CHEM 2201 , 2222 , 3001 , CHEM 3602 or PHYS 3152 , MATH 2213 , PHYS 2072 , 2077 , 3011 , 3031 , 3051 , 3122 * or 4122 *, plus 3 ch of approved electives.

Fourth Year

CHEM 3202 , 3221 , 3616 , 3621 , 4017 , 4622 , PHYS 3023, 4051 , 4142* or 5143 , plus 6 ch approved electives. Students in Honours add PHYS 4102 or CHEM 4000 and must have a minimum AGPA of 3.5 entering fourth year.

*Since PHYS 4142 (Solid State) and PHYS 5143 (NMR) are not offered every year, students can take PHYS 4142 in their third year if it is offered and delay PHYS 3122 (Digital Electronics) or PHYS 4122 (Instrumentation) to 4th year. Note also that 3122 and 4122 alternate so that if Digital is offered in a students 3rd year, Instrumentation will be offered in 4th or vice versa. The Physics Chair has the best knowledge of when and if courses will be offered.

GEOLOGY-ECONOMICS OPTION

First Year

Students follow the first year Science curriculum. MATH 1003 , 1013 must be taken. ECON 1001 , 1002 or ECON 1013 , 1023 may be taken in the first or second year. GEOL 1001 , 1012 must be included; GEOL 1703 is recommended. One of GEOL 1006 or 1017 must be included; it is recommended that students take both laboratory courses.

Second Year

GEOL 2131 , 2142 , 2212 , 2321 , 2703 , STAT 1213 , MATH 2003 , 2013 or 2503 / 2513 and ECON 1013 , 1023 if not taken in the first year. ECON 3013 and 3023 should be taken in the second year if ECON 1001 , 1002 or ECON 1013 , ECON 1023 were taken in the first year.

Third and Fourth Year

GEOL 3131 , 3322 , 4312 , 4461 , 4472 , 4442 plus a minimum of 1 term course in geology (GEOL 4900 is required in addition for honours). ECON 3013 , 3023 , 3665 , 3755 , 3794 , 4013 , 4023 plus a minimum of 2 term courses in economics. CS 1003 , and a minimum of 4 additional approved term courses.

GEOLOGY-PHYSICS OPTION

The program totals 164 ch for Major and 172 ch for Honours. This includes 13 ch of Geology Field Schools which take place outside of regular fall and winter terms. The fourth year has a lighter credit hour course load than third year to accommodate the addition of an Honours Project in fourth year. Students in a Major program may prefer to move some of the courses listed under third year into fourth year to even out the course load.

First Year

GEOL 1001 , 1006 , 1012 , 1017 , PHYS 1040 , 1045 or 1050 , 1055 , MATH 1003 , 1013 or 1053 , 1063 , CHEM 1001 , 1006 , 1012 , 1017 , plus at least 2 ch of electives.

Note: Students must have already completed MATH 1013 or equivalent (minimum grade C) before entering the second year of this program.

Second Year

GEOL 2131 , 2142 , 2321 , 2703 , PHYS 2011 , 2072 , 2077, MATH 2003 , 2013 , 3503 , plus 5 ch approved electives in Science or Computer Science.

Third Year

GEOL 2212 , 3131 , 3322 , 3703 , PHYS 2021 , 2026 , 2032, 2041 , 2052 , 2057 , 3031 ; plus 5 ch approved electives in Science or Computer Science.

Fourth Year

GEOL 4501 , 4512 , PHYS 3011 , 3023 , 3043 , 3051 , 3122 or 4122 ; plus 5 ch approved electives in Science or Computer Science.

Students in the Honours program add an houours project, PHYS 4100 or GEOL 4900 .

MATHEMATICS/STATISTICS ECONOMICS OPTION

The combination of mathematics, statistics and economics is a natural one as students will see practical applications of mathematics and statistics in their economics courses and the rigorous techniques from mathematics will aid students in their problem-solving skills. Requirements for a Science degree are listed below. Requirements for an Arts degree are available from either the Department of Mathematics and Statistics or the Department of Economics.

First Year

First year required courses are listed under the BSc general regulations. MATH 1013 or 1063 must be included. CS 1003 or 1073 , ECON 1013 , 1023 or ECON 1001 , 1002 may be taken in first or second year. Recommended elective: STAT 1213 .

Second Year

MATH 2003 , 2013 , 2203 , 2213 , ECON 1013 , 1023 , CS 1003 or 1073 (if not taken in first year), plus approved electives to bring the course load to a minimum of 30 ch.

Third and Fourth Years

1. MATH 3003 , 3043 , and two courses chosen from MATH 3033 , 3073 , 3213 , 3243 , 3473 , 3803 , 4423 , 4433 , 4853 .
2. STAT 3083 , 3093 , 3303 , 4443 , and two courses chosen from STAT 3353 , 3383 , 4053 , 4073 , 4303 .
3. ECON 3013 , 3023 , 4013 , 4023 , 4625 , 5665 plus at least 3 additional term courses in Economics.
4. An additional 9 ch of electives so that the total in third and fourth year is 66 ch. The minimum total number of credits for the degree is 135 ch.

Recommended electives: MATH 3413 , MATH 3813 , and any of the courses listed above.

Honours Requirements

Math 3103 / 3113 must be taken and MATH 3003 becomes an elective course. Honours students must take a total of 33 ch of upper level MATH/STAT courses. The minimum G.P.A. for an honours degree from the Faculty of Science is 3.0.

Note: Some year-to-year variation in Economics course selection is possible, For example a student doing ECON 1013 , 1023 in year 1 may wish to do ECON 3013 , 3023 in year 2.

MATHEMATICS-PHYSICS OPTION

Both the Major and Honours versions of this option are demanding programs intended for strong students. The Honours Mathematics-Physics Program includes all the required courses of both an Honours Physics program and an Honours Mathematics program.

First Year

MATH 1003 , 1013 or 1053 , 1063 ; PHYS 1040 / 1045 or 1050 / 1055 ; CHEM 1001 , 1006 , 1012 , 1017 ; plus two more term courses chosen from BIOL 1001 , 1012 , GEOL 1001 , 1012 plus 6 ch of electives.

HONOURS PROGRAM (158 ch)

Second Year

MATH 2003 , 2013 , 2203 , 2213 ; PHYS 2011 , 2021 , 2026, 2032 , 2041 , 2052 , 2057 , 2072 , 2077 ; CS 1003 .

Third Year

MATH 3033 , 3103 , 3113 , 3243 , 3213 , 3413 *, 3073 ; PHYS PHYS 3011 , 3023 , 3043 , 3051 plus 3 ch Physics elective.

* This course is cross-listed as CS 3113 .

Fourth Year

MATH 3043 ; STAT 3083 ; PHYS 4021 , 4051 , 4071 , 4102; plus 3 ch Mathematics elective, plus 3 ch Physics elective, plus 6 ch electives.

MAJOR PROGRAM (150 ch)

Second Year

MATH 2003 , 2013 , 2213 ; PHYS 2011 , 2021 , 2026 , 2032, 2041 , 2052 , 2057 , 2072 , 2077 ; CS 1003 ; 3 ch elective

Third and Fourth Years

MATH 3243 , 3413 *, 3503 ; STAT 3083 ; PHYS 3011 , 3023, 3043 , 3051 , 4021 ; 18 ch Mathematics electives**; 15 ch Physics electives; 6 ch electives.

* This course is cross-listed as CS 3113 .

** It is recommended that students choose MATH 3003 and 3213 in Yr 3. Other suggested Math electives would be MATH 2203 and 3033 .

GENERAL SCIENCE OPTION

This option presents students with the opportunity to get a broader science degree while concentrating on two areas of science and taking numerous electives. While General Science does not give a major in any discipline, it would approximate more than a double minor for the student. This degree has largely been used by students who planned to follow it with a second degree, e.g. in education, or a health profession.

First Year

The first year in General Science follows the regulations for First Year Science given in Section E, but students must include MATH 1003 or 1053 and at least a term of lectures in each of Biology, Chemistry, Geology, Physics and Psychology. First year labs are chosen to meet future prerequisite requirements. (38 ch).

Second Year

A student must choose two science disciplines from Biology, Chemistry, Geology, Mathematics/Statistics, Physics and Psychology for areas of concentration. Second year requires a minimum of 24 ch of second year science courses, plus 8 ch of approved electives. Prerequisites needed for upper year courses in each area of concentration should be kept in mind. Course selections must be approved by a General Science advisor. (32 ch).

Third and Fourth Years

A minimum of 64 ch made up of 21 ch of upper year courses from EACH of the two areas of concentration, plus 22 ch of approved electives. Course selections must be approved by a General Science advisor. (32+32 ch).

Notes:

- Two courses (6 ch) in History of Science must be chosen within the electives of the programme.
- 6 ch of English (e.g. ENGL 1103 / 1104) are strongly recommended as electives.
- Electives may be chosen from Forestry or Engineering with the approval of the faculty advisor.

DISTINCTION IN GENERAL SCIENCE

The BSc with Distinction in General Science will be awarded to students who attain a cumulative grade point average of 3.5 or greater in the General Science option.

Note: The General Science options on the Fredericton and Saint John campuses are different from each other. For regulations governing the General Science option offered on the Saint John campus, see the Saint John Academic Programs section of this Calendar.

PRE-PROFESSIONAL PROGRAMS IN SCIENCE

It is not the policy of the Science Faculty to set out rigid pre-professional programs. Each professional school has its own entrance requirements and it is necessary that the student ascertain these requirements in order to be sure of qualifying as a candidate for admission to that particular school. UNB does offer the courses necessary to qualify a student for entrance into all professional programs.

Experience has shown that, where possible, it is highly desirable for the pre-professional student to obtain a bachelors degree before applying for entrance to the professional school.

Students interested in meeting the entrance requirements for any professional program should meet with an assistant dean for advice before selecting their courses.

CONCURRENT BSc/BEd OPTION - GENERAL SCIENCE

Science students may apply to the Faculty of Education for admittance to this programme at the beginning of the second term of their first year. Students will be accepted into the BSc/ BEd concurrent degree programme based on the following criteria:

- successful completion of the first year science programme,
- a successful interview with the selection committee,
- completion of all necessary forms, interim marks and reference letters

Admission is granted in consultation with the Faculty of Education. The number of places in the programme is limited and admission is competitive.

This general science option is only available as part of the concurrent BSc/BEd degree. Students withdrawing from the BSc/ BEd must meet all the requirements of another BSc programme. A minimum grade of C is necessary in all required science and education courses. A minimum of 188 ch is required for graduation.

FIRST YEAR

Students must complete the minimum requirements for First Year Science as given in the general regulations for Bachelor of Science.

SECOND YEAR: (39 ch suggested)

- Students must choose a primary and a secondary area of concentration from biology, chemistry, geology, mathematics, statistics and physics.
- **Required courses:** Eight (8) term courses at second year level or higher (minimum 24 ch) chosen from two or three science departments. It is highly recommended that these courses be in the primary and secondary areas of concentration (a 5 - 3 or 4- 4 split) in order to obtain enough prerequisites to complete 3rd and 4th year requirements.
- **Elective courses:** 9 ch of electives. (See section describing approved electives).
- **Education courses:** 6 ch in education (core studies recommended).

Third and Fourth Years: (78 ch suggested)

- **Required courses:** Eight (8) term courses beyond second year (minimum 24 ch) chosen from the primary concentration and four (4) term courses beyond second year (minimum 12 ch) in the secondary concentration.
- **Elective courses:** 21 ch of electives. See section on approved electives.
- **Education courses:** 21 ch in education (core studies and methodology courses recommended).

Fifth Year: (33 ch remaining)

- Completion of the required 60 ch in education must include 15 ch of core studies and 15 ch of field studies. Students choosing a secondary option must complete at least 12 ch in curriculum / methodology in either science or math and an additional 18 ch in education. A second concentration is recommended as part of this 18 credit hours. Students choosing an elementary option must include appropriate courses in each of the following disciplines: art, literacy, mathematics, music, physical education, science and social studies.

ELECTIVES:

Thirty-six (36) ch of electives will be chosen.

Six (6) credit hours are required electives and must be chosen from the history of science courses offered by the history department in the Faculty of Arts and/or the history of mathematics offered in the mathematics department in the Faculty of Science.

Eighteen (18) credit hours of electives must be chosen from any or all of the following categories. (The remaining twelve (12) ch may include prerequisites necessary to take approved electives as outlined below.)

1. Additional courses in any physical or life science and/or mathematics,
2. Courses in other faculties that offer students an opportunity to broaden the scope of their education. These courses should help students:
   a. enhance their proficiency in a first or second language,
   b. compliment science understanding and/or develop relationships with technology, society and the environment,
   c. satisfy curiosities in subjects that assist students in better understanding the world and its people,
   d. pursue a third (possibly non-science) area for future classroom teaching.

CONCURRENT DEGREES IN ARTS AND SCIENCE

The Faculties of Arts and Science at UNB in Fredericton are co-operating to make it possible for a student to combine Arts and Science in several interesting and innovative ways.

This Joint Program is primarily aimed at three groups of students. The first is those students who are undecided as to their chief area of interest, and who would like to experience academic work in both faculties before committing themselves to a specialization. The second includes students who are confident of their intended specialization, but who would nevertheless like a broader and more systematic exposure to disciplines outside that area. The third consists of students pursuing degree programs the regulations of which permit or encourage a broader distribution of courses. Such programs include the General Science Program and various pre-professional programs leading to study in dentistry, medicine, veterinary medicine, optometry, and physiotherapy.

Students who enter the Arts and Science program may opt to move into either Arts or Science at any time. With the exception of labs, all courses taken during the first two years can be counted towards either a BA or a BSc (or both). Approved specialized Science labs count towards the BASc or BSc degree,

By continuing in Arts and Science for a further two years (four years in all), students can earn a Bachelor of Arts and Sciences (BASc) degree with a specialization in an Arts subject and a Science.

Instead of a BASc, students may continue for a fifth year to earn both a BA and a BSc, two degrees, with a major (or honours) in an Arts discipline and in a Science - for example, BA (History) and BSc (Physics).

Within Science, students can specialize in one of Biology, Chemistry, Geology, Mathematics, Statistics, Physics and Psychology.

For further detail, see "Bachelor of Arts" portion of the Fredericton Programs section (Section G) of this Calendar.

CONCURRENT DEGREES IN COMPUTER SCIENCE AND SCIENCE

For details, see the "Bachelor of Computer Science" portion of the Fredericton Programs section of this calendar.

BACHELOR OF MEDICAL LABORATORY SCIENCE (BMLS)

The degree of Bachelor of Medical Laboratory Science (BMLS) is offered through the Faculty of Science in partnership with the New Brunswick Community College in Saint John (NBCC-SJ). Enrollment will be limited. Students may enter the program only with approval by the Dean of Science or the program Director. The program requires completion of the Medical Laboratory Technology program at NBCC-SJ either prior to or after completion of 2 years at UNB. For graduation, a minimum of 84 credit hours from UNB and 2 years at NBCC-SJ is required and students must pass the Canadian Society for Medical Laboratory Science (CSMLS) exams as required for professional practice as a Medical Laboratory Technologist.

First Year BMLS General

BIOL 1001 , 1006 , 2073 , 2792 , CHEM 1001 , 1006 , 1012, 1017 , MATH 1003 , PHYS 1040 (or GEOL 1001 , 1012), CS 1043 , STAT 2264 Intersession: BIOL 2033 , 3102

Second Year BMLS General

BIOL 2521 , 3673 , 2025 , 3311 , 2043 , 2053 , CHEM 2111 (or CHEM 2401 , 2416), 3132 (or CHEM 2422 , 2857),
3 credit hours of Arts elective Intersession: BIOL 4570, NURS 2133

Third and Fourth Year BMLS General

2 years at NBCC-SJ in the Medical Laboratory Technology program.

BACHELOR OF SCIENCE IN ENGINEERING

FACULTY OF ENGINEERING

General Office:	Head Hall, Room C-28
Mailing Address:	Faculty of Engineering, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4570
Fax:	(506) 453-4569
Email:	deaneng@unb.ca
Website:	http://www.unbf.ca/eng/
Dean:	David Coleman, BScE, MScE, PhD, PEng
Associate Dean:	Michel F. Couturier, BSc, MSc, PhD, PEng
Assistant Dean:	Eldo Hildebrand, BASc, PhD, PEng

Degree programs in engineering (BScE) are offered by the Faculty of Engineering in the following disciplines:

Chemical Engineering
Civil Engineering
Computer Engineering
Electrical Engineering
Geomatics Engineering
Mechanical Engineering

Degree programs which are offered jointly between the Faculty of Engineering and other Faculties are:

Forest Engineering: A BScFE degree offered jointly with the Faculty of Forestry and Environmental Management.

Geological Engineering: A BScE degree offered jointly with the Faculty of Science.

Software Engineering: A BScSwE degree offered jointly with the Faculty of Computer Science.

Students completing the above degree programs in Engineering will be eligible for registration in Canadian Associations of Professional Engineers.

General Information

Math Placement Test: The recommended first year calculus courses for students who have obtained a passing score on the Department of Mathematics and Statistics placement test are MATH 1003 and MATH 1013. Those with an insufficient score may be required to take remedial math courses. The placement test is offered during registration week (early September) each year.

Transfer Credits (Complementary Studies Courses): Students admitted with advanced standing from non-university institutions must complete a minimum of 6 ch of complementary studies courses at a university. The intention is that engineering students complete at least half of their complementary studies courses (as defined by the Canadian Engineering Accreditation Board) in a university setting. A 70% minimum is required for transferring course credit from community colleges.

Transfer Credits (other than Complementary Studies Courses): Other courses (science, mathematics, computer science, engineering, etc.) may be accepted for transfer credit according to accepted university practice. A 70% minimum is required for transferring course credit from community colleges.

Options in Engineering: Most engineering students do not have to choose an option within their degree program, although there are several options available for students with particular interests. Students in Geological Engineering must choose an option. All departments offer a range of electives which provide opportunity for some degree of concentration. In order to graduate, a student must satisfy all program requirements.

The following options are elaborated upon in individual program descriptions on the following pages.

- Cadastral Surveying Option
- Environmental Option
- Geoenvironmental Option
- Geotechnical Option
- Instrumentation and Control Option
- Mechatronics Option
- Manufacturing Engineering Option
- Mineral Resources Option
- Nuclear and Power Plant Engineering Option
- Pulp and Paper Option
- Research Option

Engineering and the Environment: Engineering practice and environmental concerns cannot be separated; therefore topics of environmental concern are fundamental to all engineering disciplines. Engineering students interested in the environment are encouraged to choose the discipline most closely related to their interest. The following list is not all inclusive, but gives some indication of possible areas of interest.

- Air and Water Quality
- Conservation and Management of Resources
- Energy Conversion
- Energy Utilization
- Environmental Geotechnics
- Environmental Impact Assessment
- Environmental Information Systems
- Forest Dynamics
- Groundwater Development & Protection
- Hazard Mapping
- Hydrology
- Instrumentation and Control
- Integrated Renewable Resource Management
- Machine/Environment Interactions
- Mapping of Land and Water Resources
- Monitoring of Topographic Change
- Pollution Control
- Recycling
- Remote Sensing of the Environment
- Resource Operations Management
- Silviculture
- Waste Disposal
- Water and Waste Water Treatment

Standard First Year Courses

Students who are unsure of their discipline choice in Engineering are strongly advised to select from the following standard first year courses. This will avoid loss in credits if transferring after their first year.Students certain of their discipline choice should follow the first year courses recommended by each Department. In this case, some Departmental specific credits may not be transferable to other programs after first year.

APSC 1013	APSC 1023
MATH 1003	MATH 1013
MATH 1503	CHEM 1882
ENGG 1013	EE 1013
ECON 1073	

General Regulations

1. The minimum requirement for a Bachelor of Science in Engineering is the accumulation of 160 credit hours. Additional requirements may be found within the descriptions of individual programs.
2. Credit hours for courses are listed with course descriptions.
3. Students should refer to Section B of this Calendar for regulations regarding academic probation and withdrawal.
4. A minimum grade of C is required for all courses used for credit towards a BScE degree.
5. Degree requirements must be successfully completed in a period of not more than 8 consecutive calendar years from date of first registration in the program. Students transferring into a continuing degree program will have the time limit prorated on the basis of advance credit granted.

Engineering Faculty Complementary Studies Electives requirements:

a. No more than 3 ch. of language courses, including ENGL 1103 , may be used for credit as Complementary Studies Electives. Other language courses may be taken, but they would be extra to the degree.

b. To ensure that the spirit of Complementary Studies Electives is achieved, each Engineering student must take for credit at least one 3 ch course from one of the following disciplines:

Anthropology, Classics, Literature, History, Philosophy, Political Science and Sociology.

Cooperative Education Programs in Engineering

The Faculty of Engineering believes strongly in the value of relevant industrial experience at the professional level for its students. In support of this concept, the Faculty, through its constituent departments/programs, operates two cooperative education programs, Co-op and PEP (Professional Experience Program). These programs are based on established partnerships with selected employers. The companies provide quality professional experience, engineering supervision, and paid employment for approved engineering students. A faculty coordinator plus a coordinator in each department work in conjunction with the Dean to provide the necessary liaison and support activities for students in the programs. The effectiveness of Co-op and PEP in providing the desired professional experience is monitored and assessed by the coordinators by means of on-site visits, interactions with company personnel, and technical reports submitted by the students on their projects/ experience upon completion of the work period.

Program Description:

Co-op

i. Co-op requires the completion of a minimum of four 4-month work terms interspersed with academic study terms. Two back-to-back work terms are possible giving periods of work up to 8 months in duration.

ii. Co-op is available within the Chemical, Civil, Computer, Electrical, Mechanical and Software Engineering Programs, and is open to a limited number of students who have successfully completed 4 terms of study (after two terms for

Electrical, Computer and Software Engineering). The Co-op entry point and work term schedule depend on the respective engineering department.

iii. Each Co-op student will be charged a work term fee for each 4-month work term.

See Section III below for more details.

PEP (Internship)

i. PEP requires one extended period of continuous industrial internship, the duration of which may be from 8 to 16 months.

ii. PEP is available within Chemical, Civil, Computer, Electrical, Forest, Geological, Geomatics, Mechanical and Software Engineering Programs and is open to students who have completed at least 110 credit hours and have at least 15 credit hours remaining. Upon completion of the work term the student will return to university studies for at least one academic term.

iii. Each PEP student will be charged a work term fee based on the number of consecutive four month terms completed.

See Section III below for more details.

Additional Details for Co-op and PEP

i. Participation in the cooperative education programs is contingent upon the approval by the Co-op office and of the students department/program and the availability of work term positions. **Students should be in good academic standing and have a GPA of at least 2.7.**

ii. Official University registration is required for each student in Co-op and PEP. This will enable students to remain registered at the University during the time encompassed by their work term.

iii. A suitable notation will be placed on each student's transcript in recognition of their participation in Co-op or PEP.

iv. While no specific course credit will be assigned, a negotiated component of a work project may form an integral part of the student's senior report, based on a written proposal, progress reports, and faculty supervision in accordance with standard senior report regulations in the respective Engineering departments/programs. In this manner, specific course credit for Co-op and PEP participants may be available.

v. Prior to applying for Co-op or PEP jobs, students will be oriented to the process and will be assisted in preparing resumes and for job interviews.

More information can be obtained from the Engineering Co-op Office.

Minors

Further to the general regulations in Section B.V of the UNB Undergraduate Calendar, engineering students may earn a minor from another academic unit. Likewise, non-engineering students may take engineering courses for a minor. In each case, a minor consists of at least 24 credit hours of courses which are not required for the student's degree.

The courses used for a minor shall be chosen in consultation with the student, and accepted by academic advisors in both the student's home academic unit and the academic unit offering the minor. Students in a BScE program may have the program designation of the minor shown on their transcript. Students in other faculties who complete a minor in engineering shall be awarded a "Minor in Applied Science." Designation of the minor shall be approved by the office of the dean of engineering.

CHEMICAL ENGINEERING

DEPARTMENT OF CHEMICAL ENGINEERING

General Office:	Head Hall, Room D-39
Mailing Address:	Department of Chemical Engineering, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4520
Fax:	(506) 453-3591
Email:	chemeng@unb.ca
Website:	http://www.unbf.ca/eng/che/

FACULTY

- Bendrich, Guida, Dipl. Ing. (T.F.H. Berlin), PhD (McM), PEng, Eur. Ing., Prof - 1995
- Chaplin, Robin A., BSc, MSc (Cape T), MSc, DIC (Lond), PhD (Qu), PEng, Prof, NBEPC Chair, Power Plant Eng.- 1986
- Chen, Jinwen, Adjunct Prof - 2003
- Cheng, Yufeng - Adjunct Prof - 2004
- Collins, Frank, BScE (UNB), PEng, Sr. Instructor - 2002
- Cook, William, BSc, MSc, PhD (UNB), Asst Prof - 2004
- Couturier, Michel F., BSc (UNB), MSc (MIT), PhD (Qu), PEng, Prof and Assoc Dean- 1983
- Dong, Minshe - Adjunct Prof - 2004
- Eic, Mladen, Dipl. Ing. (Sarajevo), MSc (Zagreb), MSc (Worcester Poly. Inst), PhD (UNB), PEng, Prof - 1990
- Kaliaguine, Serge, Adjunct Prof - 2003
- Li, Kecheng, BEng, MASc (Northwest Inst. of Light Industry), PhD (Tor), Asst. Prof. - 2002
- Lister, Derek, BScTech, MScTech (Manchester), PhD (Leicester), PEng, Prof and Chair in Nuclear Engineering, Dept Chair - 1992
- Lowry, Brian, BASc, MASc (Tor), PhD (Cornell), Assoc Prof - 1995
- Ni, Yonghao, BEng (Northwest Inst of Light Industry), MEng, PhD (McG.), Prof and Canada Research Chair in Pulping Technology - 1993
- Ring, Zbigniew, MEng (Warsaw), MASc, PhD (Tor.), PEng, Adjunct Prof. - 2002
- Romero-Zeron, Laura, BSC, MSc (Los Andes), PhD (Calg), Asst Prof - 2004
- Sain, Mohini, BSc (Calc.), MSc (Indian Inst of Tech), PhD (Tech Univ of Czech), Adjunct Prof - 2001
- Sarria, Bienvenido, Adjunct Prof. - 2002
- Singh, Kripa, BE (Birla Inst), ME (Asian Inst), PhD (Regina), PEng, Asst Prof (Joint - Civil Eng.) - 2000
- Sun, Guogang, Adjunct Prof - 2003
- Van Heiningen, Adriaan - Adjunct Prof - 2002
- Whidden, Thomas, BSc (Mt.All.), PhD (UNB), Sr. Research Assoc. - 2002
- Xiao, Huining, BEng, MEng (Nanjing), PhD (McM.), Assoc Prof - 2001
- Zhang, Zisheng (Jason), Adjunct Prof - 2003
- Zheng, Ying, BESc, MESc (Northwest), PhD (UWO), Asst Prof - 1999

General Information

Chemical Engineering provides the basic scientific and engineering knowledge for the design, construction and operation of equipment and plants that process materials by chemical and physical operations into desired products. The curriculum is aimed at provision of a broad background in the underlying sciences of Chemistry, Physics and Mathematics, and detailed knowledge of Chemical Engineering principles. This

enables graduates to proceed to further academic degrees by study and research at this University or elsewhere, or to carry on research, development, design or production operations in any process industry.

Students can choose one of six option programs: Nuclear and Power Plant Engineering; Environmental; Pulp and Paper; Instrumentation and Control; Research; and the General program.

The Department of Chemical Engineering considers practical training and close contact with Industry an important aspect of the engineering curriculum. The Industrial Practice Program includes both the two week Chemical Engineering Practice School and the work term or co-op components carried out in industry.

Curriculum

A minimum of 168 credit hours (ch) is required to obtain a bachelors degree in Chemical Engineering. Twelve of these are technical electives (see the list below or follow an option program) and nine are non-technical complementary studies electives. The degree program may be completed in eight terms (four years). Students may opt for a program which spans a longer period of time provided all required courses are taken. Details can be obtained by writing to the Chair.
The credit system allows considerable flexibility in designing programs of study but, unless care is exercised difficulties may arise with time-tabling or prerequisites. Students are requested to consult with the Chair of the Department or the departmental Director of Undergraduate Studies if they plan to follow a program which differs significantly from the recommended one. The Department publishes an annual Program Guide which includes a recommended four-year timetable.

Required Courses

APSC 1013 / 1023	Mechanics I / II
CHE 1004	Introduction to Chemical Engineering
CHE 2004	Mass & Energy Balances
CHE 2012	Engineering Thermodynamics
CHE 2123	Chemical Engineering Thermodynamics
CHE 2401	Applied Organic Chemistry
CHE 2412	Chemical Engineering Lab I
CHE 2503	Materials Science
CHE 2703	Fluid Mechanics
CHE 3304	Heat Transfer
CHE 3314	Fluid-Particle Interactions
CHE 3324	Staged Processes
CHE 3418	Numerical Methods in Chemical Engineering
CHE 3424	Chemical Engineering Lab II
CHE 3434	Chemical Engineering Lab III
CHE 3505	Chemical Process Design
CHE 4101	Chemical Reaction Engineering I
CHE 4225	Process Design Project
CHE 4341	Mass Transfer Operations
CHE 4404	Chemical Engineering Lab IV
CHE 4601	Process Dynamics & Control
CHEM 1001 / 1012 / 1006 / 1017	General Chemistry
CHEM 2622	Electrochemistry & Chemical Kinetics
CHEM 2886	Analytical Chemistry for Chemical Engineering
CHEM 3886	Physical Chemistry for Chemical Engineering
CHEM 3897	Organic Chemistry for Chemical Engineering
CS 1003	Introduction to Computer Programming
ECON 1073	Economics for Engineers
EE 1013	Electricity & Magnetism
EE 2683	Electric Circuits & Machines
EE 2703	Introduction to Engineering Design
EE 2723	Electric Circuits & Electronics
ENGG 1013	Design & Communication
ENGG 4003	The Engineering Profession
ENGG 5003	Commercial Law: Engineering
MATH 1003	Introduction to Calculus I
MATH 1013	Introduction to Calculus II
MATH 1503	Introduction to Linear Algebra
MATH 2513	Introduction to Linear Algebra
MATH 3503	Differential Equations for Engineers
OR	
STAT 2593	Statistics for Engineers

Students who have successfully completed CHEM 1882 and who wish to transfer to Chemical Engineering should consider it equivalent to CHEM 1012 / 1017 . Such students must also complete CHEM 1001 / 1006 .

Electives

TECHNICAL ELECTIVES

The Chemical Engineering Technical Elective Program consists of 12 ch from the list of courses below or other designated courses, a selection of which is presented each term.

Courses listed for option programs but not included in the list below may normally be taken only by students intending to complete that option.

Many electives are offered every other year or infrequently. Check with the Chemical Engineering Department Office for information on planned course offerings for this year and next.

BIOL 2033	Biochemistry (3 ch)
CE 5421	Water Quality and Treatment (4ch)
CE 5432	Wastewater Treatment and Pollution Control (4ch)
CHE 3423	Chemical Engineering Practice School
CHE 4234	Process Design & Simulation
CHE 4314	Air Pollution Control
CHE 4724	Special Topics in Chemical Engineering (3 ch)
CHE 4734	Special Topics in Chemical Engineering (2 ch)
CHE 4744	Special Topics in Chemical Engineering (1 ch)
CHE 4814	Chemical Engineering Report
CHE 4914	Thesis
CHE 5004	Thermodynamics of Waste Heat Recovery
CHE 5114	Chemical Reaction Engineering II
CHE 5124	Adsorption & Adsorption Processes
CHE 5234	Oil & Gas Process Engineering
CHE 5254	Polymer Reaction Engineering & Processing
CHE 5313	Energy and the Environment
CHE 5314	Chemical Process Industries
CHE 5334	Radiative Heat Transfer
CHE 5344	Combustion
CHE 5434	Transport Phenomena
CHE 5524	Mathematical Methods in Chemical Engineering
CHE 5534	Process Identification for Advanced Control
CHE 5614	Chemical Process Control

CHE 5714	Electrochemical Engineering
CHE 5744	Steam Supply Systems
CHE 5754	Steam & Gas Turbines
CHE 5764	Special Topics in Power Plant Engineering
CHE 5804	Nuclear Chemical Processes
CHE 5824	Corrosion Processes
CHE 5834	Nuclear Engineering
CHE 5844	Nuclear Safety & Reliability
CHE 5854	Nuclear Heat Removal
CHE 5877	Advanced Nuclear Systems
CHE 5913	Pulp Production
CHE 5923	Papermaking

COMPLEMENTARY STUDIES PROGRAM

In addition to the required complementary studies courses, notably CHE 1014 , ECON 1073 , and ENGG 5003 , there are 9 ch of complementary studies electives. Breadth of knowledge and communication skills are essential for a professional chemical engineer. In view of this, at least one 3 ch course from the following disciplines is required: Anthropology, Classics, English (non-language), History, Philosophy, Political Science and Sociology.

Environmental Option

Students who have successfully completed 80 ch of the Chemical Engineering program may enter the option. To complete the option program, students must complete four of the five following technical electives:

CHE 4314	Air Pollution Control
CHE 5313	Energy and the Environment
CHE 5314	Chemical Process Industries: Overview & Environmental Impact
CHE 5344	Combustion
CHE 5414	Absorption and Membrane Based Processes in Pollution Control
CE 5432	Water and Wastewater Treatment (prerequisite: CE 5473)

Note:

1. CE 5432 is offered yearly, but the CHE courses are offered only every 2 years.
2. CE 5473 (1 ch) or equivalent must be taken as the prerequisite for CE 5432 but does not count towards the option.

Instrumentation & Control Option

The Instrumentation & Control Option Program is available to all students from the Department of Chemical Engineering. In order to enter the option program students must meet the following conditions:

1. Successful completion of 80 ch of the program in Chemical Engineering.
2. Approval by the Department of Chemical Engineering.

In order to complete the option students must complete all required courses designated as part of the option program. Students will not be required to complete CHE 3434 Chemical Engineering Laboratory III.

Prerequisite Course	
CHE 4601	Process Dynamics and Control
ME 4623	Automatic Controls I

Required Courses	
ME 3703	Mechanical Engineering Measurements (4 ch)
ME 5653	Predictive Control and Intelligent Sensors (4ch)
EE 4343	Industrial Control Systems (4 ch)
CHE 5614	Chemical Process Control (3 ch)
or	
ME 5643	Automatic Controls II (4 ch)

In the event that a core course cannot be offered as scheduled, another course will be designated by the Department as a core course.

A suitable instrumentation and control project must also be completed in CHE 4221 and CHE 4222 .

Nuclear and Power Plant Engineering Option

The Nuclear and Power Plant Option Program is available to all students from the Department of Chemical Engineering. In order to enter the option program students must meet the following conditions:

1. Successful completion of 80 ch of the program in Chemical Engineering.
2. Approval by the Department of Chemical Engineering.

In order to complete the option program students must complete 15 credit hours of technical electives of which at least three courses must be from List A. A suitable Nuclear and Power Plant Engineering project must be compppleted in CHE 4225 . Students will be required to complete CHE 3434 Chemcial Engineering Laboratory III (3 ch).

Required Courses

List A: Technical Electives		
CHE / ME 5744	Steam Supply Systems	3 ch /4 ch
CHE / ME 5754	Steam and Gas Turbines	3 ch /4 ch
CHE 5804	Nuclear Chemical Processes	3 ch
CHE 5834	Nuclear Engineering	3 ch
CHE 5854	Nuclear Heat Removal	3 ch
List B: Technical Electives		
CHE 4744 *	Special Topics in Chemical Engineering (in Nuclear or Power Plant Engineering)	1 ch
CHE 4314	Air Pollution Control	3 ch
CHE 5344	Combustion	3 ch
CHE 5824	Corrosion Processes	3 ch
ME 5223	Mechanical Behaviour of Materials	4 ch
ME 5463	Heat Transfer II	4 ch
ME 5473	Energy Management	4 ch
ME 5713	Non-destructive Testing	4 ch
ME 5503	Computational Fluid Dynamics	4 ch

In the event of a List A technical elective not being offered as scheduled, a List B technical elective will be designated as a List A course.

*Chemical Engineering students may do CHE 4744 Special Topics (1 ch; in Nuclear or Power Plant Eng) in conjunction with any of the following courses, CHE 5344 , CHE 5804 , CHE 5824 , CHE 5834 , CHE 5854 to make up a one credit hour deficit in the choice of electives.

Pulp and Paper Option Program in Chemical Engineering and Chemistry

The Pulp and Paper Option Program is available to students in the Department of Chemical Engineering or in the Department of Chemistry. Single courses can also be taken by interested students.

To enter the option program the following conditions apply to students in:

Chemical Engineering:	Successful completion of 80 ch of Chemical Engineering program.
Chemistry:	Admitted in any of the Chemistry programs.

To complete the option program the student must complete the following four courses:

CHEM 3801	Chemistry in Pulp & Paper
CHE 4832	Pulp and Paper Testing
CHE 5923	Papermaking
CHE 5913	Pulp Production

Note: All above courses are offered every year and are 3 credits each.

Pulp and Paper Option Courses as Distance Education

The Pulp and Paper Option (or some of its individual courses) can also be taken by qualified persons working outside the Fredericton area. This is done by making available (at a cost) the lectures as video tapes or by video conferencing. Separate arrangements must be made for the laboratory component of CHEM 4832 . This service is especially directed towards engineers working in the pulp and paper (or related) industry. For further details contact the Industrial Research Chair in Pulping Technology, P.O. Box 69,000 Incutech Building, McKay Drive, UNB Campus, Fredericton, E3B 6C2, Tel.: (506) 453-4547; Fax: (506) 453-4767.

Research Option Program

Students interested in a career in industrial or academic research will find opportunities to work on research projects during their undergraduate program. Summer research projects can be sponsored by the Natural Sciences and Engineering Research Council, by the Province of New Brunswick (Challenge programs), or by individual faculty members in Chemical Engineering. Students are paid normal summer work rates. It is possible to gain academic credit for such research work. When the project is self contained and can be completed in the time available, it can be considered for a Chemical Engineering Report (CHE 481 , 3 ch) or a Chemical Engineering Thesis (CHE 4914, 6 ch). Normailly a thesis requires further work beyond the paid summer project. A report or thesis proposal is required at the beginning of the project, and an oral and written report or thesis is required at the end. Projects can be done in regular term time as well. Students should consult with faculty members or the department office to find out the available projects.

A CHE 5000 level Technical Elective		3 ch
CHE 4814	Chemical Engineering Report	3 ch
CHE 4914	Chemical Engineering Thesis	6 ch
		12 ch

CIVIL ENGINEERING

DEPARTMENT OF CIVIL ENGINEERING

General Office:	Head Hall, Room H-124
Mailing Address:	Department of Civil Engineering, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4521
Fax:	(506) 453-3568
Email:	civileng@unb.ca
Website:	http://www.unbf.ca/eng/civil/

FACULTY

- Bischoff, Peter H., BASc (UBC), MEng (McG.), PhD, DIC (Imperial Col, Univ. of London), PEng, Prof - 1992
- Bisson, Barry G., BScE, MScE (UNB), MBA (Harv), PEng, Prof and J. Herbert Smith/ACOA Chr in Tech. Mgmt. & Entrepreneurship - 1982
- Bremner, Theodore W., BScE (UNB), MSc, DIC, PhD (Lond),FCSCE, FACI, PEng, Hon Res Prof - 1969
- Christian, John, BEng (Sheff), PhD (Brad), FICE, FCSCE, PEng, CEng, Prof and M. Patrick Gillin Chair in Construction Engineering - 1987
- Cooke, A. Brian, BSc (Dal), Dipl Eng (SMU), BEng (Tuns), PhD (Qu.), Assoc Prof - 1997
- Dawe, John L., BSc (Nfld), BEng (NSTC), MSc, PhD (Alta), PEng, Prof - 1971
- Gordon, Martin J., BScE, MScE (UNB), PEng, Asst Prof - 2001
- Haralampides, Katy, BA, BSc (Qu), MScEng (Windsor), DPhil in Eng (New Orleans,), Asst Prof - 2000
- Hildebrand, Eldo, BASc, PhD (Wat), PEng, Assoc Prof and Asst Dean- 1987
- Hildebrand, Eric D., BScE, MScE (UNB), PhD (Wat), PEng, Assoc Prof - 1993
- Ircha, Michael C., BSc, MPI, MPA (Qu.), NDC (Nat'l Defence College), PhD (Cardiff -Wales), PEng, Prof and Assoc V.P. (Academic/Students) - 1979
- Kondratova, Irina, BScEE (Kiev State), PhD (UNB), PEng, Adjunct Prof. - 2002
- MacQuarrie, Kerry T.B., BScE (UNB), Msc, PhD (Wat), PEng, Assoc Prof & Canada Research Chair in Groundwater-Surface Water Interactions - 1990
- Mrawira, Donath M, BScE (Dar-es-Salaam), PhD (Wat), PEng, Asst Prof and D.C. Campbell Chair in Highway Construction and Pavement - 1998
- Rankin, Jeff H., BScE, MScE (UNB), PhD (UBC), PEng, Assoc Prof and M. Patrick Gillin Chair in Construction Engineering and Management - 2003
- Schriver, Allison, B., BScE, MScE (UNB), PhD (McM), PEng, Assoc Prof and Chair - 1986
- Singh, Kripa, BE (Birla Inst), ME (Asian Inst), PhD (Regina), PEng, Asst Prof (Joint - Chemical Eng.) - 2000
- Thomas, Michael D.A., BSc, PGCE (Nottingham), PhD (Aston), PEng, Prof - 2002
- Valsangkar, Arun J., BE (Marathwada), ME, PhD (IIS Bangalore), FEIC, PEng, Prof - 1981
- Waugh, Lloyd, BScE (UNB), MS, Engr, PhD (Stan), FCSCE, PEng, Prof - 1984
- Wilson, Bruce, BASc, MASc (Tor.), PhD (McM), PEng, Asst Prof - 2001
- Wilson, Frank R., BScE, MScE (UNB), PhD (Birmingham), FCSCE, FEIC, FCAE, PEng, Hon Res Prof, VP (Research) Emeritus - 1967
- Yevdokimov, Yuri, BSc (Sumy), MA (Academy of Sciences), MSc (Ill), PhD (Manit), Asst Prof (Joint Economics) - 1999

General Information

Civil Engineering deals with the systems and facilities associated with humanity's needs for shelter, work and transportation, which include: bridges, highways, airports, buildings, industrial plants, dams, housing, hydro developments, water supply, sewage and sewage disposal, and marine facilities. Civil Engineers work with other professionals to ensure that civil engineering works do not adversely affect the natural environment. The Civil Engineer can be involved in various stages of a project's life cycle, including planning, design, construction, operation, or maintenance.

Curriculum

In order to obtain a BScE degree in Civil Engineering, a minimum of 163 credit hours (ch) is required. All courses in the program must be passed with a C or better. The program consists of core courses complemented by a wide range of electives. The program is designed to be completed within eight academic terms; however, the student may arrange for a program that spans a longer time period. Although the program is flexible, care must be taken to avoid difficulties with prerequisites and corequisites or with time-tabling.

Although the Department of Civil Engineering does not have formal Options, students can take elective courses in addition to the required core courses in a specific area to develop a personalized program of study in the area of their choice. For example, students interested in the environment may take up to four environmental technical electives in Civil Engineering and one Non-Civil Engineering environmental technical elective in addition to the two environmental core courses required in the program.

The Department participates in the Professional Experience Program (PEP) which is administered by the Faculty of Engineering. This program allows students having completed 110 ch and with at least 15 ch remaining to have up to three academic terms of approved work experience away from the campus.

Core

Through the core of the Civil Engineering undergraduate program, the student is given a firm base in all aspects of Civil Engineering including the following major areas: Structural; Geotechnical; Construction; Materials; Environmental; Hydrotechnical; and Transportation. In addition to Civil Engineering studies, undergraduates are given instruction in the principles of Mechanical and Geomatics Engineering to enable them to deal intelligently with these branches of engineering in their work. Core courses are also provided by the Arts and Science faculties to give the students the necessary background in the Sciences, Mathematics, Humanities and Social Sciences. The core consists of 137 ch in the 163 ch program.

The core courses required of all Civil Engineering students are shown below.

Core Courses	
APSC 1013	Mechanics I
APSC 1023	Mechanics II
CE 2023	Mechanics of Materials
CE 2512	Materials for Civil Engineers
CE 2603	Construction Engineering I
CE 2703	Introduction to Fluid Mechanics
CE 3033	Structural Analysis
CE 3053	Reinforced Concrete Design I
CE 3063	Structural Steel Design I
CE 3113	Soil Mechanics I
CE 3123	Foundation Engineering I
CE 3201	Transportation Engineering
CE 3403	Introduction to Environmental Engineering
CE 3713	Hydraulics and Hydrology
CE 3933	Numerical Methods for Civil Engineers
CE 3963	Engineering Economy
CE 3973	Technical Communications
CE 4613	Construction Engineering II
CE 4923	Systems Design
CE 4973	Team Design Project
CHE 2503	Materials Science
CHEM 1882	General Chemistry
CS 1003	Introduction to Computer Programming
ECON 1073	Economics for Engineers
ENGG 1013	Design and Communication I
ENGG 4003	The Engineering Profession
ENGG 5003	Commercial Law: Engineering
GEOL 1001	The Earth: Its Origin, Evolution & Age
GEOL 1026	Geology Lab for Engineers
GGE 1001	Introduction to Geodesy & Geomatics
GGE 1803	Practicum for Civil Engineers (2 weeks)
HIST 2925	Technology and Western Society
or	
SOCI 2534	Technology and Social Change
MATH 1003	Introduction to Calculus I
MATH 1013	Introduction to Calculus II
MATH 1503	Introduction to Linear Algebra
MATH 2513	Multivariable Calculus for Engineers
STAT 2593	Probability and Statistics for Engineers

Electives

The minimum number of credit hours of electives in the Civil Engineering program is 26. The ranges of credit hours of electives in each of the four categories of electives are given as follows:

Category of Electives	Credit Hours
Civil Engineering Technical Electives	13-17
Non-Civil Engineering Technical Electives	0 - 4
Natural Science Elective	3
Complementary Studies Electives	6

Technical Electives

The minimum number of credit hours of Civil Engineering Technical Electives is 13. The choice of Civil Engineering Technical Electives shall be subject to the approval of the Chair of the Department. Not all Civil Engineering Technical Electives may be available in any academic year.

CE 5013	Earthquake Engineering
CE 5033	Bridge Design
CE 5043	Structural Engineering
CE 5053	Reinforced Concrete Design II
CE 5063	Structural Steel Design II
CE 5073	Structural Masonry Design
CE 5083	Structural Wood Design
CE 5113	Soil Mechanics II
CE 5132	Foundation Engineering II
CE 5141	Embankments I

CE 5153	Waste Geotechnics
CE 5201	Road Materials & Structures
CE 5212	Pavement Design I
CE 5222	Traffic Engineering
CE 5232	Transport Facility Design
CE 5241	Introduction to Pavement Management Systems
CE 5313	Urban Planning
CE 5342	Site Planning
CE 5402	Environmental Planning for Capital Works
CE 5411	Water Supply and Wastewater Removal
CE 5421	Water Quality and Treatment
CE 5432	Wastewater Treatment and Pollution Control
CE 5473	Elem of Enviro Eng for Chemical Eng
CE 5503	Concrete Technology
CE 5603	Construction Equipment and Methods
CE 5612	Const: Financial and Industry Issues
CE 5623	Project Management
CE 5702	Open Channel Hydraulics
CE 5712	Water Resources Engineering
CE 5742	Engineering Hydrology
CE 5753	Engineering Hydrogeology
CE 5913	Special Studies in Civil Engineering I
CE 5923	Special Studies in Civil Engineering II
CE 5933	Special Studies in Civil Engineering III
CE 5943	Research Project

Non-Civil Engineering Technical Electives

The following is a partial list of acceptable Technical Electives offered by Departments other than Civil Engineering. Other courses may be elected subject to the approval of both Departments involved.

ADM 2213	Financial Accounting
ECON 3801	Economics of Transportation I
EE 1713	Electricity and Magnetism
GGE 4403	Geographic Information Systems
GE 2022	Engineering Geology
MATH 3503	Differential Equations for Engineers
ME 1013	Descriptive Geometry with Computer Graphics
ME 4263	Mechanical and Electrical Equipment for Buildings
ME 4453	Air Conditioning
TME 3213	Quality Management
TME 3423	Technological Risk and Opportunity

Natural Science Elective

The Civil Engineering program requires 3 credit hours of approved natural science electives. These electives must be chosen from one of the following disciplines: biology, chemistry, geology, and physics. The following is a partial list of acceptable Natural Science Electives. Other courses may be chosen subject to the approval of both Departments involved.

BIOL 1551	Principles of Biology, Part I
BIOL 2113	Ecology I
CHEM 2401	Organic Chemistry I

Complementary Studies Electives

A complete Civil Engineering program requires 6 credit hours of complementary studies electives. Course selections are subject to departmental approval. At least one of the electives must be a course designated as having a substantial writing component, indicated by a [W] in the calendar description. To meet the Faculty of Engineering General Regulations for Complementary Studies requirements, at least one of the electives must be chosen from one of the following disciplines:

anthropology, classics, literature, history, philosophy, political science, and sociology.

Diploma in Construction

The Department of Civil Engineering offers a Diploma in Construction. Students enrolling in the diploma program will have a wide variety of educational backgrounds, and many will possess considerable experience in the construction industry. Applicants must satisfy certain requirements for admittance to the Diploma program. The program requires a minimum total of 20 credit hours. Further details of required courses and acceptable electives may be obtained from the Department.

COMPUTER ENGINEERING

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

General Office:	Head Hall, Room D36
Mailing Address:	Department of Electrical and Computer Engineering, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4561
Fax:	(506) 453-3589
Email:	ece@unb.ca
Website:	http://www.unbf.ca/eng/ee/

NOTE: For Faculty listing please see the Electrical Engineering program section.

General Information

Computer Engineering is a multi-disciplinary program that combines the two disciplines of Electrical Engineering and Computer Science. The applications of Computer Engineering are highly diversified with an emphasis on the application of computers in solving real-world problems. Students in Computer Engineering develop an expertise with interfacing and integrating computers and computer communications for creating new and innovative products and services. Engine control computers, industrial distributed computer control systems, DVD players, wireless computer networks, embedded computers and computer games are but a few.

The Computer Engineering Program is one of three distinct programs offered by the Department of Electrical and Computer Engineering. The Department also administers the Electrical Engineering Program and the Software Engineering Program is administered jointly with the Faculty of Computer Science. The Department of Electrical and Computer Engineering is

committed to delivering a high quality program that prepares students for entering the workforce as Professional Engineers.

A foundation is first developed in mathematics, computer science and engineering science. Students are then introduced to more specialized topics in Computer Engineering and in the final year students broaden their knowledge by choosing a number of elective courses in Electrical and Computer Engineering or in such related areas as Mathematics, Physics, Computer Science and other Engineering disciplines. Courses that lead to completion of the Control and Instrumentation Option may be selected. The program also makes available courses in cultural subjects that provide an awareness of social and professional perspectives both as individuals and as future engineers.

The Department of Electrical and Computer Engineering believes strongly in the value of relevant industrial experience. The Department endorses the Professional Experience Program and the Coop Program as described under Bachelor of Science in Engineering in Section E and students who wish to gain industrial experience are strongly encouraged to participate in either of these internship programs.

The Department also supports emerging research that advances technology and fosters scientific discovery.

Curriculum

Required Courses

A minimum grade of C is required for all courses used for credit towards the B.Sc.E. degree. The following is a list of the courses that are core to the program.

APSC 1013 *	Mechanics I
APSC 1023 *	Mechanics II
CHEM 1882	General Chemistry: Physical and Inorganic hemistry
CMPE 2013	Simulation and Engineering Analysis
CMPE 3213	Advanced Software Engineering
CMPE 3533	Signals and Systems
CMPE 4000	Computer Engineering Design
Or	
EE 4000	Electrical Engineering Design
CMPE 4543	Communications Network Engineering
CS 1073 *	Introduction to Computer Programming in Java
CS 1083	Computer Science Concepts (Java)
CS 1303	Discrete Structures I
CS 2013	Software Engineering I
CS 3323	Introduction to Data Structures
EE 1013 *	Electricity and Magnetism
EE 2213	Digital Systems I
EE 2703	Introduction to Engineering Electrical Design
EE 2773	Electric Circuits
EE 2783	Networks
EE 3013	Technical Writing
EE 3121	Electronics I
EE 3132	Electronics II
EE 3221	Digital Systems II
EE 3232	Digital Systems III
EE 3253	Computer Aided Engineering Systems
EE 3323	Linear Control Systems
EE 3833	Electromagnetic Fields and Waves
EE 4243	Data Communications
EE 4261	Microprocessor System Design
EE 4273	Real Time Operation of Microcomputers
EE 4543	Digital Signal Processing I
ENGG 1013	Design and Communications
ENGG 4003	The Engineering Profession
ENGG 5003	Commercial Law: Engineering
MATH 1003 *	Introduction to Calculus I
MATH 1013 *	Introduction to Calculus II
MATH 1503 *	Introduction to Linear Algebra
MATH 2513	Multivariable Calculus for Engineers
MATH 3503	Differential Equations for Engineers
ME 3232	Engineering Economics
Or	
CE 3963	Engineering Economy
STAT 2593	Probability & Statistics for Engineers

Note: * Denotes standard first year course. In addition to the core courses there is also requirement to complete two technical elective courses (normally 8 ch), one basic science elective and four complementary studies electives (normally 12 ch).

Electives

BASIC SCIENCE ELECTIVE

Each student is required to take 3 ch of basic science courses chosen from Physics, Chemistry, and the life or earth sciences.

TECHNICAL ELECTIVE COURSES

Each student is required to take two technical elective courses (normally 8 ch). At least one of the electives must be a CMPE course.

CMPE 4223	Safety Critical System Design
CMPE 4233	Topics in Computer Engineering
CMPE 4513	Algorithms in Real Time
EE 3613	Electric Machines
EE 4033	Senior Project
EE 4142	Electronic Circuit Design
EE 4163	Instrumentation Design
EE 4173	Devices and Circuits for VLSI
EE 4253	Digital Communications
EE 4283	VLSI System Design
EE 4343	Industrial Control Systems
EE 4353	Robotics
EE 4532	Communications Systems
EE 4552	Digital Signal Processing II
EE 4563	Optical Communication Systems
EE 4853	Microwave Engineering
EE 4863	Optical Communications
EE 4933	Introduction to Biomedical Engineering
SWE 4103	Software Quality and Project Management
SWE 4203	Software Evolution and Maintenance
SWE 4303	Performance Analysis of Computer Systems
SWE 4403	Software Architecture

Students are encouraged to take combinations of electives which will permit some degree of specialization in one or more of the major fields of Computer Engineering. One of the technical electives may be taken in another discipline subject to Department approval. For instance, a number of 3000 and 4000 level courses in Math, Science, Computer Science and other Engineering disciplines are eligible.

COMPLEMENTARY STUDIES ELECTIVES

The CMPE program requires 12 credit hours of Complementary Studies electives. The choice of courses is subject to the Faculty of Engineering regulations for Complementary Studies Electives and the following:

1. A minimum of 6 ch of non-language Humanities and Social Sciences (HSS) courses is required. At least 3 ch must come from the following: Anthropology, Classics, Literature, History, Philosophy, Political Science and Sociology.
2. At least 3 ch must be an Economics course offered by the Department of Economics (usually ECON 1073 , Economics for Engineers).
3. The remaining 3 ch may be taken from: Administration, Technology Management and Entrepreneurship (TME) or the Humanities and Social Sciences.

Students are encouraged to seek out courses of interest and value to them. The final choice of electives is subject to the approval of the Department of Electrical and Computer Engineering.

Recommended Program

The program allows completion of degree requirements in eight terms. However, a significant number of students plan to take nine or ten terms to reach graduation, using the extra time to master the material more thoroughly or to take extra courses. Students planning to take longer than eight terms are advised to plan well ahead and to consult with faculty so as to minimize problems arising from timetabling restrictions and prerequisite requirements.

Instrumentation & Control Option in Computer Engineering

The Instrumentation & Control Option is available to all students in Computer Engineering who meet the following conditions:

1. Successful completion of 80 ch in the Computer Engineering program, including EE3323 .
2. Approval by the Department and the Instrumentation and Control Option coordinator.

Students must complete the three required courses and one of the area electives from the lists below. In addition students are required to complete a senior project in the area of instrumentation and/or control subject to the approval of the Instrumentation and Control Option Coordinator.

Required Courses		
EE 4343	Industrial Control Systems	(4 ch)
ME 3703	Mechanical Engineering Measurements	(4 ch)
ME 5653	Predictive Control and Intelligent Sensors	(4 ch)
Area Electives (select one)		
EE 4163	Instrumentation Design	(4 ch)
EE 4353	Robotics	(4 ch)
ME 5163	Machinery Vibration and Noise	(4 ch)
ME 5663	Hydraulic Power Systems	(4 ch)

In the event that a required course is not offered as scheduled, an area elective will be designated as a required course.

ELECTRICAL ENGINEERING

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

General Office:	Head Hall, Room D36
Mailing Address:	Department of Electrical and Computer Engineering, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4561
Fax:	(506) 453-3589
Email:	ece@unb.ca
Website:	http://www.unbf.ca/eng/ee/

FACULTY

- Biletskiy, Yevgen, Radio-Engineer (Ukraine), MScCS, PhD (Kharkiv), Asst Prof - 2003
- Briggs, William, BSc (Mt. A), PEng, Sr Instructor - 2001
- Brown, Anthony, BSc, PhD (UNB), Research Assoc, 2004
- Chang, Liuchen, BSc (N.Jiatong), MSc (China Acad of Railway Sciences), PhD (Qu.), P.Eng., NSERC Chair in Environmental Design Engineering, Prof - 1992
- Chauhan, Bak, Adjunct Prof - 2003
- Colpitts, Bruce, BScE, MScE, PhD (UNB), PEng, Prof - 1988
- Diduch, Christopher, BScE, MScE, PhD (UNB), PEng, Prof - 1981
- Doraiswami, Rajamani, BEE (VJI, Bombay), MEE (IIS, Bangalore), PhD (Johns H), PEng, Prof - 1981
- Englehart, Kevin, BScE, MScE, PhD (UNB), PEng, Assoc. Prof and Assoc Dir Inst of Biomedical Eng -1998
- Gadoura,Idris, BScEE (Libya), MScEE, Lic.Sc, DSc (Helsinki), Research Assoc, 2003
- Hudgins, Bernard, BScE, MScE, PhD (UNB), PEng, Prof. and Director Inst. of Biomedical Eng. - 2001
- Kaye, Mary E., BScE (UNB), MEng (Car), PEng, Assoc Prof - 1979
- Kyberd, Peter, BSc (Durham, MEng, PhD (Southhampton), Assoc Prof & Tier 2 Canada Research Chair in Rehabilitation Cybernetics - 2003
- Lewis, J. Eugene, BScE (UNB), PhD (UBC), PEng., Director CADMI Microelectronics, Prof and Chair - 1969
- Lovely, Dennis, BSc (Southampton), PhD (Strathclyde), PEng, Prof - 1982
- MacIsaac, Dawn, BPE (McM.), BEd (Qu.), BEng (McM.), MScE (UNB), PhD (UNB), Asst Prof (Joint Computer Science) - 2001
- Meng, Julian, BScE (UNB), MSc, PhD (Qu.), Assoc. Prof. - 2002
- Narraway, John J., MSc, PhD (Cran IT), PEng, Hon Res Prof - 1996
- Parker, Philip A., BScE (UNB), MSc (St And), PhD (UNB), PEng, Prof - 1976
- Petersen, Brent R., BEng (Car), MASc (Wat), PhD (Car), Assoc Prof - 1997
- Scott, Robert, BSc (UNB), DSc (Acad.), PEng, Professor Emeritus
- Sharaf, Adel M., BSc (Cairo), MSc, PhD (Manit), PEng, Prof - 1981
- Stevenson, Maryhelen, BEE (Gatech), MSEE, PhD (Stan), PEng, Prof - 1990
- Taylor, James H., BSEE, MSEE (Rochester), PhD (Yale), PEng, Prof - 1994
- Tervo, Richard, BSc, MSc (McM), PhD (Laval), PEng, Prof - 1986
- Veach, Ian, BA, BScE, MScE (UNB), Sr Teaching Assoc - 1985
- Venkatesh, Balasubramanian, BEE (Madr), MEE, PhD (Anna), Assoc Prof - 2005

General Information

Electrical Engineering is concerned with the application of electricity for the design and development of new and enhanced products and services. It is a discipline that has grown to include a diversity of fields including: microelectronics, digital and wireless communications, control systems, power systems, signal processing and computer technology. Electrical engineers have made remarkable contributions. Cellular phones, DVD players, industrial control systems, radio and television, smart vehicles, maglev trains, spacecraft, GPS units, wind generators and microcomputers are but a few. With advances in technology Electrical Engineering offers even more exciting possibilities.

The Electrical Engineering Program is one of three distinct programs offered by the Department of Electrical and Computer Engineering. The Department also administers the Computer Engineering Program and the Software Engineering Program is administered jointly with the Faculty of Computer Science. The Department of Electrical and Computer Engineering is committed to delivering a high quality program that prepares students for entering the workforce as Professional Engineers.

A foundation is first developed in mathematics, science and engineering. Students are then introduced to more advanced topics in Electrical Engineering and in the final year, students broaden their knowledge by choosing a number of elective courses in Electrical and Computer Engineering or in such related areas as Mathematics, Physics, Computer Science and other Engineering disciplines. Courses that lead to completion of the Control and Instrumentation Option may also be selected. The program also makes available courses in cultural subjects that provide an awareness of social and professional perspectives both as individuals and as future engineers.

The Department of Electrical and Computer Engineering believes strongly in the value of relevant industrial experience. The Department endorses the Professional Experience Program and the Coop Program and students who wish to gain industrial experience are strongly encouraged to participate in either of these internship programs.

The Department also supports emerging research that advances technology and fosters scientific discovery.

Curriculum

Required Courses

A minimum grade of C is required for all courses used for credit towards the B.Sc.E. degree. The following is a list of the courses that are core to the program.

APSC 1013 *	Mechanics I
APSC 1023 *	Mechanics II
CE 3963	Engineering Economy
Or	
ME 3232	Engineering Economics
CHE 2503	Materials Science
CHEM 1882 *	General Chemistry - Physical and Inorganic Chemistry
CMPE 2013	Simulation and Engineering Analysis
CS 1073	Intro to Computer Programming in Java
CS 1083	Computer Science Concepts (Java)
EE 1013 *	Electricity and Magnetism
EE 2213	Digital Systems I
EE 2703	Introduction to Electrical Engineering Design
EE 2773	Electric Circuits
EE 2783	Networks
EE 3013	Technical Writing
EE 3121	Electronics I
EE 3132	Electronics II
EE 3221	Digital Systems II
EE 3232	Digital Systems III
EE 3313	System Dynamics
EE 3323	Linear Control Systems
EE 3513	Signals
EE 3613	Electric Machines
EE 3811	Electromagnetic Fields
EE 3822	Electromagnetic Waves
EE 4000	Electrical Engineering Design
Or	
CMPE 4000	Computer Engineering Design
EE 4543	Digital Signal Processing I
ENGG 1013 *	Design and Communication
ENGG 4003	The Engineering Profession
ENGG 5003	Commercial Law: Engineering
MATH 1003 *	Introduction to Calculus I
MATH 1013 *	Introduction to Calculus II
MATH 1503 *	Introduction to Linear Algebra
MATH 2513	Multivariable Calculus for Engineers
MATH 3503	Differential Equations For Engineers
STAT 2593	Probability and Statistics for Engineers

* Denotes standard first year course In addition to the core courses there is also requirement to complete five technical elective courses (normally 20 ch) and four complementary studies electives (normally 12 ch).

Electives

Technical Elective Courses

Each student is required to take five technical elective courses (normally 20 ch). At least three of the electives must be EE or CMPE courses from the following list.

CMPE 3213	Advanced Software Engineering
CMPE 4233	Topics in Computer Engineering
CMPE 4513	Algorithms in Real Time
CMPE 4543	Communications Network Engineering
EE 3253	Computer Aided Engineering Systems
EE 4033	Senior Project
EE 4142	Electronic Circuit Design
EE 4163	Instrumentation Design
EE 4173	Devices and Circuits for VLSI
EE 4243	Data Communications
EE 4253	Digital Communications
EE 4261	Microprocessor System Design
EE 4273	Real Time Operation of Microcomputers
EE 4283	VLSI System Design
EE 4343	Industrial Control Systems
EE 4353	Robotics
EE 4411	Power System Analysis
EE 4422	Power System Operation
EE 4532	Communication Systems
EE 4552	Digital Signal Processing II
EE 4563	Optical Communication Systems
EE 4641	Electrical Design
EE 4653	Power Electronics
EE 4853	Microwave Engineering
EE 4863	Optical Fiber Communication
EE 4933	Introduction to Biomedical Engineering
SWE 4303	Performance Analysis of Computer Systems

Students are encouraged to take combinations of electives which will permit some degree of specialization in one or more of the major fields of Electrical Engineering. A maximum of two technical electives may be taken in other disciplines subject to Department approval. For instance, a number of 3000 and 4000 level courses in Math, Science, Computer Science and other Engineering disciplines are eligible.

Complementary Studies Electives

The EE program requires 12 credit hours of Complementary Studies electives. The choice of courses is subject to the Faculty of Engineering regulations for Complementary Studies Electives and the following:

1. A minimum of 6 ch of non-language Humanities and Social Sciences (HSS) courses is required. At least 3 ch must come from the following: Anthropology, Classics, Literature, History, Philosophy, Political Science and Sociology.
2. At least 3 ch must be an Economics course offered by the Department of Economics (usually ECON 1073 , Economics for Engineers).
3. The remaining 3 ch may be taken from: Administration, Technology Management and Entrepreneurship (TME) or the Humanities and Social Sciences.

Students are encouraged to seek out courses of interest and value to them. The final choice of electives is subject to the approval of the Department of Electrical and Computer Engineering.

Recommended Program

The program allows completion of degree requirements in eight terms. However, a significant number of students plan to take nine or ten terms to reach graduation, using the extra time to master the material more thoroughly or to take extra courses. Students planning to take longer than eight terms are advised to plan well ahead and to consult with faculty so as to minimize problems arising from timetabling restrictions and prerequisite requirements.

Instrumentation & Control Option in Electrical Engineering

The Instrumentation & Control Option is available to all students in Electrical Engineering who meet the following conditions:

1. Successful completion of 80 ch in a program in the Electrical Engineering program, including EE3323 .
2. Approval by the Department and the Instrumentation and Control Option coordinator.

Students must complete the three required courses and one of the area electives from the lists below. In addition, students are required to complete a senior project in the area of instrumentation and/or control subject to the approval of the Instrumentation and Control Option Coordinator.

Required Courses		
EE 4343	Industrial Control Systems	(4 ch)
ME 3703	Mechanical Engineering Measurements	(4 ch)
ME 5653	Predictive Control and Intelligent Sensors	(4 ch)
Area Electives		
EE 4163	Instrumentation Design	(4 ch)
EE 4353	Robotics	(4 ch)
ME 5163	Machinery Vibration and Noise	(4 ch)
ME 6163	Hydraulic Power Systems	(4 ch)

In the event that a required course is not offered as scheduled, an area elective will be designated as a required course.

FOREST ENGINEERING

Please see Bachelor of Science in Forest Engineering Program information.

GEOLOGICAL ENGINEERING

GEOLOGICAL ENGINEERING PROGRAM

General Office:	Head Hall, Room H-124
Mailing Address:	Dr. Karl Butler Director, Geological Engineering Program Department of Geology , University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 458-7210
Fax:	(506) 453-5055
Email:	GE-Program@unb.ca
Website:	http://www.unbf.ca/geological/

General Information

Geological Engineering is concerned with the exploration, conservation, utilization and management of earth materials and the resources of the earth's crust. Geological engineers apply the principles of earth sciences and engineering to find and extract earth-bound energy such as oil and geothermal sources and mineral wealth and metal resources. Geological engineers also aid other engineering disciplines in designing foundations of major structures for various types of loads and in designing waste repository systems to protect the earth and its inhabitants from environmental pollution.

The geological engineer frequently works with geologists and with civil engineers and plays an important role in the study of the interaction between the earth and engineered facilities.

Geological engineers find employment in many significant sectors of our society, including those related to metal and industrial mineral mining, energy, water resources, construction, waste disposal and remediation of contaminated sites.

As long as industry and government seek more effective and responsible methods of utilizing reserves of natural resources and of managing the wastes produced by society, the demand for geological engineers will continue to be strong.

Program

Three options are available within the Geological Engineering program: Geoenvironmental, Geotechnical and Mineral Resources. Each of these options is built on a common core of courses which provides the geological engineer with the basic sciences and engineering principles required for his profession. This core consists of about 80 percent of the total requirements for the program.

Students in the **Geoenvironmental Option** take more environmentally-oriented courses in Civil engineering, Chemistry, Biology and Geology rather than the more traditional courses in these disciplines. The students are thus better trained to work in the environmental field.

Students in the **Geotechnical Option** examine the behaviour of the earth and its response to human construction. Topics included in this option prepare the student for involvement with the design of major structures, such as off-shore installations, management of ground water, waste disposal, and mining.

Students in the **Mineral Resources Option** study applied scientific, economic and environmental aspects of the discovery, extraction, utilization, and management of mineral deposits.

Because of the large component of geology courses in the curriculum, the total number of credit hours in the BScE degree program in Geological Engineering is 197. Although most of the program content is fixed, the student is free to select a program option and three or four technical electives along with a range of possible complementary studies electives.

Engineers have to be able to communicate their ideas, thus the program places a significant emphasis on writing and the presentation of written material.

Graduates of this program will be entitled to be registered as Professional Engineers in Canada after acquiring four years of practical experience.

The program is scheduled to permit completion in 9 to 10 terms. Students may elect, or be required, to extend the time beyond 10 terms to meet individual needs. Students should pay special attention to the course sequences and prerequisites when selecting their courses for any term. Advice concerning course selection and sequence should be sought from the Director of the Geological Engineering Program.

Students entering the program without adequate preparation for courses in chemistry and physics will be required to accumulate additional credit hours in these areas for their program requirements.

Common Core

APSC 1013	Mechanics I
APSC 1023	Mechanics II
CHEM 1882	General Chemistry
CE 2023	Mechanics of Materials
CE 2703	Introduction to Fluid Mechanics
CE 3113	Soil Mechanics I
CE 3713	Hydraulics & Hydrology
CE 3933	Numerical Methods for Civil Engineers
CE 3963	Engineering Economy
CE 3973	Technical Communications
CE 4613	Construction Engineering II
CS 1003	Introduction to Computer Programming
ECON 1073	Economics for Engineers
EE 1013	Electricity and Magnetism
ENGG 1013	Design and Communication
ENGG 4003	The Engineering Profession
ENGG 5003	Commercial Law: Engineering
ENGL 1103	Fundamentals of Clear Writing
GGE 3342	Imaging and Mapping I
GE 1026	Geology Lab for Geological Engineers
GE 2022	Engineering Geology
GE 4973	Team Design Project
GEOL 1001	The Earth: Its Origin, Evolution and Age
GEOL 2131	Mineral Sciences
GEOL 2142	Chemistry and Physics of Minerals
GEOL 2212	Sedimentology I
GEOL 2321	Structural Geology I
GEOL 2602	Principles of Geochemistry
GEOL 2703	Field School
GEOL 3131	Igneous and Metamorphic Petrology
GEOL 3411	Rock Mechanics
GEOL 4512	Exploration Geophysics II
MATH 1003	Introduction to Calculus I
MATH 1013	Introduction to Calculus II
MATH 1503	Introduction to Linear Algebra
MATH 2513	Multivariable Calculus for Engineers
STAT 2593	Probability and Statistics for Engineers
GGE 1001	Introduction to Geodesy & Geomatics
GGE 1803	Practicum for Civil Engineers

Geoenvironmental Option

1. Compulsory Courses

BIOL 2113	Ecology
CE 3403	Introduction to Environmental Engineering
GE 5753	Engineering Hydrogeology
GEOL 3442	Environmental Geology
GEOL 3631	Geochemistry of Natural Waters
GEOL 3713	Field School

2. Complementary Studies Electives (6 ch)
3. Minimum of 10 Credit Hours of Technical Electives must be selected from:

CE 5113	Soil Mechanics II
CE 5141	Embankments I
CE 5201	Road Materials & Structures
GE 5153	Waste Geotechnics
CE 5421	Water and Wastewater Analysis
CE 5432	Wastewater Treatment and Pollution Control
GEOL 4501	Exploration Geophysics I
GEOL 4452	Environmental Impact Assessment

Other courses may be selected for Technical Electives subject to the approval of the Director of the Program.

Geotechnical Option

1. Compulsory Courses

CE 3123	Foundation Engineering I
GE 4412	Applied Rock Mechanics
GE 5753	Engineering Hydrogeology
GEOL 3322	Structural Geology II
GEOL 3703	Field School

2. Complementary Studies Electives (6 ch)
3. Minimum of 10 Credit Hours of Technical Electives must be selected from:

*CE 5113	Soil Mechanics II
*CE 5132	Foundation Engineering II
*CE 5141	Embankments I
*GE 5153	Waste Geotechnics
CE 5201	Road Materials and Structures
CE 5212	Pavement Design
CE 5603	Construction Equipment and Methods
CE 5623	Project Management
GE 4432	Rock Mechanics Design
GEOL 4501	Exploration Geophysics I

* At least one Technical Elective must be chosen from this list of Geotechnical courses.

Other courses may be selected for Technical Electives subject to the approval of the Director of the Program.

Mineral Resource Option

1. Compulsory Courses

GE 4442	Mineral Resources Utilization
GEOL 3322	Structural Geology II
GEOL 3703	Field School
GEOL 4461	Economic Geology
GEOL 4472	Economic Geology II
GEOL 4501	Exploration Geophysics I

2. Complementary Studies Elective (6 ch) Minimum of 3 Credit Hours of Technical Electives must be selected from

*CE 5132	Foundation Engineering II
*CE 5141	Embankments I
*CE 5201	Road Materials and Structures
*CE 5212	Pavement Design
*CE 5603	Construction Equipment and Methods
CE 5623	Project Management
GE 5153	Waste Geotechnics

* At least one technical elective must be taken from the list of courses marked with an asterisk.

Complementary Studies Electives

A complete Geological Engineering program requires 6 credit hours of complementary studies electives. Course selections are subject to Program Directors approval, and also must meet the Faculty of Engineering, General Regulations for Complementary Studies requirements.

GEOMATICS ENGINEERING (Geodesy & Geomatics Engineering)

DEPARTMENT OF GEODESY & GEOMATICS ENGINEERING

General Office:	Head Hall, Room E-54
Mailing Address:	Department of Geodesy & Geomatics Engineering, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4698
Fax:	(506) 453-4943
Email:	gge@unb.ca
Website:	http://gge.unb.ca/

FACULTY

- Alexander, Lee, BScE (Marietta), MScE (UNH), PhD (Yale), Adjunct Prof - 2004
- Bedard, Yvan, BSc, MSc (Laval), PhD (Maine), Adjunct Prof - 1999
- Chrzanowski, Adam, Dipl.Eng., MSc, PhD (Krakow), Dr.h.c. (Olsztyn), Dr.h.c. (Krakow), PEng, Prof (1966), Professor Emeritus - 1998
- Coleman, David, BScE, MScE (UNB), PhD (Tas), PEng, Prof and Dean (Engineering) - 1993
- Dare, Peter, BSc (East London), MASc (Erindale College), PhD (E.Lond), Assoc Prof & Chair - 2000
- Faig, Wolfgang, Dipl.Ing. (Stuttgart), M.Sc.E. (UNB), Dr.Ing. (Stuttgart), PEng, Prof (1971), Dean and Professor Emeritus - 1999
- Hamilton, Angus, B.A.Sc, M.S.Sc (Tor), PEng, Prof (1971), Professor Emeritus - 1987
- Hughes Clarke, John E., BA (Oxf), MSc (S'ton), PhD (Dal), Assoc Prof and Chair in Ocean Mapping- 1991
- Kim, Donghyun, BS, MS, PhD (Seoul National), Research Assoc. - 2002
- Langley, Richard B., BSc (Wat), PhD (York), Prof - 1981
- Maher, Robert, BSc(Birm), MSc, PhD (W.Ont), Adjunct Prof - 2003
- Mayer, Larry, BSc (Rhode Island), PhD (Scripps), Adjunct Prof - 2001
- McLaughlin, John D., BScE, MScE (UNB), PhD (Wis), PEng, Prof and President - 1972
- Monahan, Dave, BSc (Dal), MA (Carl), MScE (UNB) Adjunct Prof - 2003
- Nichols, Susan, BSc (Acad), MEng, PhD (UNB), PEng, Prof - 1992
- Santos, Marcelo, BSc (Rio de Janeiro), MSc (National Observatory), PhD (UNB), Assoc Prof - 2000
- Secord, James M., BScE, MScE, PhD (UNB), PEng, Sr Teaching Assoc - 1986
- Szostak-Chrzanowski, Anna, MSc (Warsaw), MEng (UNB), PhD (Krakow), PEng, Sr. Research Assoc. - 2000
- Vanicek, Petr, Geodetic Eng, PhD (Prague) PEng, Prof (1971), Professor Emeritus - 2001
- Wells, David, BScE (Mt.All), MASc (BrCol), PhD (UNB), PEng, Prof (1980), Professor Emeritus - 1999
- Zhang, Yun, BSc (Wuhan), MSc (East China), PhD (Free University Berlin), Asst Prof - 2000

GENERAL INFORMATION

The Geomatics Engineering program is offered by the Department of Geodesy and Geomatics Engineering. Interesting and challenging professional careers in land or cadastral surveying, engineering surveying, mapping, photogrammetry and geodesy are open to graduates. They can find positions with federal, provincial and municipal government agencies, with the oil, gas and mining industries and with numerous private organizations, such as photogrammetric mapping firms, geological and geophysical exploration companies and consulting engineers, or they can be self employed as professional engineers or registered land surveyors.

A variant of the concept of cooperative education has been adopted in the Geomatics Engineering Programme. Cooperative education is based upon the principle that a sound academic program combined with relevant technical experience can provide the most effective professional development during the undergraduate years. With this in mind, undergraduate geomatics students are required to obtain at least six months relevant practical experience and to prepare a technical report, normally based on this experience, prior to graduation. Many geomatics organizations have agreed to participate in this programme. The Department will make available to the students a list of organizations that provide the opportunity for appropriate experience. Students will then be responsible for selecting and negotiating suitable placement.

Curriculum

With a minimum of 170 credit hours (ch) in the program, students are required to complete:

a. a common core of basic engineering subjects;
b. a core of mathematics, computer science, general science, and geomatics engineering (GGE) subjects;
c. a certain number of technical electives;
d. a certain number of complementary studies electives; and
e. at least 6 months of relevant practical experience approved by the Department.

Students who have other post-secondary educational efforts are advised to write to the Chair of the Department for information on credits that may be awarded.

Students intending to become registered land surveyors or accredited hydrographic surveyors are required to take certain electives in geomatics engineering and other fields and should consult with the Department.

The program has been designed to be completed in 8 terms, with reasonable course loads. However, students may proceed at a slower rate but all requirements must be completed within 8 consecutive years. Detailed program information is available from the Department.

Courses

Descriptions of courses offered by the various Departments are given in the "Fredericton Courses" Section of this Calendar.

CORE COURSES:

APSC 1013	Mechanics I
APSC 1023	Mechanics II
CHEM 1882	General Chemistry - Physical and Inorganic
CS 1003	Introduction to Computer Programming
CS 1013	Computer Science Concepts
CS 3113	Introduction to Numerical Methods
ECON 1073	Economics for Engineers
EE 1013	Electricity and Magnetism
ENGG 1013	Design & Communication I
ENGG 4003	The Engineering Profession
ENGG 5003	Commercial Law: Engineering
GEOL 1001	The Earth: Its Origin, Evolution and Age
GEOL 1026	Geology Laboratory for Engineers
GGE 1001	Introduction to Geodesy & Geomatics
GGE 1003	Practicum I
GGE 2012	Advanced Surveying
GGE 2013	Practicum II
GGE 2413	Mapping Concepts and Technology
GGE 2501	Land Administration I
GGE 3022	Survey Design and Analysis
GGE 3023	Practicum III
GGE 3042	Space Geodesy
GGE 3111	Introduction to Adjustment Calculus
GGE 3122	Advanced Adjustment Calculus
GGE 3202	Geodesy I
GGE 3342	Imaging and Mapping I
GGE 3353	Imaging and Mapping II
GGE 4022	Precision Surveying
GGE 4042	Kinematic Positioning
GGE 4211	Geodesy II
GGE 4313	Imaging and Mapping III
GGE 4403	Geographic Information Systems
GGE 4512	Land Administration II
GGE 4541	GGE Economics & Management
GGE 4623	Practicum IV
GGE 4711	Technical Report
MATH 1003	Introduction to Calculus I
MATH 1013	Introduction to Calculus II
MATH 1503	Introduction to Linear Algebra
MATH 2513	Multivariable Calculus for Engineers
MATH 3543	Differential Geometry for GGE
STAT 2593	Probability and Statistics for Engineers

TECHNICAL ELECTIVES:

GGE 4723	Thesis
GGE 5013	Oceanography for Hydrographic Surveyors
GGE 5041	Engineering Surveying
GGE 5061	Mining Surveying
GGE 5072	Hydrographic Data Management
GGE 5093	Industrial Metrology
GGE 5131	Special Studies in Adjustments
GGE 5222	Gravity Field and Geodetic Networks
GGE 5242	Special Studies in Geodesy
GGE 5332	Special Studies in Photogrammetry
GGE 5413	Special Studies in Digital Mapping
GGE 5521	Survey Law
GGE 5532	Land Economy & Administration
GGE 5533	Environmental Policy, Law and Informative Mgmt
GGE 5543	Marine Policy, Law, and Administration

Other technical electives may be taken in engineering, science, computer science, or forestry, subject to Departmental approval.

Students are cautioned that not all technical electives may be offered every year.

A minimum of 9 ch of complementary studies electives is also required. These require approval by the Department.

Cadastral Surveying Option within Geomatics Engineering

Students who obtain a Bachelor of Science in Engineering degree in Geomatics Engineering at UNB, and who complete a set of four specified technical electives (CE 5313 , CE 5342 , GGE 5521 , GGE 5532), will have the following notation placed on their UNB transcripts: "COMPLETED CADASTRAL SURVEYING OPTION". This option has been recognized by the Canadian Council of Land Surveyors.

Concurrent Degrees in Geomatics Engineering and Computer Science

Rewarding career opportunities now emerging in large-scale spatial database management, geomatics systems integration, and custom applications programming demand a deeper foundation in computer science and a stronger understanding of spatial systems and sciences than found in other programs.

The Faculty of Computer Science and the Department of Geodesy and Geomatics Engineering are cooperating to make it possible for a student to graduate with both a BCS degree and a BScE(Geomatics Engg) degree in six years. Several specializations are available in both Computer Science and Geomatics Engineering but may lengthen the period of study.

The concurrent program is designed so that, if a student decides to opt for either degree alone part way through the program, the transition can be made easily.

Students in the concurrent program are able to count many of their courses toward the requirements of both degrees so it is important to select courses carefully from the start. Advising is available at every level from pre-entry inquiries through to graduation.

Certificate of Academic Proficiency in Hydrographic Surveying

Those wishing to acquire a proficiency in hydrographic surveying which meets international standards may apply for admission to this Certificate program. This Certificate is awarded to students who have completed a set of 17 specified courses, totalling 65 ch. Admission to the program requires successful completion of all prerequisites, or equivalents, for each course in the Certificate program. Students obtaining a Bachelor of Science in Engineering degree in Geomatics Engineering at UNB, including the electives, GGE 5013 , GGE 5072 , GGE 5543 , GEOL 4501 , GEOL 4512 , will have satisfied all the requirements, except for GGE 5083 . Other students may receive credit for up to 50% of the Certificate courses from equivalent courses taken elsewhere. Detailed Certificate information is available from the Department.

Courses required to complete the Certificate:

CS 3113	Introduction to Numerical Methods
ENGG 5003	Commericial Law: Engineering
GEOL 4501	Exploration Geophysics I
GEOL 4512	Exploration Geophysics II
GGE 3022	Survey Design and Analysis
GGE 3023	Practicum III
GGE 3042	Space Geodesy
GGE 3122	Advanced Adjustment Calculus
GGE 3353	Imaging and Mapping II
GGE 4042	Kinematic Positioning
GGE 4403	Geographical Information Systems
GGE 4512	Land Administration II
GGE 4711	Technical Report
GGE 5013	Oceanography for Hydrographic Surveyors
GGE 5072	Hydrographic Data Management
GGE 5083	Hydrographic Surveying Operations
GGE 5543	Marine Policy, Law, and Administration

Certificate of Field Proficiency in Hydrographic Surveying

Students who have been awarded the Certificate of Academic Proficiency in Hydrographic Surveying by the University of New Brunswick may apply for admission to this Certificate program. This Certificate will be awarded to students who (a) present logbook records demonstrating completion of at least 24 months of supervised field experience in marine surveying, at least 50% of which is at sea, and (b) submit a satisfactory report on a practical hydrographic surveying project related to field operations for which they were responsible or significantly involved. Typically, a complex multi-disciplinary project is envisaged for this report. Full details on the Certificate can be obtained from the Department of Geodesy and Geomatics Engineering.

Diplomas in Geomatics Engineering

The Department of Geodesy and Geomatics Engineering offers programs leading to diplomas in the areas of specialization of Cadastral Studies, Engineering and Exploration Surveying, Geodetic Surveying, Land Information Management, and Mapping and Geographic Information Systems (GIS). These programs offer an opportunity for practising surveyors and other technical professionals to gain a thorough understanding of the theory and principles of specific applications of new technologies and methodologies. Each program area consists of selected courses as regularly offered in the undergraduate program. A total of at least 30 credit hours of specified and elective courses is required in each program. All of the courses in these programs are degree-credit courses. Those who successfully complete a diploma program and who are subsequently admitted to a degree program may receive credit for them. Students enrolled in a diploma program will be subject to all relevant university undergraduate regulations and to the General Regulations of the Faculty of Engineering.

It is recommended that applicants to the Diploma programme have successfully completed a programme of technology, of at least two years, which should have included or have been supplemented with courses in calculus, computer science, and probability and statistics at a level equivalent to first year university. It is important that applicants have a working knowledge of these three subject areas and have at least three years of relevant work experience (at least one of which should be as a party chief or equivalent).

Cadastral Studies	
CE 5313	Urban Planning
CE 5342	Site Planning
GGE 2501	Land Administration I
GGE 3342	Imaging & Mapping I
GGE 4512	Land Administration II
GGE 5521	Survey Law
GGE 5532	Land Economy and Administration
GGE 4541	Economics and Management
Electives:	at least 3 credit hours
Engineering and Exploration Surveying	
GEOL 4501	Exploration Geophysics I
GEOL 4512	Exploration Geophysics II
GGE 3022	Survey Design and Analysis
GGE 3111	Introduction to Adjustment Calculus
GGE 3122	Advanced Adjustment Calculus
GGE 5041	Engineering Surveying
GGE 5061	Mining Surveying
MATH 1503	Introduction to Linear Algebra
MATH 2513	Multivariable Calculus for Engineers
Geodetic Surveying	
GGE 3022	Survey Design and Analysis
GGE 3111	Introduction to Adjustment Calculus
GGE 3122	Advanced Adjustment Calculus
GGE 3202	Geodesy I
GGE 4211	Geodesy II
GGE 5242	Special Studies Geodesy
MATH 1503	Introduction to Linear Algebra
MATH 2513	Multivariable Calculus for Engineers
Land Information Management	
GGE 2413	Mapping Concepts & Technology
GGE 2501	Land Administration I
GGE 4403	Geographic Information Systems
TME 3213	Management & Tech in Modern Corporation
OR	
TME 3413	Technology Entrepreneurship and Creativity
Electives:	At least 14 credit hours
Mapping and Geographic Information Systems	
GGE 2413	Mapping Concepts & Technology
GGE 3111	Introduction to Adjustment Calculus
GGE 4313	Imaging and Mapping III
GGE 4403	Geographic Information Systems
Electives:	at least 11 credit hours

Minor in Geomatics

A Minor in Geomatics is offered to students in programmes of study other than Geomatics Engineering and comprises a minimum of 24 credit hours [ch] of GGE courses. Normally a background in calculus [e.g., MATH 1003 , MATH 1013], statistics [e.g., STAT 2593], linear algebra [e.g., MATH 1503 , MATH 2513 or MATH 2213], and computer science [e.g., CS 1003 , CS 1013 ; or CS 1073 , CS 1083] would be a prerequisite to the Minor.

GGE 1001 [5 ch] must be done for the Minor. The remaining minimum of 19 ch may be chosen from other GGE courses with the following collections of courses as recommended areas of concentration. Other combinations of courses may be arranged with approval by the Department prior to starting the Minor.

Land Administration and Information Management:
GGE 2413 , GGE 2501 , GGE 4512 , GGE 5532 , GGE 5533, plus at least 1 ch of approved GGE course(s).

Mapping and Geographic Information Systems:
GGE 2413 , GGE 3342 , GGE 4403 , GGE 4313 .

Hydrography and Oceanography:
GGE 3342 , GGE 3353 , GGE 5013 , GGE 5072 , GGE 5543

Positioning:
GGE 1003 or GGE 1803 , GGE 2012 , GGE 2013 , GGE 3042 , GGE 3202 , GGE 4211

MECHANICAL ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

General Office:	Head Hall, Room E-41
Mailing Address:	Department of Mechanical Engineering, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4513
Fax:	(506) 453-5025
Email:	meceng01@unb.ca
Website:	http://www.me.unb.ca/

FACULTY

- Bailey, Trevor, B.Eng, MEng, PhD (McM), Adjunct Prof - 2004
- Biden, Edmund N., BScE (UNB), DPhil (Oxf), Prof and Assoc Dean of Graduate Studies - 1987
- Bonham, David J., BSc (Qu), MEng, PhD (McM), PEng, Prof - 1974
- Boudreau, Roger, BEng, MEng (Ecole Polytechnique), PhD (UNB), Adjunct Prof - 2003
- Carretero, Juan A., BEng (UNAM), MASc, PhD (Victoria), Asst Prof - 2002
- Chen, Zengtao, BEng (Nanjing UST), MEng, Dr. Eng. (Harbin IT), PhD (Wat), PEng, Asst Prof - 2004
- Davies, Huw G., BSc, PhD (Imperial), PEng., Prof. Emeritus and Hon Res Prof - 1975
- Dubay, Rickey, BSc Mech, MSc Mech (UWI), PhD (DalTech), PEng, Assoc Prof - 1998
- Gerber, Andrew G., BScE, PhD (UNB), BA (Ambassador), PEng, Assoc Prof - 2000
- Hassan, Marwan, BSc (Helwan), MSc (Tuskegee), PhD (McM.), Asst Prof - 2001
- Holloway, Gordon, BSc (UNB), MASc, PhD (Ott), PEng, Prof - 1989
- Hussein, Esam M.A., BSc, MSc (Alexandria), PhD (McM), PEng, Prof and Chair - 1984
- Kember, Guy, HBSc, MSc, PhD (W.Ont), Adjunct Prof - 2003
- Kishawy, Hossam, BSc (Helwan), MSc (Tuskegee), PhD (McM), PEng, Assoc Prof - 2000
- Lyon, Donald E., BS, MS, PhD (Purdue), Prof - 1991
- Reddy, Bale Viswanadha, B.Tech (Nagarjuna), M.Tech, PhD (ITT), Assoc Prof - 2002
- Rogers, Robert J., BSc (Calgary), MASc, PhD (Wat), PEng, Prof - 1977
- Sousa, Antonio C.M., ME (Lco Marques), MSc, PhD (Manc), Prof - 1980
- Sullivan, P. Pearl, BEng, MASc (Tech.UNS), PhD (Br.Col), PEng, Ceng, Adjunct Prof - 2004
- Venart, James E.S., BASc (Tor), PhD (Glas), PEng, Prof Emeritus, Hon Res Prof - 1973
- Waller, Edward, BSc, MScE (UNB), PhD (Rensselaer), PEng, Adjunct Prof (Jt Phys) - 1998
- Watt, George, BApSc, PhD (Br.Col), Adjunct Prof - 2004

General Information

The Department of Mechanical Engineering provides instruction leading to the degree Bachelor of Science in Engineering (BScE). The program of instruction presents a curriculum suitable to the education of engineers in the art and science of Mechanical Engineering.

The curriculum includes a core of basic Mathematics, Science, Business and Humanities subjects, and is structured around a sequence of essential Mechanical Engineering subjects and design instruction. All this provides for the academic requirements of university graduates qualified to practice Mechanical Engineering professionally; it prepares the student for a career in the profession whether involved in the design, production, or operation of mechanical equipment, industrial or power plant, or the pursuit of post-graduate study.

The central theme behind an education in Mechanical Engineering is the engineered production, transformation, conversion, transmission and control of "mechanical" energy and materials. This may involve any or all aspects of the design, manufacture, fabrication, alteration, installation, selection, specification, testing, maintenance, operation, and control of single components and machines or complete and complex systems. The Department offers some specialization in order to match these extremely broad demands to the interests of its students. In particular there are four program Options: Mechatronics, Manufacturing Engineering, Nuclear and Power Plant Engineering, and Instrumentation and Control. These Options are described in detail below.

Curriculum

Core Courses

Students should note the specific academic regulations in the section "General Regulations" as outlined earlier under "Engineering". In addition to the core courses required of all Engineering students, additional required courses are provided in the areas of applied mechanics, materials, thermodynamics, heat transfer, fluid mechanics, manufacturing engineering and system dynamics, as well as the application of these courses to engineering design. The program is designed to be completed in eight academic terms, however the student may arrange for a

program that spans a longer time period. Typical term-by-term course sequences may be seen on the web site: http://www.me.unb.ca .

The complete requirements for the degree, including the core courses recommended for the first and second terms, are listed below. A list of Technical Electives follows the program outline. All courses must be passed with a grade of C or better.

APSC 1013 *	Mechanics I
APSC 1023 *	Mechanics II
CHEM 1882 *	General Chemistry
CS 1003	Intro to Computer Programming
CS 3113	Intro to Numerical Methods (or CE 3933 or CHE 3418)
ECON 1073 *	Economics for Engineers (or ECON 1013 or ECON 1023)
EE 1013 *	Electricity and Magnetism
EE 2683	Electric Circuits and Machines
EE 2723	Electric Circuits and Electronics (or EE 2773)
ENGG 1013 *	Design and Communication
ENGG 4003	The Engineering Profession
ENGG 5003	Commercial Law: Engineering
MATH 1003 *	Introduction to Calculus I
MATH 1013 *	Introduction to Calculus II
MATH 1503 *	Introduction to Linear Algebra
MATH 2513	Multivariable Calculus for Engineers
MATH 3503	Differential Equations for Engineers
ME 1312	Computer Aided Design
ME 2121	Strength of Materials (or CE 2023)
ME 2143	Kinematics and Dynamics of Machines
ME 2222	Manufacturing Engineering I
ME 2332	Design of Machine Elements
ME 2503	Material Science (or CHE 2503)
ME 2613	System Dynamics
ME 3232	Engineering Economics (or CE 3963)
ME 3341	Design of Machine Systems
ME 3352	Computer Aided Engineering
ME 3413	Thermodynamics I
ME 3415	Thermodynamics I Lab
ME 3423	Thermodynamics II
ME 3425	Thermodynamics II Lab
ME 3433	Heat Transfer I (or CHE 3304)
ME 3435	Heat Transfer I Lab
ME 3511	Fluid Mechanics I
ME 3515	Fluid Mechanics I Lab
ME 3522	Fluid Mechanics II
ME 3525	Fluid Mechanics II Lab
ME 3703	Mechanical Engineering Measurements
ME 4283	Manufacturing Engineering II
ME 4343	Solid Mechanics
ME 4623	Automatic Controls I
ME 4843	Senior Design Project Proposal
ME 4853	Senior Design Project Report
PHYS 2972	Vibration Theory and Practice
PHYS 2977	Vibration Theory and Practice Laboratory
STAT 2593	Probability and Statistics for Engineers

Total credit hours of core courses:	151 ch
Complementary Studies Electives:	12 ch
Technical Electives (see section below):	14 ch
TOTAL CREDIT HOURS FOR DEGREE:	**177 ch**

* These are first year courses, most of which are accepted for credit by other engineering departments.

Electives

Technical Elective Courses

In addition to the core courses, the students select at least 14 credit hours of Technical Elective courses appropriate to their interests. Courses may be selected, as available, from the following list, or any other approved technical course offered outside the Department. The availability of specific technical electives varies; students should see list of planned offerings on web site: www.me.unb.ca . At least 7 ch must be Mechanical Engineering electives. Courses below the 3000 level are not normally considered as suitable technical electives.

ME 4173	Kinematic Design and Analysis of Robots
ME 4243	Advanced Manufacturing Methods
ME 4263	Mech & Electrical Equipment for Buildings
ME 4453	Air Conditioning
ME 4553	Flight Mechanics
ME 4633	Numerical Control of Machines
ME 5163	Machinery Vibration and Noise
ME 5173	Advanced Kinematics of Manipulators
ME 5183	Random Vibration
ME 5193	Introduction to Flow-Induced Vibrations
ME 5233	Principles of Metal Cutting
ME 5283	Advanced Topics in Occupational Health & Safety
ME 5293	Manufacturing Systems and Design
ME 5363	Systems Engineering
ME 5373	Nuclear Reactor Engineering
ME 5443	Thermal Design and Optimization
ME 5463	Heat Transfer II
ME 5473	Energy Management
ME 5483	Cogeneration and Combined Cycle Power Generation
ME 5493	Internal Combustion Engines
ME 5503	App. of Computational Fluid Dynamics to Ind. Processes
ME 5643	Automatic Controls II
ME 5653	Predictive Control and Intelligent Sensors
ME 5663	Hydraulic Power Systems
ME 5713	Nondestructive Testing
ME 5744	Steam Supply Systems
ME 5754	Steam and Gas Turbines
ME 5813	Special Topics in Mechanical Engineering
ME 5833	Special Topics in Mechanical Engineering
ME 5913	Biomechanics I
ME 5933	ndustrial Ecology

Complementary Studies Electives

In addition to the core courses and technical electives, students select four courses for at least 11 credit hours of Complementary Studies Elective courses. A very wide range of elective courses is available. Students are encouraged to take a sequence of courses in one area rather than just entry-level courses. See the Faculty of Engineering General Regulations for restrictions in the selection of Complementary Studies Electives. A list of suggested Complementary Studies Elective courses, as well as their regulations, is available on the web site: http://www.me.unb.ca .

Mechatronics Option in Mechanical Engineering

Mechatronics is an integrated approach to mechanical, electronic and computer engineering for the design of smart products and intelligent manufacturing systems. This option permits interested students to increase their understanding of

these subjects by a selection of core and elective courses in mechanical and electrical engineering. The option normally begins in second year but may be started later.

In order to enter this option, students must meet the following qualifications:

1. Successful completion of 35 ch of the regular program in Mechanical Engineering.
2. Approval of the Department. Applications to the Mechatronics Option are normally considered in August each year. Application forms are available from the Department.

Core Courses for Mechatronics Option:

Compared to the standard Mechanical Engineering Program, the following core courses are not required for the Mechatronics option: the second courses in Fluid Mechanics (ME 3522) and Thermodynamics (ME 3423), and their associated laboratory courses (ME 3525 and ME 3425), as well as Solid Mechanics (ME 4343) and three technical electives. For the Mechatronics option, EE 2773 (Electric Circuits) replaces EE 2723 (Electric Circuits and Electronics). Also required are: EE 2783 (Networks), EE 3121 (Electronics I), EE 2213 and EE 3221 (Digital Systems I and II), ME 4673 (Introduction to Mechatronics) and ME 4683 (Mecchatronics Applications). The work for the senior design project courses, ME 4843 and ME 4853 , will provide appropriate experience to suit the option.

The complete list of core courses for the Mechatronics Option follows:

APSC 1013 *	Mechanics I
APSC 1023 *	Mechanics II
CHEM 1882 *	General Chemistry
CS 1003	Introduction to Computer Programming
CS 3113	Intro to Numerical Methods (or CE 3933 or CHE 3418)
ECON 1073 *	Economics for Engineers (or ECON 1013 or ECON 1023)
EE 1013 *	Electricity and Magnetism
EE 2213	Digital Systems I
EE 2683	Electric Circuits and Machines
EE 2773	Electric Circuits
EE 2783	Networks
EE 3121	Electronics I
EE 3221	Digital Systems II
ENGG 1013 *	Design and Communication
ENGG 4003	The Engineering Profession
ENGG 5003	Commercial Law: Engineering
MATH 1003 *	Introduction to Calculus I
MATH 1013 *	Introduction to Calculus II
MATH 1503 *	Introduction to Linear Algebra
MATH 2513	Multivariable Calculus for Engineers
MATH 3503	Differential Equations for Engineers
ME 1312 *	Computer Aided Design
ME 2121	Strength of Materials (or CE 2023)
ME 2143	Kinematics and Dynamics of Machines
ME 2222	Manufacturing Engineering I
ME 2332	Design of Machine Elements
ME 2503	Materials Science (or CHE 2503)
ME 2613	System Dynamics
ME 3232	Engineering Economics (or CE 3963)
ME 3341	Design of Machine Systems
ME 3352	Computer Aided Engineering
ME 3413	Thermodynamics I
ME 3415	Thermodynamics I Lab
ME 3433	Heat Transfer I (or CHE 3304)
ME 3435	Heat Transfer I Lab
ME 3511	Fluid Mechanics I
ME 3515	Fluid Mechanics I Lab
ME 3703	Mechanical Engineering Measurements
ME 4283	Manufacturing Engineering II
ME 4623	Automatic Controls I
ME 4673	Introduction to Mechatronics
ME 4683	Mechatronics Applications
ME 4843	Senior Design Project Proposal
ME 4853	Senior Design Project Report
PHYS 2972	Vibration Theory and Practice
PHYS 2977	Vibration Theory and Practice Laboratory
STAT 2593	Probability and Statistics for Engineers

* These are first year courses, most of which are accepted for credit by other engineering departments.

Technical Electives for Mechatronics Option:

The normal choice of technical electives is replaced by a directed choice of one elective from the list below.

EE 3232	Digital Systems III	(4 ch)
EE 4343	Industrial Control Systems	(4 ch)
EE 4353	Robotics	(4 ch)
ME 4173	Kinematic Design and Analysis of Robots	(4 ch)
ME 4633	Numerical Control of Machines	(4 ch)
ME 5163	Machinery Vibration and Noise	(4 ch)
ME 5643	Automatic Controls II	(4 ch)
ME 5653	Predictive Control and Intelligent Sensors	(4 ch)
ME 5663	Hydraulic Power Systems	(4 ch)

Other technical elective courses may be selected with the permission of the Chair of the Department or the Director of Undergraduate Studies.

Manufacturing Engineering Option in Mechanical Engineering

This option permits interested students to expand upon core courses in the design and manufacturing streams through a focused selection of electives. In order to enter this option, students must meet the following qualifications:

1. Successful completion of 80 ch of the regular program in Mechanical Engineering.
2. Approval of the Department. Applications to the Manufacturing Engineering Option are normally considered in August each year. Application forms are available from the department.
3. All elective choices must be approved by the department to ensure reasonable diversity and avoid redundancy.

The normal choice of technical electives is replaced by a more directed choice from the two groups below. At least 14 ch must be chosen, including at least one course from each of the following groups:

Manufacturing Support:		
CE 5623	Project Management	(4 ch)
FE 5612	Industrial Engineering	(3 ch)
FE 5622	Human Factors Engineering	(3 ch)
ME 5233	Principles of Metal Cutting	(4 ch)
ME 5283	Advanced Topics in Occupational Health & Safety	(4 ch)

ME 5293	Manufacturing Systems and Design	(4 ch)
ME 5363	Systems Engineering	(4 ch)
ME 5713	Nondestructive Testing	(4 ch)
Automation and Controls:		
EE 4343	Industrial Control Systems	(4 ch)
ME 4173	Kinematic Design and Analysis of Robots	(4 ch)
ME 4633	Numerical Control of Machines	(4 ch)
ME 5163	Machinery Vibration and Noise	(4 ch)
ME 5643	Automatic Controls II	(4 ch)
ME 5653	Predictive Control and Intelligent Sensors	(4 ch)
ME 5663	Hydraulic Power Systems	(4 ch)

Other technical elective courses may be selected with the permission of the Chair of the Department or the Director of Undergraduate Studies.

For the Manufacturing Engineering Option, at least 6 ch of Complementary Studies Electives must be selected from the following list:

ADM 3685	Total Quality Management
ADM 4615	Production and Operations Management / Operations Management I
ADM 4616	Operations Management II
ADM 4686	Project Management
ADM 4677	Inventory Management (subject to availability)
ADM 4655	Global Manufacturing Systems (subject to availability)
TME 3013	Entrepreneurial Finance
TME 3113	Business Planning and Strategy in an Entrepreneurial Environment
TME 3346	Marketing of Technological Goods and Services
TME 3413	Technology Creativity and Innovation

Other courses may be selected with the permission of the Chair of the Department or the Director of Undergraduate Studies.

Nuclear and Power Plant Engineering Option in Mechanical Engineering

This option program is available to all students from the Departments of Chemical and Mechanical Engineering. In order to enter the option program, Mechanical Engineering students must meet the following qualifications:

1. Successful completion of 80 ch of the regular program in Mechanical Engineering.
2. Approval of the Department. Letters of application to the Nuclear and Power Plant option are considered in August each year.

Required Courses:
CHE 5834 , Nuclear Engineering (3ch), replaces ME 4283 in the regular core. The work in ME 4843 and ME 4853 will be coordinated to provide appropriate experience to suit the option.

Technical Electives:
The normal choice of technical electives is replaced by a more directed choice from the two lists below:

A. Any two of:		
CHE / ME 5744	Steam Supply Systems	3/4 ch
CHE / ME 5754	Steam and Gas Turbines	3/4 ch
ME 5373	Nuclear Reactor Engineering	3 ch
ME 5483	Cogeneration and Combined Cycle Power Generation	4 ch
B. Any two of:		
CHE 5344	Combustion	3 ch
CHE 5804	Nuclear Chemical Processes	3 ch
CHE 5824	Corrosion Processes	3 ch
CHE 5854	Nuclear Heat Removal	3 ch
ME 5163	Machinery Vibration and Noise	4 ch
ME 5193	Introduction to Flow-Induced Vibrations	4 ch
ME 5443	Thermal Design and Optimization	4 ch
ME 5463	Heat Transfer II	4 ch
ME 5473	Energy Management	4 ch
ME 5713	Nondestructive Testing	4 ch

Any of the courses in list A may also be added to list B. Other courses may be added with permission of the Department. Other technical electives may be selected as necessary to bring the total of technical electives up to at least 14 ch. ME 4283 is available for this purpose to students in the option program.

Instrumentation and Control Option in Mechanical Engineering

The Instrumentation & Control Option program is available to all students in Mechanical Engineering who have completed 80 ch, including ME 3703 , in the Mechanical Engineering Program, and who are approved by the Department. This option package replaces the normal choice of technical electives in the general Mechanical Engineering Program.

To complete the option, students must complete the three required courses listed below, and one (or more if desired by the student) of the area technical electives listed below.

Required Courses:		
ME 5643	Automatic Controls II	4 ch
ME 5653	Predictive Control and Intelligent Sensors	4 ch
EE 4343	Industrial Control Systems	4 ch

In the event that a required course cannot be offered as scheduled, an area technical elective will be designated as a required course. The work in ME 4843 and ME 4853 will be coordinated to provide appropriate experience to suit the option.

Area Technical Electives:		
ME 5163	Machinery Vibration and Noise	4 ch
ME 5663	Hydraulic Power Systems	4 ch
EE 4353	Robotics	4 ch
EE 4543	Digital Signal Processing I	4 ch

Other courses may be selected with the permission of the Chair of the Department or the Director of Undergraduate Studies.

Diploma in Technology Management and Entrepreneurship

General Information

The Faculty of Engineering offers a program leading to a Diploma in Technology Management and Entrepreneurship, administered by the Dr. J. Herbert Smith/ACOA Chair. The mission of the program is to provide undergraduate and continuing education students opportunities to experience the realities of entrepreneurship and management in technology-

based businesses and to develop the knowledge and skills necessary to be successful in business. The Diploma program consists of three core courses and two electives, each of three credit hours.

Up to twelve credit hours of the courses used for credit towards the TME diploma can be used for credit towards another degree. Each department shall determine its own maximum allowable concurrent credit hours, which may be less than, but no greater than twelve credit hours. Core courses required for an Undergraduate degree cannot be shared with the TME Diploma.

Students who intend to complete the diploma must obtain both department and TME program approval of the courses which will be applied towards the degree and the diploma.

A minimum of 80 credit hours completed is required in order to enroll in the TME Diploma or any TME course. Applicants who are not full-time students may still apply for the TME Diploma (or enroll in one or more TME courses). These applicants will have to submit the following documents along with their TME Diploma Application:

i. High School transcript;

ii. transcript from post secondary institution;

iii. resume/curriculum vitae;

iv. cover letter explaining their reasons for wanting to enroll in the TME Diploma program;

v. any additional supporting documents.

The TME Diploma is granted to students achieving a grade of C or better in all of three core TME courses and two approved elective courses.

It is possible to complete the TME Diploma online through the Department of Extension Open Access Learning Program. Please consult the Dr. J. Herbert Smith Centre for more information.

Core Courses

TME 3013	Entrepreneurial Finance
TME 3113	Business Planning and Strategy in an Entrepreneurial Environment
TME 3213	Quality Management
TME 3313	Managing Engineering and Information Technology Projects
TME 3413	Technological Creativity and Innovation
TME 3423	Technological Risk and Opportunity

Students must complete three of these six Core Courses.

Electives

The Dr. J. Herbert Smith Centre has a list of recommended electives that relate to the mission of the program. Courses may be chosen to reflect the interests of the student, subject to approval by the Chair. Additional electives offered by the TME program include:

TME 3346	Marketing of Technological Goods and Services
TME 3913	Experiential Learning - Technology Management and Entrepreneurship

Students must complete two approved electives.

BACHELOR OF SCIENCE IN FOREST ENGINEERING

The Faculty of Forestry and Environmental Management offers the degrees of Bachelor of Science in Forestry and Bachelor of Science in Forest Engineering.

Faculty of Forestry & Environmental Management

General Office:	I.U.C. - Forestry, Room 101
Mailing Address:	Faculty of Forestry & Environmental Management, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4501
Fax:	(506) 453-3538
Email:	forem@unb.ca
Website:	http://www.unbf.ca/forestry/

NOTE: For Faculty information please see the Bachelor of Science in Forestry program section.

General Information

Forest Engineering was established at UNB as a separate discipline in 1968, and the first BScFE degrees were awarded in 1971. The program, which remains the only one of its kind in Canada, educates professionals who apply engineering, forestry and business principles to renewable resource projects. Upon graduation, students have the knowledge required to design and implement forest operations in a manner that is consistent with the objectives of sustainable, multi-objective management of natural resources.

REGULATIONS

Students are strongly advised to read the General University Regulations, Section B of this Calendar, because that information will apply to points not covered in the following:

1. A minimum of 176 credit hours is required for the BScFE degree, of which 30 are elective courses.
2. Students entering the program who do not have appropriate high school level Chemistry and Physics will be required to take additional credit hours in these subjects which will increase the total credit hours in the program.
3. Students must consult with the Assistant Dean in Forestry, and other faculty as appropriate, to receive advice on course selection, scheduling, etc.
4. Students who have completed between 100 to 120 credit hours will be required to submit a study plan describing and justifying the electives they propose to take to complete the program.
5. A minimum assessment year grade point average (g.p.a.) of 2.0 is required at the end of each year. Assessment is in May following the completion of the spring examination period and includes the preceding Intersession, Summer School and Spring Extensions.
6. A student who has been required to withdraw from the program for academic reasons once, and who reapplies for admission following the withdrawal period, may be re-

admitted to the program. If re-admitted, the student will automatically be on academic probation. Failure to meet the normal academic requirements at the next time of assessment will result in final dismissal from the program. Further applications for re-admission will not be considered.

7. C grade minimum is required for all courses used for credit towards the BScFE degree.

Curriculum

In order to obtain a BScFE degree, a minimum of 176 credit hours is required, although students entering the program who do not have appropriate high school level Chemistry and Physics will be required to take additional credit hours in these subjects which will increase the total credit hours in their program. The program consists of 146 credit hours of specified core courses (listed below) and 30 credit hours of electives. Students are able to choose electives from a broad range of courses offered by forest engineering, engineering, forestry and other departments, subject to approval. See a more detailed description under the section heading ELECTIVES below.

The BScFE program is designed to be completed in ten terms. However, within the limitations of course availability and timetabling, and provided that rules concerning prerequisite courses are followed, students may progress through the BScFE program at a rate and in a sequence which best suits their qualifications and previous academic achievements.

Students with an acceptable academic standing may, with approval, participate in a Co-op Internship Program (CIP). This program of job placement in a professional setting gives students the opportunity to gain approved work experience away from the campus. Participation in the CIP program increases the time required to earn the degree because courses may only be taken during the CIP with express permission of the Faculty.

A Wood Products Minor consisting of 24 credit hours of selected courses is offered. The requirements for the minor can be satisfied through an appropriate choice of technical electives. See a more detailed description under the section heading WOOD PRODUCTS MINOR below. In addition to the Wood Products Minor, and within the general rules governing the choice of elective courses, students may choose to pursue a Minor recognized by any other UNB degree program. Note that other Minors may require courses in addition to those required as the minimum for the BScFE degree.

Degree requirements must be successfully completed in not more than 16 terms during a period of 8 consecutive calendar years from the date of first registration in the FE program. Transfer students will have the time prorated on the basis of advanced credit granted.

Core (Required) Courses

The core courses required of all Forest Engineering students are shown below.

APSC 1013	Mechanics I
APSC 1023	Mechanics II
BIOL 1923	Botany for Non-Majors
CE 2023	Mechanics of Materials
CE 2703	Introduction to Fluid Mechanics
CE 3933	Numerical Methods
CHE 2503	Materials Science
CHEM 1882	General Chemistry-Physical and Inorganic Chemistry
CS 1003	Introduction to Computer Programming
EE 1013	Electricity and Magnetism
ENGG 1013	Design and Communication
ENGG 4003	The Engineering Profession
ENGG 5003	Commercial Law: Engineering
FE 1511	Introduction to Forest Engineering
FE 3033	Structural Analysis and Design I
FE 3143	Natural Resource Geotechnique I
FE 3233	Forest Operations Research I
FE 3303	Thermal Engineering
FE 3363	Machine Design I
FE 3601	Engineering Economics
FE 3703	Forest Operations Concepts
FE 3773	Forest Engineering Operations
FE 3803	Wood Technology
FE 5780	Forest Operations Planning Project
FE 5933	Forest Engineering Professional Workshop
FE 5990	Project Report
FE 5995	Structural Design of Forest Engineering Systems
FOR 2006	Forest Dynamics and Management
FOR 2265	Computer Programming for Forestry
FOR 2505	Soils for Plant Growth
FOR 3005	Silviculture and Stand Intervention Design
FOR 4005	Social Values in Forest Management
FOR 4576	Forest Hydrology & Aquatic Habitat
FOR 1001	Introduction to Forestry Quantification for Forest Engineers
GEOL 1001	The Earth: Its Origin, Evolution and Age
GEOL 1026	Geology Lab for Engineers
GGE 1001	Introduction to Geodesy and Geomatics
MATH 1003	Introduction to Calculus I
MATH 1013	Introduction to Calculus II
MATH 1503	Introduction to Linear Algebra
MATH 2513	Multivariable Calculus for Engineers
STAT 2593	Probability and Statistics for Engineers

Electives

The minimum number of credit hours of electives in the Forest Engineering Program is 30 - of this, at least 9 ch must be in humanities, an additional 3 ch must be in humanities or social sciences.

Students who have completed between 100 to 120 credit hours will be required to submit a study plan describing and justifying the electives they propose to take to complete the program. The study plan (and any later modifications to it) must be approved to ensure that individual programs are coherent and adhere to engineering accreditation requirements. Students should note that electives taken outside their Study Plan will not be counted towards their degree.

Wood Products Minor

Those students wishing to obtain competence in subjects related to manufacture, marketing and use of engineered wood products may pursue the combination of elective courses which constitute the minor. The minor consists of the following courses (24 ch):

ADM 3375	Marketing of Products and Services
ADM 3685	Total Quality Management
CHEM 2401	Organic Chemistry I
FE 3873	Physical and Mechanical Properties of Wood
FE 4853	Processing of Wood Products
FE 4863	Wood Engineering
FE 5873	Performance of Structural Wood Systems
FOR 5881	Kiln Drying and Preserving Wood

BACHELOR OF SCIENCE IN FORESTRY

The Faculty of Forestry and Environmental Management offers the degrees of Bachelor of Science in Forestry and Bachelor of Science in Forest Engineering.

Faculty of Forestry & Environmental Management

General Office:	I.U.C. - Forestry, Room 101
Mailing Address:	Faculty of Forestry & Environmental Management, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4501
Fax:	(506) 453-3538
Email:	forem@unb.ca
Website:	http://www.unbf.ca/forestry/

FACULTY

Dean: David MacLean, BBSc, PhD
Assistant Dean : Charles P.A. Bourque,BSc, BSc, MScF, PhD

- Afzal, Muhammad, BScEng (UAF, Pak), MEng (AIT, BKK), PhD (Ehime), Assoc Prof - 2000
- Arp, Paul A., BSc (Car), PhD (McG.), Prof - 1978
- Beckley, Thomas, AB (Boudoin), MS, PhD (Wisconsin-Madison), Assoc Prof - 2000
- Bhatti, Jagtar, Adjunct Prof. - 2002
- Boer, Arnold, BSc (Agr), MSc (Guelph), PhD (UNB), Adjunct Prof 1989
- Bourque, Charles, BSc (Dal), BSc (Alta), MScF, PhD (UNB), Prof and Asst Dean - 1994
- Chan, Felisa, BSc (Mindanao), MScF (Philippines at Los Banos), PhD (Monash), Research Assoc - 2003
- Chui, Ying Hei, BSc (S'ton), PhD (Brighton Poly), PEng, Prof and Dir, WSTC - 1993
- Clair, Tom, BSc (Mt.All.), MSc (Ott.), PhD (McM), Adjunct Prof - 2000
- Cooper, Paul, BSc, BEd, PhD (Tor), MSc (Oregon), Adjunct Prof - 1998
- Cox, Roger, BSc (London), PhD (Liverpool), Adjunct Prof - 1999
- Cunjak, Richard, BSc (Geulph), MSc (Nfld), PhD (Wat), Prof, Meighen-Molson Prof. in Atlantic Salmon Res. and Can. Res. Chair in River Ecosystem Science (Joint Biology) - 1997
- Curry, Allen, BES (Wat), MSc (Trent), PhD (Guelph), Assoc Prof , Recreational Fisheries, (Joint Biology) - 1997
- Davies, Jessie, BA (Cornell), MPhil (Camb.), Dir., Environment & Sustainable Dev. Research Centre - 1994
- Diamond, Antony W., BA (Cantab), MSc, PhD (Aberd.), Prof and Chair, Atlantic Coop Wildlife Ecology Res Network (Joint Biology) - 1994
- Dalton, Shawn, Research Assoc. Environment & Sustainable Dev. Research Centre - 2002
- Erdle, Thom, BScF (UNB), MF (UBC), PhD (UNB), Prof - 1995
- Eveleigh, Eldon, BSc, MSc (Nfld.), PhD (Tor.), Adjunct Prof - 1992
- Forbes, Graham, BA(York), MA, PhD (Wat), Assoc Prof, Sir James Dunn Wildlife Research Centre (Joint Science) - 1994
- Jaeger, Dirk, MSc, PhD (Goettingen), Assoc Prof - 2002
- Jordan, Glenwood A., BScF, MScF (UNB), RPF, Prof - 1973
- Keppie, Daniel M., BS (Wis), MS (Ore), PhD (Alta), Prof (Joint Biol) - 1974
- Kershaw, John A., BS, MS (Purdue), PhD (Wash), Prof - 1991
- Krasowski, Marek, BSc (Academy of Agricultural Sciences), MSc, PhD (Vic), Assoc Prof - 1999
- Krause, Helmut H., Diplom-Forstwirt (Freib), PhD (Wis), Hon Res Prof - 1999
- Lantz, Van, BA (Car.), MA (Dal), PhD (S.Fraser), Asst Prof (Joint Economics) - 2000
- Leblon, Brigitte, Dip Agricultural Eng (Universite Catholique de Louvain), PhD (Ecole Nationale Superieure d'Agronomie), Assoc Prof - 1994
- Li, Xiu-Qing, BSc (Shandong Argiculture), MSc, PhD (Paris), Adjunct Prof - 1998
- Loo, Judy, BSc (UNB), MS, PhD (Oklahoma State), Adjunct Prof - 1994
- MacLean, David, BSc, PhD (UNB), Prof and Dean - 1999
- Meng, Chao-Ho, Bsc (Taiwan), MscF (UNB), PhD (Mich State), Hon Res Prof - 1999
- Meng, Fan-Rui, BS, MS (Northeast Forestry Univ.), PhD (UNB), Assoc Prof and Dir, Ctr for Watershed Mgmt & Conversation Research - 1995
- Methven, Ian, BScF (UNB), PhD (Duke), Prof. & Dean Emeritus - 1999
- Naderi, Nader, BSc, MSc (Tehran), PhD (Laval), Adjunct Prof - 2000
- Needham, Ted, BScF, MScF, PhD (VPI & SU), Prof - 1987
- Ostaff, Donald, BSc (Lakehead), MSc, PhD (UNB), Adjunct Prof - 2001
- Park, Yill Sung, Bsc (Seoul Nat. Univ), MSc, PhD (Penn State), Adjunct Prof - 1994
- Percy, Kevin, BScF, MSc (UNB), PhD (Bristol), Adjunct Prof - 2000
- Powell, Graham R., BSc (Edin), MSc (UNB), PhD (Edin), Professor Emeritus - 1996
- Quiring, Daniel T.W., BSc (S.Fraser), PhD (Laval), Prof - 1986
- Richards, Evelyn, BA, MA, MBA (UNB), DPhil (Dal Tech), Asst Prof - 1999
- Rickards, E. Jeremy P.S., Dip Eng (Lond), Dip Man (McG.), PEng, Hon Res Prof- 1998
- Robak, Edward W., BScFE (UNB), MBA (Maine), PEng, Prof - 1979
- Roberts, Mark R., BS, MS (Montana), PhD (Duke), Prof - 1983
- Savidge, Rodney A., BScF, MScF (Tor), PhD (Wales), Prof - 1985
- Schneider, Marc H., BS, MS, PhD (SUNY Syr), Prof - 1967
- Sergeant, Brian, BScF (UNB), Sr Teaching Assoc - 1986
- Smith, Ian, BScCE (Sunderland Poly), MSc (Durh), PhD (Poly S Bank), PEng, Univ Research Prof - 1986
- Sweeney, Jonathan D, BSc (S.Fraser), PhD (UNB), Adjunct Prof - 1999
- Turgeon, Jean, BSc, PhD (Laval), Adjunct Prof - 1992
- Whitney, Norman, BSc (Alta), MSc (UWO), PhD (Tor), Adjunct Prof - 1994
- Zhang, S.Y. (Tony), Adjunct Prof - 2003
- Zundel, Pierre, BScF, MScF (Tor), PhD (Laval), Prof and Univ Teach Prof and Dean, Renaissance College - 1991

General Information

Forests are a source of environmental, economic and social values for all of society. Continued maintenance of these values requires knowledge of natural dynamics at the scale of landscapes, and design skills that extend to large land areas over very long time horizons. The BScF program prepares professionals to work in complex situations where the goals of management must be determined by present society, and the actions to reach these goals must be designed for implementation over time horizons of centuries, in order that future societies will have continued enjoyment of values from forest landscapes. Graduates have the necessary skills to:

a. interact with society to define goals for the forest environment;
b. take a leadership role in the design and implementation of plans to ensure achievement of those goals;
c. help resolve social conflicts associated with issues of environmental and forested landscape management, and
d. assess changes in forested landscapes over time and present this information for public evaluation of progress and review of goals.

Regulations

Students are strongly advised to read the General University Regulations, Section B of this Calendar, because that information will apply to points not covered in the following:

1. A minimum of 147 credit hours is required for the BScF degree.
2. Students must consult with the Assistant Dean, or other faculty as appropriate, to receive advice on course selection. A full course load is normally 15 credit hours per semester. Students may only register for >= 18 credit hours in a semester if they have a GPA >= 3.0 in the previous assessment period and obtain permission from the Assistant Dean.
3. Few prerequisites are specified; students will take courses in normal sequence; exceptions require a minimum B average in the preceding assessment period, permission of the Assistant Dean and the instructor of the course. Courses in which a student is deficient must be taken not later than the next academic year, except by special permission of the Faculty.
4. FOR 1000 , FOR 2006 , FOR 3005 , FOR 3006 , FOR 4096 and FOR 5020 cover subject matter that is delivered in increasing degree of complexity; these courses must be taken in sequence.
5. Six credit hours of courses designed to instill an appreciation of how those outside the forestry profession view natural resource management issues must be completed before FOR 4005.
6. Degree requirements must be successfully completed in not more than 16 terms during a period of 8 consecutive calendar years from the date of first registration in the program. Transfer students will have the time limit prorated on the basis of advanced credit granted.
7. A minimum session grade point average (g.p.a.) of 2.0 is required at the end of each year. Assessment is in May following the completion of the spring examination period and includes the preceding intersession, Summer School and Spring Extensions.
8. A student who has been required to withdraw from the program for academic reasons once, and who reapplies for admission following the withdrawal period, may be re-admitted to the program. If re-admitted, the student will automatically be on academic probation. Failure to meet the normal academic requirements at the next time of assessment will result in final dismissal from the program. Further applications for re-admission will not be considered.
9. C grade minimum is required for all prerequisite and core courses used for credit towards the BScF degree.

Curriculum

The core program focuses on forest ecosystem management with a blend of courses in basic, biophysical, social, and management sciences. Opportunity for students to pursue an education of substantial personal choice is provided by elective courses that can be organized in areas of concentration leading to minors. Students may also elect to follow minors offered by other faculties, or they may take a general variety of courses that does not lead to a minor. Twenty-four credit hours are required for a minor in the BScF program.

Core courses are listed below. Elective courses are shown next. Students are advised to incorporate electives to balance work loads to a normal load of five courses per term.

Observations and experimentation in a forested environment are critical to the education of professional foresters so work in natural settings is an important part of many courses. Extensive use is made of University forests which total 2,900 hectares in area, with the 1,500 hectare UNB Woodlot, adjacent to the Fredericton campus, used most often. To work in these and other areas, students are advised that they will need an approved hard hat (approximate cost $10.00) and approved safety-toed work boots (approximate cost $100.00).

The Canadian Forest Service and the headquarters of the New Brunswick Department of Natural Resources and Energy are also adjacent to the campus. Scientists and managers at these institutions commonly undertake collaborative projects with students which provide opportunities for students to learn from the experience of others beyond their professors.

Co-op Internship Program (CIP) in the BScF Degree:

Work experience is an important part of professional development for BScF students. In support of this, the Faculty offers the opportunity of participation in a Co-op Internship Program for a period of 8 to 16 months.

The program is open to continuing students who are currently in good academic standing provided they have completed the first year (38 credit hours), and have at least one year remaining in the degree program.

Official University registration is required for each student in the Co-op Internship Program and there will be a registration fee based on the number of regular academic terms (one or two) encompassed by the CIP. This will enable students to maintain their full-time status during the CIP period. A suitable notation will be placed on the transcript to recognize CIP participation. Participation in the CIP program increases the time required to earn the degree because courses may only be taken during the CIP with express permission of the Faculty.

Core Course Requirements

YEAR 1	
Term 1	
BIOL 1001	Biological Principles, Part I
BIOL 1006	Applications in Biology, Part I
GEOL 1001	The Earth: Its Origin, Evolution and Age
GEOL 1036	Geology Lab for Foresters
MATH 1833	Finite Mathematics for Management Sciences
FOR 1000	Introduction to Forestry
FOR 1901	Oral and Written Communications I
Term 2	
BIOL 1012	Biological Principles, Part II
BIOL 1017	Applications in Biology, Part II
CHEM 1882	Gen Chemistry-Physical & Inorganic Chemistry
FOR 1000	Introduction to Forestry
FOR 1902	Oral and Written Communications II
MATH 1823	Calculus for Management Sciences
YEAR 2	
Term 1	
FOR 2420	Dynamics and Structure of Forest Vegetation
FOR 2505	Soils for Plant Growth
FOR 2973	Intro to Computer Software for Data Analysis
FOR 2435	Physiological Processes in the Forest
STAT 2253	Intro Statistics for Forestry Students
Term 2	
FOR 2006	Forest Dynamics and Management
FOR 2420	Dynamics and Structure of Forest Vegetation
FOR 2886	Wood Technology
FOR 2936	Forest Hydrometeorology
YEAR 3	
Term 1	
FOR 3005	Silviculture and Stand Intervention Design
FOR 3285	GIS in Forestry I
FOR 3445	Forest Ecology: Populations and Communities
Term 2	
FOR 3006	Forest Management
FOR 3303	Photogrammetry, Photo-interpretation and Remote Sensing
FOR 3456	Forest Watershed and Forest Fire Management
YEAR 4	
Term 1	
FOR 4096	Forest Landscape Design and Management
FOR 4545	Landscape Pattern and Ecosystem Management
FOR 4625	Integrated Management of Insects and Fungi
FOR 4973	Forestry Field Camp
Term 2	
FOR 4005	Social Values in Forest Management
FOR 4992	Individual Project I

YEAR 5	
Term 1	
FOR 5020	Management Practicum
FOR 5991	Individual Project II
Term 2	
FOR 5020	Management Practicum

Minors

1. **Computer Applications Minor:** This minor develops a working level of computer literacy in data handling geographic information systems as applied to forest inventory and management design.

Required courses:	
CS 3503	Systems Analysis and Design
FOR 2265	Using Computers to Communicate
FOR 4285	GIS in Forestry II
FOR 4313	Digital Image Processing
In addition, students must choose 3 credit hours from among	
CS 1073	Programming in Java
CS 1083	Computer Science Concepts (Java)
CS 2513	Intro to Information Systems
CS 2635	C for Programmers
CS 2013	Software Engineering I
CS 3013	Software Engineering II
CS 3703	Multimedia Design
CS 3513	Database Mgmt Systems I
CS 5735	Geographical Application Design & Development
FE 3233	Forest Operations Research
FOR 4205	Quantitative Forest Characterization
GGE 4403	Geographic Information Systems
GGE 2413	Mapping Concepts and Techniques

2. **Parks and Wilderness Minor:** Parks, wilderness and ecological reserves are increasingly important aspects of management. More and more of the landscape is dedicated to these purposes and the mission for parks is moving away from strictly custodial or protectionist modes into active management. This minor will address the very different problems associated with the social role and management of parks and wilderness areas.

   Students must take four from among:

BIOL 4191	Wildlife Management
BIOL 4233	Conservation Biology
ECON 3744	Recreation Economics
FOR 5095	Conservation
PHIL 2106	Environ Ethics
RSS 2052	Foundations of Tourism
RSS 3042	History of Parks & Recreation
RSS 3303	Parks & Protected Spaces
RSS 4311	Facility Planning & Design
RSS 4331	Interpreting the Environment

   Four from Among:

BIOL 4861	Environmental Biology
ECON 3755	Environmental Economics
ECON 3794	Natural Resource Economics
FOR 2345	Meteor & Hydrology

FOR 2933	Bioethics in Forestry
FOR 4656	Wildlife: Scale & Landscapes
RSS 2062	Psycho-Sociol Aspects of Lesiure
RSS 2302	Outdoor Recreation
RSS 3021	Sociology of Lesiure
RSS 4093 / 4094	Directed Studies

3. **Wildlife Minor:** The Wildlife Minor is a formal way to receive recognition for focusing your education on wildlife species, their biological characteristics, management, and current environmental issues; all these areas are of increasing importance to the ways society progresses. The Minor requires 24 credit hours (approximately 8 courses) of approved courses from among those listed below. The Wildlife Minor is also designed to facilitate a student's ability to acquire professional certification by The Wildlife Society, the principal North American organization overseeing the wildlife profession. The BScF Core curriculum in collaboration with the Wildlife Minor and an additional 10-12 credit hours provides sufficient background for achieving the academic requirements for certification. UNB is one of the few schools in Canada to offer this opportunity. Certification requires courses from each of the categories indicated in the following list and we encourage students to consult with the Faculty early, and on an on-going basis, to obtain advice about selecting courses that help to meet the Wildlife Minor, certification and personal interests.

a.	ENGL 1103	Fundamentals of Clear Writing
	ENGL 1104	Fundamentals of Effective Writing
b.	FOR 2933	Biothetics in Forestry
	FOR 5095	Conservation
	SOCI 3553	Sociology and the Environment
	PHIL 2106	Environmental Ethics
	ECON 3755	Environmental Economics
	ECON 3794	Natural Resource Economics
c.	BIOL 2083	Botany
	BIOL 3459	Economic Botany
	BIOL 4352	Climate Change and Environmental Response
d.	BIOL 2053	Genetics*
	BIOL 2033	Biochemistry
	BIOL 2093	Zoology*
	BIOL 3703	Vertebrate Zoology
	BIOL 4741	Fish Biology
	BIOL 4861	Environmental Biology
e.	BIOL 4191	Wildlife Management
	FOR 4656	Wildlife: Scale and Forested Landscapes
	FOR 5655	Wildlife Management Practices
	FOR 4655	Wildlife Investigational Techniques
	BIOL 4899	Population Analysis
	BIOL 4233	Conservation Biology
f.	BIOL 4732	Mammalogy
	BIOL 4722	Ornithology
	FOR 591x	Directed Studies

*One of these 2 courses is required.

The above list is subject to change; other courses may be suitable, upon approval within the Faculty.

4. **Wood Products Minor:** Educational objectives of the Wood Products minor are to give knowledge and skills which increase employment opportunities in wood structural design or in wood products manufacturing and marketing. The minor also provides a foundation for postgraduate studies in wood and timber science.

The minor consists of the following courses (24 ch):

ADM 3375	Marketing of Products and Services
ADM 3685	Total Quality Management
CHEM 2401	Organic Chemistry I
FE 3873	Physical and Mechanic Properties of Wood
FE 4853	Processing of Wood Products
FE 5873	Performance of Structural Wood Systems
FOR 5881	Kiln Drying and Preserving Wood
FOR 5910	Directed Studies in Forestry (related to wood products)

5. **Forest Science Minor:** The Forest Science minor provides students the opportunity to complement their Forest Resources Management core program with courses in the general field of forest-related science. Two courses are required. Students may then select a stream of related courses or a more varied range of courses that will give insight into more than one area. Examples of areas include ecology, biodiversity, biotechnology, or the biophysical environment. Students are advised to consult relevant faculty and the Assistant Dean for guidance in course selection.

The required courses, to be taken in years 2 or 3 are:

BIOL 2053	Genetics
FOR 2345	Meteorology and Hydrology

A minimum of 17 credit hours of courses are to be selected from the following list, or approved alternatives (courses offered by the Faculties of Engineering, Forestry or Science). At least three courses are to be at the 3000 level or higher.

BIOL 2073	Bacteriology
BIOL 2093	Zoology
BIOL 3301	Taxonomy of the Seed Plants
BIOL 3321	Plant Anatomy
BIOL 3332	Plant Growth & Development
BIOL 3342	Comparative Morphology
BIOL 3459	Economic Botany
BIOL 4819	Insect Behaviour
BIOL 4722	Ornithology
FOR 4602	Ecology of Forest Insects
FOR 4466	Adv Studies in Forest Plants
FOR 4506	Advanced Studies in Soils and Hydrology
FOR 5303	Remote Sensing of Natural Resources
FOR 5411	Seed Production of Conifers
FOR 5421	Forest Tree Genetics and Breeding
FOR 5437	Biochemistry of Trees
FOR 5911	Directed Studies

BACHELOR OF SCIENCE IN KINESIOLOGY

FACULTY OF KINESIOLOGY

General Office:	Lady Beaverbrook Gym
Mailing Address:	Faculty of Kinesiology University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4575
Fax:	(506) 453-3511
Email:	phed@unb.ca
Website:	http://www.unbf.ca/kinesiology/

FACULTY

Dean: Christopher L. Stevenson, BSc, MA, MPE, PhD
Assistant Dean : TBA

- Albert, Wayne, BSc (Ott), MA (UWO), PhD (Qu), Assoc Prof. - 1999
- Barclay, Katherine, BSc (UNB), MSc (Wat.), PhD (Guelph), Sr Instructor (Joint Biology, Nursing) - 2001
- Belcastro, Angelo, BA, BPE (McM), MSc (Dal), PhD (Alta), Prof and Vice President (Academic) - 2003
- Burkard, Jeffrey, BA (State Univ. College, Brockport), MPE (UNB), Sr. Teaching Assoc. - 2002
- Chester, Victoria, BScHK (Guelph), MA (Laur), PhD (UNB), Asst Prof - 2002
- Cleave, Shirley, BA, MA (UWO), PhD (Ill), Assoc Prof. - 1979
- Haggerty, Terry, BA, BPHE (Qu), Dip Educ, MA, (UWO), PhD (SUNY-Buffalo), Prof (Cross Appt-Renaissance College)- 1991
- Kuruganti, Usha, BSc.EE, MSc. EE, PhD (UNB), Asst Prof. - 2004
- McGarry, Timothy, BSc (Liv), MSc (Brad), MPE, PhD (UBC) Asst Prof. - 2000
- McGibbon, Chris, BSc, MSc, PhD(UNB), Prof - 2004
- Neary, J. Patrick, BEd, MA (Vic), PhD (Alta), Assoc Prof. - 2002
- Reid, Ian, BPE (Manit), MPE (UBC), PhD (Texas A & M), Assoc Prof. - 1987
- Scott, David, BA, PGCE (Ulster), MA, MA, PhD (Vic B.C.), Assoc Prof. - 1997
- Sexsmith, James R., BSc (Leth), MSc, PhD (Alta), Prof - 1984
- Shannon, Charlene, BBA, B of Recr Mgmt (Acad.), MA, PhD (Wat), Asst. Prof. - 2002
- Stacey, Cynthia, BSc (Acad.), MSc (Guelph), PhD (Ott), Assoc Prof. - 1995
- Stevenson, Christopher L., BSc (Lond), MA (UBC and Stan), MPE (UBC), PhD (Stan), Prof. and Dean - 1974
- Tymowski, Gabriela, BA, BEd, MA (UWO), PhD (Gloucestershire), Assoc Prof. - 1999

General Information

The Faculty of Kinesiology offers two degree programs: Bachelor of Science in Kinesiology and a Bachelor of Recreation and Sport Studies. The **Bachelor of Science in Kinesiology (BScKin)** is a four year discipline based program of study, with the focus being on applying scientific principles to the study of exercise and sport. The curriculum is designed to prepare students for a variety of vocational careers and/or further study at the graduate level. The program will prepare students for career opportunities in applied exercise, sport science, and health related professions (e.g. fitness consulting, athletic therapy, ergonomics, human factors) and related careers, as well as for further study in the exercise and sport science disciplines or allied health professions (nutrition, physiotherapy, medicine).

Students interested in becoming elementary or secondary physical education teachers and coaches in school systems can select either the BRSS or the BScKin degree program and must apply to the Faculty of Education for the respective concurrent program. Students who are interested in the Arts and Humanities as a teachable minor, should select the BRSS degree program, while students who are interested in the Sciences as a teachable minor, should select the BScKin degree program. The application deadline for the concurrent programs is January 31 of each year. Students who, after completing the BRSS or BScKin degree program, decide they wish to teach, may apply to the consecutive BEd degree program. The BEd degree program taken after the BRSS or BScKin degree program normally requires 60 ch of study at UNB.

University Regulations

Any point not covered in the following regulations will be governed by the General University Regulations as stated in Section B of this Calendar. Questions concerning the application of regulations should be directed to the Registrar in writing.

Conditions Regarding Admission to the BScKin Program

All admissions are on a competitive basis; satisfaction of minimum requirements does not guarantee admission. Normally, no more than 100 students will be admitted to first year in the Faculty of Kinesiology in any academic year.

Transfer Students

1. A minimum session grade point average of 3.0 is required for a student to be considered for transfer into one of the Faculty's programs.
2. Normally a student will not be allowed to transfer into the Faculty mid-way through the academic year.
3. In addition to scholastic record, a transfer applicant's record of participation and interest in the "Kinesiology", "Recreation", and "Sport Science" field is also considered for admission.
4. Students presently registered in the Faculty will continue to be governed by the regulations in effect when they first registered. Students who were formerly in the Faculty and apply for re-admission, if accepted, will be governed by the regulations in effect at the time of their re-admission.

Time Limitation

The maximum time period permitted between the first registration in the BScKin degree program and the completion of the BScKin degree shall be eight (8) years. Normally, BScKin students who are re-admitted within this time frame must complete the degree requirements in effect at the last re-admission. Effective for incoming students, 1993.

BScKin as a Second Degree

In addition to the University's regulations for a second undergraduate bachelor's degree as specified in the UNB Undergraduate Calendar, the Faculty of Kinesiology requires that any student accepted into the BScKin degree program as a second undergraduate bachelor's degree be required to: (a) Complete at least thirty-six (36) credit hours of courses, and (b) Complete the requirements of the BScKin program.

General Regulations

Grade Point Averages

1. The method of calculating grade point averages is explained in Section B (Grading System and Classification) of this Calendar.
2. To earn a BScKin degree, a student must have successfully completed a minimum 130 ch of approved courses.
3. Students should refer to Section B of this Calendar for regulations regarding academic probation and withdrawal.

Policy on Grades

BScKin students must obtain a grade of "C" or better in required degree program courses. These courses include:

a.all first year required courses
b.all required core courses
c.Exercise and Sport Science Advanced Electives

Note: KIN1001 is considered to be pre-requisites or co-requisites to all other KIN and RSS courses. Students receiving a final grade of "D" in KIN1001 may repeat KIN1001 as a co-requisite to other second year KIN and RSS courses.

Repeating Courses

1. Regulations pertaining to repeating courses can be found in Section B of this Calendar.
2. Any required courses not successfully completed during a given year must be attempted not later than the next academic year, except by special permission of the Director of Undergraduate Studies.

Intersession / Summer Session Courses

BScKin students who wish to take Intersession and/or Summer Session courses that are to be credited towards their degree should first consult with their Faculty Advisor and then must obtain permission in advance of course registration from the Faculty's Director of Undergraduate Studies or designate.

Practica and Directed Studies

1. Normally, students may elect a maximum of twelve (12) ch from practica/internship courses, i.e., RSS 3913 (3), RSS 3914 (3), KIN 3950 (6), RSS 4910 (6), KIN 4950 (6), and RSS 3100 (12).
2. Normally, students may elect a maximum of six (6) ch from directed study courses, i.e., KIN 4903 (3), KIN 4904 (3), and from Special Activity courses, i.e., KIN 2831 (1), KIN 2832 (1), KIN 3831 (2), KIN 3832 (2), and from Leadership courses, i.e., KIN 2861 (1), KIN 2862 (1), KIN 3861 (2), and KIN 3862 (2).

Approval of Elective Courses

Advice concerning elective courses will be provided by members of the Faculty. All elective courses require approval of the Faculty.

Normal Workload

A "normal" student workload is considered to be 19-20 ch per term, or 38-40 ch per year (not including Intersession and Summer School). Permission from the Director of Undergraduate Studies is required to exceed 20 ch per term or 40 ch in any given academic year.

BScKin Year Designation Based On Credit Hours

For the purposes of on-line registration and administrative operations BScKin students shall be considered as in:

1. Second year after the student has successfully completed 27 ch toward their BScKin
2. Third year BScKin after the student has successfully completed 57 ch toward their BScKin
3. Fourth year BScKin after the student has successfully completed 87 ch towards their BScKin

Curriculum

(For Students Entering the Program: September 2002+)

General Notes

1. It is the students responsibility to complete the degree program curriculum for the year in which they enrol.
2. In the BScKin degree program activity lab courses are not required but may be taken as General KIN/RSS Electives up to a maximum of 6 credit hours.
3. The minimum credit hour total to graduate with a BScKin would be 130.
4. Of the 42 ch of KIN and Non KIN Electives in 3rd and 4th year at least 27 ch must be at the 3000-4000 level.

Year 1: (36 ch)		
Required Core		
KIN 1001	Introduction to Kinesiology	3 ch
One of the following three courses:		3 ch
	RSS 2042 : History of Sport and Recreation	
	RSS 2081 : Introduction to Wellness and Active Living	
	KIN 2093 : Introduction to Philosophy of Sport & Recreation	
BIOL 1001	Biological Principles, Part I	3 ch
BIOL 1006	Application in Biology, Part I	2 ch
BIOL 1012	Biological Principles Part II	3 ch
BIOL 1017	Application in Biology, Part I	2c h
BIOL 1711	Human Anatomy I	4 ch
BIOL 2782	Human Physiology II	4 ch
ENGL	1103 or 1144 or 1145	3 ch
MATH 1003	Introduction to Calculus I	3 ch
Choose 6 ch of the following:		6 ch
	PSYC 1013 / 1023	
	ANTH 1001 / 1002	
	SOCI 1000	

Year 2 (36 ch)		
Required Core		
BIOL 1752	Human Anatomy II	4 ch
BIOL 2721	Human Physiology I	4 ch
RSS 2023	Introduction to Sociology of Sport	3 ch
KIN 2032	Introduction to Sport Psychology	3 ch
KIN 2051	Prevention and Care of Athletic Injuries	4 ch
KIN 2062	Introductory Biomechanics	3 ch
KIN 2072	Introduction to Motor Control and Learning	3 ch
Choose 1 of the following:		
	CHEM 1001 / 1006 and CHEM 1012 / 1017	10 ch
or	PHYS 1940 / 1045	10 ch
Year 3 and 4 (60 ch)		
Required Core to be completed in 3rd year		
KIN 3001	Introduction to Research Methods in Kinesiology	3 ch
KIN 3081	Introductory Exercise Physiology	3 ch
KIN 3282	Physical Activity, Health and Wellness	3 ch
STAT 2043	Statistics for Social Scientists I	3 ch
STAT 3043	Statistics for Social Scientists II	3 ch
KIN Electives	(Choose 30 ch) (see Note 1, 2 & 3 below)	30 ch
Non- KIN Electives	(Choose 15 ch) (see Note 1 & 2 below)	
TOTAL		**130ch**

Note 1: of the 45 ch of KIN and NON-KIN electives in 3rd and 4th year at least 30 must be at the 3000/4000 level)

Note 2: see advisor for suggested KIN and NON-KIN electives.

Note 3: Laboratory Requirement - for the 4 core areas of Biomechanics, Exercise Physiology, Motor Learning/ Control, and Psychology of Physical Activity, students must take a minimum of 2 courses in 2 core areas.

HONOURS PROGRAM: BSc.Kin.

Students with a minimum CGPA of 3.5 may apply to enter the Honours program in the BScKin Degree after completing at least 57ch of their degree program.

To graduate with a BScKin Honours, students must meet the following requirements:

1. Maintain a minimum CGPA of 3.5 in all required courses in the B.Sc. Kin., and
2. Maintain a minimum CGPA of 3.5 in all advanced (3000 & 4000) level courses,and
3. Complete KIN 4900: Honours Research Project in Kinesiology, and
4. Complete a minimum of 48 ch of courses at or above the 3000 level (KIN /RSS and/or non-KIN/RSS courses).
5. Complete KIN 3001 as a prerequisite, or as a co-requisite to KIN 4900.

Pre-Professional Programs in Kinesiology

The BScKin degree program provides a variety of courses for students who are interested in pursuing a professional degree such as: Medicine, Chiropractic, Athletic Therapy, Physiotherapy, Occupational Therapy, and Massage Therapy. Experience has shown, where possible, that it is highly desirable for the pre-professional student to obtain a bachelors degree before applying for entrance to the professional school. Each professional school has its own specific entrance requirements and it is necessary that the student ascertain these requirements in order to be sure of qualifying as a candidate for admission to that particular school. Interested students should meet with the undergraduate program director before selecting their courses.

Concurrent Bachelor of Science in Kinesiology / Bachelor of Education Program (BScKin/BEd)

The BScKin and BEd Concurrent program is designed as a five year program to allow students to complete a degree program in Kinesiology and Education that prepares them to teach physical education in a variety of learning environments. This program is based on the integration of the BScKin and BEd programs. Students may complete an area of concentration in addition to Kinesiology with the appropriate selection of elective courses.

Admissions Procedures

1. Students apply for entry to the BScKin degree program upon completion of their high school program.
2. Students may apply to the Faculty of Education Concurrent Program during their second term (deadline is January 31) at UNB and, upon successful completion of at least 30 ch, may be admitted to the concurrent BScKin/BEd degree program. Students should be able to complete both degrees within five years.
3. Students may enter the Concurrent program later in their academic program, however, late entry may require more than five years to complete both degrees.

Concurrent Program Requirements

1. Students in the BScKin/BEd concurrent program will follow the BScKin curriculum and in addition will complete 60 ch of Education courses. Fifteen (15) ch of Education courses may be Non-Kin/RSS elective courses.
2. A student cannot receive a BEd degree by itself in this program. If a student withdraws from the concurrent program back into the BKin degree a maximum of 15 ch of education courses may be transferred for BKin credit.

YEAR 1 (36 ch)		
Required Core		
BIOL 1001	Biological Principles, Part I	3 ch
BIOL 1006	Application in Biology, Part I	2 ch
BIOL 1012	Biological Principles Part II	3 ch
BIOL 1017	Application in Biology, Part I	2 ch
BIOL 1711	Human Anatomy I	4 ch
BIOL 1752	Human Anatomy II	4 ch
ENGL	1103 / 1145 / 1146	3 ch
KIN 1001	Introduction to Kinesiology	3 ch
One of the following three:		3 ch
	RSS 2042 : History of Sport and Recreation	
	RSS 2081 : Introduction to Wellness and Active Living	
	KIN 2093 : Introduction to Philosophy of Sport & Recreation	
MATH 1003	Introduction to Calculus I	3 ch
Non-Kin Electives		6 ch

YEAR 2 (36 ch)		
Required Core		
BIOL 2721	Human Physiology I	4 ch
BIOL 2782	Human Physiology II	4 ch
RSS 2023	Introduction to Sociology of Sport	3 ch
KIN 2032	Introduction to Sport Psychology	3 ch
KIN 2051	Prevention and Care of Athletic Injuries	4 ch
KIN 2062	Introductory Biomechanics	3 ch
KIN 2072	Introduction to Motor Control and Learning	
Choose 1 of the following		10 ch
	CHEM 1001 / 1006 and CHEM 1012 / 1017	
or	PHYS 1940 / 1045	
KIN Activity Labs: (2 x 1 ch)		2 ch
YEAR 3, 4 AND 5 (118 ch)		
Required Core to be completed in 3rd year		
KIN 3001	Introduction to Research Methods in Kinesiology	3 ch
KIN 3081	Introductory Exercise Physiology	3 ch
STATS 2043	Statistics for Social Scientists I	3 ch
STATS 3043	Statistics for Social Scientists II	3 ch
KIN Activity Labs		7 ch
KIN Electives		15 ch
Non-Kin Electives		24 ch
Education Courses		60 ch
TOTAL		**190ch**

Minor in Ergonomics

The Minor in Ergonomics is designed for students from inside and outside the Faculty of Kinesiology interested in a coherent package of Ergonomics related courses. Students interested in the minor, must apply through the Undergraduate Degree Program. Enrolment is limited.

Students enrolled in the Minor will be required to take 15 ch of required courses and 9 ch of elective courses chosen in consultation, and in advance, with the Faculty of Kinesiology. A grade of C or better is required in each course used towards the Minor.

REQUIRED COURSES (15 credits)	
KIN 3161	Introduction to Human Facotrs (3 ch)
KIN 4161	Occupational Biomechanics (3 ch)
KIN 4163	Workplace Design & Analysis (3 ch)
ADM 2513	Organizational Behaviour (3 ch)
KIN 4903	Directed Study in Ergonomics (3 ch) - an ergonomics project.
ELECTIVES (9 ch) select from the following (highly recommend: 1, 2, 5, 7)	
KIN 4165	Workplace Physiology (3 ch)
ADM 3573	Organizational Design (3 ch) [PREQ = ADM 2513)
ADM 3875	Labour Relations (3 ch)
ADM 3815	Human Resource Management (3 ch) [PREQ = ADM 2513]
ADM 2526	Motivation & Work Behaviour (3 ch) [PREQ = ADM 2513]
ADM 4826	Employment Law (3 ch)
ME 3232	Enginnering Economics (3 ch)

BACHELOR OF SCIENCE IN SOFTWARE ENGINEERING

General Office:	Faculty of Electrical and Computer Engineering Head Hall, Room D36 and/or Faculty of Computer Science Gillin Hall, Room E126
Mailing Address:	Dr. Dawn MacIsaac, Program Coordinator, Software Engineering Program Faculty of Electrical & Computer Engineering, University of New Brunswick, P.O. Box 4400, Fredericton, N. B., Canada, E3B 5A3
Phone:	(506) 453-4561 or (506) 453-4566
Fax:	(506) 453-3589 or (506) 453-3566
Email:	ece@unb.ca or fcs@unb.ca
Website:	http://www.cs.unb.ca/html/swe.html

General Information

Software Engineering was established at UNB as a separate discipline in 2000. The BScSwE is administered jointly by the Department of Electrical and Computer Engineering and the Faculty of Computer Science. The program educates professionals who apply engineering techniques to the design, implementation, test and maintenance of software products. Students graduating from the program will be eligible for registration as a Professional Engineer and an Information Systems Professional.

The BScSwE is designed as a four-year program or five years if undertaken in conjunction with the Co-op or Professional Experience Program. Students entering the program are strongly encouraged to participate in either Co-op or PEP, as it is widely recognized that the experience gained is a valuable component of a Software Engineering background. A description of these Cooperative Education Programs is found in Section E Undergraduate Degrees, both in the Computer Science and the Engineering sections.

CO-OP Schedule

The Software Engineering program will follow the Co-op schedule established for both ECE, and CS consisting of eight or more study terms and up to six work terms of four months each.

PEP Schedule

The PEP introduces a 16-month work term following the end of the third year (sixth term) until the beginning of the fourth year (seventh term) which is delayed by one year.

GENERAL REGULATIONS

1. In order to obtain a BScSwE degree, a minimum of 183 ch is required.
2. A minimum grade of C is required for all pre-requisite courses.

Curriculum

The program is designed to be completed in 16 study terms. The program consists of required core courses, basic science electives, technical electives and complementary studies electives. The first year of the program is common with other Engineering programs allowing transfers without penalty after one year. Students transferring from New Brunswick Community Colleges will be eligible to receive up to one year of credits toward the Software Engineering degree.

Core Courses

APSC 1013	Mechanics I
APSC 1023	Mechanics II
CHEM 1882	General Chemistry - Physical and Inorganic Chemistry
CMPE 2013	Simulation and Engineering Analysis
or	
CS 3113 **	Introduction to Numerical Methods
CS 1073	Introduction to Computer Programming in Java
CS 1083	Computer Science Concepts (Java)
CS 1303	Discrete Structures
CS 2013	Software Engineering I
CS 2023	Procedural Program Development
CS 2333	Computability and Formal Languages
CS 2513	Introduction to Information Systems
CS 3013	Software Engineering II
CS 3323	Introduction to Data Structures
CS 3413	Operating Systems I
CS 3503	Systems Analysis and Design I
CS 3513	Database Management Systems I
CS 3913	Algorithms I
CS 4613	Programming Languages
EE 1013	Electricity and Magnetism
EE 2213	Digital Systems I
EE 2723	Electric Circuits and Electronics (for non-electricals)
EE 3221	Digital Systems II
EE 3232	Digital Systems III
EE 4243	Data Communications
or	
CS 4865 *	Data Communications and Distributed Computing
EE 4273	Real-time Operation of Microcomputers
ENGG 1013	Design and Communications
ENGG 4003	The Engineering Profession
ENGG 5003	Commercial Law: Engineering
ME 2613	System Dynamics
ME 3232	Engineering Economics
MATH 1003	Introduction to Calculus I
MATH 1013	Introduction to Calculus II
MATH 1503	Linear Algebra
STAT 2593	Probability and Statistics for Engineers
SWE 4000	Software Engineering Design
SWE 4103	Software Quality and Project Management
SWE 4203	Software Evolution and Maintenance

Notes:

1. * EE 4243 or CS 4865 may be taken interchangeably, but the technical electives CMPE 4543 and CS 5865 require EE4243 and CS 4865 respectively.
2. ** CMPE 2013 or CS 3113 may be taken interchangeably.

Electives

BASIC SCIENCE ELECTIVES

Core courses in Basic Science include Chemistry 1882 . Two other Basic Science courses must be chosen from Physics, Chemistry, and the life or earth sciences.

TECHNICAL ELECTIVES

Each student is required to take three technical elective courses, chosen from the following list.

CS 3025	Human-Computer Interaction
CS 4405	Operating Systems Design
CS 4525	Database Management Systems II
CS 4725	Introduction to Artificial Intelligence
CS 4735	Computer Graphics
CS 4745	Introduction to Parallel Processing
CS 4815	Advanced Computer Architectures
CS 4905	Introduction to Compiler Construction
CS 4935	Advanced Algorithmic Techniques
CS 5725	Artificial Neural Networks
CS 5865	Data Networks
CMPE 4223	Safety Critical System Design
CMPE 4233	Topics in Computer Engineering
CMPE 4543	Communications Network Engineering
EE 3253	CAE Systems
EE 4261	Microprocessor System Design
EE 4933	Introduction to Biomedical Engineering
SWE 4303	Performance Analysis of Computer Systems
SWE 4403	Software Architecture

Note: Other senior level courses may be taken subject to approval.

Complementary Studies Electives T

he program requires 15 credit hours (typically 5 five three credit hour courses) of Complementary Studies Electives (CSE). The choice of courses is subject to the following restrictions:

At least three credit hours must be in Economics and be given by the Department of Economics. This usually takes the form of ECON1073 Economics for Engineers.

One of the CSEs must be a course in technical communications. At the present time, the only course of this nature is EE3013 Technical Writing.

To ensure that the spirit of CSEs is achieved, one must take at least one three credit hour course in one of the following disciplines: Anthropology, Classics, English (non-language), History, Philosophy, Political Science and Sociology.

At least three additional credit hours must be in the Humanities and Social Sciences (HSS).

SAINT JOHN COURSE DESCRIPTIONS

Standard Course Abbreviations

Biology	BIOL
Biology & Psychology Joint Honours Program	BIPS
Business Administration	BA
Chemical Engineering	CHE
Chemistry	CHEM
Civil Engineering	CE
Classics and Ancient History	CLAS
Computer Engineering	CMPE
Computer Science	CS
Data Analysis	DA
Economics	ECON
Education	ED
Electrical Engineering	EE
English	ENGL
French	FR
Forensic Science	FRNC
Gender Studies	GEND
Geology	GEOL
German	GER
Greek	GRK
Health Science	HSCI
History & English-Joint Honours Program	HENG
History	HIST
Hospitality and Tourism Management	HTM
Humanities	HUM
Information and Communication Studies	ICS
International Studies	IS
Kinesiology	KIN
Latin	LAT
Linguistics	LING
Mathematics	MATH
Mechanical Engineering	ME
Nursing	NURS
Philosophy	PHIL
Physics	PHYS
Politics	POLS
Psychology	PSYC
Science	SCI
Social Science	SOCS
Sociology	SOCI
Spanish	SPAN
Statistics	STAT
World Literature	WLIT

Course Numbers

Although the University is on a course credit system and has tended to move away from the idea of a rigid specification with respect to which year courses should be taken, yet there is some need to provide information as to the level of the course.

The various disciplines and the courses which they offer are presented in alphabetical order.

The course numbers are designated by four digits.

- **First Digit** designates the level of the course:

1	Introductory level course
2	Intermediate level course which normally has prerequisites.
3, 4 and 5	Advanced level course which requires a substantial back-ground.
6	Postgraduate level course

- **Second and Third Digits** designate the particular course in the Department, Division or Faculty.

- **Fourth Digit** designates the duration of the course:

0	Year (or full) course normally offered over two terms.
1-9	Other than full year courses.

- Departments may assign specific meanings to these digits; consult the departmental listings.

- Students should consult the official **Web Timetable** (http://www.unbsj.ca/schedules/timetable/) to find when courses are offered in a particular year and when they are scheduled. Not all courses listed are given every year.

Codes

The following codes are used in course descriptions:

A -	alternate years	**R** -	reading course
ch -	credit hours	**S** -	seminar
C -	class lecture	**T** -	tutorial
L -	laboratory	**W** -	English writing component
LE -	limited enrollment	**WS** -	workshop
O -	occasionally given	***** -	alternate weeks

For example, 6 ch(3C 1T, 2C, 2T) designates a course with 6 credit hours: 3 class lecture hours and 1 tutorial hour per week in the first term; 2 class lecture hours and 2 tutorial hours per week in the second term.

Combinations of class lectures, laboratories, seminars, etc., are indi-cated by a slash line, e.g., 5C/L/S.

Before registration, check all course offerings in the official Timeta-ble. Not all courses listed are given every year

ADMINISTRATION

See Business Administration for descriptions.

ANCIENT HISTORY

See Classics for description.

BIOLOGY

In the four digit number description of Biology courses taught on the Saint John campus the following code applies:

1st digit specifies year in which course is normally taken.

2nd and 3rd digits designate the particular course.

4th digit designates the duration of the course as follows:

0	Course extends over both terms
1	Term course offered in first term
2	Term course offered in second term
3	Field course offered outside normal session
5	Term course offered in either first or second term

* indicates laboratory sessions are given on alternate weeks.

Prerequisites All prerequisite courses must be passed with a minimum grade of C. BIOL 1001 or equivalent is a prerequisite for all courses in Biology except 1202, 1411, 1412, 1416, 1417, 1551, 2831 and 2852.

Note: See beginning of Section F for abbreviations, course numbers and coding.

BIOL 1001 Biological Principles 3 ch (3C)

Introduces biological principles and processes. Considers the chemistry of life, maintenance of cells and organisms, energy utilization, genetic information, reproductive continuity and mechanisms of evolution. Some High School chemistry is recommended. Note: This course is designed for science students or other students planning to major in Biology. Credit can be obtained for only one of BIOL 1001 or BIOL 1551.

BIOL 1012 Biological Principles, Part II 3 ch (3C)

Surveys the structure, function and evolution of selected plants and animals. Topics include ecosystems and ecological interactions. Note: Students intending to major in Biology must take BIOL 1017 as a co-requisite. Prerequisite: BIOL 1001 or equivalent. Co-requisite: BIOL 1017.

BIOL 1017 Applications in Biology, Part II 2 ch (3L)

Instruction and laboratory work dealing with the applications of Biology at the level of organisms and the ecological interactions. Prerequisite: BIOL 1001 or BIOL 1551 Co-requisite: BIOL 1012.

BIOL 1202 Introductory Marine Science 3 ch (3C)

An introduction to the physical, chemical, and biological aspects of marine environments. Marine management issues and laws will be discussed.

BIOL 1302 Introduction to Environmental Biology 3 ch (3C)

Introduction to issues in environmental biology, including ecosystem health, sustainable development, environmental law, multi-stakeholder decision-making, etc. The course will use a case study method to examine local and global effects of human activity on the earths ecology and human society, focussing on environmental concerns of coastal regions. Prerequisites: BIOL 1001, ECON 1013.

BIOL 1411 Anatomy & Physiology I 3 ch (3C)

Basic concepts in human anatomy and physiology, with emphasis on the normal condition. Prerequisite: Chem 122 and Biology 122. For Nursing students only, or permission of instructor

BIOL 1412 Anatomy & Physiology II 3 ch (3C)

A continuation of BIOL 1411, basic concepts in human anatomy and physiology, with emphasis on the normal condition. Prerequisite: BIOL 1411. For Nursing students only, or permission of instructor.

BIOL 1416 Anatomy & Physiology Laboratory I 2 ch (3L)

A selection of laboratory exercises to accompany BIOL 1411. Co-requisite: BIOL 1411 intended for Nursing students only.

BIOL 1417 Anatomy & Physiology Laboratory II 2 ch (3L)

A selection of laboratory exercises to accompany BIOL 1412. Co-requisite: BIOL 1412 intended for Nursing students only.

BIOL 1551 Principles of Biology, Part I 3 ch (3C)

Part I deals with cell structure and function, nutrition, metabolism, classical and molecular genetics and reproduction. Designed for students in the Faculties of Education, Kinesiology and those students in the Faculty of Arts not planning on majoring in Biology. A background knowledge of elementary chemistry is recommended. Note: Credit cannot be obtained for both BIOL 1001 and BIOL 1551.

BIOL 2015 Introductory Genetics 4 ch (3C 3L*) [W]

History of genetics, Mendelian genetics, chromosome theory of inheritance, sex determination and linkage, extensions of Mendelian analysis, genetic linkage, crossing-over, genetic mapping, extranuclear genetics, quantitative and population genetics. Prerequisites: BIOL 1001 (or BIOL 1550 with a grade of B or higher) and BIOL 1012 and BIOL 1017.

BIOL 2065 Introductory Biochemistry 4 ch (3C 3L*) [W]

Protein structure and function, techniques for protein analysis, examples of important proteins, mechanisms and regulations of enzymatic activity, metabolism (basic concepts and design, followed by the study of a few pathways). Prerequisites: BIOL 1001 (or BIOL 1550 with a grade of B or higher) and BIOL 1012 and BIOL 1017, additionally CHEM 1041, CHEM 1046, CHEM 1072 and CHEM 1077.

BIOL 2125 Introductory Botany 5 ch (3L)

Introduces botanical principles and processes. Includes basic anatomy and morphology on a range of scales: cellular structure and processes, tissues, organs, and their functions. Prerequisites: BIOL 1001 (or BIOL 1550 with grade of B or higher) and BIOL 1012 and BIOL 1017.

BIOL 2135 Introductory Botany for Non-Biologists 3 ch (3C 3T)

Introduces botanical principles and processes. Includes basic anatomy and morphology on a range of scales: cellular structure and processes, tissues, organs and their functions. Students are required to attend weekly laboratory/tutorial sessions, but will not write laboratory exam or assignments. This course is not equivalent to BIOL 2125 for credit toward a BSc, but serves as an acceptable prerequisite for BIOL 3275, 3353, 3355 or 3541 in place of BIOL 2125. Credit will not be granted for both BIOL 2125 and BIOL 2135. Prerequisites: BIOL 1001 or BIOL 1551 with grade of B or higher, or Grade 12 Biology with 80% or higher and permission of the instructor.

BIOL 2245 Introductory Molecular Cell Biology 4 ch (3C 3L*)

Studies cell membranes, motility and sensory systems; gene regulation and molecular embryology; DNA, RNA, protein synthesis, viruses and molecular genetics. Prerequisites: BIOL 1001 (or BIOL 1550 with a grade of B or higher) and BIOL 1012 and BIOL 1017.

BIOL 2485 Introduction To Microbiology 4 ch (3C 3L*)

Covers the occurrence, distribution and importance of the major groups of bacteria; bacterial metabolism, growth, structure and function; introduces the role of microbes in the environment, microbial interactions, biological cycles and exploitation of microbes by industry. Labs stress techniques for observation, cultivation and characterization of bacteria and experimental concepts of the discipline. Prerequisites: BIOL 1001 (or BIOL 1550 with a grade of B or higher) and BIOL 1012 and BIOL 1017.

BIOL 2585 Introductory Ecology 4 ch (3C 4L*)

Introduces concepts of ecology common to terrestrial, fresh water and marine ecosystems. Provides a basis for further ecological or environmental studies. Introduces mans influence on ecosystems. Prerequisites: BIOL 1001 (Or BIOL 1550 with a grade of B or higher) and BIOL 1012 and BIOL 1017.

BIOL 2615 Introductory Zoology 5 ch (3C 3L)

Classification, functional morphology, development and evolution of the major animal groups. Prerequisites: BIOL 1001 (or BIOL 1550 with a grade of B or higher) and BIOL 1012 and BIOL 1017.

BIOL 2831 Pathophysiology I 3 ch (3C)

A review of the normal physiological mechanisms for maintaining homeostasis. This is followed by a consideration of how various perturbations (such as environmental or life style factors) and disease can disrupt the normal balance and lead to pathology. Prerequisite: BIOL 1411 and BIOL 1412.

BIOL 2852 Pathophysiology II 3 ch (3C)

A continuation of BIOL 2831. Prerequisite: BIOL 2831. For Nursing students only.

BIOL 3055 Animal Physiology I (A) 4 ch (3C 3L*)

A physiological approach to organismic function in animals, focussing on homeostasis and nervous, muscular, and cardiovascular systems. Prerequisites: BIOL 2615.

BIOL 3132 Advanced Biochemistry 3 ch (3C)

Emphasizes the molecular underpinnings of the healthy and diseased states by extending and integrating essential molecular concepts introduced in Introductory Biochemistry - BIOL 2065. Prerequisite: BIOL 2065.

BIOL 3140 Independent Studies 3 ch (3WS) [W]

Gives academically strong Biology Major students an opportunity to write a library research report. The student should discuss the topic with the staff member best qualified to give approval to the subject matter and to give guidance during the year. Prerequisite: Students must have a grade point average of 3.0 or better in the last two years of Biology courses.

BIOL 3165 Marine Ecology (A) 4 ch (3C 3L*)

An introduction to the interrelationships between organism and environment in marine ecosystems. Limited enrollment: preference will be given to Marine Biology Majors, then other students based on C.G.P.A. Pre-requisite: BIOL 2585.

BIOL 3173 Marine Biology Field Course 4 ch

An introduction to the study of the seashore and coastal waters with emphasis on the nature and ecology of the littoral flora and fauna and on practical methods of study. Held immediately after spring examinations. Enrollment is limited; preference will be given to Marine Biology Majors. Prerequisite: BIOL 2585.

BIOL 3215 Biology of Algae (A) 4 ch (3C 3L*) [W]

General characteristics and diversity of Algae: classification, light-harvesting pigments, reserve carbohydrates, cellular organizations, morphology, levels of organization, reproduction and life cycles, morphogenesis, evolution and phylogeny. Limited enrollment: preference will be given to Marine Biology Majors, then other students based on C.G.P.A. Prerequisite: BIOL 2125.

BIOL 3245 Environmental Chemistry (A) 4 ch (3C 3L) (Cross Listed: CHEM 3245)

Course will provide students with a chemical basis for understanding the natural environment and current environmental issues. Topics will include: the composition of the natural environment, the chemistry supporting environmental processes, and the main reactions of natural & anthropogenic chemicals in the atmosphere, water, and soils. Note: This course may be listed as either BIOL 3245 or CHEM 3245. Credit can not be obtained for both BIOL 3245 and CHEM 3245. Prerequisite: One term of organic chemistry at the 2nd year level.

BIOL 3251 Introductory Microbiology 3 ch (3C)

Introduction to the fundamental concepts of infectious disease microbiology. Discusses bacteria, fungi, viruses, protozoa, helminths and arthropods. For Nursing students only (or with permission of Instructor).

BIOL 3275 Economic Botany 4 ch (3L)

Considers the range of ways in which plants are used by humans for food, medicine, shelter, etc. Discusses the impact of plants on humans and vice versa, including the possible origins and impacts of agriculture, importance of plants in various cultures, and selection of desirable plant features by humans. Students will research an area of particular interest and present a seminar on it. Prerequisite: BIOL 2125.

BIOL 3285 Mycology (A) 5 ch (3C 3L)

Introduces students to the taxonomy, physiology and industrial uses of the fungi. Prerequisite: BIOL 2485.

BIOL 3353 Flora of New Brunswick (A) 5 ch (3C 3L)

A practical taxonomy course dealing with a range of vascular plants: ferns, fern allies, gymnosperms and flowering plants; consideration of taxonomic concepts, literature and methods used to identify various groups. Laboratory emphasis will be on features of important plant families and identification of students plant collections. Prerequisite: BIOL 2125.

BIOL 3355 Survey of the Plant Kingdom (A) 5 ch (3C/3L)

Explores diversity in form, structure and function in major plant groups, and how these organisms live and reproduce in their particular environments. Probable homologies and evolutionary relationships are discussed. Prerequisite: BIOL 2125.

BIOL 3375 Research Skills 5 ch (3C 3L)

In-depth introduction to biological research, particularly ecological sampling and experiments. Topics covered include development of hypotheses, design of experiments and sampling, evaluation of the scientific literature, presentation, interpretation, and statistical analysis of biological data, and writing scientific papers. Students will carry out field and laboratory projects, including an independent research project. Prerequisites: BIOL 2585 and STAT 2264.

BIOL 3541 Plant Ecology (A) 5 ch (3C 3L)

A course on the factors affecting the distribution and abundance of plants, how patterns and structure at the levels of populations and communities can be described quantitatively, and how these arise from the interaction of abiotic (climate, fire, soil) and biotic (competition, herbivory) factors. Prerequisites: BIOL 2125 and BIOL 2585.

BIOL 3565 Conservation Biology (A) 4 ch (2C 3L)

Emphasizes the management of environmental and ecological resources in such a way as to maintain ecosystem resources for the protection of species. Focus will be on methods of determining population habitat requirements, community interactions, impacts of habitat change, cumulative effects of environmental pressures, etc. in coastal systems. Issues such as biodiversity, habitat protection, endangered species protection, politics of conservation, etc. will also be discussed. Prerequisites: BIOL 2585, STAT 2264.

BIOL 3625 Structure and Functions of Marine Invertebrates 5 ch (3C 3L)

Explores the structure and functions of major marine invertebrate phyla, emphasizing comparative and organismic approaches, respectively. Topics covered include food capture and digestion, defense mechanisms, respiration, circulation, excretion, skeletal support, reproduction and life cycles, as well as locomotion. Prerequisite: BIOL 2615.

BIOL 3635 Animal Physiology II (A) 4 ch (2C 4L)

A physiological approach to organismic function in animals, focussing on endocrine and temperature effects on homeostasis; osmoregulation; and the respiratory and urinary systems. Prerequisites: BIOL 3055.

BIOL 3663 Biology and Ecology of Elasmobranchs (A) 4 ch

The course will look at the evolution, taxonomy, ecology and physiology of elasmobranch fishes, with an emphasis on sharks. The course will consist of lectures, laboratory sessions, and field trips, beginning with three days at UNBSJ followed by six days at the BBS, Bahamas. Prerequisite: BIOL 2615.

BIOL 3665 Introduction to Environmental Law 3 ch (3A)

This course will provide a general overview of the different concepts that surround environmental law. Recent events have focused our attention on the fragility of the environment, and there is evidence of its deterioration in the forms of harmful pollution, resource depletion, thinning of the earths ozone layer, global warming, ground water contamination and the decline or even extinction of species. We will look at the legislation, the common law, and the different remedies they provide in cases of environmental crisis. Prerequisite: a minimum of 60 chs.

BIOL 3715 Biology of Vertebrates 5 ch (3C 3L)

A comparative account, principally of the physiology and functional anatomy of the higher vertebrates. Prerequisite: BIOL 2615.

BIOL 3755 Fish Biology (A) 5 ch (3C 3L)

A study of the anatomy, physiology, and classification of Recent fishes. In classification and geographical distribution, emphasis is placed on the marine northwest Atlantic fishes and freshwater fishes of New Brunswick. Limited enrollment: preference will be given to Marine Biology Majors, then other students based on C.G.P.A. Prerequisite: BIOL 2615.

BIOL 3765 Fisheries Ecology (A) 3 ch (2C 3L*)

This course takes an ecological approach to fisheries management. Topics include: age and growth, life history analysis, bioenergetics, functional ecology, social behaviour, population estimates, recruitment dynamics and management. Limited enrollment: preference will be given to Marine Biology Majors, then other students based on C.G.P.A. Prerequisite: BIOL 2615.

BIOL 3955 Biological Oceanography (A) 4 ch (3C 3L*)

A synopsis of descriptive physical and biological oceanography of the world's oceans with special emphasis on Canadian coastal waters. Laboratories emphasize techniques for measurement of oceanogrphic parameters and include some field studies. Limited enrollment; preference will be given to Marine Biology Majors, then other students based on C.G.P.A. Prerequisites: BIOL 2585.

BIOL 4090 Honours Project 9 ch (WS) [W]

A Biology Honours student must undertake a thesis project with permission of the Department. Students who intend to apply for this elective are advised to consult with their intended faculty supervisor at the beginning of their third year. Prerequisite: students should have a cumulative grade point average of 3.3 or better. Under special circumstances, students can register in BIOL 4090 as a regular course with permission of the Department Chairperson.

BIOL 4155 (4159). Current Topics in Biology 3 ch (2C)

A lecture/seminar course to acquaint students with some of the outstanding recent developments in various fields. Restricted to students majoring in Biology or Marine Biology. Prerequisite: Permission of Instructor.

BIOL 4215 Ecophys. and Biochem. of Seaweeds (A) 4 ch (3C 3L*) [W]

A brief description of the general characteristics of seaweeds and their environment, followed by the study of the major factors affecting seaweeds: physical, chemical, biological and human parameters. Prerequisite: BIOL 2125.

BIOL 4295 Principles of Plant Pathology (A) 4 ch (2C 3L)

Introduces students with basic concepts of interactions between plant hosts and fungal, bacterial and viral pathogens. Considers the roles of phytotoxins, resistant mechanisms, and cellular metabolism during pathogenesis. Prerequisite: BIOL 2125.

BIOL 4373 Tropical Marine Biology Field Course 3 ch

An examination of tropical coastal ecosystems. The course will focus on the ecology of coral reefs, tropical fish ecology and physiology, tropical seaweed biology and mangrove ecology. The course consists of lectures, fieldwork and laboratory work. Prerequisite: BIOL 3173 or equivalent; or permission of instructor.

BIOL 4445 Marine Behavioural Ecology 3 ch (3C)

Explores the relationship between animal behaviour, ecology and evolution. Theoretical concepts covered include the economics of animal decision making, predator-prey relationships, competition, fighting and assessment, sexual conflict and sexual selection, parental care and mating systems, alternative breeding strategies, altruism and co-operation, Whenever possible marine organisms, and particularly invertebrates will be used to illustrate theoretical concepts. Prerequisite: BIOL 2585 Introductory Ecology.

BIOL 4585 Quantitative Ecology (A) 3 ch (2C 2T)

The development and application of fundamental models in ecology. Topics include: population dynamics, competition, predator-prey relationships and community models (both mechanistic and systems approaches). Prerequisite: BIOL 2585.

BIOL 4592 Aquaculture (A) 4 ch (2C 3L)

The history, practice and future of aquaculture, with particular emphasis on development of finfish aquaculture in Atlantic Canada. Topics include: biology of growth, culture of live feed, hatchery techniques, health, nutrition, engineering and economics. Limited enrollment; preference will be given to Marine Biology Majors, then other students based on C.G.P.A. Prerequisite: BIOL 2585.

BIOL 4645 Biology and Conservation of Marine Mammals (A) 3 ch (3C) [W]

The biology of seals, whales, and sea-cows. Life histories, behaviour, reproduction, and population estimation techniques will receive special emphasis. The biological, economic, and moral aspects of mans direct and indirect influence on, and utilization of marine mammals will be discussed. Prerequisite: BIOL 2615.

BIOL 4693 Diversity and Systematics of Marine Invertebrates 4 ch

Introduces basic techniques for invertebrate identification, monitoring and biodiversity assessment in rich and diverse invertebrate fauna of the Quoddy Region. Practical work includes shipboard sampling, field trips to coastal sites and laboratory exercises that present a broad overview of invertebrates of intertidal, plankton and subtidal benthic communities. The course is held at the Huntsman Marine Science Centre, St. Andrews, and is twelve days in length. A charge of tuition, full board and lodging is required. Prerequisites: BIOL 2615 or equivalent.

BIOL 4775 Physiology of Marine Vertebrates (A) 3 ch (3C)

A course on selected aspects of the comparative physiology of marine fishes, reptiles, birds and mammals. Prerequisite: BIOL 3055.

BIOL 4825 Introduction to Ecotoxicology (A) 4 ch (2C 3L)

A theoretical and applied approach to the science of exotoxicology, including application of the tools and procedures used to understand toxicant fate and effects in ecosystems. Both field (ed. Community level environmental effects monitoring) and laboratory (eg. LC50 tests) methods for understanding contaminant fates and effects will be examined. Prerequisite: CHEM 2422.

BIOL 4855 Biometrics 4 ch (3C 2T)

Students are introduced to methods of statistical analysis relevant to biological questions. Topics of study will include: experimental design, how to deal with noisy data (transformations); parametric and non-parametric tests; how to deal with missing data; regression (linear & non linear); statistical packages; and introduction to multivariate statistics (PCA and DFA). Prerequisite:STAT 2263 or equivalent.

BIOL 4861 Advanced Environmental Biology (A) 4 ch (5C/L/S)

Continuation of BIOL 1302. The course will use case studies to explore environmental issues, focussing on the role of biologists in environmental studies and decision-making. Emphasis will be on the types of interactions required of biologists, economists, community members, activists, industrialists, lawyers, regulators, etc. in areas of environmental law, policy, and economics for integrated environmental and coastal zone management. Prerequisites: BIOL 1302, ECON 2775.

BIOL 4875 Environmental Techniques (A) 4 ch (3C 3L*)

A techniques course, in which students will have practical experience in sampling and analytical techniques, including: water, air and soil sampling; plant and animal sampling in field and lab; and chemical analyses of tissues and water, air and soil. Appropriate study design and statistical analyses of collected data will be emphasized.

BIOL 4935 Comparative Animal Behaviour 3 ch (3C)

Physiological bases of behaviour, the animal in relation to its environment, the animal in its social context, and the evolution of behavioural displays and activities. Emphasizes the adaptive significance of behavioural activities (ethology) rather than experimental psychology. Prerequisite: BIOL 2615.

BIOLOGY-PSYCHOLOGY

Note: See beginning of Section F for abbreviations, course numbers and coding.

BIPS 4000 Biology-Psychology Joint Major-Honours Project 6 ch

A Biology-Psychology student must complete a thesis project to satisfy the requirements of the Honours program. A C.G.P.A. of 3.3 or better at the end of the third year and the permission of the Departments of Biology and Psychology are required for entry into the program. The thesis is supervised and examined jointly by the two Departments. The project will be assessed simply as a pass or fail.

BUSINESS ADMINISTRATION

Course Numbering System

The Faculty of Business uses the following numbering system for courses offered by the School

A first digit of:

1	designates an introductory level course.
2	designates an intermediate level course which normally has a prerequisite specified in the course designation.
3	designates an advanced level course which has one or more prerequisites specified in the course description.
4	designates an advanced level course which normally has prerequisites. These courses are intended for senior students who have successfully passed a minimum of 75 chs of BBA or BAM course work.

The second digit identifies the nature of the course, as follows:

1	general,
2	accounting,
3	marketing,
4	finance,
5	organizational behaviour and management,
6	quantitative analysis,
7	law,
8	industrial relations and human resource management.

The third and fourth digits distinguish different courses in the same field.

COURSE OFFERINGS

All courses listed in this section will not be offered each year. The official timetable must be consulted for courses offered each year.

Notes:

In order to take a Business Administration (BA) course that has a prerequisite, students must earn a C or better in the prerequisite course(s), regardless of the program in which the student is registered.

Students who feel they have the equivalent prerequisite background through a combination of coursework and work experience, may apply to the Faculty of Business on a Permission and Request Form for permission to enter a course. These forms are available from the Faculty of Business office in Oland Hall.

See beginning of Section F for abbreviations, course numbers and coding.

BA 1216 Accounting for Managers I 3 ch (3C)

Examines the uses of accounting information within and outside organizations. Focuses on the impact of business events on the financial statements. Introduces case studies, oral and written presentations, group problem solving, and unstructured problems. Prerequisite: Math 1853.

BA 1218 Accounting Lab 1 ch

A self-paced course that introduces the procedural aspects of accounting. Students will receive a grade of either pass or fail. Prerequisite: BA 1216

BA 1605 Business Decision Analysis I 3 ch

Basic probability concepts, random variables, descriptive measures, properties of distributions, statistical decision theory and Bayesian approaches are introduced. Discrete and continuous probability models and their applications to business problems are also covered. Prerequisite: Math 1853 or equivalent

BA 2001 Business Communications 3 ch (3C) (LE)

Introduces students to topics related to business communications, including preparing research papers and business documents; delivering presentations, interviewing, basic speaking and listening skills, running business meetings; and a number of topical issues related to business communications in the 21st century. Prerequisite: Open only to BBA students with at least 30chs completed.

BA 2123 Introduction to Electronic Commerce 3 ch (3C)

This is an introductory course that examines all facets of Internet commerce. Topics covered include, creating and marketing products on the Internet, electronic money and third party payments, virtual organizations, security on the Internet, and the use of the Internet for creating management information systems. Prerequisite: successful completion of 24 ch of BBA, CS, or DA program or admission to the Certificate in Electronic Commerce.

BA 2217 Accounting for Managers II 3 ch (3C)

Continues the study of accounting by examining the uses of accounting information within the organization. Case studies will be used extensively. Emphasis placed on solving unstructured problems through the use of cases and other materials. Oral and written presentation skills are also emphasized. Credit will not be granted for both BA2217 and HTM 2217. Prerequisite: BA 1216

BA 2303 Principles of Marketing 3 ch (3C) [W]

A basic foundation of marketing theory and analysis, providing the basic analytical framework from which to approach the decision-making process and issues related to the marketing function. Prerequisites: BA 1216, BA 2504.

BA 2501 Introduction to International Business 3 ch (3C)

The course examines issues and problems which arise when business operations transcend national boundaries. Topics include the dimensions of the contemporary international economy, politics and management. Course examines theories and activities leading toward international trade, investment and management of international firms. Prerequisite: BA 2504, ECON 1013, ECON 1023.

BA 2504 Introduction to Organizational Behaviour 3 ch (3C)

An introduction to the contributions of the applied behavioural sciences to the study of people at work in organizations. The fundamentals of individual and group behaviour are covered as well as selected topics in motivation, leadership, communication, conflict and organizational change. Prerequisite: Successful completion of 24 credit hours or admission to a certificate program in the Faculty of Business.

BA 2606 Business Decision Analysis II 3 ch

Introduction to statistics, statistical techniques used in business situations, sampling theory, estimation, hypothesis testing, Chi-square, t and F distributions, Bayesian inference, association and trend analysis, and their applications. Prerequisite: BA 1605.

BA 2663 Technology Fundamentals of E-commerce 3 ch (3C)

This course examines the technological basis of electronic commerce. The computer-based network enabling electronic commerce is the focus. Data and voice networks, Internet and telephony, bandwidth, architecture, software strategies, and the Internet and WWW supplier industries will be discussed with relevance to e-commerce implementation planning.

BA 2738 Administrative Law (O) 3 ch (3C)

Begins with a brief introduction to our Constitutional system. Then the distinctions between judicial, quasi-judicial, and purely discretionary power are developed through cases followed by a study of law relating to notice, the right to a hearing, and the nature of hearings before tribunals. Concludes with an examination of the interposition of judicial review of administrative action and the legal remedies available to protect individual rights adversely affected by the administrative process.

BA 2758 Employment Law 3 ch (3C)

This course examines Canadian employment legislation and its application. Includes a study of laws governing union-management relations, work standards, employment equity, and relevant laws governing recruitment, selection, and employment of personnel, Differences in federal and provincial employment laws will be discussed.

BA 2858 Introduction to Human Resource Management 3 ch (3C)

A study of the personnel function within an organization and its relationship to the employees and to the labour market. Includes human resource planning, recruitment and selection, training, performance measurement, wage and salary administration, and job satisfaction. Concludes with a discussion of current issues that affect personnel administration. Prerequisite: BA 2504.

BA 2903 Work Term Report I 1 ch

Identifies an opportunity or problem in the workplace, analyzes its source and development, addresses key issues to be considered, offers alternatives and makes recommendations including clear provisions for implementation.

BA 3123 Issues in Business and Society (O) 3 ch (3C)

Uses the applied social sciences as a theoretical framework for analyzing the contemporary business organization in its environment. Such topics as business ethics, the social responsibility of business, cultural relativism, and the multinational organization are examined. Examines the many new demands made on business by various groups (e.g. consumers, environmentalists, employees, minorities, anti-technology groups, etc.) and how they affect business decision making. Prerequisite: BA 2504 and successful completion of 60 ch.

BA 3125 Industry Impact of Electronic Commerce 3 ch (3C)

This courses addresses the implications of electronic commerce with a broad industry level perspective. Students will develop the profile of electronic commerce in a particular industry and will identify electronic commerce opportunities for the industry and its member organizations. Prerequisites: BA2123 and BA2663.

BA 3126 Frontiers of E-Commerce I 3 ch (3C)

Introduction to current issues in electronic commerce, with emphasis on the management of these issues. Prerequisites: BA2123 and BA2663.

BA 3134 Government and Business (A) 3 ch (3C)

Examines the technological structure of major industries in order to understand the basis for government intervention. Consideration is given to anti-trust policy, subsidization, utility regulation and government ownership in Canada. The strengths and weaknesses of these techniques are considered. Open to third and fourth year students who have appropriate background in the social sciences.

BA 3224 Accounting for Managers III 3 ch (3C)

Continues the study of accounting for managerial planning and control. Topics include measuring divisional performance, transfer pricing, short-term decision models and revenue variance analysis. Prerequisite: BA 2217 and BA 1218

BA 3235 Intermediate Accounting I 3 ch (3C)

Gives a more detailed understanding of accounting principles and practices than is available in an introductory course. Topics to be discussed include the definition and measurement of assets and of income. This course combined with BA 3236 generally constitutes a credit in the programs of the professional accounting organizations. Prerequisite: BA 1218 and 2217

BA 3236 Intermediate Accounting II 3 ch (3C)

Includes an examination of the problems involved in the definition and measurement of liabilities and stockholders equity, income taxes and funds flow. Prerequisite: BA 3235.

BA 3304 Marketing Management 3 ch (3C) [W]

Covers the application of theory and analytical tools from the marketing management viewpoint. This integrated study will focus upon the analysis and solution of complex marketing problems for a contemporary environment. Topics include industrial, international, not-for-profit marketing; marketing of services, images and causes; and ethical issues. Prerequisite: BA 2217, 2303

BA 3305 Marketing on the Internet 3 ch (3C)

This course examines the integration of Internet in an organizations marketing strategy. Topics include, goals for online marketing, customer communications, interactive Internet pages, and customer service issues. Prerequisites: BA 2123 and BA 2303 and BA 2663

BA 3328 Consumer Behaviour 3 ch (3C) [W]

Designed to expose a variety of concepts, explain their interrelationships, and develop an understanding of consumer decision making processes. Includes basic individual determinants of consumer behaviour, environmental influences on consumers, purchase processes, post-purchase processes, market segmentation, brand loyalty and message appeals. Prerequisite: BA 2303.

BA 3339 Marketing Communications (A) 3 ch (3C) [W]

Examines forms of marketing communications, emphasizing their role in the Canadian environment. Includes basic communications theory related to basic consumer behaviour theory, media availability and selection, promotion channels, personal selling, industry self-regulation, role of government regulation. Prerequisite: BA 2303.

BA 3371 Marketing of Services 3 ch (3C) [W]

This course builds on the basic marketing elements to enable the student to contend with marketing problems and opportunities that present themselves in the service industries. The marketing plan and research techniques are applied to actual situations and marketing issues. Cases, industry events and guest lecturers will supplement class lectures and seminars. Prerequisite: BA 2303 or admission to the BAM-HT degree.

BA 3421 Personal Financial Planning 3 ch (3C)

The objective of this course is to introduce the students to issues and concepts of personal financial planning, with an emphasis on application to real life situations. Topics include concepts of personal finances, credit, financial resources and controlling your financial future. The focus is to provide tools for students to use in planning their financial futures. Proposed prerequisite: BA 1216.

BA 3425 Managerial Finance 3 ch

An introduction to the foundations of financial management. Content includes analysis of the financial environment and its components; security valuation; capital budgeting and the cost of capital; working capital management and financial planning. Prerequisite: BA 2217.

BA 3547 Organizational Communication (A) 3 ch (3C) [W]

The communication process is explored from the individual, small group, and organizational levels. Topic areas include perception and communication, patterns of miscommunication, the motivational base of communications, and organizational climate and communications. The student is exposed to a variety of communication exercises and cases in order to experience some of the issues and problems in organizational communications. Prerequisite: BA 2504.

BA 3557 The Management of Planned Change (A) 3 ch (3C)

Complex organizations in todays society find themselves immersed in a world of social, political and economic change in which their survival depends on innovation and adaptation. The course familiarizes the student with techniques for diagnosing the need for organization change, ways of designing adaptive organization systems, and the methods and problems of persons functioning as change agents within organizations. Prerequisite: BA 2504.

BA 3615 Managerial Forecasting (O) 3 ch (3C)

Considers forecasting functions in an enterprise, quantitative and qualitative techniques and their characteristics, and selection and implementation of forecasting techniques. Emphasizes the basic concepts underlying different techniques and their suitability to various decision-making situations. Prerequisite: BA 2606 or equivalent.

BA 3616 Special Topics in Managerial Forecasting (O) 3 ch (3C)

An extension of BA 3615. A critical evaluation of forecasting practices in a selected industry. A project is required of all students registered for credit. Prerequisite: BA 3615.

BA 3623 Management Science: Deterministic Models 3 ch (3C)

Deterministic models and solution methods applicable to business systems. Linear programming, network analysis, dynamic programming, and inventory models are included. Prerequisite: BA 1605 or the equivalent, Math 1853 or the equivalent.

BA 3624 Management Science: Probabilistic Models (O) 3 ch (3C)

Stochastic inventory models, queuing theory and computer simulation are considered. Prerequisite: BA 3623 or the equivalent.

BA 3645 Management Systems Analysis I (O) 3 ch (3C)

Planning and control problems within an organization are studied using a systems approach. Systems representation for the purpose of analysis and improvement. Includes systems definition, description, classification, hierarchies, controls, memories and simplification. Prerequisite: BA 3623 or equivalent.

BA 3646 Management Systems Analysis II (O) 3 ch (3C)

Systems design and simulation and techniques of analysis and improvement are considered. Case studies from business and social systems demonstrate the techniques and their applicability. Prerequisite: BA 3645.

BA 3653 Production and Operations Management I 3 ch (3C)

Discusses the design and implementation of production and operations systems in manufacturing and non-manufacturing environments. Topics include process design and development, facilities layout, production and operations planning, capacity planning, materials management, information flow and quality control. A systems approach is utilized throughout this course. Prerequisite: BA 3623 and 2606.

BA 3654 Production and Operations Management II (O) 3 ch (3C)

A continuation of BA 3653 with an emphasis on contemporary developments in the field.

BA 3672 Introduction to Management Information Systems 3 ch (3C)

Provides an introduction to the essential concepts of management information systems. Students will focus on the information needs to conduct business analysis and make decisions in different business functions. How information technology and information systems can contribute to the analysis and decision-making processes will also be considered. Prerequisite: 60 ch or admission to the Certificate in Electronic Commerce.

BA 3705 Business Law 3 ch (3C)

Introduction to the Law of Torts, contracts; particularly those relevant to businesses such as debtor/creditor, sale of goods, mortgages, leases, forms of business organizations. Credit will not be granted for BA 2703/BA 2704 or BA 2705 and BA3705.

BA 3715 Labour Law (O) 3 ch (3C)

Examines Canadian labour legislation and its application. Includes a study of the law governing: union-management relations, collective bargaining, certification, Labour Relations Boards, the legal application of economic pressure, injunctions, strikes, picketing, appeals, and all related remedies. Includes an examination of constitutional differences between Federal and Provincial legislation. Prerequisite: BA 3813.

BA 3718 Legal, Privacy, and Security Issues in Electronic Commerce 3 ch (3C)

This course deals with the various systems that provide privacy and security on the Internet, as well as the legal issues that arise in electronic commerce. Includes an examination of encryption, fire walls, user authentication, as well as copyright of intellectual property and contracts. Prerequisite: BA 2123 and BA 2663; or BA 2123 and CS 2803, CS 2403, and CS 2513.

BA 3813 Introduction to Industrial Relations 3 ch (3C)

Provides a general introduction to the field of industrial relations. The objectives and values of the various parties involved in collective bargaining in the private and the public sectors are identified. Consideration is given to how these are modified in the bargaining process. The role of industrial conflict and dispute settlement procedures are examined. Prerequisites: BA 2858, and successful completion of 60 ch or admission to the Certificate in Human Resource Management.

BA 3817 Contemporary Industrial Relations (O) 3 ch (3C)

Designed for students who wish to develop a better understanding of some of the major problems confronting labour and management in Canada today. Includes such issues as the structure and philosophy of the labour movement, international unionism, public policy and grievance arbitration, collective bargaining in the private and public sectors, union democracy and incomes policy. Prerequisite: BA 3813.

BA 3903 Co-op Work Term Report II 1 ch

Identifies an opportunity or problem in the workplace, analyzes its source and development, addresses key issues to be considered, offers alternatives and makes recommendations including clear provisions for implementation.

BA 4003 Independent Study - Electronic Commerce 3 ch

This course will provide the student with a deepening knowledge in the Electronic Commerce area. Under the supervision of a Faculty member, the student will explore topics not available in the regular course offerings. The course may consist of written assignments, oral examinations and written examinations. Students must identify a faculty member who is willing to supervise the course and apply to the Director, Undergraduate Studies for approval at least 30 days prior to the term in which they wish to undertake the work. Applications are normally approved for students who are in their senior year and who have obtained a grade point average of at least 3.0 in the work of the second and third years.

BA 4101 Competitive Strategy I 3 ch (3C) [W]

Integrates material from other courses from a top management perspective, including factors that influence decision makers and the decision making process. Defines strategy. Concentrates on development of strategies for organizations competing in a single industry. Analyzes industry structure and dynamics and resources and processes that enable an organization to develop and sustain competitive advantages. NOTE: credit will not be granted for both BA4101 and HTM 4101. Prerequisites: Credit in all courses required for the BBA except BA 3705.

BA 4103 Independent Study - Management 3 ch

This course will provide the student with a deepening knowledge in the Management area. Under the supervision of a Faculty member, the student will explore topics not available in the regular course offerings. The course may consist of written assignments, oral examinations and written examinations. Students must identify a faculty member who is willing to supervise the course and apply to the Director, Undergraduate Studies for approval at least 30 days prior to the term in which they wish to undertake the work. Applications are normally approved for students who are in their senior year and who have obtained a grade point average of at least 3.0 in the work of the second and third years.

BA 4107 Studies in Small Business (A) 3 ch (3C) [W] (LE)

A seminar course designed to acquaint students with the problems of starting and operating a small business. Class discussions focus on actual small business successes and failures. Frequently, local business owners join in discussions. Emphasis is on written and video-taped cases and on a high degree of student participation.

BA 4108 Management of New Enterprise (A) 3 ch (3C) [W] (LE)

A project course designed to allow students to prepare a proposal for starting a new business or to write a case study of an existing enterprise. In the latter case, the business people involved frequently participate in the classroom discussion. Students cannot receive credit for both BA4108 and BA4109. Prerequisites: BA 1216, 2303 and 4107.

BA 4109 Management of Online Business 3 ch (3C)

A project course in which students prepare a proposal for (a)launching a new product or service on the Internet (b) extending an existing business onto the Internet. The proprosal will include a plan for an online business. Students cannot receive credit for both BA 4108 and BA 4109. Prerequisites: BA 2123, BA 2663, BA 3305 and BA 3425.

BA 4126 Frontiers of E-Commerce II 3 ch (3C)

In-depth examination of current issues in electronic commerce, with emphasis on the management of these issues. Prerequisites: BA2123, BA2663, and one of BA3718, BA3125, or BA3305. Students should be in their final 30 credit hours of BBA program.

BA 4147 Research Report (O) 3 ch (3C) [W]

This course involves planning and carrying out a research project or a theoretical investigation under the supervision of a faculty member. Wide latitude is given in the selection of topics and in the methods for investigation but all projects must be approved by the Undergraduate Studies Committee before the last day for adding courses in the term. Students must present written reports and defend them before a committee from the Faculty. Applications are normally approved for students who are in their senior year and who have obtained a grade point average of at least 3.0 in the work of the second and third years. Prerequisite: BA 4129 or the equivalent.

BA 4148 Research Report (O) 3 ch (3C) [W]

This course involves planning and carrying out a research project or a theoretical investigation under the supervision of a faculty member. Wide latitude is given in the selection of topics and in the methods for investigation but all projects must be approved by the Undergraduate Studies Committee before the last day for adding courses in the term. Students must present written reports and defend them before a committee from the Faculty. Applications are normally approved for students who are in their senior year and who have obtained a grade point average of at least 3.0 in the work of the second and third years. Prerequisite: BA 4129 or the equivalent.

BA 4173 Strategic Management and Information 3 ch (3C)

An integrative course on strategy relevant to top managers of businesses. Emphasizes the acquisition and exchange of information within and among organizations and their environments. Topics include diversification, competition and resource allocation in complex and turbulent economic, technological, international, political and social situations. Examines corporate forms and transformations appropriate to various strategies, including virtual organizations. Prerequisites: All courses specifically required for the BBA degree except BA 3705.

BA 4177 Advanced Topics in Government (O) 3 ch (3C)

An advanced course which examines a number of issues in the fields of business, government and society. Special emphasis on current problems. Prerequisite: BA 3123.

BA 4193 International and Comparative Management (O) 3 ch (3C)

Introduces and surveys international business and management. Examines the environment in which international business occurs; the role of culture, political systems and level of economic development in differentiation of management patterns; and formation and implementation of global business strategies in the international environment, focusing on political, social and cultural issues.

BA 4203 Independent Study - Accounting 3 ch

This course will provide the student with a deepening knowledge in the Accounting area. Under the supervision of a Faculty member, the student will explore topics not available in the regular course offerings. The course may consist of written assignments, oral examinations and written examinations. Students must identify a faculty member who is willing to supervise the course and apply to the Director, Undergraduate Studies for approval at least 30 days prior to the term in which they wish to undertake the work. Applications are normally approved for students who are in their senior year and who have obtained a grade point average of at least 3.0 in the work of the second and third years.

BA 4207 Current Accounting Issues 3 ch (3C)

Concentrates on the application of accounting theory to contemporary areas in financial reporting. Topics covered vary according to the changing importance of current accounting issues. Prerequisite: BA 3236.

BA 4221 Advanced Management Accounting 3 ch (3C)

Cost accounting information and its use in managerial control. Deals in detail with cost accumulation, job and process costing, standard costing, and variance analysis. Supplements the material contained in BA 3224. Examines uses of costing techniques in other than manufacturing situations. Uses case material extensively. Prerequisite: BA 3224

BA 4223 Accounting Information Systems 3 ch (3C)

Introduces the important role that accounting information systems play in todays business world. Emphasizes the accounting information systems function of collecting, recording, and storing business data in order to produce the information for sound business decisions. Prerequisite: BA 2217.

BA 4227 Contemporary Issues in Management Accounting (O) 3 ch (3C)

Students knowledge of the role of accountants in managerial planning and control is expanded. The interface between accounting and management science is emphasized.

BA 4229 Advanced Financial Accounting 3 ch (3C)

In addition to detailed coverage of Consolidation of Financial statements, other selected advanced financial accounting topics will be discussed. Prerequisite: BA 3236.

BA 4237 Income Taxation 3 ch (3C)

Examines the effects of government policies on determining the level of business income tax in Canada. Emphasis is on corporate taxation. Examines the concepts of the Canadian income tax system with a critical review of existing practices, combined with some study of current income tax laws and practices. Prerequisite: BA 2217

BA 4238 Auditing 3 ch (3C)

Examines the roles, responsibilities and legal liabilities of internal and external auditors in Canada and their professional organizations. Topics developed include internal control systems and their evaluation; audit evidence and problems related to the audit of particular assets, liabilities, capital and income accounts. A brief study is also made of audit procedures and priorities. Prerequisite: BA 3236 and one of BA 4223 or BA 2672.

BA 4242 Accounting Theory (A) 3 ch (3C)

Focuses on accounting literature, especially with respect to financial reporting and accounting standard setting. Prerequisite: BA 3235

BA 4303 Independent Study - Marketing 3 ch

This course will provide the student with a deepening knowledge in the Marketing area. Under the supervision of a Faculty member, the student will explore topics not available in the regular course offerings. The course may consist of written assignments, oral examinations and written examinations. Students must identify a faculty member who is willing to supervise the course and apply to the Director, Undergraduate Studies for approval at least 30 days prior to the term in which they wish to undertake the work. Applications are normally approved for students who are in their senior year and who have obtained a grade point average of at least 3.0 in the work of the second and third years.

BA 4319 Marketing Research (A) 3 ch (3C)

A course on how to design, conduct and analyze the results of research for marketing decisions. Includes problem formulation, data issues such as obtaining and organizing data, advanced analytic techniques, questionnaire design, market testing. Prerequisites: BA 3304 and 2606. Corequisite or Prerequisite: BA 3328.

BA 4334 Public and Non-Profit Marketing (O) 3 ch (3C) [W]

Focuses on the application of traditional marketing concepts to the non business sector. Types of organizations studied include government, universities, performing arts groups, charities, political groups and health care facilities. Students are encouraged to specialize in one or two areas of interest through a major project. Class time will be divided among lecture, case discussion and student presentations. Prerequisite: Credit in BA 3304.

BA 4398 International Marketing 3 ch (3C) [W]

Examines planning marketing strategies for international markets including operations of multinational firms. The main purpose is to show how companies entering the global market should analyze international marketing environment, identify different kinds of international opportunities, decide which particular markets to enter, decide how to enter the chosen market, develop marketing mix strategies for the chosen market and develop an effective organization for pursuing international marketing. Prerequisite: BA 3304.

BA 4418 Advanced Financial Management (O) 3 ch (3C)

Primarily a case course designed to give students experience in applying the knowledge acquired in BA 3425, supplemented with readings to expand their knowledge. Attention is given to problems of measuring the efficiency of operations, valuation, mergers, reorganization and liquidation. Of interest to those concerned with utilization of accounting and financial information. Prerequisite: BA 3425.

BA 4437 Investment Analysis and Portfolio Management (O) 3 ch (3C)

Introduces students to a basic knowledge of investment media, security markets, security analysis and the role of financial intermediaries in the investment process. Emphasis on the interpretation of economic indicators and analysis of published financial information in order to select superior investment opportunities. Technical analysis, random walk theory and optimal portfolio selection are covered. Application of quantitative techniques is an essential component of the course. Prerequisite: BA 3425.

BA 4448 Canadian Financial Institutions (O) 3 ch (3C)

Examines the various financial institutions both federal and provincial with attention to their role as suppliers of capital to the market, including the chartered banks, finance companies, trust companies, insurance companies, mutual funds, mortgage loan companies, pension funds, credit unions and caisses populaires. Attention is given to other functions of these institutions. Prerequisite: BA 3425.

BA 4455 Derivatives: Options and Futures 3 ch

This course will examine the evolution of the derivative markets, market micro-structure, trading strategies, pricing models, and risk management using derivative instruments such as futures, options and swaps. Prerequisite: BA 3425.

BA 4501 Organization Theory and Design (O) 3 ch (3C) [W]

An intensive study of the construction and management of complex organizations. Appropriate structural configurations for various market and technology combinations are discussed. In addition, the function and limitations of various structural components are presented. Prerequisite: BA 2504.

BA 4506 Organizations and Electronic Commerce 3 ch (3C)

This courses focuses on the internal changes that happen in an organization when it implements electronic commerce. Redesign of organizational structures, jobs, processes and workflow will be considered. Intranets, extranets, and enterprise integration will also be explored. Prerequisites: BA2123, BA2663, BA2672, and one of BA3718, BA3125, or BA3305.

BA 4519 The Corporation, the Union, and Society (O) 3 ch (S)

Development of the large corporation and the large union pose new problems both for the individual and for society. Examines the reasons for this growth and how the problems created might be dealt with within the framework of a basically private enterprise economy. The changing concept of property rights and its significance together with the problems being created by the multinational corporation are examined.Open to senior students in Business and to senior students in Arts who have an appropriate background in the social sciences.

BA 4557 Organizational Development (O) 3 ch (3C) [W]

Explores a variety of organizational development techniques designed to improve the effectiveness of organizations: job enrichment, team building, process consultation, role analysis and confrontation meetings. On completing the course the student should be able to discuss the basic characteristics of a wide range of organizational development techniques and evaluate the potential application of these strategies for solving organizational problems. Particularly helpful to those who intend to work in the personnel, management development or organizational development functions within professional or administrative organizations. Prerequisite: BA 2504.

BA 4603 Independent Study - Quantitative Methods 3 ch

This course will provide the student with a deepening knowledge in the Quantitative Methods area. Under the supervision of a Faculty member, the student will explore topics not available in the regular course offerings. The course may consist of written assignments, oral examinations and written examinations. Students must identify a faculty member who is willing to supervise the course and apply to the Director, Undergraduate Studies for approval at least 30 days prior to the term in which they wish to undertake the work. Applications are normally approved for students who are in their senior year and who have obtained a grade point average of at least 3.0 in the work of the second and third years.

BA 4644 Project Management (O) 3 ch (3C)

Presents and explores a project management framework. Also illustrates general principles and concepts in the context of information systems development projects.

BA 4673 Management Information Systems I 3 ch (3C) [W]

Manager-user oriented, this course focuses on the information needs of managers and the satisfaction of these needs through the design and implementation of information systems for operations, management and strategic planning and control. Prerequisites: BA 2672.

BA 4803 Independent Study - Human Resource Management & Industrial Relations 3 ch

This course will provide the student with a deepening knowledge in the Human Resource Management & Industrial Relations area. Under the supervision of a Faculty member, the student will explore topics not available in the regular course offerings. The course may consist of written assignments, oral examinations and written examinations. Students must identify a faculty member who is willing to supervise the course and apply to the Director, Undergraduate Studies for approval at least 30 days prior to the term in which they wish to undertake the work. Applications are normally approved for students who are in their senior year and who have obtained a grade point average of at least 3.0 in the work of the second and third years.

BA 4813 Negotiations and Dispute Resolutions 3 ch (3C)

The aim of this course is to provide an in-depth examination of conflict, negotiation and dispute resolution principles. The course has four specific objectives: to increase students understanding of the causes and consequences of conflict, to explore various methods of reducing or resolving conflict, to develop an understanding of the different levels and sources of conflict and to apply negotiation and dispute resolution principles to various aspects of industrial relations. Prerequisite: BA 3813.

BA 4827 Public Policy and Labour Management Relations (O) 3 ch

Examines the influence of labour law on the development and growth of trade unionism in Canada and the United States. Emphasizes the role of public policy with regard to labour-management relations. Topics include certification, unfair labour practices, collective agreements, disputes settlements and picketing. Designed for students with a strong interest in the field of industrial relations.Limited enrollment. May be taken only with the approval of the instructor.

BA 4829 Research Methodology for Human Resource Management 3 ch (S) (LE)

A discussion of measurement issues as they pertain to the human resources function. This course will focus on reliability, validity, and other measurement issues within the context of personnel selection, performance appraisal, and other human resources topics. Normally a prerequisite for research projects to be undertaken under BA 4147 and 4148. Prerequisites: BA2606, BA2858, satisfactory completion of a minimum of 6 additional credit hours of required or elective courses in the Human Resource Management major, and satisfactory completion of 60 credit hours or admission to the Human Resource Management Certificate program.

BA 4839 Collective Bargaining (O) 3 ch (S)

A detailed examination of the institution and process of collective bargaining. Topics include the evolution of bargaining, theories of bargaining power and behaviour, and the relevant legislative framework in Canada and in the United States. Students interested in how collective bargaining decisions are made have an opportunity to participate in a bargaining simulation. Prerequisite: BA 3817.

BA 4847 Collective Bargaining in the Public Sector (O) 3 ch (S)

A study of unionization and collective bargaining among federal and provincial employees. Includes the nature of public sector employer and employee associations, bargaining processes and issues, relevant federal and provincial legislation, the public sector dispute and the application of various impasse procedures. Enables students to compare the practice of collective bargaining in the public and private sectors. Prerequisite: BA 3817.

BA 4853 Recruitment and Selection 3 ch (3C)

This course is designed to acquaint students with important issues in the recruitment and selection of employees. The roles of job analysis in the development of selection programs will be stressed. Strategies for effective recruitment will be discussed as will the various selection devices available to organizations. In all cases, the legal context of recruitment and selection will be considered. Prerequisite: BA 2858 and successful completion of 75 chs, or admission to the Certificate in Human Resource Management, and successful completion of BA 1605, BA 2858, and BA 3813.

BA 4854 Training and Development 3 ch (3C)

This course is designed to familiarize students with issues and techniques of training in organizations. Emphasis will be placed on an assessment of training needs, instructional methods, and evaluation of training outcomes. Prerequisites: BA2858 and successful completion of 75 chs, or admission to the Certificate in Human Resource Management and successful completion of BA 1605, BA 2858 and BA 3813.

BA 4855 Compensation Structure Development 3 ch (3C) [W]

Explores the theory and practice of compensation structure development based on concepts of internal and external equity. Internal equity focuses on assessing the relative worth of different jobs in an organization through job evaluation. External equity involves assigning pay levels to different jobs in an organization based on data collected from wage and salary surveys of competitors. Students are required to apply concepts and techniques discussed in class within a goup project that entails developing a compensation structure for a hypothetical company.Prerequisites: BA 2858 and successful completion of 75 chs, or admission to the Certificate in Human Resource Management and successful completion of BA 1605, BA 2858 and BA 3813.

BA 4856 Evaluating and Rewarding Employee Performance 3 ch (3C) [W]

Explores the theory and practice of performance appraisal and performance-based pay. Performance appraisal topics include appraisal instruments, sources of appraisal, increasing appraisal accuracy, and conducting appraisal interviews. Performance-based pay topics include traditional merit pay as well as incentive plans, gain sharing, and profit sharing. Students are required to apply concepts and techniques discussed in class within several assignements and/or exercises. Prerequisites: BA 2858 and successful completion of 75 chs, or admission to the Certificate in Human Resource Management and successful completion of BA 1605, BA 2858 and BA 3813.

BA 4857 Management of Occupational Health and Employee Wellness 3 ch (3C)

A growing number of organizations are realizing that not only is properly managing the occupational health, safety and well-being of employees at all organizational levels right and ethical, it can also be an important competitive advantage. Topics will include, but are not limited to, employee rights and workers compensation, the chemical, biological and psychosocial hazards faced by employees and how to recognize, assess and control these hazards. Furthermore, students will be provided with the tools and knowledge to develop workplace wellness and health promotion programs. Prerequisites: BA 2858 and successful completion of 75 chs, or admission to the Certificate in Human Resource Management and successful completion of BA 1605, BA 2858 and BA 3813.

BA 4858 International Human Resource Management 3 ch (3C)

Provides a comparative study of human resource practices and policies in countries with which Canada has major trade relations. Emphasis is placed on examining the efficacy of Canadian practices in other countries such as Western and Eastern Europe, South America, and Asia. Prerequisites: BA 2858 and successful completion of 75 chs, or admission to the Certificate in Human Resource Management and successful completion of BA 1605, BA 2858 and BA 3813.

BA 4866 Management of Technology (O) 3 ch (3C)

A study of the critical role that technology, particularly information technology, plays in competition. The emphasis will be on aligning human resources practices and technological and organizational strategies. Prerequisites: BA 2858 and successful completion of 75 chs, or admission to the Certificate in Human Resource Management and successful completion of BA 1605, BA 2858 and BA 3813.

BA 4893 International Industrial Relations (O) 3 ch (3C)

This course is concerned with the analysis of industrial relations in the worlds developed economies. It will focus on those institutions, policies, and practices which cross national boundaries, such as the employment relations aspects of multinational companies, employers associations and labour organizations. In the process, the course will analyze the factors which have shaped industrial relations in selected countries, with particular attention being paid to Canada, Australia, Britain, France, Germany, Japan, Sweden and the USA. Prerequisite: BA 3813.

BA 4898 Strategic HRM Policy 3ch (3C) [W]

Explores the formulation and implementation of HRM strategies designed to facilitate the effective and efficient operations of organizations. Students are expected to integrate the material learned in other HRM courses and apply their accumulated knowledge to HRM issues posed in numerous case studies. The course will be taught primarily via case analyses and extensive class discussion. Prerequisites: All other courses required for the HRM major, including the five compulsory courses BA 2504, BA 2758, BA 2858, BA 3813, and BA 4129 as well as six chs of HRM electives selected from the following courses: BA 4813, BA 4853, BA 4854, BA 4855, BA 4856, BA 4866.

BA 4903 Work Term Report III. 1 ch

Identifies an opportunity or problem in the workplace, analyzes its source and development, addresses key issues to be considered, offers alternatives and makes recommendations including clear provisions for implementation.

CHEMICAL ENGINEERING

A grade of C or higher is required in all Chemical Engineering courses.

Note: See beginning of Section F for abbreviations, course numbers and coding.

CHE 1004 Introduction to Chemical Engineering 3 ch (2C 1L)

An introduction to the nature of the chemical industry. The basis for systems of units and the concept of fundamental units. The basic principles and calculations required to systematically perform material balances on industrial chemical processes. Computer self-teaching programs will be used. A description of some major chemical industries such as petroleum, pulp and paper, sulfuric acid and caustic chlorine will be presented. Note: the subsequent course, CHE 2004, is taken in Year 3 at UNB Fredericton.

CHE 2412 Chemical Engineering Laboratory I 4ch (2C 3L) [W]

Bomb and flow calorimetry, material and energy balance study of the University heating plant, fluid mechanics experiments including flowmeter calibrations and pressure drop measurements in pipes and fittings. Report writing is emphasized. Co-requisite: CE 2703, ME 3413.

CHE 2503 Materials Science 4 ch (3C 3L*)

The principles relating the properties and behaviour of engineering materials to their structure; atomic bonding forces and strength of interatomic and intermolecular bonding forces, atomic arrangements in solids, structural imperfections and atom movements in solids; principles of phase diagrams and their application to multiphase materials, with particular reference to the iron-carbon system; mechanical and electrical properties of engineering materials, metals, semiconductors, polymers and ceramics, and their relation to internal structure. Laboratory experiments are conducted to illustrate behaviour of materials. Prerequisite: CHEM 1882 or each of CHEM 1041, CHEM 1046, CHEM 1072, CHEM 1077.

CHEMISTRY

Note: See beginning of Section F for abbreviations, course numbers and coding.

CHEM 1041 General Chemistry I 3 ch (3C 1T)

Introductory course designed primarily for B.Sc. students. Topics covered include atoms, molecules & ions; stoichiometry; thermochemistry; atomic structure & quantum theory; periodic trends - atomic size, ionization, electron affinity; chemical bonding - Lewis structure, VSEPR, polarity, electronegativity, hybridization, hydrocarbons - alkanes, alkenes, alkynes, nomenclature, isomerism, functional groups. Prerequisite: Grade 12 Chemistry or equivalent. Corequisite: MATH 1003.

CHEM 1046 Introductory Chemistry Laboratory I 2 ch (3L)

A selection of experiments to accompany CHEM 1041. Corequisite: CHEM 1041 or equivalent.

CHEM 1072 General Chemistry II 3 ch (3C 1T)

A continuation of CHEM 1041. Topics covered include gas laws & kinetic theory; oxidation & reduction - oxidation numbers, balancing redox equations; equilibria - equilibrium constant K, Le Chateliers Principle, homo- and heterogeneous equilibria; acid-base equilibria - weak acids & bases, pH, common ion effect, buffers, solubility, selective precipitation; thermodynamics - entropy & free energy; electrochemistry - electrode potentials, galvanic & electrolytic cells, quantitative aspects. Prerequisite: CHEM 1041. Corequisite: MATH 1013 or MATH 1003 repeated.

CHEM 1077 Introductory Chemistry Laboratory II 2 ch (3L)

A selection of experiments to accompany CHEM 1072. Prerequisite: CHEM 1046 or equivalent. Corequisite: CHEM 1072.

CHEM 1831 Chemistry for Non-Scientists 3 ch (3C)

An introduction to basic concepts of chemistry. Covers aspects of atomic and molecular structure, periodic table, forces between particles, bonding, chemical reactions, radiation, stoichiometry, oxidation and reduction, solutions, reaction rates and equilibrium, acid-base reactions. Prerequisite(s): None.

CHEM 1842 Chemistry for Health Sciences 3 ch (3C)

An introduction to organic chemistry, including classification, nomenclature, and reactivity; biochemistry and metabolism of carbohydrates, lipids, and proteins; aspects of body fluids, enzymes and nucleic acids. Prerequisite: A mark of 70% or greater in grade 12 chemistry or CHEM 1831.

CHEM 1882 General Chemistry-Physical and Inorganic 5 ch (3C 3L)

Intended primarily for Engineering (other than chemical) students who require an introduction to physical and inorganic chemistry. Covers states of matter, chemical equilibria, electrochemistry, thermodynamics and chemical kinetics. Prerequisite: Grade 12 Chemistry (70%) or CHEM 1041.

CHEM 2111 Introductory Analytical Chemistry 5 ch (3C 3L)

Theory and practice. Topics include concepts of acid-base, redox, precipitation and solvent extraction equilibria; sample handling and preparation; calibration techniques; error analysis and regression analysis; titrimetric and spectrophometric analysis. Prerequisites: CHEM 1072/1077.

CHEM 2201 Introduction to Inorganic Chemistry I 3 ch (3C)

Bonding, structures, and reactions of compounds of both main group and transition elements. Prerequisite(s): A grade of C or better in CHEM 1041 and CHEM 1072.

CHEM 2222 Introduction to Inorganic Chemistry II 3 ch (3C)

Bonding, structures, and reactions of compounds of both main group and transition elements. Prerequisite(s): A grade of C or better in CHEM 2201.

CHEM 2237 Inorganic Chemistry Laboratory 2 ch (3L)

Introduction to preparative techniques in inorganic chemistry. Emphasis on Main Group and Transition Element coordination chemistry. Prerequisites: CHEM 1041, CHEM 1046, CHEM 1072, CHEM 1077, CHEM 2201; Co-requisite: CHEM 2222.

CHEM 2401 Organic Chemistry I 3 ch (3C)

An introductory course. Topics include bonding, elementary stereochemistry, optical isomerism, functional groups, structure determination, reactions of alkenes and alkynes. Prerequisite: CHEM 1072.

CHEM 2416 Organic Chemistry Laboratory I 2 ch (3L) [W]

Introduction to experimental (organic) chemistry. Part I. Prerequisite: CHEM 1077. Corequisite: CHEM 2401.

CHEM 2422 Organic Chemistry I 3 ch (3C)

A continuation of CHEM 2401. Topics include stereochemistry, structure determination, alkyl halides, nucleophilic substitution and elimination reactions and their synthetic utility. Prerequisite: CHEM 2401.

CHEM 2441 Organic Chemistry for Biological Sciences 3 ch (3C)

An introductory course intended primarily for students requiring a one-term course in organic chemistry. Topics covered include all principal functional groups including carboxylic acids, amines and amides, as well as specialized topics such as stereochemistry, carbohydrates and lipids. It is a survey course designed to provide a broader coverage than in CHEM 2401. It is not suitable as a prerequisite to CHEM 2422. Credit will not be given for both CHEM 2401 and 2441. Prequisite: CHEM 1072.

CHEM 2457 Organic Chemistry Laboratory 2 ch (3L) [W]

A laboratory course involving synthesis and purification of organic compounds, stereochemistry, isolation and structure elucidation of natural compounds (by both qualitative and spectroscopic methods). Prerequisite: CHEM 2416. Corequisite CHEM 2422.

CHEM 2601 Chemical Thermodynamics 3 ch (3C)

The three laws of thermodynamics, thermochemical calculations, chemical equilibria, introduction to phase rule. Prerequisites: CHEM 1072 and MATH 1003/1013. Corequisite: MATH 2003 or equivalent.

CHEM 2622 Electrochemistry and Chemical Kinetics 3 ch (3C)

Elementary electrochemistry, electrochemical cells, electrolysis, electromotive forces, applications of EMF measurements. Reaction kinetics and mechanisms, uni-, bi-, and ter-molecular reactions, catalysis, enzyme catalysis, chain reactions, reaction dynamics, steric effects and transition state theory. Prerequisite: CHEM 2601. Corequisite: MATH 2213, 2513, or equivalent.

CHEM 2637 Physical Chemistry Laboratory 2 ch (3L)

Introduction to experimental physical chemistry. Prerequisite: CHEM 1077. Corequisite: CHEM 2622.

CHEM 2886 Chemistry Laboratory for Chemical Engineers I 2 ch (3L)

Consists of experiments in conventional and instrumental analysis. Prerequisites: CHEM 1072, CHEM 1077.

CHEM 2897 Chemistry Laboratory for Chemical Engineers II 2 ch (3L)

Consists of a selection of experiments in conventional and instrumental analysis and physical chemistry. Prerequisite(s): CHEM 2601, CHEM 2886, Co-requisite: CHEM 2662.

CHEM 3132 Intermediate Analytical Chemistry (O) 5ch (3C/3L)

Principles and applications of wet methods and instrumental analysis, sample preparation, clean up and method development. Topics include non-aqueous titrations, complexometric titrations, analytical extractions and separations, potentiometry, analytical spectrophotometry, gas chromatography, and elementary chemometrics Prerequisites: CHEM 2111.

CHEM 3201 Inorganic Chemistry I 3 ch (3C)

Structure and chemistry of the elements; both main groups and transition metals and their compounds. Prerequisite(s): A grade of C or better in CHEM 2201 and CHEM 2222.

CHEM 3222 Inorganic Chemistry II 3 ch (3C)

Structure and chemistry of the elements; both main groups and transition metals and their compounds. Prerequisite: A grade of C or better CHEM 3201.

CHEM 3236 Inorganic Chemistry Laboratory 2 ch (3L)

Preparative, analytical, and instrumental techniques in Main Group and Transition Metal; organic, organometallic and coordination chemistry. Prerequisite: CHEM 2237; Co-requisite: CHEM 3201.

CHEM 3245 Environmental Chemistry (A) (Cross Listed: BIOL 3245) 4 ch (3C 3L)

Course will provide students with a chemical basis for understanding the natural environment and current environmental issues. Topics will include: the composition of the natural environment, the chemistry supporting environmental processes, and the main reactions of natural & anthropogenic chemicals in the atmosphere, water, and soils. Note: This course may be listed as either BIOL 3245 or CHEM 3245. Credit can not be obtained for both BIOL 3245 and CHEM 3245. Prerequisite: One term of organic chemistry at the 2nd year level.

CHEM 3315 Biochemistry/Molecular Biology (O) 3 ch (3C)

Gene cloning, recombinant DNA technology, genetic engineering (restriction endonucleases, gene isolation, human genome and gene therapy)

CHEM 3316 Biochemistry/Molecular Biology Laboratory (O) 2 ch (3L)

Methods for: DNA isolation, hybridization, cloning and sequence analysis; identification of cloned genes (mapping); cloning and transfer of genes; mutagenesis; protein engineering; expression vectors.

CHEM 3401 Organic Chemistry III 3 ch (3C)

Spectroscopic methods in organic chemistry, background and application to structure determination. Organic stereochemistry, symmetry elements and operations, stereoisomerism. Principles of stereochemical methodology. Prerequisite: CHEM 2422.

CHEM 3416 Organic Chemistry Laboratory 2 ch (4L)

Application of UV, IR, and NMR spectroscopy, special synthetic methods, isolation of naturally occurring compounds. Prerequisite: CHEM 2416. Corequisite: CHEM 3401.

CHEM 3422 Organic Chemistry IV 3 ch (3C)

Chemistry of carbonyl group, carbonion chemistry, pericyclic reactions, aromatic substitution, organic synthesis, special topics. Prerequisite: CHEM 3401.

CHEM 3437 Organic Chemistry Laboratory 2 ch (4L)

Resolution of enantiomers; advanced synthetic methods - Grignard, Diels-Alder, Wittig, etc. Prerequisite: CHEM 2416. Corequisite: CHEM 3422.

CHEM 3503 Bio-organic Chemistry of Nucleic Acids (O) 3 ch (3C) [W]

Structure, properties and chemistry of nucleic acids (DNA & RNA). Chemical synthesis. Unusual DNA structures. Modern probes of DNA structure, DNA binding and cleaving agents, protein-DNA interactions and other aspects of DNA recognition. Chemical mutagens and carcinogenicity. The chemical aspects of modern biochemistry tools(synthesis, sequencing, cloning, etc) will also be covered. Prerequisites: BIOL 2065 and BIOL 2245, Co-requisites: CHEM 3401 and CHEM 3422.

CHEM 3523 Bio-organic Chemistry of Proteins (O) 3 ch (3C) [W]

Protein structure - from amino acids to multi-subunit entities. Overview of protein function. Probes for protein structure. Molecular recognition of proteins. Principles of enzymology. Chemical approach to molecular mechanism of the action of enzymes and co-enzymes, drug enzyme interactions, rational design of enzyme inhibitors. Chemical aspects of modern protein chemistry tools (sequencing, synthesis, etc.). Protein engineering, catalytic antibodies, ribozymes and catalytic RNA. Prerequisites: BIOL 2065 and BIOL 2245, Co-requisites: CHEM 3401 and CHEM 3422.

CHEM 3641 Physical Organic Chemistry I (O) 3 ch (3C)

Applications of molecular spectroscopy to organic chemistry. Electronic, vibrational and rotational spectroscopy. Nuclear magnetic resonance and electron spin resonance spectroscopy. X-Ray diffraction. Prerequisites: CHEM 2601 and CHEM 2622.

CHEM 3642 Physical Organic Chemistry II (O) 3 ch (3C)

Continuation of topics in CHEM 3641. Inclusion of statistical thermodynamics & theories of reaction rates. Prerequisite: CHEM 3641.

CHEM 3647 Physical Organic Chemistry Laboratory (O) 2 ch (3L) [W]

Spectroscopic techniques and applications in ultra-violet, visible, infrared and nuclear magnetic resonance areas. Prerequisite: CHEM 2637, Co-requisite: CHEM 3641.

CHEM 3701 Medicinal Chemistry I (O) 3 ch (3C)

Drug action of enzymes, drug action of receptors, drug development, pharmaco-dynamics, structure activity, relationships of drugs in terms of their physical and chemical properties.

CHEM 3702 Medicinal Chemistry II (O) 3 ch (3C)

The organic chemistry of drug design and drug action. Includes basis of DNA - interaction drugs, combination chemotherapy, drug interactions, drug metabolism, drug delivery. Prerequisite: CHEM 3701.

CHEM 4111 Instrumental Analytical Chemistry I (O) 3 ch (2C/2L)

A coordinated laboratory - lecture course to introduce the principles of instrumental analysis, operational aspects of analytical spectroscopy and chromatography. Prerequisites: CHEM 3132.

CHEM 4132 Instrumental Analytical Chemistry II (O) 3 ch (2C/2L)

A coordinated laboratory-lecture course to introduce the principles of electroanalytical methods, differential thermal analysis, concepts of signal/noise, simple chemometric methods for data enhancement and aspects of instrumentation. Prerequisite: CHEM 4111.

CHEM 4422 Advanced Organic Chemistry (O) 3 ch (3C)

The organic chemistry of drug synthesis. Advanced topics in organic chemistry such as synthesis of complex, polyfunctional molecules, asymmetric synthesis. Prerequisite: Departmental approval.

CHEM 4700 Senior Research Project in Medicinal Chemistry (O) 6 ch

Project in medicinal chemistry involving a literature search and lab work (1 term) Prerequisite: Departmental approval.

CHEM 4701 Medicinal Chemistry III (O) 3 ch (3C)

A variety of topics including: use of radioisotopic material in the diagnosis and treatment of diseases, cancer chemotherapy, antibacterial agents, analgesics, psychoactive drugs, neuropharmacology of drugs, gene therapy - new developments and new problems including drug resistance, steroids, drugs and cardiovascular diseases. Prerequisite: CHEM 3702.

CHEM 4702 Medicinal Chemistry IV (O) 3 ch (3C)

A continuation of topics included in CHEM 4701 Medicinal Chemistry III.Prerequisite: CHEM 4701.

CHEM 4711 Selected Topics in Medicinal Chemistry (O) 3 ch

Selected topics, particularly the more recent advances in medicinal chemistry. Suggested Special Topics: Anatomy, Toxicology, Cellular and diagnostic applications of NMR, Molecular modelling, Pharmacology, Commercial synthesis of optically active compounds, Forensic Science, Prevention, Non traditional Medicine, Medical ethics, Patent law, etc. Prerequisite: Departmental approval.

CHEM 4712 Selected Topics in Medicinal Chemistry (O) 3 ch

A continuation of topics from CHEM 4711. Prerequisite: CHEM 4711.

CIVIL ENGINEERING

A grade of C or higher is required in all Civil Engineering courses.

Note: See beginning of Section F for abbreviations, course numbers and coding.

CE 1003 Introduction to Civil Engineering 3 ch (3C) [W]

An introduction to the many aspects of the field of civil engineering, including key concepts and case histories. Application of basic engineering principles to the solution of civil engineering problems. Team problem solving and design. Prerequisites: None

CE 1013 Applied Mechanics I : Statics 4 ch (3C 1T)

This course is designed to introduce first year engineering students to the fundamental concepts of two- and three-dimensional force systems. Related concepts such as centroids and moments of inertia are also introduced. Practical applications include frames, machines, trusses and beams. Prerequisite: None

CE 2023 Mechanics of Materials 5 ch (3C 3L)

Analysis of stress and strain; torsion; shear and moment in beams; deflection of beams; behaviour of columns; pressure vessels; energy methods; shear center. Prerequisite: CE 1013. Corequisite: MATH 1013.

CE 2603 Construction Engineering I 3 ch (2C 1T)

Responsibilities and relationships of participants in the construction industry. Standard contract documents, contractor resources and project control. Prerequisite(s): Completion of a minimum of 45 credit hours.

CE 2703 Fluid Mechanics 3 ch (3C, 1T)

Physical properties of liquids and gases, fluid statics, kinematics of fluid flow, energy considerations in steady flow, momentum and dynamic forces in fluid flow, fluid measurements, introduction to forces on immersed bodies. Prerequisite: CE 1013, MATH 1013.

CE 2953 Civil Engineering Systems Analysis 4 ch (3C 1T)

Modeling system response with multiple linear regression and step-wise regression. Time series analysis and forecasting; sampling techniques; quality control; non-parametric tests. An introduction to optimization and the application of applied probability to the design and operation of civil engineering systems. Prerequisite: STAT 2593.

CE 3033 Structural Analysis 5 ch (3C 3L)

Influence lines for beams and trusses; analyses of indeterminate structures including approximate, classical, moment distribution, and numerical methods. Prerequisite: CE 2023.

CE 3113 Soil Mechanics I 4 ch (3C 3L*)

Consolidation, shear strength, stresses under loaded areas, effects of water on soil behaviour. Prerequisites: GEOL 1044, CE 2023. Corequisite: CE 2703.

CLASSICS AND ANCIENT HISTORY

Note: See beginning of Section F for abbreviations, course numbers and coding.

See also Greek and Latin.

CLAS 1005 Ancient History: Greek and Roman People 3 ch [W]

An introduction to the history of ancient Greece and Rome through famous and lesser known individuals. This course is designed to introduce students to historical inquiry and techniques through the study of antiquity.

CLAS 1501 Greek Myth and Religion 3 ch [W]

An introduction to the divine and heroic myths and to the religion of the Greek world. There will also be consideration of the various approaches to the interpretation of myths.

CLAS 1502 Roman Myth and Religion 3 ch [W]

An introduction to the divine and heroic myths and to the religion of the Roman world. There will also be consideration of the various approaches to the interpretation of myths.

CLAS 2501 Ancient History: The Greeks 3 ch [W]

A survey of the social, cultural, intellectual, and political history of the ancient Greek world from the Bronze age to the death of Alexander the Great. Prerequisite: CLAS 1005 or any 1000 level HIST course.

CLAS 2601 Ancient History: The Romans 3 ch [W]

A survey of the social, cultural, intellectual, and political history of the ancient Roman world from the founding of Rome to the fall of the western empire. Prerequisite: CLAS 1005 or any 1000 level HIST course.

CLAS 3201 Ancient History: The Athenian Empire 3 ch

The social, cultural, intellectual, and political history of the "Golden Age" of Athens. Prerequisite: CLAS 2501

CLAS 3202 Ancient History: Alexander and the Hellenistic World 3 ch

The social, cultural, intellectual, and political history of the age of Alexander the Great and his successors down to the death of Cleopatra VII. Prerequisite: CLAS 2501 or 2601

CLAS 3203 Ancient History: Cicero and the Late Republic 3 ch

An examination of the social, cultural, intellectual, and political history of the late Roman republic through the life of one of its most famous citizens. Prerequisite: CLAS 2601

CLAS 3204 Ancient History: The Julio-Claudian Dynasty 3 ch

The social, cultural, intellectual, and political history of the Roman empire under Tiberius, Caligula, Claudius, and Nero. Prerequisite: CLAS 2601

CLAS 3205 Ancient History: Jewish Palestine (Maccabees to Masada) 3 ch

The social, cultural, intellectual, and political history of the Jewish people from the Maccabean revolt to the fall of Masada. Prerequisite: CLAS 2501 or 2601

CLAS 3206 Ancient History: Women in the Roman World 3 ch

The status and role of women in the Roman world as reflected in literary, historical, legal, and archaeological sources. Prerequisite: CLAS 2601

CLAS 3207 Ancient History: Augustus and the Roman Revolution 3 ch [W]

An examination of the career of Caesar Augustus from his unexpected rise to power to his establishment of the imperial system of government at Rome. Prerequisite: CLAS 2601. Credit may be obtained for only one of CLAS 3207 and CLAS 3063.

COMPUTER ENGINEERING

Note: See beginning of Section F for abbreviations, course numbers and coding.

CMPE 2013 Simulation and Engineering Analysis 4ch (3C 3L*)

An introduction to modelling and numerical methods as applied in the solution of engineering problems. Linear equations, polynomials, statistical tools, numerical integration and difference equations. Simulation tools such as MATLAB will be used. Prerequisite: CS1073 or equivalent, EE1713, MATH1013. Co-requisite: MATH 2503.

COMPUTER SCIENCE

Note: See beginning of Section F for abbreviations, course numbers and coding.

CS 1003 Introduction to Computer Programming 4 ch (3C 1T 2L)

Intended for Science, Applied Science and Engineering students. Introduces the use of digital computers. Includes: problem analysis; algorithm design, and program structure. Use of procedures, loops, and arrays. Debugging and verification of programs. Note: Credit will be granted for only one of CS 1003 or CS 1073. Prerequisite: High School Mathematics.

CS 1073 Introduction to Computer Programming in Java 4 ch (3C 1L)

Includes problem analysis, algorithm design, and program structure. Covers the use of loops, arrays, objects, and methods. Debugging and verification of programs. Note: Credit will be granted for only one of CS 1003 or 1073. Prerequisite: MATH 120.

CS 1083 Computer Science Concepts (Java) 4 ch (3C 1L)

Continues CS 1073. Advanced language features. Use of libraries. Data abstraction, encapsulation, simple data structures. recursion. Prerequisite: CS 1073 with a "C" or better.

CS 1303 Discrete Structures I 4 ch (3C 1T)

Introduces topics in discrete mathematics important in Computer Science, including propositional logic, predicate logic, proofs, sigma notation, mathematical induction, elementary set theory and asymptotic analysis. Note: Credit will not be given for both MATH 2203 and CS 1303.

CS 1703 Introduction to Computing Concepts 3 ch (3C)

An introduction to the essential concepts of computers, computing systems and computer-based information systems. Topics also include microcomputer operating systems and word processing. This course may not be taken for credit by BBA, CS, DA and Engineering students. Credit will not be given for CS 1803 and CS 1703.

CS 1713 Multimedia and the Information Highway 3 ch (3C)

An introduction to current computer technology. Selected topics from current applications, networks, communication software, the internet, email, FTP, World Wide Web, multimedia hardware and software, hypertext/hypermedia, desktop publishing and graphics. Specific software packages selected will depend on current availability. Prerequisite: CS 1703 or CS 1803 with a "C" or better. Note: This course may not be taken for credit by Computer Science and Data Analysis students.

CS 1803 Introduction to Computers and Systems 3 ch (3C)

An introduction to the essential features of computers, computing systems and computer-based information systems. Includes: microcomputer operating systems, word processing and spreadsheets. This course is intended for students in Business, Education and Physical Education and cannot be taken for credit by CS, DA or Engineering students. Credit will not be given for both CS 1803 and CS 1703.

CS 2003 Computer Architecture and Assembly Programming 4 ch (3C)

Computer architecture including instruction formats, addressing and input/output schemes. Machine representation of numbers and symbols. Assembly language notation and programming, including macros. Prerequisite: CS 1083.

CS 2013 Software Engineering I 4 ch (3C)

Introduction to the discipline of software engineering. Examines all phases of the software development life cycle, from initial planning through implementation and maintenance. Particular emphasis is placed on designing, producing, and testing well-structured programs. Introduces selected advanced features of the Java programming language. Prerequisite: CS 1083.

CS 2113 Scientific Computing 4 ch (3 C)

An introduction to numerical techniques for solving scientific problems. Topics to include sequences, series, structured linear systems, polynomial models, quadrature, differential/ difference equations and root finding. Use of existing numerical software packages and a basic introduction to scientific programming using a high-level language. Prerequisites: MATH 1013 and one of CS 1073, CS 2773 or CS 1003.

CS 2303 Discrete Structures II 4 ch (3C 1T)

Continues CS 1303. Topics covered include: advanced set theory, functions, relations, elementary permutations and combinations, graph theory, and finite state machines. Prerequisite: CS 1303.

CS 2403 Operating Systems Principles I 4 ch (3C)

An introduction to computer operating systems. Processes: synchronization, communication. Processor allocation. Primary and secondary storage management, resource sharing, security, user interfaces. Illustrated with examples from contemporary operating systems. Prerequisite: CS 2003, CS 2013.

CS 2503 Introduction to Information Processing (O) 4 ch (3C)

Introduction to COBOL language, file organization, sequential file processing, sorting and merging, balance line algorithm, report generation, relative and index file processing, and ISAM and VSAM file organizations. Introduction to random access files and database management systems. Prerequisites: CS 1073.

CS 2513 Introduction to Information Systems 4 ch (3C)

Concentrates on developing information system applications. Topics include: event-driven programming, file processing, relational database systems, user interface design, database design, and component architecture. The development environment is Visual Basic. Pre-requisite: CS 1083, or (CS 1073 with "B" or better and CS 1083 as co-requisite).

CS 2616 Java for Programmers 1 ch (2C)

Basic language constructs (input/output, variables and types, control structures.) Object oriented concepts, such as classes, objects, attributes and methods. Programming with multiple classes. This course is given over an 8 week period as follows: 2 hours/week for 3 weeks followed by midterm test plus 2 hours/week for 3 weeks followed by final examination. Course drop date is one week after the midterm test. Note: Credit will not be given for both CS 1083 and CS 2616. Prerequisite: Two term courses (at least 6 ch) in programming, excluding CS 1083

CS 2617 C++ for Java Programmers 1 ch (2C)

Basic language constructs (input/output, variables and types, control structures), classes, pointers, and preprocessor. This course is given over an 8 week period as follows: 2 hours/week for 3 weeks followed by midterm test plus 2 hours/week for 3 weeks followed by final examination. Course drop date is one week after the midterm test. Prerequisite: CS 1083 or CS 2616, or equivalent

CS 2618 Fortran for Programmers 1 ch (2C)

Basic language constructs (input/output, variables and types, control structures), libraries and modules, file processing and arrays. This course is given over an 8 week period as follows: 2 hours/week for 3 weeks followed by midterm test plus 2 hours/ week for 3 weeks followed by final examination. Course drop date is one week after the midterm test. Prerequisite: Two term courses (at least 6ch) in programming

CS 2773 Java Programming for the Internet 3 ch (3C)

Intended for students in Arts, Business, and Science interested in pursuing further courses in computer science. The course will cover algorithm design and programming techniques using Java with applications and applets related to practical examples. An introduction to the World Wide Web and HTML included. This course may not be used towards the requirements of the BScCS or BCS or BDA degrees. Prerequisites: 30 credit hours of university courses including one of CS 1703, CS 1803 or equivalent; or permission of the instructor.

CS 2803 Switching Theory and Logical Design 4 ch (3C 2L)

Switching algebra and its application in analysis and synthesis of combinational and clocked sequential circuits; minimization and realization methods. Universal logic gates, error detection and correction and register and counter operations and memory systems. Prerequisite: CS 1003 or CS 1073. Note: For the CS and DA programs, CS 2803 is equivalent to EE 2213 Digital Systems I; credit will not be given for both.

CS 3033 Software Design and Development 4 ch (3C 1T)

Presents major approaches and specific techniques for object oriented, structured and real-time design. Includes related topics such as quality, reusability, and CASE tools. Prerequisite: CS 2013. Co-requisite: CS 2403, CS 2617.

CS 3113 Introduction to Numerical Methods 4 ch (3C)

Error analysis, convergence and stability. Approximation of functions by polynominals. Numerical quadrature and differentiation. The solution of linear and non-linear equations and the solution of ordinary differential equations. Emphasizes the development of computer algorithms and stresses the influence of finite precision and arithmetic on computational results.Prerequisites: CS 2113 or Math 2503 plus either CS2618 or CS 1003 OR CS2618 or CS1003 and MATH2113 as a co-requisite.

CS 3123 High Speed Numerical Computation 4 ch (3C)

This course will discuss the building blocks required for undertaking parallel computation. Differences between programming on shared memory multiprocessors and distributed memory processors will be discussed. Software will include performance analysis tools and message passing libraries such as MPI and/or PVM. Prerequisites: CS 2113, CS 2003.

CS 3323 Introduction to Data Structures 4 ch (3C)

Presents major techniques in representing and manipulating data structures: lists, trees, stacks, queues, strings, arrays, graphs, sets and symbol tables. Covers sorting, searching and dynamic storage handling. Formal specification of data structures. Prerequisites: CS 2013 and CS 1303.

CS 3423 Data Management (A) 4 ch (3C)

Discussion of selected topics at an advanced level concerning the storage and manipulation of data. The use of an advanced operating system (e.g. UNIX) for shell programming. Regular expressions and their use in data manipulation utilities. A very high-level language (e.g. Perl) suited for data manipulation. Handling data over the Internet (e.g. CGI). Prerequisite: CS 2013 or equivalent programming experience.

CS 3513 Database Management Systems I 4 ch (3C 2L)

Introduction to DBMS, ER model & conceptual design, relational model, relational algebra and calculus, SQL and DML, Database application development, overview of data storage and query evaluation. Prerequisite: CS1083 or CS2617.

CS 3693 Advanced Program Development 4 ch (3C)

This course explores advanced features of Java such as inner/ nested classes, finalizers, cloning, reflection, reference objects, object serialization, Java Beans, Java Native Interface, internationalization, security, assertions and enterprise features. Emphasis will be on reading technical documentation, searching libraries and effective use of Java development tools for debugging, obfuscation, decompilation and documentation. The course also covers Unix features for program development and a team project forms an important part of this course. Prerequisite: CS 1083.

CS 3783 Human Computer Interaction 4 ch (3C)

This course examines human-centered approaches to software development. Basic principles, procedures and techniques that contribute to successful user interface design are explored. Design, analysis, prototyping, testing and evaluation of interface design are considered. It also examines advanced GUI design such as visualization, metaphor and multi-modal interaction (graphics, sound and haptics), 3D interaction and virtual reality. Other aspects of HCI design such as cognitive and physical ergonomics, visual perception, attention, memory, use of speech recognition and natural language processing will also be explored. Students are expected to participate in case discussions and submit analysis and design exercises. Prerequisite: CS 2513.

CS 3813 Computer Organization and Architecture 4 ch (3C 1T)

Computer elements, system organization, performance measurement, instruction sets and assembly-language programming, floating-point and integer representation and operations, cache and virtual memory systems, buses, I/O subsystems and interfacing, introduction to processor design. Coverage is intended to supply background for systems programming and performance tuning, rather than lead to further courses in hardware design. Note: Credit will not be given for both DA 3603 and CS 3813. Prerequisites: CS 2003, CS 2013.

CS 3893 Computer Networking 4 ch (3C)

This course provides an in-depth look at the hardware and software behind the Internet and other computer networks. Topics include UDP and TCP, socket programming, common application-level protocols, congestion control, routing, IPV4 and IPV6, link layer services and hardware, network security, multimedia networking, SNMP. Prerequisites: CS 2003 and CS 2303, or permission of the instructor.

CS 3913 Algorithms I 4 ch (3C 1T)

This course examines the characteristics of algorithms that lead to efficient computer solutions of discrete problems, and analytical and experimental techniques for comparing algorithms. Several advanced topics are chosen from the following areas: algorithmic problems arising in artificial intelligence, state spaces and search strategies, parallel and distributed algorithms, computational complexity. Prerequisites: CS 3323, and either MATH 3703 or CS 2303.

CS 3983 Technical Report I 2 ch (2C)

Instructs students in the preparation of technical reports in Computer Science. Involves an independent study component resulting in a technical report, typically a survey paper. Covers basic writing, oral presentation and library skills. Prerequisites: 70 ch completed.

CS 4033 Software Project Management and Quality Assurance (A) 4 ch (3C 1T)

Introduces the general software life-cycle models and software processes. Discusses the "umbrella" activities in software development: project planning and monitoring, risk management, quality assurance through reviews and testing (including reliability and safety), configuration management. Prerequisite: CS 3033.

CS 4073 Software Process Improvement (A) 4 ch (3C)

Discusses the identification of improvement opportunities, and verification of changes made to the process, through the use of process measurement and software metrics. Includes the analysis of past data for improving resource estimation. Prerequisites: CS 3033 and STAT 3093.

CS 4083 Leading-Edge Technology in Software Development (A) 4 ch (3C)

Selected topics at an advanced level. Content will vary. Potential topics: software evolution, formal methods, system engineering, program visualization. Prerequisites: CS 3033, CS 3913.

CS 4093 Team Software Development Project (A) 4 ch (3C)

The application of sound software engineering techniques to a problem in a practical setting. This course involves a relatively large software project, done in a team (with proper team management). A real "client" shall be involved, from whom the requirements have to be gathered, and to whom quality product and documentation have to be delivered. This course is normally completed during the student's final year of study. Prerequisite: CS 3033 and permission of instructor.

CS 4103 Parallel Processing Numerical Algorithms 4 ch (3C)

Explores the design and analysis of parallel algorithms with numerical applications. The course will involve a written report and presentation based on current research topics in the area. Prerequisites: CS 3113, CS 3123.

CS 4113 Advanced Scientific Computing 4 ch (3C)

Topics to be discussed include: systems with banded, sparse, diagonally dominant, Toeplitz, positive definite or symmetric coefficient matrices. Methods of solution include both direct and iterative, factorization, perturbation, relaxation and projection. Additional topics may include eigenvalue problems and nonlinear systems with applications taken from differential and integro-differential equations. Prerequisites: CS 2113, CS 3113.

CS 4123 Topics in High-Performance Scientific Computing and Visualization 4 ch (3C)

Advanced level discussions chosen from current research topics in computation techniques, high-performance computing or visualization. The course will involve presentations and written reports. Prerequisites: CS 4103 or CS 4113.

CS 4525 Database Management Systems II 4 ch (3C 2L)

File systems and structures, normalization, advanced query languages, query optimization, concurrency control and recovery, security and integrity. Overview of hierarchical, network and object-oriented data models. Prerequisites: CS3323, CS 3513, CS 2403.

CS 4613 Programming Languages 4 ch (3C)

Structure and major characteristics of programming languages; formal definition, syntax, semantics. Comparative study of principal language concepts and their treatment in imperative, functional, logic, and object-oriented languages. Prerequisites: CS 2013, CS 2303, and 90 ch completed.

CS 4713 Fundamentals of Simulation (A) 4 ch (3C 1T)

Systems and model. The simulation process. Random number generation. Introduction to queues, computer modelling of discrete systems using appropriate languages, computer modelling of continuous systems, model validation and experiment planning. Case studies from a variety of disciplines. Prerequisites: CS 1083, CS 3113, STAT 3083.

CS 4793 Fundamentals of Neural Networks (O) 4 ch (3C)

Introduction to the design and training of artificial neural networks, natural and artificial neurons, neural net architecture, single and multi- layered networks, supervised and unsupervised learning and their applications in time series analysis, optimization methods, solution of linear systems. Prerequisites: STAT 2793 or STAT 2593; MATH 2213; CS 3913; CS 2113 or permission of instructor.

CS 4843 Wireless and Mobile Computing (A) 4 ch (3C)

Wireless communication technology, fading and line-of-sight propagation, antennas, signal encoding, spread spectrum and wireless networking. Cellular system, cell coverage, mobile data communication, mobile IP and WAP. The course will also cover IEEE wireless standards, Bluetooth and other related topics for networking. Prequisite: CS 3893.

CS 4893 Networking Programming 4 ch (3C)

Threads, socket programming (client & server), secure sockets, multicast sockets, protocol handlers, content handlers, RMI, Mail API. Uses Java programming language. Prerequisites: CS 2403, CS 3893.

CS 4913 Theory of Computation 4 ch (3C)

Models of sequential and parallel computation, automata theory, formal languages, the Chomsky hierarchy, decidability and computability, sequential and parallel complexity theory. Prerequisites: CS 3913, CS 2303.

CS 4973 Independent Study in Computer Science 4 ch

This course will provide the student with practical experience in their area of study. Under the supervision of a faculty member, the student will explore topics not available in the regular course offerings. The course may contain written assignments, written tests, or relevant work experience. A written report and oral presentation are required. Students must identify a faculty member who is willing to supervise the course and apply to the co-ordinator of the course for approval prior to the term in which they wish to undertake the work. Applications are normally approved only for students who are in their final year of the programme, and who have obtained a grade point average of at least 3.0 in work of the second and third years. Prerequisite: Approval of the Department.

CS 4983 Technical Report II 2 ch (2C)

Builds on the skills developed in CS 3983, through the preparation and presentation of a technical report. A supervisor approved by the Department must normally be chosen before the beginning of the term. Prerequisite: CS 3983.

CS 4993 Honours Project 4 ch (2S)

The student submits a detailed proposal, schedule, progress reports and written report to the thesis coordinator with the supervisor's approval. A seminar is required. Planning of the thesis is done in the term prior to completion. Detailed guidelines are available from the Department. Prerequisite: CS 3983.

CS 5065 Introduction to Functional Programming 4 ch (3C)

This course examines strict (standard ML) and lazy (Haskell) functional languages and their uses. Topics include lists, user defined data types, laziness, recursive and infinite data objects, pattern matching, types, type classes, parametric polymorphism, and techniques for I/O. Theoretical topics include a quick introduction to the lambda calculus and transformational programming. Unconventional uses of functional languages will be examined. Note: Credit will not be granted for both CS 5065 and CS 6065 (See Graduate Calendar). Prerequisites: 110 ch in BScCS/BDA/BCS and gpa of 3.0 or above. Co-requisite: CS 4613.

DATA ANALYSIS

Note: See beginning of Section F for abbreviations, course numbers and coding.

DA 2503 Packaged Software Decision Aids 4 ch (3C 1T)

Examines typical software packages present in information centres and other business environments. Includes selected topics from the following areas: operating systems; network administration; communication software; wordprocessing; spreadsheets; database management systems and graphics. Prerequisites: 30 ch of university courses including one of CS 1803, CS 1003, or CS 1073.

DA 3053 Mathematical Software 4 ch (3C 1T)

Advanced software packages and programming languages developed for mathematical computations: symbolic, graphical, numerical and combinatorial. Students will be involved in implementing and testing various algorithms. Prerequisites: Math 2003, Math 1703, or CS 1073.

DA 3123 Numerical Treatment of Geometric Modeling 4 ch (3C 1T)

Presents the nature, development and application of the basic concepts of geometric modeling. The parametric geometry is considered primarily for curves including analytical properties, intersections and transformation. Emphasizes numerical methods and analysis with applications being drawn from such areas as image processing, graphics and computer-aided design. Prerequisite: CS 3113.

DA 3203 Data Analysis Using Statistical Software Packages 4 ch (3C)

This is a case-studies based course in which students learn to analyse data in a modern statistical computing environment. The course promotes the use of graphical and other exploratory techniques as a crucial first step in data analysis. Students will be exposed to practical problems often encountered during the data analysis process. The importance of summarizing and communicating results effectively will be emphasized through the strong project-oriented component of the course. Prerequisite: 3 ch in each of three subjects: Mathematics, Statistics, and Computer Science.

DA 4123 Numerical Solution of Systems 4 ch (3C 1T)

Emphasis on linear systems with discussion on topics such as large, small; sparse, full; square, nonsquare systems. Methods of solution involve a survey of direct and interactive techniques. As time permits, the discussions will be extended to include nonlinear systems. Applications drawn from statistics and operations research. Both writing computer programs and working with stored computer programs form an integral part of the course. Prerequisites: CS 3113.

DA 4403 Data Mining (O) 4 ch (3C)

Major issues in data mining. Data warehouse architecture and its implementation. Data processing, cleaning, integration, and transformation. Methods for data reduction and compression. Data mining primitives, languages, and association rules in large databases. Data classification and prediction. Prerequisites: STAT 1793 and CS 3513.

DA 4803 Independent Studies in Data Analysis 4 ch (3C 1T)

Discussion of Data Analysis topics at an advanced level chosen jointly by student, advisor and Department Chair. Topic of course to be entered on the students transcript.

DA 4813 Independent Studies in Data Analysis 4 ch (3C 1T)

Discussion of Data Analysis topics at an advanced level chosen jointly by student, advisor and Department Chair. Topic of course to be entered on the students transcript.

DA 4993 Project in Data Analysis 4 ch (3C 1T)

Application of correct and appropriate methods of data analysis in one or more areas. A project proposal is required with a final report in which the student describes clearly and concisely the work done, the results obtained, and a careful interpretation of the results in form and language meaningful to workers in the subject area. Prerequisite: Permission of Program Director.

ECONOMICS

Note: See beginning of Section F for abbreviations, course numbers and coding.

ECON 1004 Economics and Society 3 ch

Designed for students who do not intend to major in economics. Examines the working of the market system, competition policy, price supports and regulation, labour markets and unions, and social issues. Note: BBA students cannot take this course for credit. Students with credit for ECON 1013 or ECON 1073 or taking those courses, cannot take this course for credit.

ECON 1013 Introduction to Microeconomics 3 ch (3C)

Concerned with how modern mixed economies operate. Behaviour of consumers and business firms. Theory of the firm, production, costs and market structures, and distribution .

ECON 1023 Introduction to Macroeconomics 3 ch (3C)

Concerned with the causes of unemployment and inflation, the determination of total output, investment, and interest rates. Stablilization policies, exchange rates and balance of payments.

ECON 1073 Economics for Engineers 3 ch (3C)

An introductory course for students in Engineering and Computer Science. Topics include theory of markets, production, costs, externalities, and the macroeconomics of aggregate output determination and growth. Note: Credit will not be given for both ECON 1073 and ECON 1013/1023

ECON 2013 Intermediate Microeconomics 3 ch (3C)

This course develops material from ECON 1013. Applications of microeconomic theory are emphasized. Prerequisite: ECON 1013.

ECON 2023 Intermediate Macroeconomics 3 ch (3C)

This course develops material from ECON 1023. Applications of macroeconomic theory are emphasized. Prerequisite: ECON 1023.

ECON 2051 Political Economy of Regions I (O) 3 ch (3C)

Considers the general theory of regional development within the framework of the national economy. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 2052 Political Economy of Regions II (O) 3 ch (3C)

Concerned with regional development policies. Special attention given to the Atlantic provinces. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 2091 Contemporary Issues in the Canadian Economy I (O) 3 ch (3C)

Concerned with the study of the Canadian economy. Specifically, public policy towards unemployment and inflation, regional development, the labour market, economic growth, foreign investment and income distribution. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 2092 Contemporary Issues in the Canadian Economy II (O) 3 ch (3C)

Analysis of specific economic phenomena in Canada. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 2095 The New Brunswick Economy (O) 3 ch (3C)

Examines the New Brunswick economy; sources and analysis of data; evaluation of trends and policies. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 2103 Financial Institutions and Markets 3 ch (3C)

An introduction to the microeconomic aspects of monetary theory and policy. Topics include how money is defined and measured, portfolio theory, theories of the interest rate, the determination of the money supply, and bank regulation. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 2213 Poverty, Inequality and Income Redistribution (O) 3 ch (3C)

Definition, extent and causes of poverty. Distribution of income and wealth in Canada and abroad. Rationales for and effectiveness of income redistribution policies. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 3013 Microeconomics I 3 ch (3C)

The theory of consumer demand and of production costs. The elementary theory of the firm: pure competition and pure monopoly; an introduction to monopolistic competition and oligopoly. Prerequisite: ECON 2013.

ECON 3023 Macroeconomics I 3 ch (3C)

A study of the standard macroeconomic models of closed and open economies. Macroeconomic problems, such as unemployment, inflation, and balance of payment disequilibria are examined. Alternative stabilization policies are evaluated with reference to the Canadian economy. Prerequisite: ECON 2023 and one of: MATH 1853 (with MATH 2853 strongly recommended), MATH 1003, or permission of the instructor.

ECON 3091 Urban Economics I (O) 3 ch (3S)

An introduction to the economic analysis of the development of urban areas. Topics include the evolutionary development of cities, the location of cities and of activities within them, and theories of urban growth. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 3092 Urban Economics II (O) 3 ch (3S)

Examines problems of and policies for urban areas. Emphasizes urban problems particularly relevant to Saint John. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 3099 History of Economic Thought (O) 3 ch (3C)

A study of the major contributions to economic analysis from Adam Smith to Alfred Marshall. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 3114 International Financial Institutions and Markets 3 ch (3C)

An introduction to the Macroeconomic aspects of monetary theory and policy. Topics include how the Central Bank influences the interest rate and inflation rate, the demand and supply for money, international financial markets, and international banking. Prerequisite: ECON 2103 or permission of the instructor.

ECON 3203 Public Sector Economics I (O) 3 ch (3C)

The principles of taxation and government expenditures, with emphasis on Canadian institutions and issues. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 3233 Public Sector Economics II (O) 3 ch (3C)

Examines such topics as the economics of democracy, the principles and experience of Canadian fiscal federalism, public pensions, employment insurance, and other public policy issues. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 3375 Labour Economics (O) 3 ch (3C)

Determinants of labour supply and demand. Includes structure of wages, male-female earnings differentials, employment insurance, unions, strikes, and labour relations. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 3401 International Trade & Trade Policy (O) 3 ch (3C)

The principles of international trade, and issues in trade policy; NAFTA and other trade agreements. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 3412 International Macroeconomics and Finance 3 ch (3C)

The economics of exchange rate determination, the balance of payments, international borrowing and lending. Role of international financial insititutions. Prerequisite: ECON 2023.

ECON 3531 International Development (O) 3 ch (3C)

Development theory at both sectoral and aggregate level; analysis of growth, employment, distribution of income, intersectoral investment allocation, and investment in human capital. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 3542 Topics in International Development (O) 3 ch (3C)

An analysis of the international dimension of economic problems faced and policies adopted by developing countries of Asia, Latin America, and Africa. Topics include: international trade, direct foreign investment, technology transfer, regional economic blocks, structural liberalization, debt and development financing, high rate of population growth and exhausting of natural resources. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 3665 Mathematical Economics 3 ch (3C)

A course in economic theory concerned with topics in micro- and macroeconomics. Emphasis is on the use of mathematics in the development of economic theory, particularly calculus and matrix algebra. Prerequisites: ECON 2013, 2023. Also, Mathematics requirement for Majors must be completed before a student is admitted.

ECON 3702 Cost Benefit Analysis (O) 3 ch (3S)

Comparative study of costs and benefits and the impact of public projects and policy initiatives. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 3755 Environmental Economics (A) 3 ch (3C)

Examines interaction of ecological and economic systems, considering population growth, food supply, non-renewable resources. Prerequisites: ECON 1013 or ECON 1073, and ECON 1023.

ECON 3835 Market Strategies and Organization (O) 3 ch (3C)

The analysis of market structure, firm strategy and performance, and public policy issues. Prerequisite: ECON 2013.

ECON 4035 Macroeconomics II 3 ch (3C)

Advanced course in macroeconomic theory and analysis, with emphasis on the theory of investment, consumption, money and employment. Neoclassical monetary equilibrium, and the Keynesian and post-Keynesian models. Prerequisite: ECON 3023.

ECON 4045 Microeconomics II 3 ch (3C)

Topics may include theories of imperfect competition, search and information, market failures, property rights, simple general equilibrium models. Prerequisite: ECON 3013.

ECON 4645 Introduction to Applied Econometrics 3 ch (3S)

The objective of the course is to explain the problems and issues associated with empirical measurement of economic relationships, and an assessment of the techniques by which those problems may be solved. Prerequisites: BA 1605 (or equivalent), BA 2606, and 12 chs of economics.

ECON 4990 Honours Thesis 6 ch

An honours student in the final year may elect to write a thesis under the supervision of faculty members in Economics. The student must submit a formal proposal to the department prior to final year registration.

ECON 4998 Topics in Economics I (O) 3 ch (3WS/S)

Directed study/reading programs. Workshops or seminars will be held as required. Students should apply to the Department in September or January for permission to take this course. Prerequisites: ECON 2013 and ECON 2023.

ECON 4999 Topics in Economics II (O) 3 ch (3WS/S)

Directed study/reading programs. Workshops or seminars will be held as required. Students should apply to the Department in September or January for permission to take this course. Prerequisites: ECON 2013 and ECON 2023.

EDUCATION

Note: See beginning of Section F for abbreviations, course numbers, and coding.

ED 3021 Human Development and Learning: An Overview 3 ch (3C)

Developmental perspectives on human growth and learning. Credit will not be given for both PSYC 2201 and ED 3021. Prerequisites: PSYC 1003 and PSYC 1004.

ED 3031 The Education of Exceptional Learners (O) 3 ch (3C)

Provides the student with an introduction to the field of knowledge associated with exceptional learners.

ED 3041 The Theory and Practice of Education (O) 3 ch (3C)

A study of dominant theories which influence and shape educational thinking and practice today. Key ideas, their origins, their current representatives, and the transposition of ideas into educational applications will be discussed.

ED 3051 School Law and Organization (O) 3 ch (3C)

An overview of the legal, organizational, financial and professional aspects of schools and school systems.

ED 3063 Health Promotion in Schools (O) 3 ch (3C)

Examines concepts and inter-relationships among nutrition, exercise, and well-being within educational contexts.

ED 3241 Music for the Classroom Teacher (O) 3 ch (3C)

Outlines the materials in the music curriculum that the classroom teacher might be expected to teach, plus a study of various ways to integrate music into the general classroom curriculum.

ED 3361 Internet Literacy (O) 3 ch (3C) (LE)

Theoretical issues arising from Internet, along with practical skills needed to gain familiarity with this network. How Internet challenges the way we create, disseminate, acquire and own knowledge.

ED 3415 Developing Numeracy 3 ch

The study of number relationships and approaches to developing number sense in children and adults.

ED 3416 Developing Geometrical Concepts 3 ch

The study of geometric relationships and approaches to developing spatial sense in children and adults.

ED 3424 Teaching Elementary School Mathematics (O) 3 ch (3C)

Focus on appropriate methodology for teaching mathematics at the elementary school level. Students must demonstrate competency in the mathematics content underlying the curriculum prior to completion of this course. Students may take ED 3415 as a prerequisite or corequisite to the course to demonstrate this competence or successfully pass a test of this content during the course.

ED 3475 Movement Education for the Elementary Teacher (O) 3 ch (3C)

Overview of physical education program in elementary schools. Program planning, practical work.

ED 3511 Introduction to Science Education (O) 3 ch (3C)

An introduction to the teaching of science across and for particular learner levels.

ED 3561 Introduction to Second Language Education 3 ch

An overview of the theories of learning and teaching in a second language context with particular emphasis on the multi-dimensional and multi-resource methodology 6 ch approved Arts and/or Education courses: advanced written and spoken English language skills

ED 3621 Introduction to the Social Studies (O) 3 ch (3C)

Consideration of the history of social studies, debates about the content of social studies and the current state of social studies in Canada.

ED 4003 Field Experience I for BEd Concurrent Students (Saint John Campus)

Field experience for BEd concurrent students. Must be completed before ED 5000 Practicum.

ED 4004 Field Experience II for BEd Concurrent Students (Saint John Campus)

Field experience for BEd concurrent students. Must be completed before ED 5000 Practicum.

ED 4164 Techniques of Teaching 3 ch

Students will learn to design lessons to meet a variety of teaching situations. Classroom skills will be learned and practised in mini-teaching sessions in front of peers and a supervising faculty member. Causes of student behaviour problems will be analyzed and strategies for dealing with disruptive students developed.

ED 4211 Integrated Learning Through Art (O) 3 ch (3C)

Art education theories and practices as they apply to learning across the curriculum.

ED 4353 Literacy for Struggling Readers K-5 (A) 3 ch (3C)

Classroom learning philosophies and arrangements for children who are struggling readers. Prerequisite: must be a BEd student or teacher upgrading.

ED 4354 Literacy Learning in Early Years (O) 3 ch (3C)

Current theories of the nature of literacy learning and their relationship to instructional practices in the early years.

ED 4451 Health Education (O) 3 ch (3C)

Examines curriculum and pedagogy in a range of elementary, middle and secondary school programs that come under the rubric of health education. Includes analyses of underlying assumptions, the organization of knowledge, and pedagogical approaches to this subject area.

ED 4562 Advanced Studies in ESL Education 3 ch

Examines communicative language teaching in the context of classrooms. Emphasizes various teaching methods, curriculum development and evaluation of second language learning. ED 3561 or ED 3560 or equivalent

ED 4791 Basic and Applied Nutrition (O) 3 ch (3C)

Basic concepts in nutrition across the lifespan; nutritional assessment; nutrition information, education and other change strategies; and current nutrition issues.

ED 5000 Field Studies Practicum for Consecutive/Concurrent BEd Program1 15 ch

Fifteen weeks of school and classroom experience. Additional regulations are included in Education General Regulations under Field Experience Practicum, Section F. Pre-requisites: (1) Admission to the BEd (Concurrent); (2) 30 ch in BEd courses, including 12 ch in Subject Areas/Methodologies courses; (3) GPA 2.7 (4) Ed 4003 and ED 4004.

ED 5053 Middle Level Education (O) 3 ch (3C) [W]

Of interest to both experienced and student teachers, this course will focus on the physical, intellectual, psychological, and social characteristics of 10 to 14 year olds and the implications for effective instruction. Additional topics will include middle school organization, curriculum integration, and teaming.

ED 5175 Classroom Assessment (O) 3 ch (3C)

Concepts and principles: teacher made tests, standardized tests, test construction, selection, administration and interpretation across the curriculum.

ED 5314 Drama Across the Curriculum (O) 3 ch (3C)

Group process drama will be employed to study in any curriculum subject, such as history, mathematics, science and social studies. No experience necessary.

ED 5566 Field Experience in TESL 3 ch

Supervised field experience for students in an environment in which they can both observe qualified instructors and participate in planning and teaching English as a second language. Prerequisites: ED 3561 and ED 4562.

ELECTRICAL ENGINEERING

A grade of C or higher is required in all Electrical Engineering courses.

Note: See beginning of Section F for abbreviations, course numbers and coding.

EE 1713 Electricity and Magnetism 4 ch (3C 1T 3L*)

An introductory course in basic circuit analysis techniques for all Engineering students. Electric charge, electric energy sources, current, voltage, power and energy. Resistors, resistance and the application of Ohm's Law, Kirchoff's voltage and current laws, D.C. circuit analysis using equivalent resistor techniques, voltage and current division, loop analysis, mesh analysis, nodal analysis, superposition, and the application of Thevenin's and Norton's theorems. Capacitors, capacitance, and analysis of RC networks. Magnetic circuits, magnetic forces in current carrying conductors. Faraday's and Lenz's laws. Inductors, inductance, and analysis of RL networks. Introduction to A.C. Circuits.

EE 2213 Digital Logic I 4 ch (3C 1T 3L*)

Introduces the design of digital systems. Combinatorial and sequential logic and computer-based designs. Prerequisite: CS 1073 or equivalent

EE 2703 Introduction to Electrical Design 4 ch (3C 2L)

Covers the electrical design process at an introductory level, group projects, simulation and construction, laboratory measurement techniques. Economic and safety aspects. Written reports. Prerequisites: EE 2773, CMPE 2013.

EE 2773 Electric Circuits 4 ch (3C 1T 3L*)

A.C. circuits. Phasors. Network analysis. Network theorems and polyphase systems. Prerequisites: MATH 1013, EE 1713.

EE 2783 Networks 4 ch (3C 1T 3L*)

Topics include Laplace transform methods, network functions, frequency response, filters, one-port networks, dependent sources. Prerequisites:EE 2773, MATH 2503 or equivalent. Co-requisites: MATH 2513 and MATH 3503 or equivalents.

ENGLISH

The prerequisite for upper-level courses in English is nine credit hours of English at the lower level, 6 ch of which must be ENGL 1200, unless otherwise indicated, or unless special permission is obtained from the instructor.

Note: See the beginning of the Saint John Courses Section of this calendar for abbreviations, course numbers and coding.

ENGL 1200 Introduction to Literature in English 6 ch [W]

An introduction to the development of major literary movements. A study of poetry, drama, short stories, essays and novels written in English.

ENGL 2001 Introduction to Poetry 3 ch (3C)

An introduction to poetic forms, language and theme within an historical context. Students will be encouraged to participate in the critical analysis of the poems in the course. There will be a special emphasis on written assignments.

ENGL 2002 Introduction to Drama 3 ch (3C)

Introduces dramatic genres, language, theoretical approaches and staging within an historical context. Note: this is a course in reading drama and not in acting. There will be a special emphasis on written assignments.

ENGL 2003 Introduction to Fiction 3 ch (3C)

An introduction to the critical analysis of fictionshort stories, novellas, novelswithin an historical context. There will be a special emphasis on written assignments

ENGL 2201 Drama Production I 3 ch (3C)

An introduction to acting, with an emphasis on script analysis and rehearsal techniques. Prerequisite: 6 ch lower level and permission of the instructor.

ENGL 2202 Drama Production II 3 ch (3C)

A practical introduction to methods of production. Students will participate in any of several possible capacities, in the production of at least one play. Prerequisite: 6 ch lower level and permission of the instructor.

ENGL 3003 Medieval Drama 3 ch (3C) [W]

Explores the literary and theatrical dimensions of the English drama from its origins in the 10th century through to (but not including) Shakespeare.

ENGL 3004 Malorys Morte DArthur 3 ch (3C) [W]

A study of the Arthuriad of Sir Thomas Malory and some of Malorys source material.

ENGL 3007 Chaucer and his Contemporaries 3 ch (3C) [W]

A study of the major themes and literary forms of the English Middle Ages, with particular emphasis on the lyric, the Breton Lay, the Romance, and the dream vision.

ENGL 3008 Chaucer: The Canterbury Tales 3 ch (3C)

A study of Chaucers major literary achievement and its relevance to the concerns of the 21st century.

ENGL 3105 Shakespeares Earlier Plays 3 ch [W]

This course is a study of a selection of Shakespeare's earlier plays (pre-1600) in context. This course will also examine early theatres, genre, and possible dramatizations.

ENGL 3106 Shakespeares Later Plays 3 ch [W]

This course is a study of a selection of Shakespeare's later plays (post-1600) in context. This course will also examine early theatres, genre, and possible dramatizations. .

ENGL 3107 Renaissance Drama (Non-Shakespearian) 3 ch [W]

This course is an introduction of Elizabethan and Jacobean plays in context. This course will also examine early theatres, genre, and possible dramatizations.

ENGL 3108 Studies in Early Renaissance Literature 3 ch [W]

This course is an introduction to prose and poetry of the early Renaissance (within 1510-1640), studied in the context of the periods wide-ranging literary, political, religious and social changes.

ENGL 3109 Studies in Later Renaissance Literature 3 ch [W]

This course is an introduction to prose and poetry of the later Renaissance (within 1590-1670), studied in the context of the periods wide-ranging literary, political, religious and social changes.

ENGL 3203 Restoration and 18th Century Drama 3 ch [W]

Traces British Drama from its bawdy rebirth in 1660, through the sentimental domesticity of the early eighteenth century, to the laughing comedy of Sheridan and Goldsmith at the end of the 18th Century. Also considers the history of the London theatre and the fate of Shakespeare during the period.

ENGL 3204 18th Century Prose and Poetry 3 ch [W]

Examines the literature of the 18th century, excluding the drama.

ENGL 3205 Prose Narrative Before 1800 3 ch (3S/C) [W]

Examines genres of prose narrative through to 1800 with emphasis on the novel.

ENGL 3301 Romantic Poetry 3 ch (3C) [W]

Studies the major poets of the British Romantic period.

ENGL 3302 Romantic Novel 3 ch (3C) [W]

A study of the development of the novel in Romantic Britain. Topics studied may include the novel of sensibility, the Gothic novel, the English Jacobin novel, the historical novel, and the national tale.

ENGL 3303 Romantic and Victorian Drama 3 ch [W]

Explores both the literary and theatrical dimensions of the nineteenth century. Studies closet drama, melodrama, comedy, farce, pantomime, burlesque, extravaganza, and spectacular entertainment.

ENGL 3304 Studies in the Romantic Age 3ch (3C) [W]

This course will study a selection of texts from the period of 1789 to 1832.

ENGL 3311 Victorian Poetry 3 ch (3C) [W]

Studies the major poets of Victorian Britain.

ENGL 3312 Victorian Novel 3 ch (3C)

A study of a selection of Victorian novels from the period 1832 to the end of the nineteenth century.

ENGL 3313 The Earlier Victorian Age 3 ch (3C) [W]

This course will study a selection of texts from the period of 1832 to 1870.

ENGL 3314 The Later Victorian Age 3 ch (3C) [W]

This course will study a selection of texts from the period of 1870 to 1901.

ENGL 3401 Modern British Poetry 3 ch [W]

A study of selected modern poetry.

ENGL 3402 Modern British Novel 3 ch [W]

A study of selected novels.

ENGL 3403 Modern English and Irish Drama 3 ch [W]

Deals with the major dramatic developments of this century, beginning with the pioneering efforts of such figures as Galsworthy, Shaw and Yeats, and concluding with the trends of the present day.

ENGL 3404 Irish Literature 3 ch [W]

A study of the literature of Ireland, excluding drama.

ENGL 3405 Studies in Modern British Literature 3 ch [W]

A study of selected British short fiction, poetry, essays, and novels of the 20th century.

ENGL 3501 Canadian Poetry 3 ch [W]

A study of Canadian poetry.

ENGL 3502 Canadian Novel 3 ch [W]

A study of selected novels.

ENGL 3503 English Canadian Drama 3 ch (3C) [W]

A survey of English-Canadian drama from its beginning to the present.

ENGL 3504 Canadian Short Fiction 3 ch [W]

A study of selected short fiction.

ENGL 3505 Maritime Poetry 3 ch [W]

A study of Maritime poetry from its beginnings, with an emphasis on 20th century developments.

ENGL 3506 Maritime Fiction 3 ch (3C) [W]

An overview of the variety of genres in Maritime fiction.

ENGL 3508 Canadian Literature to WWII 3 ch [W]

A study of Canadian poetry, short fiction, criticism, and novels written before the Second World War.

ENGL 3509 Canadian Literature after WWII 3 ch [W]

A study of Canadian short fiction, poetry, novels, and criticism written after World War II.

ENGL 3511 American Poetry 3 ch (3C) [W]

An overview of modern American poetry.

ENGL 3512 American Short Fiction 3 ch (3S) [W]

A study of 19th and 20th Century American short fiction.

ENGL 3513 American Drama 3 ch (3S) [W]

A study of the work of major American playwrights of the 20th Century.

ENGL 3514 The 19th Century American Novel 3 ch (3C) [W]

A study of the 19th Century American novel.

ENGL 3515 20th Century American Novel 3 ch (3C) [W]

A study of 20th Century American novels.

ENGL 3601 Introduction to Literary Theory 3 ch (3C) [W]

A historical survey of literary theory.

ENGL 3602 Studies in Literary Theory 3 ch [W]

The application of one or more critical approaches (feminist, psychoanalytic, Marxist, reader-response, structural, etc.) to a body of works.

ENGL 3621 Writing by Women I 3 ch (3CS) [W]

A study of texts in a variety of genres by women to the mid-eighteenth century. Prerequisite: ENGL 1200, or ENGL 1500, or equivalent; or GEND 2001 and permission of the instructor.

ENGL 3622 Writing by Women II 3 ch (3CS) [W]

A study of texts in a variety of genres by women since the mid-eighteenth century. Prerequisite: ENGL 1200, or ENGL 1500, or equivalent; or GEND 2001 and permission of the instructor.

ENGL 3631 Studies in Gender and Genre 3 ch [W]

Examines the development of masculinities and/or femininities in the context of a particular or several literary genre(s). Prerequisite: ENGL 1200, or ENGL 1500, or equivalent; or GEND 2001 and permission of the instructor.

ENGL 3702 The Women of The Arthurian Legend 3 ch [W]

Examines the representation of women in 19th and 20th century retellings of the Arthurian legend. Prerequisite: ENGL 1200, or ENGL 1500, or equivalent; or GEND 2001 and permission of the instructor.

ENGL 3705 Literature of the West Indies, Africa and India 3 ch (3C) [W]

A study of selected literature written in English in the West Indies , Africa and India.

ENGL 3706 Experimental Modern Theatre 3 ch (3C) [W]

A study of the development of modern and postmodern drama as a series of reactions against realism.

ENGL 3707 Utopian Fiction 3 ch (3C) [W]

A study of the major literary utopias from Plato's Republic to contemporary dystopian fiction.

ENGL 3709 Children's Literature 3 ch (3C) [W]

An overview of children's literature.

ENGL 3711 Special Authors I 3 ch (3C) [W]

This course will study a particular author or group of authors.

ENGL 3712 Special Authors II 3 ch (3C) [W]

This course will study a particular author or group of authors.

ENGL 3713 Special Topics I 3 ch [W]

This course focuses on specialized areas of interest.

ENGL 3714 Special Topics II 3 ch [W]

This course focuses on specialized areas of interest.

ENGL 3721 Literature of the Fantastic Before the 20th Century 3 ch (3S/C) [W]

This course examines the development of fantastic literature from the early modern period to the beginning of the 20th Century.

ENGL 3722 Topics in Speculative Fiction 3 ch (3S) [W]

This course examines specific themes, movements, and/or authors of science fiction and/or fantasy from the early 20th century.

ENGL 3751 The Bible as Literature 3 ch [W]

A study of selections from the Old and New Testament as literary texts.

ENGL 3801 From Script to Performance 3 ch (3C) [W]

This course integrates the study of drama as literature with the practical elements of theatrical production.

ENGL 3802 Reading Film 3 ch [W]

This course will explore various ways of analyzing a variety of films.

ENGL 3803 American Film 3 ch [W]

A study of major trends in American film.

ENGL 3812 Postmodern Literature 3 ch [W]

Postmodern Literature is a study of the theory behind, and the practise of, postmodern literature. Works from several genre including poetry, prose, drama, and film will be studied.

ENGL 3903 The Development of Western Drama 3 ch [W]

Studies a range of plays to illustrate the development of the dramatic tradition in the western world.

ENGL 3913 Writing Poetry I 3 ch [W]

A workshop seminar in which a variety of poetic styles and forms are studied and practised: weekly assignments.

ENGL 3914 Writing Poetry II (A) 3 ch (WS/S)

A workshop seminar that provides students with the opportunity to work in traditional poetic forms. This course is an extension of ENGL 3913 Writing Poetry I which will allow students to continue to work in genre of poetry. Prerequisite: ENGL 3913.

ENGL 3915 Writing Short Fiction (O) 3 ch (3WS/S) [W]

A workshop-seminar in which notable examples of short fiction are studied and the writing of short stories is practiced in weekly assignments.

ENGL 3916 WRITING FOR THE STAGE OR SCREEN (O) 3 ch (WS/S)

A workshop seminar in which either playwriting or screenwriting will be studied and practiced. This course will involve prescribed readings, exercises, workshops and discussions.

ENGL 4801 Honours Essay: Reading and Research 3 ch [W]

This course is devoted to the research portion of the honours project.

ENGL 4802 Honours Essay 3 ch [W]

An honours essay to be attempted upon completion of ENGL 4801. Prerequisites: ENGL 4801.

HENG 4000 Joint Honours Thesis 6 ch [W]

Honours thesis for Joint Honours Program in English and History. Prerequisites: Acceptance into the Joint Honours Program in English and History.

FRENCH

Note: See beginning of Section F for abbreviations, course numbers and coding.

FR 1203 Communication en français I 3 ch

Français de base pour étudiants ayant au plus le Grade 10. Les étudiants ayant les Grades 11 ou 12 doivent se soumettre à un test de placement. Des preuves d'éligibilité aux cours seront exigées du bureau de Régistraire avant l'inscription aux cours et au test. FR 1205 est obligatoire.

FR 1203 Communicating in French I 3 ch

Basic French course for students with no more than Grade 10 core French. Students with Grade 11 or 12 must write a placement test before registration. Proof of qualification must be presented to Registrar's Office before registration to course and placement test. FR 1205 is compulsory.

FR 1204 Communication en français II 3 ch

Suite de FR 1203. Développement et exploration de la communication linguistique et des différences culturelles. FR 1206 est obligatoire. Prérequis: FR 1203 et FR 1205.

FR 1204 Communicating in French II 3 ch

Continuation of FR 1203. Develops and explores language communication and culture differences. FR 1206 is compulsory. Prerequisite: FR 1203 and FR 1205.

FR 1205 Module de la laboratoire I 1 ch (1L)

Destiné à la revue et au renforcement de la grammaire française et de ses structures par le biais de logiciels informatiques spécialisés. Le module I est obligatoire pour les étudiants inscrits en FR 1203. Le module de laboratoire est accessible aux autres étudiants du Niveau I de loption Soutien du français.

FR 1205 Laboratory Module I 1 ch (1L)

This course is designed to review and reinforce French grammar and structures be means of student-centered learning in the computer lab using a variety of software. Module I is compulsory for students in FR 1203. The Laboratory Module is open to other students as Level I of the French Maintenance option.

FR 1206 Module de laboratoire II 1 ch (1L)

Suite de FR 1205. Destiné à renforcer les connaissances de létudiant en grammaire française et en qualité de lexpression. Exercices pratiques de composition de courts paragraphes où létudiant est invité à appliquer les concepts acquis. Obligatoire pour les étudiants de FR 1204. Niveau II de loption Soutien du français. Prérequis: FR 1205.

FR 1206 Laboratory Module II 1 ch (1L)

Continuation of FR 1205. Intended to strengthen the students knowledge of French grammar and accuracy of expression. Students will practise writing short paragraphs in which they will apply the acquired concepts. Compulsory for students in FR 1204. Level II of the French Maintenance option. Prerequisite: FR 1205.

FR 1304 Français pour étudiants de limmersion I 3 ch

Première partie dun cours destiné à satisfaire les besoins particuliers des étudiants issus des écoles dimmersion. Revue systématique de la grammaire française. Ouvert aux étudiants issus d'écoles dont la langue première d'enseignement est le français.

FR 1304 French for Immersion Students I 3 ch

The first half of a course designed to meet the particular needs of students coming from immersion schools. The course offers a systematic review of French grammar. Graduates of high schools where French is the first language of instruction must register for this course.

FR 2200 Communicating in French III and IV 6 ch

This course is the equivalent of FR 2203 and 2204. It will be offered on an intensive basis in one term. Students may not receive credit for both FR 2203 and FR 2204 and FR 2200.

FR 2203 Communication en français III 3 ch

Exploration du langage médiatique; présentation déléments de grammaire avancés, révision des noms et des verbes. Destiné à améliorer les connaissances du français et à renforcer la compréhension orale et écrite. FR 2205 est obligatoire. Prérequis: FR 1205, FR 1206.

FR 2203 Communicating in French III 3 ch

Students are exposed to the language of the media; more advanced grammar is presented and nouns and verb forms are reviewed. Designed to improve French communication skills by strengthening oral and written comprehension. FR 2205 is compulsory. Prerequisites: FR 1205, FR 1206.

FR 2204 Communication en français IV 3 ch (3C)

Destiné à améliorer les outils de communication par le renforcement de lexpression orale et écrite. Conversation sur différents sujets et exercices pratiques de diverses formes de styles, appuyés par la révision des principales structures de la phrase. Prérequis : FR 2203, 2205 ou équivalent.

FR 2204 Communicating in French IV 3 ch (1L)

Designed to improve French communication skills by strengthening oral and written expression. Conversation on a variety of topics and practice of different writing styles is supported by grammatical background and a review of sentence building rules. Prerequisites: FR 2203, 2205 or equivalent.

FR 2205 Module de laboratoire III 1 ch (1L)

Suite de FR 1206. Introduction de structures plus complexes de la phrase et développement accru de lexpression. Exercices pratiques de composition de courts paragraphes et dapplication des connaissances acquises. Obligatoire pour les étudiants de FR 2203. Niveau III de loption Soutien du français. Prérequis : Fr 1206 ou équivalent.

FR 2205 Laboratory Module III 1 ch (3C)

Continuation of FR 1206. Intended to expose students to more complex sentence structure and further develop accuracy of speech. Students will practise writing short paragraphs in which they will apply the acquired concepts. Compulsory for students in FR 2203. Level III of the French Maintenance option. Prerequisites: FR 1206 or equivalent.

FR 2206 Développement de lexpression orale 3 ch (3C)

Destiné au développement du vocabulaire et de la communication orale. Composante orale de loption de Soutien du français. Prérequis : FR 2205 ou équivalent.

FR 2206 Developing Oral Skills 3 ch (3C)

Designed to develop vocabulary and strategies for oral communication. Oral component of the French Maintenance option. Prerequisites: FR 2205 or equivalent.

FR 2304 Français pour étudiants de limmersion II 3 ch

Deuxième partie dun cours destiné à satisfaire les besoins particuliers des étudiants issus des écoles dimmersion. Suite de FR 1304, ce cours offre une revue systématique de la grammaire française. Ouvert aux étudiants issus d'écoles dont la langue première d'ensignement est le français.

FR 2304 French for Immersion Students II 3 ch

Second half of a course designed to meet the particular needs of students coming from immersion schools. As a continuation of FR 1304, this course provides a systematic review of French grammar. Graduates of high schools where French is the first language of instruction must register for this course.

FR 3084 Le monde des affaires en français 3 ch (3C)

Par le biais de textes divers et détudes de cas, ce cours améliore les connaissances de létudiant en français des affaires. La rédaction de lettres, de mémos, de procès-verbaux et de rapports sont étudiés. Ce cours prépare aussi les étudiants qui désirent écrire lexamen de la Chambre de Commerce et dIndustrie de Paris. Prérequis : FR 2204 ou équivalent.

FR 3084 Conducting Business French 3 ch (3C)

Through various texts and case studies, students will be shown the different approaches used in a francophone environment and learn to communicate more effectively. Formats for letters, memos, minutes and reports will be studied. This course also prepares students who wish to write the examination sest by the Chambre de Commerce et dIndustrie de Paris. Prerequisite: FR 2204 or equivalent.

FR 3203 Communication avancée 3 ch (3C)

Destiné à familiariser létudiant aux structures complexes du langage et à lapplication efficace de ces concepts dans leur expression orale et écrite. Prérequis : FR 2204 ou 2304 (avec le permission du professeur), ou équivalent.

FR 3203 Advanced Communication 3 ch (3C)

Designed to familiarize students with complex language structures and to prepare them to apply these concepts effectively in their oral and written expression. Prerequisite: FR 2204 or 2304 (with permission of the instructor), or equivalent.

FR 3204 Français écrit avancé 3 ch (3C)

Destiné au développement plus particulier des connaissances de structures complexes et de leur usage dans lexpression orale et écrite - en particulier la dissertation, le rapport, la lettre. Prérequis : FR 2204, ou 2304, 3203 ou équivalent.

FR 3204 Effective Writing in French 3 ch (3C)

Designed to further develop the knowledge of complex structures and their use in oral and written expression - particularly essays, reports and letters. Prerequisite: FR 2204, or 2304, 3203 or equivalent.

FR 3324 Traduction I 3 ch (3C)

Destiné à familiariser létudiant aux principes fondamentaux de la traduction. Pratique de traduction de textes en français avec accent sur les diverses formes de traduction de mêmes concepts en anglais et en français. Prérequis : FR 2204 ou 2304, 3203 ou équivalent.

FR 3324 Cross-Linguistic Communication I 3 ch (3C)

Designed to familiarize the students with the fundamentals of translation theory. Students will practise translating text into French with emphasis on the different ways of expressing the same concept in English and French - micro level. Prerequisite: FR 2204 or 2304, 3203 or equivalent.

FR 3412 L'acquisition de la langue 3 ch (3C)

Ce cours présente le processus d'acquisition de la langue avec application au français. Les sujets de discussion incluent l'acquisition de la langue maternelle (l'hypothèse de l'IP) et l'acquisition du français comme langue seconde en situations d'immersion et de bilinguisme. Pré-requis: aucun sauf pour les étudiant(e)s du programme de français, qui doivent avoir fini Fr 2204, ou Fr 2304, ou un cours équivalent.

FR 3412 Language Acquisition 3 ch (3C)

This is a course in language acquisition with application to French. Topics cover first language acquisition (the IP hypothesis) and second language acquisition of French in immersion and bilingual environments. Prerequisite: No prerequisites except for the students enrolled in a French program, who must have FR2204 or FR2304.

FR 3422 Lhistoire de la langue française

Ce cours présente les concepts de la linguistique diachronique dans la perspective de la grammaire générative en se basant sur lhistoire du français. Parmi les sujets abordés seront les changements du système phonologique, la transition au système sans cas, les changements paramètriques en syntaxe. Pré-requis: aucun sauf pour les étudiant(e)s du programme de français, qui doivent avoir fini Fr 2204, ou Fr 2304, ou un cours équivalent.

FR 3422 The History of the French Language 3 ch (3C)

A generative grammar approach to diachronic linguistics with application to French. Topics: changes in consonant and vowel systems, transition to a non-case system, parametric changes in syntax. Prerequisite: No prerequisites except for the students enrolled in a French program, who must have FR2204 or FR2304.

FR 3432 Variation langagière I : Concepts de base 3 ch (3C)

Étude des variations entre les langues selon leurs paramètres morphologiques. Illustrations et applications inspirées des dialectiques du français et de langlais, des pidgins et des créoles. Prérequis : FR 2204, 2304, ou équivalent.

FR 3432 Dialect Variation I: Basic Concepts 3 ch (3C)

Study of variations among languages as rooted in the setting of morphological parameters. Illustrations and applications from French and English dialects, pidgins and creoles. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3434 Les mots et leurs sens 3 ch (3C)

Quest-ce quun lexique, quest-ce quun dictionnaire? Le mot (son sens, son évolution, ses variations et sa formation) sont au coeur de cette étude sur limpact quotidien de loral et de lécrit dans la communication. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3434 Words and Meaning 3 ch (3C)

What is a lexicon and what is a dictionary? Words (meaning, evolution, variants and formation) are the central topic of this study which looks at the impact of spoken and written words on daily communication. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3442 Variation langagière II: le français acadien 3 ch (3C)

Étude des différences entre le français standard et le français acadien dans la perspective de leur variation paramétrique en morphologie. Une vue densemble de la grammaire française acadienne sert de fondement à létude. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3442 Dialect Variation II: Acadian French 3 ch (3C)

Differences between Standard French and Acadian French are approached from the perspective of parametric variation in morphology. An overview of Acadian French grammar provides the basis for this study. Prerequisite: FR 2204 or 2304, 3422, 3432 or equivalent.

FR 3464 La pensée et la phrase 3 ch (3C)

Pourquoi les usagers dune langue construisent-ils leurs phrases de la même manière? Explication du don inné de lapprentissage dune langue et description de modèles mentaux de création de phrases. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3464 Mind and Sentence 3 ch (3C)

Why do speakers of a language construct their sentences in the same way? An investigation of the innate ability to learn a language is proposed. Mental models for creating sentences are considered. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3514 Communication et expression littéraire 3 ch (3C)

Exploration de la littérature comme mode de communication et comme effets de sens particuliers selon les usages de la prose fictive, de la non-fiction, de la poésie ou du théâtre. Étude de textes dauteurs français du dix-neuvième et du vingtième siècle. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3514 Communication and Literary Form 3 ch (3C)

An exploration of literature as communication, and of the significance inherent in the choice of literary form whether prose fiction, non-fiction, poetry or drama. A variety of texts by French authors of the 19th and 20th centuries will serve as illustration. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3524 Cultures françaises dAfrique et des Caraïbes 3 ch

Ce cours compare certains courants esthétiques et idéologiques propres aux littératures de France, dAfrique et des Caraïbes, dans une perspective post-coloniale.Prérequis : FR 2204, FR 2304 ou équivalent.

FR 3524 Contemporary French African and Caribbean Literatures 3 ch

Examines in a comparative perspective some ideological and aesthetic trends in French, African and Caribbean literatures from a post-colonial point of view. Prerequisite(s): FR 2204 or FR 2304, or equivalent.

FR 3614 Auteurs du dix-huitième siècle 3 ch (3C)

Étude de textes représentatifs de quelques auteurs français importants du dix-huitième siècle. Prérequis: FR 2204 ou 2304, ou équivalent.

FR 3614 Selected 18th Century Authors 3 ch (3C)

A study of selected important works representative of one or two major French authors from the 18th century. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3615 Auteurs du dix-neuvième siècle 3 ch (3C)

Étude de textes représentatifs de quelques auteurs français importants du dix-neuvième siècle. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3615 Selected 19th Century Authors 3 ch (3C)

A study of selected important works representative of one or two major French authors from the 19th century. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3616 Auteurs du vingtième siècle 3 ch (3C)

Étude de textes représentatifs de quelques auteurs français importants du vingtième siècle. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3616 Selected 20th Century Authors 3 ch (3C)

A study of selected important works representative of one or two major French authors from the 20th century. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3704 Aspects des cultures francophones internationales 3 ch (3C)

Ce cours décrit les changements récents dans les cultures francophones d'Afrique et des Caraibes dans contexte post-colonial de leurs rapports avec la France. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3704 Aspects of World Francophone Cultures 3 ch (3C)

This course will exporte recent changes in Francophone countries, mainly African and Caribbean, and their cultural relationships with France in the post-colonial context. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3714 Aspects des cultures acadienne et franco-ontarienne 3 ch (3C)

À titre de cultures minoritaires au Canada, acadiens et franco-ontariens ont développé des identités distinctes. Des origines à nos jours, ce cours porte une attention particulière sur les réalités historiques, sociales et artistiques de ces cultures. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3714 Aspects of Acadian and Franco-Ontarian Cultures 3 ch (3C)

As French cultural minorities in Canada, Acadians and Franco-Ontarians have developed distinctive identifies. From their origins to the present, attention will be given to the historical, social and artistic expressions of these cultures. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3724 Aspects de la culture québécoise 3 ch (3C)

Ce cours porte sur de multiples aspects de la culture québécoise, en particulier lhistoire, la géographie, la langue, la religion, le folklore, la musique, la chanson, léducation, le mouvement des idées et la littérature. Attention spéciale portée sur les grandes questions dans le Québec contemporain. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3724 Aspects of Quebec Culture 3 ch (3C)

This course examines the multiple aspects of Quebec culture focusing on the history, geography, language, religion, folklore, music, songs, education, intellectual movements and literary works. Special attention will be given to contemporary issues in the Quebec society. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3734 Cinéma et litérature 3 ch (3C)

Ce cours porte sur les interactions entre loeuvre littéraire et son adaptation cinématographique. Analyse comparative des séquences narratives, de la représentation et de linterprétation. Une sélection de films français et canadien-français, et leur version cinématographique sert de base au cours. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3734 Language of Cinema and Literature 3 ch (3C)

This course examines the correlation between literary works and their cinematographic adaption. Particular attention is given to the comparative analysis of narrative sequences, representation and interpretation. A selection of French and/or French Canadian movies and novels will serve as a basis for the course. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3744 Media Texts and the Francophone World 3 ch

Based on a corpus of study combining journal articles gleaned from the French press and samplings taken from French television and radio broadcasting, the course proposes an examination of Francophone cultures through analysis of media language, communication strategies and socio-ideological/aesthetic tendencies.

FR 3814 Lexpression littéraire au Canada français 3 ch (3C)

Étude dauteurs canadiens-français, principalement de romanciers. Analyse de lévolution historique, sociale et idéologique des procédés narratifs et du contenu des oeuvres, de 1950 à nos jours. Initiation à la narratologie. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3814 Language of French Canadian Fiction 3 ch (3C)

A study of selected French Canadian authors, particularly novelists. The course proposes to analyze the historical, sociological and ideological evolution of literary content and narrative process, language strategies, from 1950 to the present. Basic concepts in narratology will be introduced. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3824 Le théâtre au Canada français 3 ch (3C)

De Gratien Gélinas a Robert Lepage, le théâtre canadien-français a évolué dune expression de lidentité collective vers une recherche plus orientée sur le langage dramatique. Dans ce contexte, les oeuvres des principaux dramaturges seront analysées. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3824 Language of French Canadian Drama 3 ch (3C)

From Gratien Gélinas to Robert Lepage, French Canadian drama has evolved from the expression of cultural identity to research into the language of drama, gradually emphasizing the relationship of dramatic language and content. In this context, the works of major dramatists will be reviewed. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3844 Michel Tremblay et son temps 3 ch (3C)

Auteur reconnu internationalement, Michel Tremblay a consacré limportance de la culture populaire dans la littérature québécoise dans les années 60. Du Cycle des Belles-Soeurs aux Chroniques du Plateau Mont-Royal, ce cours analyse la consécration de ce jeune classique et son influence dans la société. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3844 Michel Tremblay and His Time 3 ch (3C)

Internationally acclaimed for Les Belles-Soeurs, Michel Tremblay consecrated the cultural importance of « joual» (popular language) in the «quebecois» literature of the late 1960's. Through a selection of his works in drama, autobiography, short stories, movies and novels, this course will review the making of this young «classic» and the influence of this author on society. Prerequisite: FR 2204 or 2304, or equivalent.

FR 4204 Parfaire loral et lécrit 3 ch (3C)

Destiné à développer une connaissance plus authentique du français par ses expressions idiomatiques et ses vocabulaires spécifiques. Ce cours sadresse particulièrement aux étudiants désireux de faciliter leur intégration dans un environnement bilingue. Prérequis : FR 3203 ou 3204, ou équivalent.

FR 4204 Perfecting Oral and Written Skills 3 ch (3C)

Designed to develop a more idiomatic and authentic knowledge of French through active learning and application of more specific vocabulary. This course will prepare students to function effectively in a bilingual work place. Prerequisite: FR 3203, 3204 or equivalent.

FR 4324 Traduction II 3 ch (3C)

Exploration avancée des différences linguistiques par la traduction de documents authentiques de langlais vers le français. Prérequis : FR 3324 ou équivalent

FR 4324 Cross-Linguistic Communication II 3 ch (3C)

Intended to explore cross-communication differences by translation of authentic texts into French - macro level. Prerequisite: FR 3324 or equivalent.

FORENSIC SCIENCE

Note: See beginning of Section F for abbreviations, course numbers and coding.

FRNC 2701 Forensic Science I: Principles of Forensic Science (O) 3 ch

This provides a broad overview of forensic science. It is designed to introduce the different disciplines, principles and concepts peculiar to forensic science. It covers, tin the forensic context, the following areas: history, general definitions and concepts, sub-disciplines, methodology and methods, introduction to crime scene, trace typology, function of expert, legal system, judicial admissibility, ethical considerations, interpretation of forensic evidence.

FRNC 2702 Forensic Science II: Forensic Imaging (O) 3 ch

Covers application of light theory in forensic science(absorption, reflection, UV, IR, diffusion, episcopic coaxial illumination, polarised light, photoluminescence etc), technical and forensic photography(use of large and medium format and single lens reflex cameras), image treatment, optical and electron microscopy, comparison microscopy.

FRNC 3701 Forensic Science III: Forensic Toxicology 1 (O) 3 ch

An introduction to the fundamentals of forensic toxicology. It involves specific forensic material, general pharmacology and toxicology. The subject also gives an overview of Provincial & Federal laws concerning licit and illicit drugs & poisons.

FRNC 3702 Forensic Science IV: Forensic Toxicology 2 (O) 3 ch

An advanced course dealing in some depth with analytical details of the areas covered. The course enables the pharmacology and toxicology of drugs such as cannabis, amphetamines, opiates and cocaine to be taught on parallel with other aspects of these drugs.

FRNC 4700 Honours Research Project in Forensic Science (O) 6 ch

Project in forensic chemistry involving literature search and laboratory work; a work term, or internship on a crime or forensic laborator.

FRNC 4701/ 4702/4705 Forensic Science V/VI/VII : Selected Topics in Forensic Science (O) 9 ch

Forensic cases from chemical & legal standpoints - specialists in forensic science could lecture on a variety of topics including crime scene investigation, the role of the coroner, forensic pathology, forensic botany, forensic entomology, forensic dentistry, psychology and toxicology.

GENDER STUDIES

Note: See beginning of Section F for abbreviations, course numbers and coding.

GEND 2001 Introduction to Gender Studies 3 ch

An introduction to Gender Studies with an emphasis on interdisciplinary perspectives. Examines basic concepts, approaches, and methods pertinent to understanding gender relations and divisions in a global and historical context. Prerequisite: Successful completion of 30 ch or admission to the Certificate in Gender Studies programme.

GEND 4001 Directed Studies 3 ch

Supervised study in some area of Gender Studies to be determined by the student and instructor in consultation with the Gender Studies Coordinator. Prerequisites: GEND 2001 and 9 additional ch of Gender Studies eligible courses.

GEOGRAPHY

Note: See beginning of Section F for abbreviations, course numbers and coding.

GEOG 2001 Introduction to the Regional Geography of Canada 3 ch (3C)

This course offers a general introduction to the regional geography of Canada. Emphasis will be placed upon regional variations in population distribution, elements of the natural environment and resource use. To understand Canadas present landscape, some aspects of the historical evolution of each region will be explored.Prerequisite: none

GEOLOGY

Note: See beginning of Section F for abbreviations, course numbers and coding.

GEOL 1044 The Earth: Its Origin and Evolution 5 ch (3C 3L)

Basic geological concepts, geological time, material of the earth's crust, igneous, sedimentary and metamorphic rocks, earthquakes, evolution of continents and ocean basins, sea-floor spreading and plate tectonics, coastlines.

GEOL 1074 Earth Processes, Resources and the Environment 5 ch (3C 3L)

Structural geology, origin and evolution of life from fossils, geomorphology of landforms, mineral resources and fossil fuels, environmental geology, hydrology, engineering geology. Prerequisite: GEOL 1044.

GEOL 2131 Crystallography and Mineralogy 5 ch (2C 4L)

Fundamentals of crystallography and the classification, identification, occurrence and origin of the major rock and ore-forming minerals. Concludes by defining sedimentary, igneous and metamorphic rocks in terms of mineral assemblages. Prerequisites: GEOL 1044/1074.

GEOL 2142 Optical Mineralogy and Petrography 5 ch (2C 4L)

Fundamental polarizing microscope techniques as applied to the identification of crystalline materials. Systematic study of the composition, phase relations and occurrence of rock-forming minerals with an emphasis on their identification in thin section as individuals and as members of mineral assemblages. Prerequisite: GEOL 2131.

GEOL 2201 Biogeology I (Systematic Paleontology) 5 ch (3C 2L)

Morphology, paleoecology and biostratigraphy of selected groups of marine invertebrates represented in the fossil record; comparisons with modern invertebrates in present-day oceans stressed.

GEOL 2212 Sedimentology I 5 ch (3C 2L)

Sedimentary structures, principles of sedimentation, selected sedimentary environments, with emphasis on marine environments, comparison of present-day models with occurrences in the geological record.

GEOL 2321 Structural Geology I 5 ch (3C 3L)

Emphasis on the description and classification of folds, cleavages, lineations, joints and faults. Presentation of structural data. Use of primary structures. Salt tectonics. Structure of igneous rocks. Laboratories include stereographic projection, interpretation of geological maps and preparation of geological cross sections.

GEOL 2703 Field School 6 ch

Principles of stratigraphic mapping. Prerequisite: GEOL 1044/ 1074.

GEOL 3222 Biota-Substrate Relationships 3 ch (3C)

Relationships between various substrate types, mainly in subtidal marine environments, and benthic biotas they support, with examples drawn mainly from Atlantic (temperate and sub-tropical) and Mediterranean areas. Comparisons between present-day relationships and those from fossil record are made.

GEOL 3442 Environmental Geology 3 ch (3C)

The role of Geology in the management of our environment. Issues examined may include natural hazards; soil, water, mineral and energy resources; contamination; global systems and change. Prerequisite: GEOL 1044 or approved equivalent.

GERMAN

Note: See beginning of Section F for abbreviations, course numbers and coding.

GER 1003 Basic German 3 ch

How Germans pronounce and order their words in questions, answers, commands and various sentence structures. Original German videos and Canadian content improve understanding and motivation.

GER 1004 Improving Basic German 3 ch

Continues the study of the basic elements of German with a Canadian emphasis. Creative oral and written work on subjects chosen by the students is strongly encouraged. Extensive use of audio-visual materials. Prerequisite: GER 1003 or equivalent.

GER 1063 Spoken German 3 ch

Concentrates on the development of conversational skills appropriate to students stated needs. Extensive use of audio-visual materials.Note: Similar to UNBF course GER 1013 Spoken German I.

GER 2003 Creative German 3 ch

Continues to develop the students ability to read, write, speak and understand German. Emphasises oral and written production on subjects chosen by students. Uses shorter German original texts and audio-visual materials. Taught in German and English. Prerequisite: GER 1003 and one of GER 1004, 1063, 1133 or equivalent.

GER 2004 Reading German Literature in German 3 ch

Selected short stories in German, e.g., Ebner-Eschenbach, Kafka, Brecht, Böll, Dürrenmatt and students choices. Taught mainly in German. Prerequisite: GER 2003 or equivalent.

GER 2133 The Contributions of German-Speaking People 3 ch

Examines the contributions to arts, culture, literature science and ideas of selected German-speaking individuals from past and present times. Taught in English.

GER 3003 Literature in German in Translation I (18th/19th Century) 3 ch

Examines selected works of the enlightenment and the storm and stress, classical, romantic and realistic periods, and their contribution to world literature. Taught in English.

GER 3004 Lit. in German in Translation II (20thCentury) 3 ch

Examines important Swiss, Austrian, and German authors and their contribution to world literature. This includes Hesse, Kafka, Brecht, Böll Grass, Hochhuth, Dürrenmatt and Frisch and film versions of the works whenever possible. Taught in English.

GREEK

Note: See beginning of Section F for abbreviations, course numbers and coding.

GRK 1001 Introductory Ancient Greek I 3 ch

A beginners course in Ancient Greek. No previous knowledge of Greek is required.

GRK 1002 Introductory Ancient Greek II 3 ch

A continuation of GRK 1001.

HEALTH SCIENCES

Note: See beginning of Section F for abbreviations, course numbers and coding.

HSCI 3032 Communication for Health Professionals (Cross Listed: NURS 3031) 4 ch (3C 1L)

Includes reflection, discussion and inquiry on concepts related to understanding and improving interpersonal communication within a health care context. Focuses on complex interpersonal dilemmas, demands and difficulties faced by health care professionals in the workplace. Students will analyse interactions using knowledge of communication theory; demonstrate appropriate interpersonal skills in caring/helping relationships; and apply self-knowledge in interpersonal relations. Prerequisite: BN students - successful completion of year 2 Nursing courses; BHS students - successful completion of year 1 BSc courses or CMA certification in Radiation Technology, Nuclear Medicine, Radiation Oncology or Respiratory Therapy.

HSCI 4091 Health Science Research 3 ch (3C)

Introduces the purpose, process and utilization of health science research. The interrelationships among theory, practice and research are explored. Students critique research studies. (For Health Science (BHS) students only.) Co-requisite: STAT 2263 or approved substitute.

HISTORY & ENGLISH - Joint Honours Program

Note: See beginning of Section F for abbreviations, course numbers and coding.

HENG 4000 Honours Thesis 6 ch [W]

Honours thesis for Joint Honours Programme in English and History. Prerequisites: Acceptance into the Joint Honours Programme in English and History.

HISTORY

Note: See beginning of Section F for abbreviations, course numbers and coding.

HIST 1101 The European Experience 3 ch

This semester course will introduce students to the history of continental Europe and the goals and methods of historical studies. A flexible set of lectures, discussion periods and assignments will explore social, cultural, economic and political issues illustrative of a wide range of European experiences, as well as the central role of this continent in the shaping of our contemporary world.

HIST 1201 British Experience 3 ch

Introduces British history of the period 1480 to the present using a biographical approach. From the high and mighty to the low and powerless, the lives of several individuals of various social ranks will be examined. The successes and limitations of biography as a means of historical understanding will be explored.

HIST 1301 Canadian Historical Issues 3 ch

This course is designed to introduce students to the methodology and techniques of historical study. It will focus on the historical background to current issues in Canadian society, culture and politics.

HIST 1401 The American Experience 3 ch

HIST 1401 is an introductory course focusing on American Social History. Through lecture, discussion and written assignments, students will examine questions about how men and women make history, as well as questions about how history is shaped by those writing it. This course will offer students an opportunity to do historical research, improve communication skills, and develop a critical scholarly approach.

HIST 1501 The Latin American Experience 3 ch

Introduces students to the methodology and techniques of historical study through a thematic introduction to Latin American history, society and culture.

HIST 2000 World History 6 ch (3C) [W]

Will examine the distinctive achievements of major world civilizations, such as China, India, Egypt and the Mediterranean World, Islam, East and West Africa, Western Europe and the Americas. Emphasis will be given to cross cultural interactions such as trade, slavery, religion, war, disease, technological exchange and imperialism.

HIST 2010 Comp. Colonial Settlements 1450-1763 6 ch (3C) [W]

Intended as an introduction to more intensive studies of empires and imperialism, this course includes some study of the civilizations of the world prior to the European impact upon them, surveys the overseas empires of Spain, Portugal, France, Holland and Britain and the overland empire of Russia, and concludes with a consideration of the impact of the overseas world on Europe.

HIST 2101 European History: French Revolution to the Great War 3 ch [W]

A survey of political, social, economic and cultural developments in modern Europe from 1789 to 1919. Topics examined include the French Revolution and Napoleon, the Restoration, Nation-building, colonial rivalry and the Great War of 1914-1918.

HIST 2102 European History: Great War to European Union 3 ch (3C) [W]

A survey of the political, social, economic and cultural development of Modern Europe from the Great War to the emergence of the European Union. Topics examined will include: the rise of Fascism and Nazism; the Russian Revolution and Stalinism; Antisemitism and the Holocaust; and the re-birth of Europe since 1945. Prerequisite: HIST 2101

HIST 2207 England and Scotland: 1483-1708 3 ch [W]

A political history of these two countries in the early modern era. Prerequisite: Any 3 ch of 1000 level History or Classics

HIST 2208 Great Britain: 1707 to Present 3 ch [W]

The political, social and economic history of Great Britain in the modern era. Prerequisite: HIST 2207

HIST 2301 Canadian History Before Confederation 3 ch [W]

A survey of Canadian history from the age of exploration through the Colonial era to the British North American Act of 1867.Prerequisite: HIST 1301 or equivalent

HIST 2302 Canadian History Since Confederation 3 ch

A survey of Canadian history from 1867 through western expansion, the growth of an industrial society, the wars of the 20th century and into the re-examination of Confederation of the late 20th century. Prerequisite: HIST 2301.

HIST 2407 U.S. History: Colony to Nation 3 ch [W]

A general survey of political, economic, and social developments from the colonial period to the 19th century. Themes examined will include: Puritan New England, native peoples and colonists, slavery, the American Revolution, and nationalism. Prerequisites: 3ch of (any) 1000 level history course

HIST 2408 U.S. History: Since Independence 3 ch [W]

A general survey of political, economic, and social developments from the Revolution to the present. Themes examined will include: territorial expansion, the Civil War, the rise of corporate America, protest and reform movements, and the US in international affairs. Prerequisites: HIST 2407

HIST 3003 Women in European History 3 ch (3C) [W]

A survey of the changing roles of women from the Middle Ages through modern industrialization. Studies major texts defining womans place in European society. Specific topics include attitudes to women, family and work patterns, education, and emerging public roles.

HIST 3041 Global Issues in the 20th Century 3 ch

This course examines a series of contemporary global issues in historical perspective. It will take a thematic approach to a variety of key 20th century subjects and will cover such topics as women's rights, anti-Semitism, the origins of the environmental movement, economic integration and globalization, indigenous land rights, urbanization, trends in popular culture, technological innovations, and militarization.

HIST 3101 European Personalities, Power and Politics 3 ch

Explores 19th and 20th century Europe from the perspective of the political lives and exploits of such notables as Napoleon, Metternich, Cavour, Bismarck, Mussolini, Hitler and Stalin. Topics will include the role of biography in historiography, the dynamics of centralized power, and the cult of personality. Prerequisites: HIST 2101 and HIST 2102 or permission of the Instructor.

HIST 3102 Racism in Europe: Science, Myth and Politics 3 ch

Traces the rise and fall of Fascist racism in 20th century Europe. Topics include the background and genesis of Fascist racial doctrines, and the political rationale legitimizing genocide in the period between 1922 and 1945. Special attention will be given to Fascist eugenics, racial propaganda, antisemitism and the Holocaust, the impact of survivor testimony in oral history, and the political significance of war crimes tribunals. Prerequisites: HIST 2101 and HIST 2102 or permission of the Instructor.

HIST 3105 Fascism on Film 3 ch

Explores the work of film makers who have used the medium of feature film to interpret the rise and fall of the European Fascist experience in the years between the two World Wars. Lectures, discussions, film screenings, and critical film reviews will measure the extent to which these film makers created cinematic historical documents designed to meet the needs of a devastated and defeated continental society embarking on a path of rebirth and renewal. Prerequisites: HIST 2101 and HIST 2102 or permission of the Instructor.

HIST 3106 The Rise of Fascism and Nazism in Europe 1890s to 1945 3 ch [W]

Examines the crises faced by European nations from the 1890s to 1945 that produced fascist movements. Using primary sources the course explores the relation between fascism and other tendencies such as nationalism, imperialism, antisemitism and biological racism. Prerequisites: Two of the following: HIST 2101, HIST 2102, HIST 2207, HIST 2208.

HIST 3107 Propaganda, Politics and Film in Modern Europe 3 ch [W]

This course explores the political and social dynamics of film in modern Europe between 1918 and 1945. The experiences of Britain, France, Italy, Germany and Russia in the period between the two World Wars in using film for communication and propaganda will be examined. Prerequisites: Two of the following: HIST 2101, HIST 2102, HIST 2207, HIST 2208.

HIST 3174 Nation-States in Modern Europe: France, Germany and Italy in Comparative Perspective 3 ch [W]

This course will provide a comparative survey of the political, social, economic and cultural aspects of important liberal democracies of continental Western Europe: France, Germany and Italy. Topics include: governmental functions and structures; modernization; democracy; supra-nationalism; sovereignty and the European Union. Prerequisites: Two of the following: HIST 2101, HIST 2102, HIST 2207, HIST 2208.

HIST 3185 Britain, 1688-1760: The Age of Oligarchy 3 ch (3C) [W]

Analyzes the Glorious Revolution and its consequences, the intellectual revolution of the late 17th century, the emergence of Britain as a military power under William and Anne and the union with Scotland, the roots and course of the Agricultural Revolution, the beginnings of the Industrial Revolution, the rule of the Whig oligarchy and the social development and the cultural transformation of the period. Prerequisites: Two of HIST 2101, 2102, 2207, 2208

HIST 3195 Britain in the Age of Revolution, 1760-1832 3 ch (3C) [W]

Studies Great Britain and Ireland in the years of transition from the age of classicism and aristocracy to the age of romanticism and liberal reform. Emphasis on political history and on the modernization of government in response to the problems of war, the dramatic increase in population and the agricultural and industrial revolutions. Attention is also paid to the treatment of convicts and slaves in an increasingly humanitarian age, and the development of new economic, social and political ideologies. Prerequisites: Two of HIST 2101, HIST 2102, HIST 2207, HIST 2208.

HIST 3202 England Under the Tudors 3 ch

An examination of the events and conditions in England during the Tudor dynasty, 1485-1603. Attention will be paid to political, religious, intellectual, economic and social issues. Prerequisites: Two of HIST 2101, HIST 2102, HIST 2207, HIST 2208.

HIST 3205 Victorian and Edwardian Britain, 1833-1910 3 ch (3C) [W]

Considers the political, economic and social structures of Victorian and Edwardian Britain. Topics incude religion, the family, trade unionism, imperialism, Darwinism and urbanization. Prerequisites: Two of HIST 2101, HIST 2102, HIST 2207, HIST 2208.

HIST 3212 England Under the Stuarts 3 ch

An examination of the changing political, intellectual, religious and social conditions in England during the tumultuous period dating from the reign of James I in 1603 to the end of the Glorious Revolution in 1688-89. Prerequisites: Two of HIST 2101, 2102, 2207, 2208.

HIST 3255 Anglo-Irish Relations 3 ch (3C) [W]

This course will examine the history of Ireland and the United Kingdom between 1780-1980. It will seek to discover the sources of Anglo-Irish conflict and the various steps taken to resolve that conflict. Credit cannot be obtained for both this course and HIST 3290. This course together with HIST 3265 will replace HIST 3290. Prerequisites: Two of HIST 2101, HIST 2102, HIST 2207, HIST 2208.

HIST 3265 Ireland: Conquest and Subordination 1500-1800 3 ch (3C) [W]

A survey of Ireland from the rise of the Tudor Monarchy to the Act of Union with Britain.Note: Credit cannot be obtained for both this course and HIST 3290. This course, together with HIST 3295 and HIST 3255, will replace HIST 3290. Prerequisites: Two of HIST 2101, HIST 2102, HIST 2207, HIST 2208.

HIST 3275 History of Scotland I 3 ch (3C) [W]

This course will examine the emergence of a Scottish Kingdom, the Knoxian Reformation, the union with England, the Jacobite rebellions, the Scottish Enlightenment and Industrial Revolution, the Highland Clearances, and the attainment of Parliamentary democracy.

HIST 3285 Social History of Modern Scotland 3 ch (3C) [W]

This course takes a topical approach and assumes a background knowledge of Scottish history on the part of the student. Topics to be considered include the Highland-Lowland division, the changing linguistic pattern, the cause of emigration, urbanization, the rise of trade union and labour movements, and the emergence of an independence movement. Prerequisite: HIST 3275.

HIST 3290 An Intro to the History of Ireland 6 ch (3C) [W]

A survey of the development of the history of the Irish people from the mythological origin, early Christianity, the Norse invasions, the Norman conquest, the Gaelic revival, the Tudor wars, the Plantations, Cromwell, the Penal Period, the rise of the Protestant Nation, the Union, Catholic Emancipation, the Famine, the struggle for political reform, to the rise of the modern political state of Ireland. Credit will not be granted for both HIST 3290, HIST 3255 and HIST 3295 Prerequisite: HIST 1150 or Instructors permission.

HIST 3295 Medieval and Norman Ireland, 500-1500 3 ch (3C) [W]

A survey of early Irish history from the introduction of Christianity to the establishment of control by Tudor England.Note: Credit cannot be obtained for both this course and HIST 3290. This course, together with HIST 3265 and HIST 3255, will replace HIST 3290. Prerequisites: Two of HIST 2101, HIST 2102, HIST 2207, HIST 2208.

HIST 3303 Women in Canadian History 3 ch (3C) [W]

A survey of changing roles of women in Canadian History. Studies major texts on the condition of women in Canadian history. Specific topics include: attitudes to women, education, work patterns, family and public roles.

HIST 3305 Canadian Nationalism 3 ch (3C) [W]

Course will examine the phenomenon of nationalism, its role in Canadian development in the nineteenth century and such alternate movements as French Canadian nationalism, provincial rights, Continentalism, and Imperialism. Writings of major political and cultural leaders will be studied.Credit will not be granted for both HIST 3305 and HIST 3320. This course with HIST 3315 will replace HIST 3320.

HIST 3311 Canada-U.S. Relations 1867-1945 3 ch [W]

This course examines the major themes in Canada-United States relations from Confederation until the end of World War II. Specific areas include trade, diplomacy, military relations, cultural issues and how Americans and Canadians viewed each others societies. Prerequisite: HIST 2301.

HIST 3312 Canada-United States Relations Since 1945 3 ch [W]

This course examines Canadian-American Relations from 1945 to the Mulroney-Reagan era. It explores diplomatic, defence, economic, cultural and environmental issues. Prerequisite: HIST 2302.

HIST 3315 Twentieth Century Canada 3 ch (3C) [W]

Course will investigate the quest for Canadian autonomy in politics, foreign affairs, constitutional reform and cultural expression since 1914. The efforts of the central government to foster national unity in the face of sustained regional and ethnic tension will be studied. Credit will not be granted for HIST 3315 and HIST 3320. This course with HIST 3305 will replace HIST 3320.

HIST 3316 Immigration and Identity in Canadian History 3 ch [W]

Examines the changing pattern of immigration to Canada from the early seventeenth century to the present, and the contribution of the various immigrant groups to the creation of a sense of Canadian identity. Prerequisite: HIST 2302.

HIST 3317 Historical Geography of Canada before Confederation 3 ch (3C)

The development of Canada from European contact until the middle of the nineteenth century from a geographical perspective. This course deals with exploration, migration and settlement, the staple trades, the agricultural economy and the developing urban system. Prerequisite: 15 ch of History courses.

HIST 3321 Canadian Colonial Society 3 ch [W]

Examines the formation and nature of community in pre-industrial English Canada. Particular attention given to demography, immigrant and religious traditions, economic and environmental factors, poverty, social structure and the growth of towns. Prerequisite: HIST 2302.

HIST 3335 Canadian Military History (O) 3 ch (3C)

Provides an historical overview of the military in Canada, and of the evolving relationship between the military and society from colonial times through to the present. Prerequisite: HIST 2301 or HIST 2302.

HIST 3361 Atlantic Provinces 1497 - 1784 3 ch

A history of the Atlantic region of Canada from the time of earliest European explorations to the formation of the second Empire in North America. Prerequisite: HIST 2302 or equivalent.

HIST 3362 Atlantic Provinces 1784 - 1867 3 ch

A history of the Atlantic region of Canada from the formation of the Second Empire to Confederation with Canada. Prerequisite: HIST 2302 or equivalent.

HIST 3363 History of the Atlantic Provinces After Confederation 3 ch

A history of the region after Confederation to the present day with focus on movements for social, economic, and political reform. Equivalent to HIST 4342 UNBF. Prerequisite: HIST 2302 or equivalent.

HIST 3365 The Formation of Loyalist Canada 3 ch (3C) [W]

Traces the settlement of the Loyalists in Nova Scotia, New Brunswick, Quebec, and Upper Canada after the American Revolution. Particular attention is paid to Loyalist ideology and the types of communities and institutions they established in British North America and to the subsequent impact of the Loyalist myth on Canadian history.

HIST 3377 Social History of Crime in Canada 3 ch (3C)

An examination of how Canadian society has perceived and reacted to crime and criminals from early Colonial times to the mid-twentieth century. Prerequisite: HIST 2302 or equivalent.

HIST 3381 The Family and the State in North America 3 ch (3C)

Examines the economic and social functions of the family in the transition from pre-industrial to industrial society. Topics include the religious underpinnings of the family, gender relations, the role of laws and state regulation, the impact of social policy and the emergence of a North American politics of the family. Prerequisite: one of HIST 2301, HIST 2302, HIST 2407, HIST 2408 or 15 ch of History courses.

HIST 3383 Police and Society in North America 3 ch (3C)

Examines the development of the new Police and its relationship to 19th and 20th century North American society. Themes will include the European origins of policing, police reform, professionalization, labour relations, relations with minorities, political policing and private security. Prerequisite: one of HIST 2301, HIST 2302, HIST 2407, HIST 2408 or 15 ch of History courses.

HIST 3386 Canadian Criminal Justice System 3 ch

An examination of the Canadian criminal justice system with an emphasis on criminal law, courts, police and corrections from the Colonial era to the mid-twentieth century. Prerequisite: HIST 2302 or equivalent

HIST 3403 Women in American History 3 ch (3C) [W]

Survey of the changing roles of women from colonial times until today. Studies major texts on the condition of women. Specific topics include education, work patterns, the suffragette movement and feminist theory.

HIST 3421 From the Age of Discovery to the Atomic Age: Science in America 3 ch (3C) [W]

America's position as a world superpower has many sources, none more important than science. This course will focus on the American fascination with science. Social and political themes will be examined, in addition to intellectual developments in science.

HIST 3455 Colonial America 3 ch (3C) [W]

Deals with the exploration, settlement and development of America from the beginning until the 18th century both in the context of local history and the broad European-American background, focusing on the original thirteen colonies that became the United States.

HIST 3465 The American Revolution 3 ch (3C) [W]

Deals with the causes, results and nature of the American Revolution. Themes include imperial relations, the internal development of the colonies and states, the development of revolutionary ideas, and the formation of the federal government. Attention given to the conflicting interpretations of these themes.

HIST 3471 Indigenous Peoples in America before 1800 3 ch (3C) [W]

This course will focus on the history of Native People in the post-contact period. Relationships based on missions, the fur trade, and colonization will be examined.

HIST 3473 Native People in the United States since the American Revolution 3 ch (3C) [W]

This course will focus on government policies pertaining to Native People, beginning in the early National period. The history of Natives and Newcomers in the nineteenth century will be emphasized, although twentieth century issues will also be examined.

HIST 3475 The American South 3 ch (1.5C 1.5S)

Beginning with the arrival of the first settlers and their relationship with aboriginal peoples, through the development of a distinctive culture and society based on slavery, HIST 3475 will focus on social, intellectual, economic and political themes in southern history. Prerequisites: HIST 2407 and HIST 2408.

HIST 3481 American Society, 1830-1900 3 ch (3C) [W]

With the Revolution and its aftermath consolidated, the United States embarked on nation-building and continental expansion, profoundly altering the economic, social and political character of revolutionary America. The course traces these changes and seeks to assess how well Americans and American society adapted to them. Prerequisite: HIST 2400 or permission of the instructor.

HIST 3485 American History & the Mass Media 3 ch

This is an advanced course in American history focusing on how history has been presented and promoted to an increasingly numerous and educated audience. Analysis of media used for entertainment or propaganda will be based on studies of the historical literature, as well as theoretical literature in film and media studies. Must be a History Major, or by permission of the Instructor.

HIST 3491 American Society, 1900-1980 3 ch (3C) [W]

Examines how the United States came to terms with the legacy of nineteenth-century growth and development as it transformed itself into a mature nation and society. Considers the impact of the depression, World War I and World War II on the United States, along with its growing impact on the world. Prerequisite: HIST 2400 or permission of the instructor.

HIST 3505 History of Reform in Modern America 3 ch (3C) [W]

The political and social struggle of Populists, Progressives, New Dealers and Radicals are the focal points of this survey. Prerequisite: HIST 1400 or permission of the instructor.

HIST 3525 US Diplomatic History in the 20th Century 3 ch (3C) (W)

The growth of the great power from isolation to world leadership. The basic premises of American policy are studied as well as the United States role in the great confrontations of the century from World War One to the Cold War, the American withdrawal from Vietnam and the reorientation of US policy. Prerequisite: HIST 1400 or permission of the instructor.

HIST 3555 History of the Atlantic World 3 ch (3C)

History of the Atlantic slave trade, plantation societies in the Caribbean region, Atlantic trade networks, the abolition of Atlantic slavery, and emancipation. Prerequisite: 15 credit hours of History.

HIST 3560 American Intellectual History 6 ch (3C) [W]

A study of the major developments in American political, religious, and social thought from the Federalist Era to the Counter Culture of the late 1960s. Emphasis on the relationship between ideas and the formation of public institutions, economic structures, and cultural movements. Prerequisite: HIST 2400 or permission of the instructor.

HIST 3567 The Colonial History of Latin America 3 ch

The objective of the course is to provide a broad social, political, and economic overview of Latin America under Spanish and Portuguese colonial rule.Prerequisites: At least 6 ch of lower level history or permission of the Instructor.

HIST 3577 The History of the Caribbean Since 1492 3 ch (3C)

Provides a broad social, political, and economic overview of the Caribbean since 1492. Prerequisites: At least 6 ch of lower level history including HIST 1501 or permission of the instructor.

HIST 3588 Modern Latin American Revolutions 3ch (3C)

Origins, course, and development of the Mexican Revolution (1910-40) and the Cuban Revolution (1959-present). Prerequisite: 15 credit hours of History

HIST 3715 European Union: Historical Roots, Obstacles and Achievements 3 ch (3C) [W]

Over the last fifty years, many European countries have embarked on a slow and complex attempt to build a European Union. While the shape of this entity remains very much in question, substantial achievements have already transformed Europe to a degree that would have been difficult to imagine in the aftermath of the Second World War. This course will search for historical antecedents to the current efforts, analyze the fundamental questions raised by unification, and evaluate the impact of existing common structures on European states and societies.

HIST 3945 Women, Science and Medicine 3 ch (3C) [W]

This course will focus on the relationship between gender and science. Women's participation in science and medicine will be examined, as well as the philosophical and empirical underpinnings of science and medicine. Contemporary issues will be discussed, but the focus is historical, beginning with Aristotelian science and Hippocratic medicine.

HIST 4333 History: Theory and Practice 3 ch (3S)

Introduces historical methodology, the process of historical research, and the influences on selected major historical studies. Prerequisite: HIST 4333 is mandatory for Honours students; other students must have permission of the instructor.

HIST 4361 Studies in the Historical Sociology of Saint John: Community 3 ch

Drawing upon the intellectual structures of both history and sociology, aspects of the community of Saint John will be explored. Consideration will be given to the community as space, as people, as shared institutions, and a social system. Prerequisite: Must be a History major, or by permission of the Instructor.

HIST 4362 Studies in the Historical Sociology of Saint John: Religion 3 ch

Drawing upon the intellectual structures of both history and sociology, aspects of the role of religion in Saint John will be explored. Consideration will be given to religion as an institution, religion in politics, and religion and gender. Prerequisites: Must be a History Major, or by permission of the Instructor.

HIST 4451 The US as a Great Power, 1900-1939 3 ch (3C) [W]

During the years 1900-1939 the United States was forced to come to terms with its new international status. The course examines how this took place and explores the reaction of American society to its new role. Prerequisite: HIST 2400 or permission of the instructor.

HIST 4461 The US as a Great Power, 1945-Present 3 ch (3C) (W)

Considers the role of the United States as a great power after World War II. Examines intensively the interplay of domestic policies and politics with international affairs. Prerequisite: HIST 2400 or permission of the instructor.

HIST 4475 The American South: From Jamestown to Jimmy Carter 3 ch

Beginning with the arrival of the first settlers and their relationships with aboriginal peoples through the development of a distinctive culture and society based on slavery, to the "New South" of the late 19th century and the industrialized south of the 20th century, HIST 4475 will focus on social, intellectual, economic and political themes in southern history. Must be a History Major, or by permission of the Instructor.

HIST 4900 Honours Thesis 6 ch [W]

Prerequisite: Honours admission.

HIST 4906 Honours Seminar 3 ch (3CS) [W]

Selected topics for Honours History students. Prerequisite: Honours admission.

HOSPITALITY AND TOURISM

Notes:

In order to take a Hospitality and Tourism (HTM) course that has a prerequisite, students must earn a C or better in the prerequisite course(s), regardless of the program in which the student is registered.

Students who feel they have the equivalent prerequisite background through a combination of coursework and work experience, may apply to the Faculty of Business on a Permission and Request Form for permission to enter a course. These forms are available from the Faculty of Business office in Oland Hall.

Note: See beginning of Section F for abbreviations, course numbers and coding.

HTM 1103 Introduction to Tourism 3 ch

This course is designed to acquaint students with the broad topic of tourism. Emphasis is placed on the socio-cultural, environmental and economic impacts of tourism. In addition, the course focuses on the interdisciplinary nature of tourism, with pertinent elements drawn from business, economics, sociology, psychology, recreation and geography.

HTM 2103 International Tourism 3 ch (3C)

This course studies the special characteristics of international tourism. Topics may include: the nature, importance and measurement of international travel, the impact of host/visitor interactions, factors affecting the motivation of travelers, and the constraints on travelers. Prerequisite: HTM 1103.

HTM 2217 Management Accounting For The Hospitality Industries 3 ch (3C)

This course examines the use of accounting information for planning and control in hospitality and tourism operations. Topics to be covered include cost-volume-profit analysis, budget planning and control, ABC costing, and performance evaluation all geared to the industry. Also included will be an introduction to measuring the costs of quality and to yield management. NOTE: Credit will not be granted for both HTM 2217 and BA2217.

HTM 2858 Human Resource Management In the Hospitality Industry 3 ch (3C)

An analysis of the human resource management problems involved in the delivery of services including recruitment, selection, training and development, motivation, compensation, communication, unionism and labour market issues. Emphasis will be placed on the particular human resource challenges that present themselves in the service industries and the linkages between human resources overall business objectives. NOTE: Credit will not be granted for both HTM 2858 and BA 2858.

HTM 2903 Workterm Report I 1 ch

Identifies an opportunity or problem in the workplace, analyzes its sources and development, addresses key issues to be considered, offers alternatives and makes recommendations, including clear provisions for implementation.

HTM 3505 Resort And Recreation Management 3 ch (3C)

This course considers concepts and methods of resort planning, management and marketing, including recreational and event management for the resort environment. Case studies of real and proposed resorts from different environments will be used. Field visits to one or more resorts will be an essential part of the course. Prerequisite: HTM 1103.

HTM 3506 Festivals and Events Management (A) 3 ch

The goal of this course will be to familiarize the student with this exciting and dynamic segment of the tourism and recreation industry. It will examine specific aspects of contemporary sport, community and cultural events; and the meeting, incentive, convention (MICE) industry. Topics to be studied include the main functions of Events Managers in the areas of development, planning, programming, marketing and promotions, facility management, human resources and finance. Students will be presented with case studies and applied projects Prerequisite: HTM 1103.

HTM 3555 Adventure And Leisure Tourism 3 ch (3C)

This course will explore issues related to entrepreneurial small business development in the growing adventure and leisure sector of the Tourism Industry. Participants will have the opportunity to research emerging trends and issues related to the feasibility of creating service products to serve this market. Small business models which allow for the creation of stable enterprises in an often seasonal market will be examined. Prerequisite: HTM 1103.

HTM 3903 Workterm Report II 1 ch

Identifies an opportunity or problem in the workplace, analyzes its sources and development, addresses key issues to be considered, offers alternatives and makes recommendations, including clear provisions for implementation.

HTM 4101 Competitive Strategy 3 ch (3C)

This is an integrative course dealing with the many interdepartmental and interdisciplinary problems confronting the management team in addressing organizations with opportunities and problems. Extensive use will be made of case studies and on-site assignments or projects. Emphasis will be placed on productivity and the delivery of a quality product within a competitive environment. Note: credit will not be granted for both HTM 4101 and BA 4101. Prerequisite: Credit in all courses required for the BAMHT except HTM 4161.

HTM 4111 Travel Writing and Photography 3 ch (3C)

Provides an introduction to the travel writing industry. Topics include the responsibilities and ethics of the travel writing profession and an examination of how visual imagery relates to tourism marketing, motivation, service quality and visitor satisfaction. Prerequisite: HTM 1103 or permission of the faculty.

HTM 4129 Tourism Research Methods 3 ch (3C)

This course focuses on the knowledge and skills required to understand the importance of research in successful businesses. The course emphasizes the interpretation and evaluation of existing research. Prerequisites: BA1605 and BA2606

HTM 4161 Planning & Development of Sustainable Tourism 3 ch (3C)

This course examines the nature and scope of tourism planning and development from the perspective of markets, attractions, services, transportation suppliers, natural resources and government policy makers. Emphasis will be placed on community and regional tourism planning, with attention paid to economic, physical, environmental and social considerations of planning for tourism entities and destinations. Prerequisite: Open to fourth year students who have successfully completed HTM 4129, or permission of the Faculty.

HTM 4503 Independent Study - Hospitality and Tourism 3 ch

This course will provide the student with a deepening knowledge in the Hospitality and Tourism area. Under the supervision of a Faculty member, the student will explore topics not available in the regular course offerings. The course may consist of written assignments, oral examinations and written examinations. Students must identify a faculty member who is willing to supervise the course and apply to the Director, Undergraduate Studies for approval at least 30 days prior to the term in which they wish to undertake the work. Applications are normally approved for students who are in their senior year and who have obtained a grade point average of at least 3.0 in the work of the second and third years.

HTM 4516 Natural Area Tourism 3 ch

This course will examine in detail the management of tourism in natural areas. Topics will include an introduction to ecology, and how ecological and related sustainable management principles are used to manage visitors to natural parks and equivalent reserves. Students interested in outdoor recreation, adventure tourism, park and heritage management and related topics would find this course an advantage. Prerequisite: Students should have successfully completed HTM 1103 or permission of the Faculty. This is a Web based course and a good understanding of MS Word and Excel as well as the Internet would be an advantage.

HTM 4535 Special Topics In Hospitality Management/Tourism And Travel 3 ch (3C)

This course surveys various issues and events that influence the hospitality and tourism industries. Topics will vary from year to year reflecting contemporary issues and events.

HTM 4545 Special Topics In Hospitality Management/Tourism And Travel 3 ch (3C)

This course surveys various issues and events that influence the hospitality and tourism industries. Topics will vary from year to year reflecting contemporary issues and events.

HTM 4565 Heritage Tourism 3 ch (3C)

This course explores the nature of heritage tourism. It surveys the issues that influence the development of heritage for tourism. Perspectives on heritage provisions for tourism will be examined in the context of social, cultural, tourism policies at the provincial, national, and international levels. Prerequisite: HTM 1103.

HTM 4903 Workterm Report III 1 ch

Identifies an opportunity or problem in the workplace, analyzes its sources and development, addresses key issues to be considered, offers alternatives and makes recommendations, including clear provisions for implementation.

HUMANITIES

Note: See beginning of Section F for abbreviations, course numbers and coding.

HUM 1401 Introduction to Music 3 ch [W]

An introduction to the development of music from the origins of musical performance and compositions to the relationships of music with present computer technology, and to the appreciation of music.

HUM 1903 Introduction to Art and Architecture I 3 ch (3C) [W]

A comprehensive review of the elements, terminology, methods and concepts underlying the History of Art and Architecture from pre-historic times to the present. This course is part one of two and covers the periods from Pre-history to the end of the Middle Ages. Prerequisite to upper-level Art History courses.

HUM 1904 Introduction to Art and Architecture II 3 ch (3C) [W]

A comprehensive review of the elements, terminology, methods and concepts underlying the History of Art and Architecture from pre-historic times to the present. This course is part two of two and covers the periods from Renaissance to the present day. Prerequisite to upper-level Art History courses.

HUM 2003 Theory and Practice of Technical and Professional Communication I (O) 3 ch (3C)

A broad-based introduction to theories of workplace communication. Introduces the practice of workplace and other professional communication including technical writing, editing, proof-reading, document design, on-line publishing. Prerequisite: HUM 2121.

HUM 2121 Effective Writing I (A) 3 ch (3C) [W]

Examines various aspects of effective writing in English including vocabulary, sentence structure, organization of material, and essays of a descriptive, comparative, expository, critical and argumentative nature. Includes numerous written exercises.

HUM 3003 Theory and Practice of Technical and Professional Communication II (O) 3 ch (3C)

Develops students understanding of current theory and research in workplace communication, and gives them the opportunity to pursue workplace and other professional communication (including technical writing, editing, proof-reading, document design, on-line publishing) in more depth. Prerequisite: HUM 2003.

HUM 3121 Effective Writing II (A) 3 ch (3C) [W]

This course develops academic skills in writing and research, and focuses on how critical analysis is used across the disciplines. Students will be introduces to methods of appraising and critiquing academic materials, developing skills in supporting a scholarly argument, and understanding ethical issues in research and writing. Prerequisite: HUM 2121.

HUM 3205 Baroque and Rococo Art 3 ch [W]

A study of the history of Art and Architecture in Europe during the 17th and 18th centuries. Prerequisites: HUM 1903, HUM 1904.

HUM 3208 Renaissance Art 3 ch [W]

Examines developments in painting, sculpture and architecture during the fifteenth and sixteenth centuries in Italy and in the rest of Europe. Prerequisites: HUM 1903, HUM 1904.

HUM 3924 History of Modern Art 3 ch (3C) [W]

A study of major movements in the art of the 19th and early 20th centuries from Neo-classicism to Surrealism.

HUM 3953 American Painting 3 ch (3C) [W]

A history of painting in the United States from the time of the Revolution to the 1960s, including Abstract Expressionism and Pop Art.

HUM 3964 Canadian Painting 3 ch (3C) [W]

A history of Canadian Painting, emphasizing developments in the twentieth century.

INTERNATIONAL STUDIES

Note: See beginning of Section F for abbreviations, course numbers and coding.

IS 1001 Introduction to International Studies 3 ch

An interdisciplinary introduction to the regional approach to International Studies. The course examines the political, social and economic aspects of developing and developed regions.

IS 1002 Global Issues 3 ch

An interdisciplinary examination of issues and problems relating to the environment, human rights, gender and inequality, migration, and poverty in a global perspective. Prerequisite: IS 1001. Prerequisite: IS 1001.

IS 3301 The Contemporary Mediterranean Region 3 ch

Interdisciplinary examination of the basic features of the contemporary Mediterranean. Prerequisites: IS 1001, IS 1002.

IS 3401 Contemporary Latin America 3 ch

Interdisciplinary examination of the basic features of contemporary Latin America. Prerequisites: IS 1001, IS 1002.

IS 3501 Work & Labour in the International Economy 3 ch (3S) (LE)

Interdisciplinary advanced seminar on the history of work and labour in the international economy. Prerequisites: IS 1001 and IS 1002.

IS 4501 Research Project in International Studies 3 ch

A seminar requirement of the International Studies Program to enable students to do research. Prerequisites: IS 1001, IS 1002 and 9 ch in IS courses, or permission of the instructor.

INFORMATION AND COMMUNICATION STUDIES

Note: See beginning of Section F for abbreviations, course numbers and coding.

ICS 1001 History of Communication 3 ch (3C)

A survey of the great revolutions in human communication of speech, literacy, printing and electronic communication. Examines how new media of communication come into being, their impact on earlier forms of communication, their impact on society, and the influence society and culture have on communication technologies.

ICS 2001 Introduction to Information and Communication Studies 3 ch

This course is a basic introduction to the social, cultural, political, economic and technological aspects of the information and communication revolution.

ICS 2101 Popular Music, Culture and Communication (O) 3 ch (3C)

A general introduction to the study of Western popular music as both a cultural industry and as a form of communication which presents students with an overview of post-war popular music genres from rock n roll to contemporary dance music.

ICS 3001 Theories of Information and Communication 3 ch

This focuses on theoretical issues regarding the political and social implications of the information and communication revolution. Specific themes to be covered include society and technological change, communication technologies, globalization and the digital revolution. Prerequisites: ICS 2001.

ICS 3003 Electronic Research 3 ch

This course provides students with an advanced introduction to conducting web-based research and the use of electronic research tools. Prerequisites: ICS 2001.

ICS 3004 Media Production I 3 ch (3C)

Introduction to production and scripting techniques for Radio and Print. Students will explore aspects of production through individual and group projects as well as in class presentations. A strong writing component is required. Prerequisite: ICS 2001.

ICS 3005 The Digital Revolution 3 ch

This course provides a historical, political, social and economic perspective on how digital technologies influence practices of communication and information distribution. Prerequisite: ICS 2001.

ICS 3006 Media Production II 3 ch (3C)

Introduction to production techniques for Television, Film and Web. Students will explore aspects of production through individual and group projects as well as in class presentations. A strong writing component is required. Prerequisite: ICS 2001.

ICS 3007 Digital Democracy 3 ch

This course examines technologically mediated political practices in liberal democracies. Prerequisite: ICS 2001.

ICS 4001 Research Seminar in ICS 3 ch

This seminar provides majors with the opportunity to do basic research in an area of special interest. Prerequisites: ICS 2001, ICS 3001, ICS 3003.

KINESIOLOGY

Note: See beginning of Section F for abbreviations, course numbers and coding.

KIN 1001 Introduction to Kinesiology 3 ch (3C)

This course is presented in three modules covering the following areas of study: recreation and leisure studies; sport management, coaching, wellness, and theoretical foundations; and exercise and sport science.

KIN 1012 Kinesiological Aspects of Lifespan Development 3 ch (3C)

Introductory study of physical growth and motor development of the human organism from conception to maturity.

KIN 2021 Youth in Sport 3 ch (3C) [W]

Examines the influence of sport experiences on the total development of youth. Includes an analysis of the nature and impact of youth sport programs to determine the major psychological, physiological, sociological and moral considerations surrounding youth involvement in sport. Prerequisites: PSYC 1004, SOCI 1001, or permission of instructor.

KIN 2023 Introduction to the Sociology of Sport 3 ch (3C) [W]

Considers sport as a social institution and studies various topics which have occupied sport sociologists. Prerequisite: SOCI 1001, or permission of instructor.

KIN 2032 Introduction to Sport Psychology 3 ch (3C) [W]

Examines selected topics which have implications for performance in sport and physical activity. Emphasis is on the application of theory to developmental coaching practice. Prerequisite: PSYC 1004 or permission of instructor.

KIN 3031 Exercise Psychology 3 ch (3C) [W]

An introduction to the study of behaviour in the exercise environment. The course will focus on how psychological factors affect physical performance, how exercise affects psychological development, and on the development of strategies to encourage exercise participation and/or adherence. Prerequisites: KIN 2021, KIN 2023 and KIN 2032 (grade of B- or better in each).

KIN 3032 Sport Psychology 3 ch (3C) [W]

Examines contemporary trends in sport psychology. Topics covered include: personality, motivation, arousal, stress, anxiety, competition, cooperation, imagery, self-efficacy, goal setting, concentration, burnout, and gender issues. Prerequisites: KIN 2021, KIN 2023, and KIN 2032 (grade of B- or better in each).

KIN 3123 Careers of Elite Athletes: Sociological Analysis 3 ch (3C) [W]

This course will take a sociological perspective, primarily interactionist and career-oriented, on the involvement of individuals in sports practices. An attempt will be made to provide an overview of such involvements, from the initial exposure and introduction to sport practice, through the deepening commitments and obligations to the ultimate withdrawal. Such an overview will be examined in the context of the variety of contingencies which influence each phase of the athletic career. While the focus will be upon those individuals who have made it through the sports system to some sort of elite status, the analysis by its very nature will not ignore the experiences of those who disengage from involvements in sports practices at earlier stages. Material will be drawn from both the theoretical and empirical literature, and will be critiqued in terms of its usefulness for understanding the phenomenon of the individuals involvement in athletic career. Prerequisites: KIN 2021, KIN 2023, and KIN 2032 (grade of B- or better in each).

KIN 4021 Aggression and Violence Perspectives in Sport 3 ch (3C) [W]

The study of aggression and violence in sport. Topics include: behavioral theories of aggression, frequency of occurrence, and behavioral modification programs to reduce aggression and violence in sport. Prerequisites: KIN 2021, KIN 2023, and KIN 2032 (grade of B- or better in each).

KIN 4022 Sociological Analysis of Sport 3 ch (3C) [W]

Advanced reading course in selected topics. Prerequisites: KIN 2021, KIN 2023, and KIN 2032 (grade of B- or better in each).

KIN 4904 Directed Studies in Exercise and Sport 3 ch (3C) [W]

Provides opportunities for students to explore a number of special areas in physical education and sport. Faculty approval is required prior to registration. Title of the topic will appear on the students transcript. Open only to students in third year and above. Prerequisites: KIN 2021, KIN 2023, and KIN 2032 (grade of B- or better in each).

KIN 4993 Selected Topics in Kinesiology 3 ch (3C) [W]

Selected topics of special interest from the areas of physical education, fitness and sport are examined in detail. Topics will be specified by the Faculty. Title of topic chosen will appear on the students transcript. Open only to students in third year and above. Prerequisites: KIN 2021, KIN 2023, and KIN 2032 (grade of B- or better in each).

KIN 4994 Selected Topics in Kinesiology 3 ch (3C) [W]

Selected topics of special interest from the areas of physical education, fitness and sport are examined in detail. Topics will be specified by the Faculty. Title of topic chosen will appear on the students transcript. Open only to students in third year and above. Prerequisites: KIN 2021, KIN 2023, and KIN 2032 (grade of B- or better in each).

LATIN

Note: See beginning of Section F for abbreviations, course numbers and coding.

LAT 1001 Introductory Latin I 3 ch

A beginners course in Latin. No previous knowledge of Latin is required.

LAT 1002 Introductory Latin II 3 ch

A continuation of LAT 1001.

LAT 2001 Intermediate Latin I 3 ch

Emphasis on developing fluency in reading Latin. By the end of the term students will be reading unaltered Latin texts.

LAT 2002 Intermediate Latin II 3 ch

Reading of selections from Caesar, Cicero, and Ovid.

LINGUISTICS

Note: See beginning for Section F for abbreviations, course numbers and coding.

For Linguistics taught in French, see FR 3412, FR 3432, FR 3434, FR 3442, FR 3464 under the French section.

LING 2101 Linguistics I 3 ch

It presents the basic concepts in the areas of morpho-syntax, semantics and phonology. Prerequisite: 6 ch of any first year course.

LING 3111 Language Acquisition 3 ch (3C)

This is a course in language acquisition with application to English. Topics cover first language acquisition (the VP hypothesis) and second language acquisition in ESL environments.

LING 3202 Linguistics II 3 ch

It presents the basic concepts in the areas of dialectal variation, language acquisition, artificial language, and language change. Prerequisite: LING 2102.

LING 3212 The History of the English Language 3 ch (3C)

A generative grammar approach to diachronic linguistics with application to English. Topics: changes in consonant and vowel systems, transition to a non-case system, parametric changes in syntax.

MATHEMATICS

Note: See beginning of Section F for abbreviations, course numbers and coding.

MATH 1003 Introduction to Calculus I 3 ch (4C)

Functions and graphs, limits, derivatives of polynominal, log, exponential and trigonometric functions. Curve sketching and extrema of functions. Prerequisite: A grade of at least 60% in New Brunswick Advanced Mathematics (120), or Math 1863 or equivalent. Students must also pass a Placement Test which is administered by the Department of Mathematical Sciences during Orientation Week in September. See Note 12 to Admissions Chart in Section B of this Calendar for further details. Note: Credit will be given for only one of Math 1003, 1823 or 2853.

MATH 1013 Introduction to Calculus II 3 ch (3C)

Definition of the integral, fundamental theorem of calculus, techniques of integration, improper integrals. Ordinary differential equations. Taylor polynomials and series. Prerequisite: A grade of C or higher in MATH 1003.

MATH 1503 Introduction to Linear Algegra 3 ch (3C)

Lines and Planes, The Geometry and Algebra of vectors, Systems of linear equations, Matrix algebra, Linear independence, Linear transformations, Determinants, Complex numbers, Eigenvalues, Eigenvectors, Diagonalization, Rotation matrices, Quadratic forms, Least squares. Note: Credit will not be given for both MATH 1503 and MATH 2213. Prerequisite: A minimum grade of 60% in New Brunswick Advanced Mathematics 120 or equivalent.

MATH 1853 Mathematics for Business I 3 ch (3C)

A brief review of pre-calculus math, logarithmic and exponential functions, limits, introduction to derivatives. Linear systems, matrices, systems of linear inequalities, difference equations, arithmetic and geometric sequences, annuities and instalment buying. Applications to Business and Economics will be emphasized throughout the course. Note: Credit will not be given for both MATH 1833 and MATH 1853. Prerequisite(s): New Brunswick Advanced Math 120 or MATH1863 or its equivalent.

MATH 1863 Precalculus Mathematics 3 ch (3C 1T)

A review of high school Mathematics topics, particularly those covered in the New Brunswick Advanced Math 120 course. Topics include: elementary set theory, manipulation of algebraic expressions, equations and inequalities, analytic geometry, linear and quadratic functions, polynomial and rational functions, exponential and logarithm functions, trigonometric functions, inverse trigonometric functions, analytic trigonometry. Note: This course is designed to serve as preparation for Math 1003 and Math 1853. It carries no credit for certain programs. Please consult with a faculty advisor.

MATH 2003 Intermediate Mathematics I 3 ch (3C 1T)

Analytic geometry and vectors, differential calculus of several variables including partial derivatives, max-min, multiple integrals, parametric equations and polar coordinates, surface area. Note: Credit will be given for courses in only one of the sequences MATH2003/2013 or MATH2503/2513.Prerequisite: A grade of C or higher in MATH 1013.

MATH 2013 Intermediate Mathematics II 3 ch (3C 1T)

Infinite series and power series, line and surface integrals. Theorems of Green and Stokes, the divergence theorem, differential equations. See note following MATH 2003. Prerequisite: A grade of C or higher in MATH 2003.

MATH 2203 Discrete Mathematics 3 ch (3C)

Logic, methods of proof, mathematical induction, elementary set theory, functions and relations. This course is designed for students desiring a good grounding in mathematics. Theorems and proofs are an important part of the course. Credit will not be given for both MATH 2003 and CS 1303. Students majoring in Mathematics must choose MATH 2203. Prerequisites: Math 1013.

MATH 2213 Linear Algebra I 3 ch (3C)

Matrices, Gaussian Elimination, LU decomposition, lines and planes in R2 and R3 (including dot and cross products). Geometric properties of linear transformations of R2 and R3. Linear transformations of Rn (including orthogonal projections), change of basis. Eigenvectors, diagonalization of symmetric matrices Prerequisites: MATH 1013, or MATH 1853 with a minimum grade of B and permission of the Department.

MATH 2513 Multivariate Calculus for Engineers 4 ch (4C)

Functions of several variables, partial derivatives, multiple integrals, vector functions, Greens and Stokes Theorems. See the note following MATH 2003. Prerequisite: A grade of C or higher in MATH 1503 or MATH 2213. Co-requisite MATH 2513 or MATH 2003.

MATH 2633 Fundamental Principles of Elementary School Mathematics 3 ch (3C)

This course is primarily intended for individuals interested in elementary and middle school teaching, and is open to students registered in concurrent B.Ed. program. The focus is on the mathematical content of K-8 Atlantic Canada Mathematics Curriculum, and extensions beyond the classroom to show the how and the why behind school mathematics. Topics include problem solving, number concepts, number and relationship operations, patterns and relations, shape and space, as well as data management and probability. This course may be taken by others with the approval of the students department Chair or Dean. Prerequisite: Successful completion of at least one year of a university program.

MATH 2853 Mathematics for Business II 3 ch (3C)

Derivatives, marginal analysis, optimization problems with applications in business, anti-derivative, definite integrals and applications, techniques of integration, simple differential equations, functions of several variables, partial derivatives, unconstrained and constrained optimization, Lagrange multipliers. Applications to Business and Economics will be emphasized throughout the course. Note: Credit will be given for only one of MATH 1003, MATH 1823 or MATH 2853. Prerequisite: MATH 1853.

MATH 2903 Financial Mathematics I 3 ch (3C)

Simple, compound, continuously compound interest, future value, series of payments, sinking funds, amortization, installments. Major assets type. Valuation of fixed interest securities, effects of tax, ordinary shares, bonds. Deterministic models for term structure dynamics. Prerequisite: MATH 1003 or MATH 1853.

MATH 2913 Financial Mathematics II 3 ch (3C)

Derivatives: cash-and-carry markets, price-discovery markets, expiration date, forwards and futures, options, swaps. The algebraic no-arbitrage concept. Asset prices, returns and payoffs, portfolio. Lattice models, payouts and foreign currencies. Prerequisites: MATH 1013 and MATH 2903.

MATH 3073 Partial Differential Equations 3 ch (3C)

Methods of solution for first order equations. Classification of second order equations. Characteristics. Analytic and numerical methods of solution for hyperbolic, elliptic, and parabolic equations. Prerequisite: MATH 2003 and MATH 2013, or equivalent.

MATH 3093 Elementary Number Theory 3 ch (3C)

Primes, unique factorization, congruences, Diophantine equations, basic number theoretic functions.Recommended for Education Students or prospective Mathematics teachers.

MATH 3213 Linear Algebra II 3 ch (3C)

Vector spaces and subspaces, independent and spanning sets, dimension, linear operators, determinants, inner product spaces, canonical forms. Prerequisites: MATH 2213 or MATH 1013 and Permission of the Department.

MATH 3243 Complex Analysis 3 ch (3C)

Complex analytic functions, contour integrals and Cauchys Theorem; Taylors, Laurents series and Liouvilles Theorem; residue calculus. Prerequisite: MATH 2003 and MATH 2013, or equivalent.

MATH 3303 Operations Research I 3 ch (3C)

Linear programming models, simplex method, duality theory, post-optimality analysis, network simplex method and special cases, introduction to interior point methods. Credit will not be granted for both MATH 3303 and BA 3623. Prerequisite: MATH 2213.

MATH 3343 Networks and Graphs 3 ch (3C)

Graphs, Euler paths, tournaments, factors, spanning trees, applications; electric networks and Kirchhoffs laws, matroids; kernels, Grundy function and application to game theory; Mengers theorem, flows in networks, flow algorithms. Prerequisites: MATH 2213.

MATH 3503 Differential Equations for Engineers 3 ch (3C 1T)

Nonhomogeneous differential equations, undetermined coefficients, variation of parameters, systems of 1st and 2nd order ordinary differential equations, Laplace transforms, Fourier series, partial differential equations with constant coefficients, boundary value problems. Prerequisite: MATH 1503 or 2213 (C grade minimum). Corequisite: MATH 2513 or MATH 2003.

MATH 3713 Analysis I 3 ch (3C)

The real number system. Elementary set theory. Metric spaces. Sequences and series. Continuity. Prerequisites: MATH 2013, 2213.

MATH 3633 Fundamental Principles of School Mathematics 3 ch (3C)

This course is primarily intended for individuals interested in school teaching. The focus is on the mathematical content of the K-12 Atlantic Canada Mathematics Curriculum with extensions beyond the classroom, to show the how and why behind school mathematics. Topics include mathematical language; real numbers and other mathematical structure; Euclidean geometry; functions; mathematical connections; problem solving. Intended for students registered in concurrent B.Ed. programs, but may be taken for credit by others with the approval of the students department Chair or Dean. Prerequisite: NB Advanced Math (120), or equivalent and successful completion of at least one year of a university program.

MATH 3733 Abstract Algebra 3 ch (3C)

An introduction to the elementary theory of groups. Rings and Fields. Applications to number theory. Prerequisite: MATH 2213.

MATH 3753 Applications of Mathematical Models 3 ch (3C)

Provides an overview of mathematical modeling strategies for particular applications. Introduces students in a variety of disciplines to mathematical modeling based problem solving. General concepts such as stochastic vs. deterministic modeling are discussed and case studies of specific applications are presented. Case studies may include models of survival, models of cognition, models of population growth and financial models. Students develop case studies in the areas of their major or their own expertise. Prerequisites: one of STAT 3093, PSYC 3913, MATh 2013, MATH 2513; or permission of the instructor.

MATH 3903 Financial Mathematics III (A) 3 ch (3C)

Calculus in stochastic environment: random functions, derivative, chain rule, integral, integration by parts, partial derivatives. Pricing forwards and options. Itos lemma and financial applications. Hull-White, Artzner-Heath, and Brennan-Schwartz models. Martingales, pricing methodology, and risk-neutral probability. Prerequisites: MATH 2213 and MATH 2913.

MATH 4303 Operations Research II 3 ch (3C)

Integer programming, non-linear programming, inventory theory, game theory, planning under uncertainty and stochastic linear programs. Prerequisite: MATH 2003 and MATH 3303.

MATH 4703 Topics in Mathematics 3 ch (3C)

Selected topics at an advanced level. Content varies from year to year. Topic of course will be entered on students transcript. Prerequisite: Consent of instructor.

MATH 4903 Financial Mathematics IV (A) 3 ch (3C)

Forming risk-free portfolios: the Black-Scholes partial differential equation; constant dividend case, exotic options, drift adjustment, equivalent martingale measures. Cox-Ross-Rubinstein, Merton and Vasiceks models. Stochastic optimization: Hamilton-Jacobi-Bellman equation, application to American options. Prerequisites: MATH 3903 and STAT 3093.

MATH 4993 Project in Mathematics 6 ch

Research project in the Mathematical Sciences carried out by the student under the supervision of a member of the Department. The student will submit a written report and make an oral presentation. Prerequisite: Normally 75% of total credits required in the programme.

MECHANICAL ENGINEERING

A grade of C or higher is required in all Mechanical Engineering courses.

Note: See beginning of Section F for abbreviations, course numbers and coding.

ME 1003 Engineering Graphics 4 ch (2C 3L)

Engineering drafting is introduced through technical sketching, instrument drawing, and computer aided methods. Fundamentals of manual drafting: use of instruments, scales, lettering, and line styles. Standard drawing types, multiviews, isometrics, pictorials, assembly drawings, cross-sections. Graphics symbols for fasteners, welding, tolerancing and surface finish specification; dimensioning. Use of a commercial CAD software package. The link between manual methods and computer methods is developed. Descriptive geometry and spatial analysis to establish relationships between three-dimensional objects, lines, points or planes.

ME 1013 Descriptive Geometry with Computer Graphics 4 ch (2C 3L)

An introductory course in descriptive geometry using interactive computer graphics. Topics include computer graphics hardware and software systems. Descriptive geometry topics including spatial relationships of points, lines and planes, etc., geometrical transformations, 3D geometric modelling and graphical mathematics. Pre-requisite: ME 1003. Co-requisite: CS 1003 or other introductory programming course.

ME 1113 Applied Mechanics II : Dynamics 4 ch (3C 1T)

Vector analysis is introduced and applied to the kinematics and dynamics of particle motion along straight and curved paths. Newtons second and third laws, work, energy and momentum of particles are reviewed. Moment of inertia for areas and masses. Rotation of a rigid body around a fixed axis. Motion of a rigid body in a plane. Energy, momentum and angular momentum of a rigid body in plane motion. Simple harmonic motion. Prerequisites: CE 1013, MATH 1003, PHYS 1917 or equivalent. Corequisite: MATH 1013.

ME 2143 Kinematics and Dynamics of Machines 4 ch (3C 2L)

Fundamental concepts, kinematic linkages, model construction; displacement analysis; instant centers; velocities and accelerations in mechanism, Coriollis acceleration; design of cams; analysis of ordinary and planetary gear trains; simple linkage synthesis. Transmission of forces in machines, inertia forces in machines; dynamic force analysis; dynamically equivalent systems. Prerequisites: ME 1113.Recommended: CS 1003 or other introductory programming course.

ME 2222 Manufacturing Engineering 4 ch (3C 2L)

Basic concepts of Materials Science are applied to the selection of common engineering materials used in important manufacturing. Material properties important to processing design are emphasized. Strengthening due to such microstructural features as dislocations, grain boundaries, transformation products, and precipitates will be introduced. Both ferrous and non-ferrous alloys will be studied in detail. Industrial applications of plastics, composites and ceramics are emphasized. The laboratory exercises are: metallography, heat treating, precipitate strengthening, jominy, and impact toughness testing. Prerequisite: CHE 2503 or equivalent.

ME 2321 Communications and Introduction to Design 4 ch (3C 2L)

Engineering communications, problem solving and design philosophy are stressed. Lab periods will be used for group work, presentations, guest lectures and individual consultation on design projects. Design topics include: concepts of safety, working drawings, fits and tolerances, fluid power, logic control, and power transmission. Prerequisites: CE 1013, ME 1013.

ME 2332 Design of Machine Elements 4 ch (3C 2L)

Review of strength of materials; stresses, deflections and material properties. Static strength: failure criteria and stress concentration. Fatigue strength. Probabilistic design. Computer assisted design of shafts, mechanical springs, power screws and threaded fasteners. Prerequisites: ME 1113, ME 2121 (or CE 2023), ME 2321.

ME 2613 System Dynamics 4 ch (3C 3L*)

System Concept, dynamics system elements; mechanical, electrical, fluid and thermal. Syste,s of elements and their differential equations; analysis of systems of first and second order by various methods; industrial applications: modelling of physical systems on the analog computer. Prerequisites: CS 1003 or other introductory programming course, MATH 1013, ME 1113. Recommended: EE 1713. Corequisite: MATH 2503.

ME 3232 Engineering Economics 3 ch (3C)

Application of engineering economic analysis to mechanical and industrial engineering systems. Major emphasis will be given to decision-making based on the comparison of worth of alternative courses of action with respect to their costs. Topics include: discounted cash flow mechanics, economic analyses, management of money, economic decisions. Restricted to students with at least 60 ch in their program.

ME 3413 Thermodynamics I 3 ch (3C)

Properties of a pure substance -- work and heat. First law and applications in non-flow and flow processes. Second law and reversibility: entropy, applications of the second law to non-flow and flow processes. Analysis of thermodynamic cycles. Thermodynamic relationships. Prerequisites: CHEM 1882, MATH 2503.

ME 3415 Thermodynamics I Laboratory 1 ch (3L*) [W]

Laboratory experiments and measurements related to Thermodynamics I. Laboratory reports and readings are assigned. Co-requisite: ME3413

ME 3482 Thermal Engineering 3 ch (3C)

Elementary engineering thermodynamics, steam and gas power cycles, heat transfer, psychrometry, air conditioning and refrigeration. Prerequisites: MATH 1013, ME 1113.

ME 3513 Fluid Mechanics I 3 ch (3C)

Describes the properties and kinematics of fluids, and some techniques of flow measurement. Extends the basic principles of mechanics (mass, momentum and energy) to describe the fluid motion using a control volume approach. Introduces dimensional analysis and similarity. The flow through pipes is studied in detail. Prerequisites: ME 1113, MATH 2503, MATH 2513. Recommended: ME 3413.

ME 3515 Fluid Mechanics I Laboratory 1 ch (3L*) [W]

Laboratory experiments and measurements related to Fluid Mechanics I. Laboratory reports and readings are assigned. Co-requisite: ME3513

NURSING

Note: See beginning of Section F for abbreviations, course numbers and coding.

NURS 1011 Nursing as a Profession 3 ch (3C)

Introduction to the foundations, heritage and practices of nursing as a profession. Examines UNB nursing curriculum and philosophy.

NURS 1032 Caring Relationships 3 ch (2C 3L)

Introduction to the theoretical foundations of caring, relational aspects of caring in nursing practice, and beginning counselling skills.

NURS 1225 Nursing and Wellness 3 ch (3C)

Explores the concepts of wellness, health and illness within the framework of primary health care. Co-requisite: NURS 1235.

NURS 1235 Clinical Practice: Nursing and Wellness 4 ch (12L)

Supplements NURS 1225. Designed to provide students with the opportunity to apply theory and acquire skills in clinical environments. Corequisite: NURS 1225.

NURS 2011 Concepts for Professional Nursing Practice 3 ch (3C)

Includes core concepts (health, client, environment, nursing), nursing standards, professional issues (ethics, legal, collaboration) and primary health care with particular emphasis on health promotion and disease prevention. For BN/RN students only.

NURS 2041 Health Assessment 4 ch (3C 3L)

Includes physical and psycho-social assessment of adults. Lab experiences provide opportunities for students to develop competencies in the areas of collecting and documenting health histories, conducting focused system assessments, and condensed health examinations.

NURS 2063 Concentrated Clinical Practice I 5 ch (5L)

This practice concentration occurs within a five week period. It is designed to provide students with opportunities to practically apply theory and acquired skills from previous learning experiences. Practice will take place in a variety of settings, guided by principles of prevention: primary (health promotion and illness prevention), secondary (care-giving and client advocacy); and tertiary (rehabilitation and support). Specifically, learning experiences for care-giving will take place in acute care and in community settings (including mental health services).

NURS 2132 Pharmacology 3 ch (3C)

Involves the study of pharmacology and its application to the practice of Nursing. The course will focus on classifications of drugs, physiological responses of body systems to medications, nursing responsibilities, and factors influencing patient/client ability to manage medication therapies. Prerequisite: NURS 2041 and NURS 2135: BIOL 2831. Corequisite: BIOL 2852.

NURS 2135 Chronic Health Challenges 3 ch (3C)

Focuses on the impact and influences of long-term health challenges on clients. Examines rehabilitative and supportive nursing practice. Co-requisite. NURS 2156.

NURS 2145 Mental Health Challenges 3 ch (3C)

Explores the experiences of persons living with psychiatric illnesses and examines related nursing therapeutics. Co-requisite. NURS 2188.

NURS 2156 Clinical Practice: Chronic Health Challenges 4 ch (12L)

Supplements NURS 2135. Provides students with the opportunity to apply theory and acquire skills in the supportive and rehabilitative clinical environments. Prerequisites: NURS 1225 & NURS 1235. Co-requisites: NURS 2041 & NURS 2135.

NURS 2177 Young Families Health 3 ch (3C)

Focuses on promoting the health of childbearing and child-rearing families. Prerequisites: NURS 2041, NURS 2135 and NURS 2156. Corequisite: NURS 2188.

NURS 2188 Clinical Practice: Young Families Health and Mental Health 4 ch (12L)

Supplements NURS 2145 and NURS 2177. Provides students with the opportunity to apply theory and acquire skills in practice environments. Prerequisites: NURS 2135 and NURS 2156. Corequisites: NURS 2145 and NURS 2177.

NURS 3032 Communication for Health Professionals (Cross Listed: HSCI 3032) 4 ch (3C 1L)

Includes reflection, discussion and inquiry on concepts related to understanding and improving interpersonal communication within a health care context. Focuses on complex interpersonal dilemmas, demands and difficulties faced by health care professionals in the workplace. Students will analyse interactions using knowledge of communication theory; demonstrate appropriate interpersonal skills in caring/helping relationships; and apply self-knowledge in interpersonal relations. Prerequisite: BN/RN students - NURS 2011; BHS students - successful completion of year 1 BSc courses or CMA certification in Radiation Technology, Nuclear Medicine, Radiation Oncology or Respiratory Therapy.

NURS 3033 Health Communication 4 ch (3C 3L)

Explores more advanced skills in helping relationships with clients, and focuses on the development of skills related to effective collaboration with members of the health care team. Prerequisite: completion of Year 2 BN programme.

NURS 3053 Gendered Experiences in Health Care (A) 3 ch (3C)

This course will involve an exploration of gendered experiences as health care consumers and providers. Attention will be given to how gender relations impact upon health, illness, and the delivery of formal and informal care. Analysis of these issues will take into account the interrelationship between structural and individual elements. Prerequisite: GS 2001 or permission of the instructor.

NURS 3071 Acute Health Challenges 3 ch (3C)

Examines the clients experience of acute health challenges, with a focus on nursing therapeutics. Prerequisites: all required Year 2 courses. Corequisite: NURS 3073

NURS 3073 Clinical Practicum: Acute Health Challenges 6 ch (18L)

Complements and supplements NURS 3071.

NURS 3081 Theoretical Foundations in Nursing (O) 3 ch (3C)

Explores theoretical foundations of nursing practice and research, including critical analysis of theories and concepts related to nursing. Prerequisites: NURS 2063 for BN, NURS 2011 for BN/RN.

NURS 3092 Nursing Research (Cross Listed: HSCI 4091) 3 ch (3C)

Introduces the purpose, process and utilization of nursing research. Introduces an exploration of the interrelationship between theory and practice and critique of published reports. Prerequisite or co-requisite: STAT 2263 or approved substitute.

NURS 3114 Client Teaching 3 ch [W]

This elective course addresses individual client teaching within the steps of the nursing process and looks at development and marketing of client education programs.

NURS 3122 Nursing in Complex Situations 3 ch (3C)

Explores clients experiences of complex health challenges. Examines related nursing therapeutics with an emphasis on clinical judgment and decision making. Prerequisites: NURS 3071, NURS 3073, NURS 3092. Corequisite: NURS 3123.

NURS 3123 Clinical Practicum: Nursing in Complex Situations 6 ch (18L)

Provides students with the opportunity to care for families who have at least one member experiencing an acute or chronic illness. Prerequisites: NURS 3071, NURS 3073. Corequisites: NURS 3112 and NURS 3122.

NURS 3703 Concentrated Clinical Practice II 5 ch (15L)

An integrative experience to practice acquired and new nursing skills in institutional settings. Prerequisite: NURS 3122, NURS 3123, NURS 3033 and NURS 3112.

NURS 4061 Community Development I 3 ch (3C)

Focuses on community assessment and program planning in institutional and non-institutional settings. Students assess primary health care needs of a community, and are involved with planning, implementing, and evaluating health care programs for target groups. Prerequisite: NURS 3703. Note: may be open to Health Sciences students with Instructors permission.

NURS 4062 Clinical Practicum: Community Development I 3 ch (3L)

Supplements NURS 4061. Emphasis is placed on applying program development skills in community settings. Note: May be open to Health Science students with Instructors permission. Corequisite: NURS 4061.

NURS 4111 Nursing of Families 3 ch (3C)

Using a research-based problem classification scheme and drawing on selected theories, the student will explore the role of the nurse in empowering family members toward greater responsibility for their health. Prerequisites: NURS 3072, NURS 3073, and NURS 3092 as pre- or co-requisite.

NURS 4132 Community Development II 3 ch (3C)

Builds upon the community program development skills students studied in NURS 3061 and NURS 3062. Emphasis is placed on the nurse's responsibility in building public policy, creating environments that support health, strengthening community resources, developing people's health-determining skills and reorienting health services. Prerequisite: NURS 4061 & NURS 4062, may be open to Health Sciences students with Instructor's approval.

NURS 4133 Clinical Practicum: Community Development II 2 ch (2L)

Supplements NURS 4061, NURS 4062 and NURS 4132. Involves 6 hours of clinical practice weekly. Emphasis is placed on community health with aggregates. Co-requisite: NURS 4132, may be open to Health Sciences students with Instructor's approval.

NURS 4142 Issues and Leadership in Nursing Practice 3 ch (3C)

Critically evaluates current issues affecting the nursing profession, including concepts relating to nursing leadership and nursing management as well as the influence of organizational structures on nursing work. Examines mandates of nursing professional associations, unions, and the Acts and Standards (including ethics) governing nursing practice. Prerequisite: completion of Year 3 courses for BN students; completion of NURS 2011 for BN/RN students.

NURS 4144 Issues in the Canadian Health Care System 3 ch (3C)

This course focuses on the history and organization of the Health Care System and discusses current health care issues. Note: This course is open to non-nursing students with Instructors permission.

NURS 4152 Concentrated Clinical Practice III 7 ch (7L)

Provides a concentrated period of clinical studies in a setting of choice involving mentoring by advanced practitioners.

NURS 4184 Professional Values, Ethical Issues, and Nursing Practice 3 ch (3C)

This course encourages reflection on and discussion about: personal and professional ethical values; components of ethical reasoning in professional contexts; value systems inherent in past, current, and future practice contexts; professional ethical decision-making. In addition, students will develop skills that foster ethical nursing action in the face of opposition and assist in overcoming barriers to ethically-sensitive health care practices.Prerequisites:NURS 2063

NURS 4234 Independent Study 3 ch

An elective independent study program under the guidance of a faculty member is pursued on the basis of student interest in any area of nursing. Faculty approval required.

NURS 4254 Issues in Transcultural Health 3 ch (3C)

This elective course examines cultural influences on perceptions of health and their implications for health practices.

PHILOSOPHY

Note: See beginning of Section F for abbreviations, course numbers and coding.

PHIL 1000 Introduction to Philosophy 6 ch (3C) [W]

Introduces students to some of the main issues of Philosophy today; whether questions of value can be resolved; what forms of knowledge are attainable; whether there is a divine force in the world; whether the mind is independent of the body. Aims to assist students in clarifying and expressing their beliefs and ideas, and to develop their capacities for thought through critical study of philosophical writings of both the past and the present.

PHIL 1053 Introduction to Logic 3 ch (3C)

A first course in logic, including a study of various fallacies in reasoning, as well as certain techniques, both traditional and contemporary, for determining the validity of arguments.

PHIL 2003 Introduction to Moral, Social and Political Philosophy 3 ch (3C) [W]

An historical investigation into such moral and socio-political concepts as goodness, virtue, happiness, justice, choice, duty, custom, natural and civil law, the state, freedom and the individual.

PHIL 2014 Metaphysics and Epistemology 3 ch (3C) [W]

An examination of the nature and conditions of knowledge and reality. Questions of time, immortality, freedom, the nature of causality, certainty and doubt, memory and perception, imagination and reason, existence and dread will be discussed through historical as well as contemporary writings.

PHIL 2034 Religion and Ethics 3 ch (3C) [W]

An examination of such notions as good and evil, compassion and social justice, divine and natural authority, community and society, from the perspectives of religious affirmation and moral reasoning.

PHIL 2063 Introduction to Language and Semantics 3 ch (3C)

A study of some of the basic concepts of argument and reasoning, such as truth and falsity, analyticity, validity, agreement, stating and questioning.

PHIL 2111 Symbolic Logic I 3 ch (3C)

A study of the principles of symbolic logic and the standard notations and methods used in determining the validity and invalidity of arguments.

PHIL 2112 Symbolic Logic II 3 ch (3C)

A continuation of the principles of symbolic logic and the standard notations and methods used in determining the validity and invalidity of arguments.

PHIL 2124 Contemporary Moral Problems 3 ch (3C) [W]

A wide-ranging look at a variety of claims and issues perplexing moral agents in contemporary society.

PHIL 2153 Business Ethics 3 ch (3C) [W]

An evaluation of a selection of moral problems in business enterprises and analysis of various possible economic structures. The course will attempt to refine ethical concepts through a case-study method. Topics will include: social responsibility, the state and business; bluffing, deception and bribery; discrimination in hiring; business and the Third World; the profit motive; free-enterprise, mixed economies and Communism. Prerequisite: 3 ch in Philosophy or permission of instructor.

PHIL 3033 Pre-Socratics and Plato 3 ch (3C) [W]

An examination of early forms of Greek thought from the pre-Socrates to Socrates and Plato. The Platonic tradition will also be surveyed and assessed. Prerequisite: 3 ch course in Philosophy or permission of instructor

PHIL 3034 Aristotle and Hellenistic Philosophies 3 ch (3C) [W]

A study of Aristotelian thought and of the diverse philosophies of the Hellenistic period. Prerequisite: 3 ch course in Philosophy or permission of instructor

PHIL 3075 Philosophy of Art 3 ch (3C) [W]

This course examines the principles and concepts of art, as developed by philosophers and artists themselves, from ancient aesthetic theory, through essays on taste, to more recent views of aesthetic perception and the function of art in society. Prerequisite: 3 chs in Philosophy and/or Art History or the permission of the instructor.

PHIL 3110 Contemporary Philosophy 6 ch (3C) [W]

An examination of the major philosophical trends of the 20th century-analytic philosophy, existentialism, and pragmatism. Prerequisite: 3 ch in Philosophy or permission of instructor.

PHIL 3133 Health Care Ethics I 3 ch (3C) [W]

Examines major problems in contemporary medical practice, including confidentiality, informed consent and paternalism, compulsory sterilization and blood transfusions, contraception, abortion and genetic engineering, euthanasia, allocation of scarce resources, moral aspects involved in strikes of medical personnel, and conflict of duty situations. Prerequisite: 3 ch in philosophy or permission of the instructor.

PHIL 3134 Health Care Ethics II 3 ch (3C) [W]

A continuation of Health Care Ethics I. Examines major problems in contemporary medical practice, including confidentiality, informed consent and paternalism, compulsory sterilization and blood transfusions, contraception, abortion and genetic engineering, euthanasia, allocation of scarce resources, moral aspects involved in strikes of medical personnel, and conflict of duty situations. Prerequisite: PHIL 3133.

PHIL 3141 Philosophy of Mind 3 ch (3C) [W]

A study of various philosophical approaches to the nature and concept of mind. Topics to be covered include: Cartesian Dualism, Freudian Psychology, Behaviourism, Cognitive Psychology and Artificial Intelligence. Prerequisite: PHIL 1000 or permission of the instructor.

PHIL 3145 Chinese Philosophy 3 ch (3C) [W]

An examination of Chinese schools of thought, the incursion and growth of Buddhism in China, Neo-Confucian revivals and syntheses, and the Chinese encounter with Western forms of thinking in the past two centuries. Prerequisite: 3 chs in Philosophy of permission of the instructor.

PHIL 3171 Philosophy of Religion I 3 ch (3C) [W]

A critical examination of the central philosophical issues in the Western Religious Tradition. Prerequisite: PHIL 1000 or permission of the instructor.

PHIL 3172 Philosophy of Religion II 3 ch (3C) [W]

A further analysis and elaboration of issues raised in PHIL 3171. Prerequisite: PHIL 3171 or permission of the instructor.

PHIL 3181 Philosophy of History I 3 ch (3C) [W]

A critical examination of historical knowledge. An attempt to answer the question: What is history? Prerequisite: 3 ch course in Philosophy or History.

PHIL 3182 Philosophy of History II 3 ch (3C) [W]

A critical analysis of historical understanding. Prerequisite: PHIL 3181.

PHIL 3241 Philosophy of Natural Science 3 ch (3C) [W]

An analysis of such scientific concepts as explanation, theory, and law, with special attention to the implications of recent scientific theories.

PHIL 3242 Philosophy of Human Science 3 ch (3C) [W]

An analysis of the methods, theories and presuppositions of such human sciences as economics, psychology, history, and anthropology.

PHIL 3530 Mediaeval, Renaissance, and Early Modern Philosophy 6 ch (3C) [W]

A study of the philosophical doctrine of Man, from the decline of Greek thought and the appearance of Mediaeval Christian philosophers, to the emergence of Renaissance studia Humanitatis and Bacons instauration of the human sciences.

PHIL 3630 Phenomenology and Existentialism 6 ch (3C) [W]

A study of the relationship between phenomenological method and existential inquiries concerning human existence. In this connection, some of the main features of Husserls phenomenology and Heideggers analysis of existence are examined, pointing out their similarities and differences in dealing with such issues as philosophical method, human existence, freedom, intersubjectivity, how understanding and moods disclose ones existence in the world. Discussion and student participation encouraged.

PHIL 3785 Philosophers of the Scottish Enlightenment 3 ch (3C) [W]

A study of selected thinkers in Scotland whose ideas radically transformed both social and philosophical movements in the 18th and 19th centuries. Prerequisite: 3 ch course in Philosophy or permission of instructor

PHIL 3841 Descartes and Locke 3 ch (3C) [W]

A study of the Rationalist and empiricist traditions of the seventeenth century. Emphasis will be on the theory of knowledge.

PHIL 3852 Hume and Kant 3 ch (3C) [W]

A study of the Epistemology of David Hume and of the resolution of the problems arising from Hume's analysis proposed in Kant's Critique of Pure Reason.

PHIL 4193-9 Selected Topics in Philosophy 3 ch [W]

Courses of independent studies of specified texts or topics on Philosophy under the supervision of a member of the Discipline. Prerequisite: Permission of the Discipline.

PHYSICS

Note: See beginning of Section F for abbreviations, course numbers and coding.

PHYS 1000 Elements of Physics 9 ch (3C 1T 3L/S)

Scalar and vector quantities. Kinematics of motion for straight and curved paths. Newtons laws of motion. Conservation of linear momentum. Conservation of energy. Gravitation. Simple harmonic motion. Wave motion, properties of sound and light waves, including interference and diffraction. Optics. Coulombs law, electric field and potential. Electric current and resistance. Magnetic fields. Quantum theory and the atom. The nucleus. Prerequisite: Grade 12 Physics or equivalent. Corequisite: MATH 1003/1013.

PHYS 1917 Physics for Engineering 5 ch (4C 2T/ 3L)

Vectors, kinematics, momentum, force, potential and kinetic energy. Kinetic theory of gases, circular motion, charge, field and potential, gravitation, electrostatics, optics, sound. Prerequisite: Grade 12 Physics or equivalent.

PHYS 2011 Mechanics 5 ch (3C 3L)

Scalar and vector quantities, statics, kinematics, dynamics, work, energy, power, rotational motion, impulse and momentum, vibratory motion. Prerequisites: MATH 1003/1013 and PHYS 1000.

PHYS 2022 Electricity and Magnetism 5 ch (3C 3L)

Current, resistance and DC circuit analysis. Transients in LCR circuits. AC circuit analysis, phasors, resonance in series and parallel LCR circuits. Electrostatics; electric fields, Gauss' Theorem, potential, capacitance. Magnetic fields, induced e.m.f. Prerequisites: MATH 1003/1013 and PHYS 1000.

PHYS 2041 Mechanical and Thermal Properties of Matter 3 ch (3C)

Intermolecular forces, elementary thermodynamics and kinetic theory; applications (gases). Imperfect gases; solid and liquid state; elastic and thermal properties of solids; fluid flow. Prerequisites: MATH 1003/1013 and PHYS 1000.

PHYS 2055 Survey of Modern Physics 5 ch (3C 3L)

Relativity, quantization in nature, photoelectric effect, Compton effect, x-rays, x-ray diffraction, deBroglie waves, phase and group velocities, the uncertainty principle, energy levels and atomic structure, nuclear structure, nuclear reactions, radioactivity, fission, fusion, elementary particles of physics. Prerequisites: MATH 1003/1013 and PHYS 1000.

PHYS 2183 Introductory Astronomy 3 ch (3C)

A basic astronomy course for students in science, engineering or computer science. Topics include an overview of the history and techniques, dynamics of the solar system, stellar interiors and evolution, cosmology and galactic structure. Prerequisite: MATH 1013, and PHYS 1000 or 1917.

PHYS 2543 Environmental Physics 3 ch (3C)

Open to students in all faculties. Provides an introduction to environmental physics of the atmosphere. Topics include: physics of the atmosphere, energy transportation and transformation; air pollution, sources, effects and control. Prerequisite: MATH 1013, and PHYS 1000 or 1917, or by permission of instructor.

PHYS 2975 Light and Sound 5 ch (3C 3L)

Periodic motions and their linear superposition, free and forced damped harmonic motion, resonance, normal modes, vibrating strings. Transverse and longitudinal waves in various media, acoustics, reflection and refraction of waves at boundaries. Topics selected from the following list: geometrical optics, interference, diffraction, polarization, wave-particle duality, dispersion, coherence. Prerequisites: MATH 1003/1013 and PHYS 1917. Corequisite: MATH 2513.

POLITICS

Note: See beginning of Section F for abbreviations, course numbers and coding.

POLS 1201 Introduction to Canadian Politics 3 ch (3C/T) [W]

Survey course focusing on Canadian government and politics at the national level.

POLS 1301 Introduction to Comparative Politics 3 ch (3C/T) [W]

Summary comparisons of the political systems, cultures, and structures of various states, derived from European and non-European examples.

POLS 2401 Approaches to Political Ideas 3 ch (3C) [W]

An introduction to the ideas and principles that serve as the foundation for Political Science. Prerequisite: 3 ch of Political Science.

POLS 2601 Introduction to International Politics 3 ch (3C/T) [W]

General introduction to the historic and contemporary practices of international relations.

POLS 3007 Digital Democracy 3 ch [W]

This course examines technologically mediated political practices in liberal democracies.

POLS 3101 Constitutional Politics in Canada 3 ch (3S/T) [W]

Examines the structure and process of constitution-making, and conflicting visions of constitutional change.

POLS 3112 Political Economy of Canada 3 ch (3S/T) [W]

Examines the political economy of Canada, with a focus on the contribution of the political economy tradition to an understanding of Canadas political, social and economic development.

POLS 3201 New Brunswick Politics 3 ch (3S/T) [W]

An overview of the history and development of New Brunswick politics.

POLS 3205 Canadian Provincial Politics 3 ch (3C/S) [W]

Designed to provide the student with an overview of the nature of government and political processes in the Canadian provinces.

POLS 3211 Contemporary New Brunswick Politics 3 ch (3S/T) [W]

Specialized study of current or selected issues in New Brunswick provincial politics.

POLS 3221 Canadian Political Issues I 3 ch (3C/S) [W]

Emphasis on current problem areas in Canadian Politics.

POLS 3222 Canadian Political Issues II 3 ch (3C/S)

Emphasis on a selected problem area in Canadian Politics.

POLS 3225 Gender and Canadian Politics 3 ch [W]

Examines the role of gender in Canadian social movements, political parties and political institutions, including Parliament, the courts and the media. Prerequisites: POLS 1201 or GEND 2001.

POLS 3232 Language Issues in Canada 3 ch (3S/T) [W]

Study of linguistic duality in Canada, with particular attention to conflicts over language rights.

POLS 3241 Canadian Voting Behavior 3 ch (3S/T) [W]

A study of the electoral system, representation, and voting behavior in Canada.

POLS 3252 Canadian Political Parties 3 ch (3S/T) [W]

Directed at a systematic study of the structure and functions of political parties in Canada.

POLS 3255 Interest Groups and Social Movements 3 ch [W]

Explores the development, goals, strategies and political impact of interest groups and social movements.

POLS 3261 Canadian Federalism 3 ch (3C/S) [W]

Advanced analysis of specific issues affecting the federation.

POLS 3273 Canadian Intergovernmental Relations 3 ch (3C/S) [W]

Considers the relationships between federal, provincial and municipal governments, and their impacts on current issues.

POLS 3277 Political Leadership in Canada 3 ch (3S/T) [W]

Focuses on various aspects of political leadership at the federal level.

POLS 3283 Politics in French Canada 3 ch (3S/T) [W]

The politics and institutions of French Canada; in particular, the nature and sources of relevant political changes within French Canadian society in Quebec and Acadian society in New Brunswick.

POLS 3291 First Nations Government in Canada 3 ch (3C/S) [W]

Examines the politics and administration of the relationship between aboriginal peoples and the Canadian state.

POLS 3292 Politics of Aboriginal Self-Government 3 ch (3C/S) [W]

A systematic analysis of the principles, structures and institutions of traditional and contemporary aboriginal self-government in Canada.

POLS 3303 Politics of the Developing World 3 ch (3C) [W]

Political tendencies and trends, nature of and rationale for political processes and systems in selected developing states.

POLS 3311 Government of the United States 3 ch (3C/L) [W]

An analysis of contemporary issues in American politics, derived from an understanding of the concepts and structures of the national governmental system.

POLS 3322 The United States Presidency 3 ch (3C/L) [W]

An emphasis on the power relationships of the office of the Chief Executive.

POLS 3325 Gender and Comparative Politics 3 ch [W]

Comparative study of gender issues in selected countries, including womens political organizations, political participation and social policies affecting women. Prerequisites: POLS 1301 or GEND 2001.

POLS 3333 Comparative European States 3 ch (3S/T) [W]

A comparative examination of selected European states, their political institutions, political cultures and recent political issues.

POLS 3335 The Circumpolar North 3 ch (3C/S) [W]

A comparative analysis of political change and development in the Arctic region. Examples drawn from the Soviet Union, Alaska, Canada, Greenland, and Nordic Europe; pan-national movements; and Canadian Arctic policy.

POLS 3341 Comparative Federalisms 3 ch (3C/S) [W]

A comparison of selected federal state structures. Definition of the problems and prospects of federation in Canada, the United States, Russia and other examples.

POLS 3345 Political Behaviour 3 ch [W]

An examination of the foundations of political behaviour, public opinion, political participation and political elites.

POLS 3355 Politics of the Environment 3 ch (3C/S) [W]

Focus on the public sensitivity to environmental/ecological issues, political responses to this phenomena, and consequences of those responses. Uses a case-study approach.

POLS 3372 The State and Economic Interests 3 ch (3 S/T) [W]

Examines the role of the Canadian state in economic development, with emphasis on the political dimensions of economic policy. Issues include the deficit, industrial policy, and foreign elements.

POLS 3375 The Political Economies of Asia 3 ch (3S/T) [W]

Examines the political structures, decisions and processes underlying Asia's role in the global economy.

POLS 3381 Politics of Asia 3 ch (S) [W]

Examines political resistance, rebellions and revolutions in selected Asian countries.

POLS 3401 Modern Political Thought 3 ch [W]

Examines a selection of major texts from the late modern period of Western political theory, encompassing classic statements of conservative, feminist, liberal, and socialist thought.

POLS 3421 Selected Topics in the History of Ideas 3 ch (3C/S) [W]

A comparison of various political thinkers on specific themes: natural law from Cicero to Rousseau, social contract theory from Locke to Marx, etc.

POLS 3425 Canadian Political Ideas 3 ch (3S/T) [W]

This course surveys the tradition of Canadian political thought from Confederation to the present.

POLS 3433 Montesquieu and the Enlightenment 3 ch (3S) [W]

The examination of his influence on the Enlightenment.

POLS 3445 Rousseau and the Enlightenment 3 ch (3S) [W]

The examination of his influence on the Enlightenment.

POLS 3451 Marxism 3 ch (3S/T) [W]

A focus on the writings of Karl Marx. Other Marxist theorists may also be examined.

POLS 3456 Politics Through Film 3 ch (3C/S) [W]

Seeks to examine political principles through the medium of film. Tyranny, censorship, totalitarianism, utopia, and liberty will be discussed through an analysis of a variety of films.

POLS 3463 Liberalism 3 ch (3S/T) [W]

Focuses on the core values and the exponents of liberal ideology.

POLS 3471 Study of Politics Through Literature 3 ch (3S) [W]

A multi-disciplinary analysis of the exposition of political ideas in works of classical and contemporary literature.

POLS 3473 Politics and Media in Canada 3 ch [W]

Examines the role of the press as critics and opposition to government & the role of government in regulating media. Designed as an upper level course for students majoring in politics or with a background in media or communications studies.

POLS 3483 Theories of Rights 3 ch (3S/T) [W]

The concept of right and differing perspectives on rights discourse.

POLS 3494 Democracy 3 ch (S/T) [W]

Examines the concept, and the various theories, of democracy.

POLS 3501 Contemporary Issues in Public Policy 3 ch (3S/T) [W]

Examines the major approaches explaining and understanding Canadian public policy, and applies them to a study of major public policy fields.

POLS 3601 Contemporary Issues in World Politics 3 ch (3S) [W]

Deals with current trends on the international scene including the global balance of power, relations between superpowers, ideological conflicts, the developing world, war, revolution, etc.

POLS 3603 Critical Perspectives on International Relations Theory 3 ch (S) [W]

A seminar that centers on frameworks for understanding international relations. The frameworks discussed will include: race, nationalism, political geography, de-territorialization, sovereignty, feminism, global communication, humanitarianism, human rights, the state and political space, forms of political conflict, identity theory, ethnography, and globalization. Prerequisite: One of POLS 1201, POLS 1301 or POLS 2601.

POLS 3622 International Organization and Law 3 ch (3S/T) [W]

Study of supra-national organizations, and structures of international conduct; the effect of both on inter-state relationships.

POLS 3625 Gender and International Politics 3 ch [W]

Introduction to the gender aspects of international relations including militarism, nationalism, international political economy, the environment and human rights. Prerequisites: POLS 2601 or GEND 2001

POLS 3631 Survey of Global Issues. 3 ch (3S/L) [W]

Current global issues such as war, militarism, the arms race, human rights and social justice, ecological imbalance, economic inequalities, and alternative world organizational structures, considered from international and interdisciplinary perspectives. General-interest course.

POLS 3671 Web Activism 3 ch (S) [W]

Examines how Web activists use global communication technology in campaigns against given governments.

POLS 3673 Global Communication and International Relations 3 ch (S) [W]

Examines the role of global communication media and technologies in international relations. Discussion focuses on inter-governmental interaction, government links to citizens, and the empowerment of sub-state and non-state actors

POLS 3675 Global News 3 ch (S) [W]

A seminar that focuses on the political meaning of global media communication. The rise of international television news networks will be examined as a factor that influences international relations. Prerequisite: One of POLS 1201, POLS 1301 or POLS 2601.

POLS 3677 Information Technologies & Conflict 3 ch (S) [W]

A seminar based on the examination of new information technologies and their role and impact on conflict. Discussion will focus on a variety of technological applications in order to outline trends, features and theoretical implications. Prerequisite: One of POLS 1201, POLS 1301 or POLS 2601.

POLS 3683 Human Rights 3 ch (3S/T) [W]

An examination of human rights in an international context, including international human rights instruments, and enforcement and the implications of economic, political and cultural globalization for human rights standards.

POLS 3901 Approaches to Political Reseach 3 ch [W]

A survey of the major approaches and techniques used to research and analyze politics. Prerequisite: POLS 2401.

POLS 4001 Honours Seminar in Politics 3ch (3S/T) [W]

A compulsory seminar course for fourth year Honours students. Provides a broad overview of key debates and some of the most influential writings in the field of political science. Prerequisite: Permission of the Instructor.

POLS 4002 Honours Thesis 3 ch [W]

Under the direction of a supervisor, an Honours student completes a major research paper. Prerequisite: Admission to the Honours programme.

POLS 4211 Special Topics in Canadian Politics 3 ch (3S/T) [W]

Advanced study of a specific subject in Canadian politics. Course topics will change annually.

POLS 4226 Directed Reading in Canadian Politics 3 ch [W]

Open to students desiring further specialization, the course requires a research paper in Canadian politics, supervised by an instructor in the subject area.

POLS 4311 Special Topics in Comparative Politics 3 ch (3S/T) [W]

Advanced study of a specific subject in comparative politics. Course topics change annually.

POLS 4336 Directed Reading in Comparative Politics 3 ch [W]

Open to students desiring further specialization, the course requires a research paper in comparative politics, supervised by an instructor in the subject area.

POLS 4411 Special Topics in Political Theory 3 ch (3S/T) [W]

Advanced study of a specific subject in political theory. Course topics change annually.

POLS 4416 Directed Reading in Political Theory 3 ch [W]

The course is open to 4th-year students with a sufficient background and a special interest in political theory. It can be taken only with permission of the relevant instructor.

POLS 4611 Special Topics in International Politics 3 ch (3S/T) [W]

Advanced study of a specific subject in international politics. Course topics change annually.

POLS 4646 Directed Readings in International Politics 3 ch [W]

Work on a research essay pertinent to specialized areas in international or comparative politics, under an instructor assigned by the discipline.

PSYCHOLOGY

PSYC1003 is a prerequisite for PSYC1004 and PSYC1004 is a prerequisite for all remaining Psychology courses.

Note: See beginning of Section F for abbreviations, course numbers and coding.

PSYC 1003 Introductory Psychology I 3 ch (3C)

An overview of psychology as well as an introduction to the biological basis of behavior, motivation, learning, sensation, perception, memory, thinking and language. Students may be requested to participate in research and some course credit may be earned in this way.

PSYC 1004 Introductory Psychology II 3 ch (3C)

Examines social behavior, personality, assessment, abnormal psychology, and psychological therapy. Students may be requested to participate in research and some course credit may be earned in this way.

PSYC 1273 Life Span Development 3 ch (3C)

An introduction to theory, methods, and research finding in lifespan developmental psychology. The life cycle as a whole and basic processes in socialization, cognition, and personality development will be examined. This course is designed primarily for Nursing students. Enrollment of other students is by permission of the instructor. Students currently enrolled in the BN programme are exempt from the PSYC 1004 requirement. Note: Students who take Psyc 1273 may not take Psyc 2201.

PSYC 2102 Research Methods in Psychology 3 ch (3C 1L)

An introduction to the methods and theory of empirical and experimental research in psychology. The logic of hypothesis construction and testing in relation to various areas of psychology are examined. Students will be required to complete an experiment. This course is intended for students who plan to major or honour in either Psychology or Biopsychology. Prerequisite: A grade of C or better in PSYC 2901.

PSYC 2201 Child Development 3 ch (3C)

A study of theory, methods and research findings in infancy and childhood. Examines social, cognitive, emotional and physical development. Credit will not be granted for both PSYC 2201 and ED 3021.

PSYC 2401 Fundamentals of Social Psychology 3 ch (3C)

The scientific study of how people think about, influence, and relate to one another. The course examines methods and findings related to such topics as the self in society, judging others, attitudes, persuasion, social thinking processes and conformity.

PSYC 2901 Introduction to Statistical Analysis for Psychologists 3 ch (3C)

Designed to acquaint the student with the basic tools of statistics which are used to summarize and analyze psychological data.

PSYC 3033 Health Psychology 3 ch (3C) (LE)

An aggregate of the scientific and professional contributions of the discipline of psychology towards promotion of an holistic approach for the maintenance of health, the prevention and treatment of illness including etiologic as well as diagnostic correlates of health and illness. Prerequisites: PSYC 1003 and PSYC 1004.

PSYC 3222 Sex Differences 3 ch (3C)

Focuses on biological and behavioural differences between females and males. Examines the psychological implications from conception to maturity of both physical sex differences and differential treatment by family and society.

PSYC 3232 Socialization 3 ch (1C 2S)

The major theoretical and empirical approaches to the nature of the child, the socialization processes, and the development of personality are dealt with in lectures and discussions. Prerequisite: PSYC 2201.

PSYC 3263 The Psychology of Criminal Behavior 3 ch (3C)

Examines psychological contributions to theories of crime and incarceration and addresses specific topics such as: how media and political forces affect criminal justice policies; the effectiveness of offender treatment and punishment programmes; the prevention of crime; the effects of incarceration on prisoners; the prediction of criminal behaviour.

PSYC 3293 The Psychology of Aging 3 ch (3C)

Focuses on changes in learning ability, memory, perception, physical development, personality and social development associated with aging, beginning in young adulthood and extending to late adulthood. Prerequisites: PSYC 1273 or PSYC 2201 or ED 3021.

PSYC 3313 Introduction to Psychological Testing 3 ch (3C/L)

An introduction to principles of psychological testing as they arise in consideration of relevant statistical concepts and methods and of historical experience in development and use of tests for general intelligence, differential abilities and personality traits. Prerequisite: PSYC 2102.

PSYC 3323 Community Psychology and Mental Health 3 ch (2C 1S)

Provides a detailed examination of how to evaluate programs in the community. Areas covered are mental health, criminal justice, and other systems that provide human services.

PSYC 3343 Human Sexuality 3 ch (3C)

Provides an introduction to the psychology of human sexuality, including examination of topics such as sexual anatomy, sexual behaviour, sexual response, sexual dysfunction and therapy, sexual variation and other topics of interest.

PSYC 3352 Developmentally Handicapped Children and Adults 3 ch (3C)

A survey of sensory, physical and intellectual dysfunction in interaction with developmental processes.

PSYC 3362 Introduction to Guidance and Counselling 3 ch (3C)

A survey of the concepts, theories, and resources involved in the guidance and counselling area.

PSYC 3383 Perception 3 ch (3C)

Provides a broad introduction to visual and auditory perception. Topics include the structure and neural functioning of auditory and visual systems and contemporary approaches to traditional problems of perception. The course may include reviews of other sense modalities.

PSYC 3393 Systems of Therapy 3 ch (3C)

The array of contemporary psychotherapeutic techniques is examined with emphasis on the relationship that exists between the theoretical and historical background of a therapy and the form it assumes when put into practice.

PSYC 3412 Advanced Social Psychology 3 ch (3C)

Further examines the scientific methods and findings that pertain to the functioning of individuals in social contexts. Topics include advanced methods used to study groups, aggression, prejudice, attraction and altruism.

PSYC 3461 Theories of Personality 3 ch (3C)

Theory formation is greatly influenced by the assumptions, beliefs and experience of the theorist. In surveying formal theories of personality, an attempt is made to demonstrate the influence of personal-subjective factors in the development of theory.

PSYC 3493 Changing Behaviour 3 ch (3C)

An examination of the application of basic principles of learning to human behavioural processes. A study of the treatment techniques and assessment procedures employed in behaviour modification programs.

PSYC 3503 Learning 3 ch (3C)

A survey of principles of both instrumental and classical conditioning focusing on animal subjects. Such topics as biological constraints on learning, cognitive interpretations of learning, and memory processes will be included. There will be various demonstrations throughout the course.

PSYC 3553 Psychopathology 3 ch (3C)

This course will provide the student with a comprehensive picture of maladaptive behaviour from a biological and psychosocial perspective. Problems associated with diagnostic systems, the role of stress, and other causative factors implicated in the traditional clinical syndromes will be discussed.

PSYC 3603 Selective Attention and Memory 3 ch (3C/SL)

Open to 2nd, 3rd and 4th year students who have completed PSYC 1004. An examination of the processes involved in the reception, election and storage of information.

PSYC 3632 Motivation 3 ch (3C)

A critical examination of the concept of motivation in terms of its power to explain findings in the experimental literature and its capacity to generate research.

PSYC 3693 Cognitive Processes 3 ch (3C)

The scientific study of higher mental processes. This course examines experimental methods and findings related to attention, memory, mental imagery, the organization of general knowledge, language, problem solving and creativity.

PSYC 3711 Biological Psychology 3 ch (3C) (LE)

An introduction to the anatomy and physiology of nervous systems with a special emphasis on behavioural indices of function. Illustrative examples of both human and animal research are surveyed. Prerequisites: PSYC 1003 and PSYC 1004.

PSYC 3723 Introduction to Human Neuropsychology 3 ch (3C)

A review of human neuroanatomy with a focus on recent theories and findings regarding the functional organization of the brain. The principles of cerebral asymmetry, disconnection syndromes, and the functions of the occipital, parietal, temporal, and frontal lobes are examined. A special emphasis is placed on the role of brain systems in sensory motor skills, higher order cognitive functions and personality. Prerequisite: PSYC 3711.

PSYC 3724 Introduction to Clinical Neuropsychology 3 ch (3C)

Explores the neuropsychological sequelae of the most common neurological and psychiatric disorders seen in the practice of clinical neuropsychology , including vascular disorders, traumatic head injuries, epilepsy, tumours, multiple sclerosis, anxiety, depression, schizophrenia, dementia, and neuro-degenerative conditions, such as Alzheimer's Disease. Prerequisite: PSYC 372.

PSYC 3725 The Dementias 3 ch (3C)

An introduction to a devastating group of diseases which cause irreversible decline in cognitive functioning and for which the incidence is expected to triple by the year 2031. The etiological models, cognitive, emotional, and behavioral changes, treatment, care, and management issues of the most common types of dementias are explored including cortical (e.g., Alzheimer's disease, Vascular Dementia, Frontal Lobe Diseases) and subcortical (e.g., Parkinson's Disease, Huntington's Disease, Multiple Sclerosis, and AIDS) dementias. Prerequisites: PSYC 1003 and PSYC 1004.

PSYC 3743 Comparative Psychology 3 ch (3C)

Development of psychological theory by the comparison of data from different species. Emphasizes the evolution and adaptive significance of behaviour. Prerequisites: PSYC 1003 & PSYC 1004.

PSYC 3752 Drugs and Behaviour 3 ch (3C)

A survey of all classes of psychoactive drugs, their effects on human and animal physiology and behaviour, their history of use, and various drug-related issues such as abuse, dependency, and legality.

PSYC 3803 Industrial Psychology 3 ch (3C)

Application of psychological knowledge to business and industrial problems. Prerequisite(s): PSYC 1003, PSYC 1004.

PSYC 3913 Introduction to Statistical Inference and Experimental Design in Psychology 3 ch (3C)

This course provides an introduction to research design and statistical inference in psychology. Topics covered are computational procedures and theory up to analysis of variance, including multiple comparisons and multiple regression. Students will also learn how to analyse data using one or more statistical packages.

PSYC 4021 Psychophysiological Research 3 ch (2C 1L)

Deals with measurement techniques of the autonomic and central nervous systems of humans functioning under cognitive or situational challenges. The measurements reflect processes and conditions related to stress, cognitive functioning, motivation and individual differences.

PSYC 4053 History of Psychology 3 ch (3C)

This course traces the origins and development of modern psychology from its roots in ancient Greece through the philosophical and scientific developments in Europe that have culminated in the broad polymorphic discipline of today.

PSYC 4111 Basic Research 3 ch (3S)

The purpose is to enable students to become actively involved in basic research. This involvement will take the form of participation in research, reading and discussion of research topics, and development of research skills.

PSYC 4122 Basic Research II 3 ch (3S)

Continuation of PSYC 4111.

PSYC 4131 Honours Research Seminar 0 ch (3S)

A non-credit seminar for Honours students. Topics include problems of research design and discussions of student Honours research projects.

PSYC 4142 Honours Research Seminar 0 ch (3S)

A non-credit seminar for Honours students. Topics include problems of research design and discussions of student Honours research projects. Prerequisite: PSYC 4131.

PSYC 4143 Designing Research Proposals 3 ch

Under the direction of a supervisor a student develops a proposal which is assessed and approved by the Department. Prerequisite: Eligibility for the Honours programme.

PSYC 4145 Honours Thesis 3 ch

Under the direction of a supervisor a student conducts, completes and defends the research. Prerequisite: PSYC 4143.

PSYC 4213 Practicum in Child Studies I 3 ch (4C/S)

This practicum is designed to provide students with experience in the school setting. The major emphasis is on field placement, where students will gain practical experience working with children. This course has limited enrolment, and is open to fourth year Psychology majors and honours students. Prerequisites: PSYC 2201, PSYC 3493, and permission of instructor.

PSYC 4214 Practicum in Child Studies II 3 ch (4C/S)

A continuation of PSYC 4213. Prerequisite: PSYC 4213.

PSYC 4233 Programme Evaluation 3 ch (3C)

A review of the principles and methods used in planning and conducting programme evaluations. A basic introduction to the review and assessment of applied/clinical research using meta-analytic methods. Prerequisites: PSYC 2102, PSYC 2901 (or SOCI 3100).

PSYC 4263 Field Placement in Community Corrections I 3 ch (LE)

The field placement is designed to provide students with practical experience in a community correctional setting that provides services for federal parolees. The course has limited enrollment and is open to 3rd - 4th year psychology & sociology majors. Prerequisites: PSYC 3263 and PSYC 3493 and SOCI 2611 and SOCI 3614; 3rd - 4th year PSYC/SOCI, Cumulative GPA=B (exceptions may be made at the discretion of the instructors).

PSYC 4264 Field Placemeny in Community Corrections II 3 ch (LE)

The field placement is designed to provide students with additional practical experience in a community correctional setting that provides services for federal parolees. The course has limited enrollment and is open to 3rd - 4th year psychology & sociology majors. Prerequisites: PSYC 3263 and PSYC 3493 and SOCI 2611 and SOCI 3614; 3rd - 4th year PSYC/ SOCI, Cumulative GPA=B (exceptions may be made at the discretion of the instructors).

PSYC 4463 Special Topics in Personality 3 ch (C/S)

A seminar course focusing on an in-depth analysis of selected topics in personality theory and research. Possible topics include attachment, interpersonal relations and communication, intimacy, loneliness, solitude, and issues in personality assessment. Prerequisite: PSYC 3461.

PSYC 4493 Developmental Psychopathology 3 ch (3C/S)

Introduces students to the literature of maladaptive behavior within the developmental perspective. Specific disorders of childhood and adolescence will be included in the seminar topics. Prerequisites: PSYC 2201 and 3553 or permission of instructor.

PSYC 4583 Advanced Perception 3 ch (3C)

Provides an in-depth discussion and analysis of selected problems in perception. Topics may include temporal factors in perception, optical illusions, spatial frequency representation, perceptual development, motion perception. Prerequisite: PSYC 3383.

PSYC 4693 Learning Theory 3 ch (3C/S)

An examination of some of the persistent theoretical questions in learning. Prerequisite: PSYC 3503.

PSYC 4733 Cognitive Neuroscience 3 ch (3C/S)

This course deals with contemporary neurological models of perception and cognition. Topics will be selected to reflect the expertise of faculty. They may include computational networks, blindsight, prosopagnosia, lateralization, etc. Prerequisites: PSYC 3711 and either PSYC 3383 or PSYC 3693.

PSYC 4833 Psychopharmacology 3 ch (3C)

A seminar course focusing on the drugs used in the treatment of depression, anxiety, panic disorder, obsessive-compulsive disorder, phobias, schizophrenia, dementias, and related disorders. The emphasis is on the biological bases of these syndromes and the pharmacological agents used to alleviate them. Prerequisite: PSYC 3711.

SCIENCE

Note: See beginning of Section F for abbreviations, course numbers and coding.

SCI 1001 University Skills for Science Students 2 ch (2C)

This course introduces first year students to skills which will assist in their success in first year university. Helps students develop their self-assessment skills and their approaches to problem solving.

SCI 1862 Shaping the Earth's Surface 3 ch (3C)

Designed for the non-scientist. Examines the basic geological forces that shape the earth's surface and our environment. Subjects include volcanism, earthquakes, erosion, soils, groundwater, rivers, coastlines, deserts, landslides, and the earth's past, present and possible future climates.

SCI 1872 Basic Physics and Astronomy for Non-Scientists 3 ch (3C)

Overview of physics and astronomy from the perspective of historic development and fundamental principles of science. Topics include: concepts of force, energy and wave; survey of astronomy tracing development of our view of the universe. Offered in alternate years with SCI 1862 (Shaping the Earths Surface). Prerequisite: High School math and science courses are an asset.

SCI 2001 An Introduction to Space Studies 3 ch (3C)

Examines aspects of humankinds interaction with space: the scientific, the technological, the economic, the political, and the social components. Prerequisite: 24 chs.

SCI 2022 Introduction to Geographic Information Systems (GIS) (A) 4 ch (3C 2L)

A general introduction to the theory, methods and applications of GIS, combined with hands-on practice designed to develop basic skills. Covers: types and sources of geographic and attribute data; remote sensing and GIS; data processing; digital base maps and digital terrain models; problem-solving for natural resource and socio-economic applications; geospatial analysis; data presentation and output.

SCI 3155 Women and Science 3 ch (3C)

An overview of womens historical and contemporary participation in science, issues in science and math education, feminist critiques and theories on science and gender, and the impact of technology on womens lives. Prerequisites: GEND 2001 (pre or co) or 30 ch of any SASE program.

SCI 3255 Women, Development and the Environment 3 ch (3C)

An examination of the effects of the status of women, poverty, population growth and economics on the state of the environment and conservation in developing nations. Environmental issues to be discussed include: over cultivation and deforestation, over fishing, poaching, antibiotic resistance, migration, biodiversity, extinction and resource depletion. Prerequisites: GEND 2001 (pre or co) or 30 ch of any SASE program.

SOCIAL SCIENCES

Note: See beginning of Section F for abbreviations, course numbers and coding.

SOCS 4000 Twentieth-Century Personalities 6 ch (3C/S)

A study of major contributions to contemporary thought.

SOCS 4100 Patterns of Twentieth-Century Thought 6 ch (3C/S)

An analysis of important social, political and cultural movements in this century.

SOCIOLOGY

Note: See beginning of Section F for abbreviations, course numbers and coding.

Unless otherwise indicated, students must complete Sociology 1001 before taking any sociology courses at the 2000 level or above. Students are required to complete at least 9 credit hours of sociology courses at the lower level (10002000 courses) before enrolling in any upper level sociology courses. Students who are not majoring or honouring in Sociology will be admitted to a 4000 level course only if they have completed 18ch of Sociology and have consulted with the instructor. A minimum grade of C (2.0) is required for all sociology courses taken to meet the Majors, Honours requirements or prerequisites.

SOCI 1001 Introduction to Sociology 3 ch (3C)

Surveys the basic concepts, theories and analytical methods of sociology and introduces students to sociology as a way of thinking.

SOCI 2250 Sociology of the Media 3 ch

Examines the place of media (such as film, television and newspapers) in contemporary social life. Analyzes how media have emerged and developed, the organizational forms they have taken, and how they reflect and influence shared social experience.

SOCI 2251 Film and Society 3 ch

This course examines the rise of the North American film industry, its organization and its current cultural influence. It investigates the history of early film, the rise of the studio system, the star as celebrity, the emergence of a number of film aesthetics, and it analyses how film has represented social issues especially those of class, gender and race.

SOCI 2253 From TV to the Internet 3 ch

This course provides a broad-based introduction to the interdisciplinary field of the sociology of the media. It explores the political, economic, ideological and organizational settings within which the media operates and charts its growing importance in many aspects of contemporary life.

SOCI 2323 Sociology of Work 3 ch

This course will examine the changing nature and organization of work within the context of regional, national and international developments.

SOCI 2376 Sociology of Health, Illness and Healing 3 ch (3C)

Examines the social nature and consequences of health, illness and healing and looks at medicine as a form of social control. Areas to be covered include the delivery of health care, social construction of medical knowledge, social inequality and its impact on health and disease. Prerequisite: none

SOCI 2413 Canadian Society 3 ch (3C) [W]

Examines the historical preconditions, current processes in and structure of Canadian society. This may include French-English relations, regionalism, native rights, Canadian mosaic and position in the world system. No prerequisite required.

SOCI 2415 Mexican Society 3 ch (3C)

An introduction to Mexican society and social history from pre-Columbian to contemporary times, offering a conceptual framework for understanding Mexican society, current events and its place in the work system.

SOCI 2533 Social Movements and Social Revolutions (O) 3 ch (3C)

An analysis of social movements and revolutions from a sociological perspective. Emphasis is on critical understanding of why they arise, why some fail and why others succeed.

SOCI 2603 Sociology of Deviance 3 ch (3C) [W]

Examines the elements and patterns of deviance, basic principles of both normative and deviant behaviour, and the institutionalization of each. Studies examples of specific areas and types of deviance in some detail.

SOCI 2611 Language, Crime and Human Agency 3 ch (3C)

Introduces students to the field of qualitative criminology. Focuses on criminological developments since the work of Becker in the 1950s. Emphases will be placed on interactionist, ethnomethodological, feminist, and other micro-level analyses of crime in Western societies.

SOCI 2615 Historical Sociology 1 3 ch

Introduction to historical and sociological understanding of modern and post-modern societies. Particular emphasis will be placed on Canada and Europe.

SOCI 2703 Population Studies 3 ch (3C) [W]

Examines world and Canadian population variation and change through consideration of underlying fertility, mortality and migration patterns. Also explores the rise and development of modern population theories, models and policies. No prerequisite required.

SOCI 2803 Sociology of the Family 3 ch (3C)

Introduction to theory and research on marriage and the contemporary family. Forms and functions of the family in Western society; industrialization and the growth of the symmetrical family; the effect of feminism on marital and sexual roles; the dynamics of family formation and dissolution; evaluation of prospects for the family in post-industrial society.

SOCI 2991 Cuban Society 3 ch

Examines the historical preconditions, together with the current processes in, and structure of, Cuban society. Prerequisite: SOCI 1001.

SOCI 3000 Theoretical Foundations of Sociology 6 ch (3C)

An overview of the origins and development of sociology. Considers major classical theorists such as Marx, Durkheim and Weber, as well as some selected contemporary ones, and examines readings from original works. Prerequisite: 12 ch of Sociology.

SOCI 3003 Sociology of Economic Ideas 3 ch (3C)

Explores the relationships between the evolution of economic ideas and the prevailing socio-historical conditions. Also examines broader implications of economic ideas for the formulation of economic and social policy.

SOCI 3104 Quantitative Methods in the Social Sciences 3 ch (3C)

Introduces students to the logic and main stages of quantitative research, covering sampling, measurement, data collection methods, and statistical analysis as well as research ethics.

SOCI 3105 Qualitative Methods in the Social Sciences 3 ch (3C)

Introduces students to the inter-disciplinary emergence of qualitative methods (e.g., feminist, interactionist, textual), with an emphasis on epistemological, philosophical and reflexive concerns as well as practical applications.

SOCI 3214 Sociology of Communications 3 ch (3C)

A sociological examination of the principal ways communication can be understood. It will analyze both theoretical considerations and applied issues in communication studies.

SOCI 3251 Film and Society II 3 ch (3C)

This course provides a broad- based introduction to the interdisciplinary field of the sociology of film. It investigates the relationship between film and society and focuses its attention on post World War II Hollywood Films, Italian Neo-realist and French New Wave films. Prerequisite: SOCI 1001, SOCI 2251

SOCI 3501 Signs, Symbols and Society 3 ch

An introduction into the origin and role of signs and symbols in the production and reproduction of human societies. Prerequisite: SOCI 1001 and 6 ch of Sociology at the lower level(2000).

SOCI 3523 Sociology of Third World Development 3 ch (3C)

A comparative historical study of the wealth and poverty of nations. Emphasizes how the environment, culture and politics affect economic development.

SOCI 3543 Sociology of Gender Relations 3 ch

Examines gender as an organizing principle in social life, exploring how particular patterns of gender relations shape and are shaped by key areas of human activity (e.g., work, education, communication, sexuality, family violence) in ways that generate and perpetuate gender inequalities.

SOCI 3544 Gender and Technology 3 ch

Explores the processes through which gender relations and assumptions about gender enter into the design and use of technologies, the extent to which the social relations of technology are implicated in the generation of gender inequalities, and the impacts of technology on the lives of women and men.

SOCI 3611 Socio-Legal Studies 3 ch

Examines the complex relations between law and Western societies. Emphasis will be on qualitative, historical and critical interpretations of the field. Wherever possible, empirical analysis will be used to highlight theoretical concerns. Prerequisites: SOCI 2614.

SOCI 3614 Culture, Criminal Justice & Social Structure 3 ch (3C)

Advanced study in the field of qualitative criminology. Focuses on developments in the field since the emergence of the New Criminology in the 1970s. Emphasis will be placed on Marxist, post-structuralist and other macro-level analyses of crime in Western Societies. Prerequisite: SOCI 1001, SOCI 2611.

SOCI 3615 Historical Sociology 2 3 ch

Advanced study of socio-cultural and socio-historical transformations in Western societies. Emphasis will be placed on the critical literature in this field, and the detailed analysis of specific empirical transformations. Course topics change annually. Prerequisite: SOCI 2615.

SOCI 3700 Studies in Urban Sociology 6 ch (3C) [W]

Analyzes the evolution and structure of the urban community as a socio-spatial system. An introduction to the study of urban social and ecological structures, with particular attention given to the Canadian urban system.

SOCI 3822 Sociology of Modernization 3 ch (3C)

Course explores the transition from traditional to modern society. Emphasis is on the structures of everyday life before and after modernization.

SOCI 3843 Sociology of the Arts 3 ch (3C)

Investigates the social contexts of artistic endeavour and consumption of such art forms as painting, music, literature, theatre, film and architecture. Explores the role of both amateur and professional artists as well as their products and publics.

SOCI 3883 Sociology of Health and Welfare 3 ch (3C)

Analyzes the development of organized social welfare as a component of modern industrialized societies.Pays attention to the rise of the welfare state in historical and comparative perspectives. Also investigates contemporary problems which confront both the welfare state itself and individuals within the system.

SOCI 3889 Sociology of Native Issues: Culture and Colonization 3 ch

This course explores the spirituality and diversity of native culture in Canada, the impact of European colonization and the use of genocide, reserves and residential schools. Prerequisite: SOCI 1001 and 6 ch of Sociology courses.

SOCI 3921 Sociology of Knowledge 3ch (3C)

This course examines the social construction of knowledge. Explores the social and historical processes by which we have come to accept certain claims to knowledge as valid. Also examines controversies about the progressiveness and rationality of knowledge.

SOCI 4013 Contemporary Sociological Theory 3 ch (3C)

An intensive examination of one or more contemporary social theorists. Prerequisite: SOCI 3000.

SOCI 4014 Designing Research Proposals 3 ch

Under the direction of a supervisor, an Honours student develops a proposal which is approved by the Discipline.

SOCI 4015 Honours Thesis 3 ch

Under the direction of a supervisor, a student conducts, completes and defends a thesis. Prerequisite: Sociology 4014

SOCI 4023 Special Topics in Sociological Theory 3 ch (3S)

Intensive study of a selected theorist, theory group or issue in sociological theory. Prerequisite: SOCI 4013.

SOCI 4263 Discourse and Text 3 ch

Advanced studies in discourse and textual analysis. Topics may vary from year to year, but will typically cover a selection from the following intellectual schools: phenomenology, ethnomethodology, conversation analysis, discourse analysis, cultural studies, post-structuralism, deconstruction, and feminism. Prerequisite: SOCI 3105

SOCI 4315 Cultural Studies in Sociology 3 ch (3C)

Examines cultural texts and practices in society. It will analyze the historical emergence of culture and how it is related to assumptions about class, gender, politics and history.

SOCI 4363 Political Sociology 3ch (3S)

A comprehensive historical study of the political routes the major countries of the East and the West took to reach modern industrial society. Emphasis is on the interrelations of state power, class, ideology, and industrialization.

SOCI 4403 Special Topics in Canadian Society 3 ch (3S)

Intensive examination of one or more selected topics. Prerequisite: SOCI 2403 or SOCI 2413.

SOCI 4503 Research Seminar in Popular Culture 3 ch

This course examines the daily cultural artifacts that surround us, their multitude of meanings, and their use by social actors. This course will provide a historical background for understanding contemporary popular culture, and will investigate current theoretical debates on mass culture, popular culture and postmodernism. Prerequisite: Twelve credit hours of sociology

SOCI 4555 Gender and Organization 3 ch (3S)

An advanced level focus on how organizations are viewed and explained as gendered, sexualized entities. Examines feminist critiques of traditional approaches to organization; feminist conceptualizations of gender and organization; empirical studies of men and women in particular organizations; organizations, gender and violence; and gender and military organization. Prerequisites: Either (a) Sociology 1000 or (b) Gender Studies 2001 and permission of the instructor

SOCI 4603 Special Topics in Criminological Theory 3 ch

Intensive examination of selected recent developments in the field with an emphasis on feminist, critical, post-structural and interactionist literature. Prerequisite: SOCI 2614.

SOCI 4613 Special Topics in Socio-Legal Studies 3 ch

In-depth examination of selected topics in the field. Theoretical emphases will vary from year to year, but insights from phenomenological, ethnomethodological, post-structural, feminist and other discursive approaches will be stressed. Substantive topics also vary from year to year, but historical and contemporary concerns regarding social rights and welfare law will be prioritized. Prerequisites: SOCI 3611.

SOCI 4705 Sociology of Civilizations 3 ch (3C)

A comparative study of the cultural, political and economic heritage of world civilizations.

SOCI 4910 Readings in Special Areas 6 ch (R)

Provides Majors and Honours students with the opportunity to pursue a special area of interest on an individualized basis. Requires a substantial essay, based on library research. Course offering depends on the consent and availability of Sociology faculty.

SOCI 4920 Research in Special Areas 6 ch (R)

Provides Majors and Honours students with the opportunity to do basic, hands-on research in an area of special interest. Requires a substantial essay, based on the students directed research. Prerequisite: SOCI 3103. Corequisite: SOCI 3100. Course offering depends on the consent and availability of Sociology faculty.

SPANISH

Note: See beginning of Section F for abbreviations, course numbers and coding.

SPAN 1203 Introductory Spanish I 3 ch

Designed to give beginners a sound basic knowledge of Spanish. Explains fundamentals of grammar with some reading at the elementary level. Language laboratory available for oral practice.

SPAN 1204 Introductory Spanish II 3 ch

Continuation of SPAN 1203. Prerequisite: SPAN 1203 or equivalent.

SPAN 2010 The Civilization of Spain 6 ch (3C)

Given in English and based upon texts and reference works in English, and requires no knowledge of Spanish. Various aspects of Spanish civilization are examined, including geography, history, art, literature, society and contemporary problems.

SPAN 2203 Intermediate Spanish I 3 ch

Designed to consolidate and to develop language skills acquired in SPAN 1203 and SPAN 1204. Fundamentals of grammar will be completed and modern Spanish and Spanish American authors read. Audio-visual materials are also used. Prerequisite: SPAN 1204 or equivalent.

SPAN 2204 Intermediate Spanish II 3 ch

Continuation of SPAN 2203. Prerequisite: SPAN 2203 or equivalent.

SPAN 3007 Fundamentals of Spanish Language and Culture (O) 3 ch (3C)

This intensive course combines the study of language and culture and targets the development of all four basic skills: speaking, listening, reading, and writing to extend intermediate-level proficiency. It also offers an opportunity to create a contemporary, and interesting context for meaningful communication with the Spanish-speaking world. Prerequisite: SPAN 2204 or equivalent.

SPAN 3974 Contemporary Spanish American Prose Fiction 3 ch (3S)

Representative novels and short stories by Spanish-American writers including Borges, Vargas, Llosa, Garcia Marquez, and Paz whose works exemplify the social conflicts and ideological contradictions of the region. Taught in Spanish. Prerequisite: permission of the instructor.

STATISTICS

Note: See beginning of Section F for abbreviations, course numbers and coding.

STAT 1793 Introduction to Applied Statistics 3 ch (4C)

Descriptive statistics. Binomial and Normal models. Sampling techniques. Confidence intervals. Tests of hypotheses. Linear regression and correlation. Analysis of variance. Prerequisite(s): Grade 12 Mathematics.

STAT 2263 Statistics for Health Sciences 3 ch (3C)

An introductory course in statistics. Probability, application of Bayes' Theorem. Binomial and Normal random variables. Confidence intervals for means and proportions. Prediction intervals. Tests of hypotheses. Paired data versus two independent samples. Brief introduction to analysis of variance. Regression, correlation. Contingency tables. Examples drawn from the health sciences. Use of a statistical computer package. NOTE: Credit can be obtained for only one of STAT 1793, STAT 2263, STAT 2264, STAT 2593, PSYC 2901. Prerequisites: New Brunswick Mathematics 112 and 122 or equivalent.

STAT 2264 Statistics for Biology I 3 ch (3C)

An introductory course in statistics. Probability, Bayes' Theorem, applications of probability to genetics. Random variable, expectation. Binomial and Normal random variables. Confidence intervals for means and proportions. Prediction intervals. Tests of hypotheses. Paired data versus two independent samples. Brief introduction to analysis of variance. Regression, correlation. Contingency variables. Examples drawn from biology. Use of a statistical computer package. NOTE: Credit can be obtained for only one of STAT 1793, STAT 2263, STAT 2264, STAT 2593, PSYC 2901. Prerequisites: New Brunswick Mathematics 112 and 122 or equivalent.

STAT 2593 Probability and Statistics for Engineers 3 ch (3C 1T)

Elementary probability, discrete and continuous distributions, characteristics of distributions. Statistics, sampling, estimation and hypothesis testing, curve fitting, quality control. Note: Credit can be obtained for only one of STAT 1793, STAT 2263, STAT 2593. Prerequisite: MATH 1013.

STAT 2783 Introduction to Non-parametric Methods (O) 3 ch (3C)

An introduction to the ideas and techniques of non-parametric analysis. Included are studies of the one, two and K samples problems, goodness of fit tests, randomness tests, and correlation. Prerequisite: STAT 1793.

STAT 3083 Probability and Mathematical Statistics I 3 ch (3C)

The first half of a two-part sequence covering various topics in probability and statistics. This course provides an introduction to probability theory and the theory of random variables and their distributions. Probability laws. Discrete and continuous random variables. Means, variances and moment generating functions. Sums of random variables. Joint discrete distributions. Central Limit Theorem. Examples drawn from engineering, science, computer science and business. Prerequisites: MATH 1013. Also, STAT 1793 is strongly recommended as preparation for the sequence STAT 3083/ STAT 3093.

STAT 3093 Probability and Mathematical Statistics II 3 ch (3C)

The second half of a two part sequence covering various topics in probability and statistics. This course provides an introduction to essential techniques of statistical inference. Samples and statistics versus population and parameters. Brief introduction to method of moments and maximum likelihood. Tests and intervals for means, variances and proportions (one and two sample). Multiple regression, residual plots. Analysis of variance. Brief introduction to experimental design. Chi-squared tests. Examples drawn from engineering, computing science and business. Use of a statistical computer package. Prerequisite: STAT 3083.

STAT 3264 Statistics for Biology II 3 ch (3C)

Experimental design, analysis of variance, regression, non-parametric statistics, the use of BMDP, SAS or SPSS computer packages. Prerequisite: STAT 2264.

STAT 3383 Introduction to Stochastic Processes (O) 3 ch (3C)

Poisson processes, Markov chains, renewal theory, and queuing theory. Prerequisite: STAT 3093.

STAT 3703 Experimental Design 3 ch (3C)

Experimental Design methods and theory, one-way and two-way classification models, split plot designs, incomplete blocks, response surface designs. Special emphasis on applications. Prerequisite: STAT 1793.

STAT 3713 Introduction to Statistical Decision Theory (O) 3 ch (3C)

Concept of a strategy, utility theory, Bayes Theorem and decision making, min-max theorem and introduction to game theory. Use of a statistical computer package. Prerequisite: 6 ch in Statistics.

STAT 4043 Sample Survey Theory (A) 3 ch (3C)

Simple random sampling; stratified sampling; systematic sampling; multistage sampling; double sampling, ratio and regression estimates; sources of error in surveys. Prerequisite: 6 ch in Statistics.

STAT 4203 Introduction to Multivariate Data Analysis (A) 3 ch (3C)

Multivariate normal distribution; multivariate regression and the analysis of variance; canonical correlations; principal components; classification procedures; factor analysis; computer applications. Student should have some exposure to matrix algebra. Prerequisite: 6ch in Statistics.

STAT 4243 Statistical Computing (A) 3 ch (3C)

Course will include random number generation, simulation of random variables and processes, Monte Carlo techniques and integral estimation, the computation of percentage points and percentiles, as well as resampling methods. Students should have a course in computer programming. Prerequisite: 6ch in Statistics.

STAT 4703 Regression Analysis 3 ch (3C)

Simple and multiple linear regression, least squares estimates and their properties, tests of hypotheses, F-test, general linear model, prediction and confidence intervals. Orthogonal and non-orthogonal designs. Weighted least squares. Use of a statistical computer package. Prerequisite: 6 ch in Statistics, 3 ch in Computer Science and some exposure to matrix algebra.

STAT 4803 Topics in Statistics (O) 3 ch (3C)

Selected topics at an advanced level. Content will vary. Topic of course will be entered on students transcript. Course will be considered as an upper level elective for Data Analysis students and for Mathematics and Statistics Majors. Prerequisite: STAT 3093 or consent of instructor.

SURVEYING ENGINEERING

A grade of C or higher is required in all Surveying Engineering courses.

Note: See beginning of Section F for abbreviations, course numbers and coding.

SE 1001 Surveying I 5 ch (3C 3L)

Basic instrumentation, techniques and computations for plane surveying and small area topographic surveys. Introduction to electronic distance measurement and total stations; basic curves, area and volume computations.

WORLD LITERATURE

Note: See beginning of Section F for abbreviations, course numbers and coding.

For upper-level courses, the prerequisites are: WLIT 2501 and WLIT 2502; or permission of the instructor.

WLIT 2501 The Western Literary Tradition 3 ch (3C)

This course is an introduction to the discipline of Comparative Literature, and to the Western literary tradition. Students will read representative works of imaginative literature in a variety of genres from different cultures and historical periods.

WLIT 2502 The Eastern Literary Tradition 3 ch (3C)

This course is an introduction to the discipline of Comparative Literature, and to the Eastern literary tradition. Students will read representative works of imaginative literature in a variety of genres from different cultures and historical periods.

WLIT 3314 European Romanticism 3 ch (3C)

A study of the literature, art, and music of the period 1770-1850 in Europe. Major themes may include individualism, Romantic heroism, revolution, folklore, childhood and nature.

WLIT 3315 Nineteenth-Century Literature 3 ch (3C)

The development of Western literature, philosophy, and aesthetics during the second half of the nineteenth century, in the context of literary, philosophical, aesthetic, and social movements. Authors studied may include: Baudelaire, Sand, Mallarmé, Rachilde, Marx, Tolstoy, Nietzsche, Ibsen, Dostoevsky, Strindberg, Freud.

WLIT 3725 Literature and/as Philosophy 3 ch (3C)

Through the study of specific authors, this course will be an examination of the manner in which these two humanities disciplines interact, enhance and mutually inform dialectical, analytic, and imaginative forms of thought. Authors and their texts may include de Beauvoir, Camus, Dostoevsky, Kundera, de Sade, Sartre, Tolstoy, Wollstonecraft.

WLIT 3901 Studies in Comparative Literature 3 ch (3S)

An upper-level seminar on a specified topic. Please consult the discipline.

FREDERICTON COURSE DESCRIPTIONS

Standard Course Abbreviations

Aboriginal Education	ABRG
Anthropology	ANTH
Applied Science	APSC
Arts	ARTS
Astronomy	ASTR
Biology	BIOL
Bridging Year for Aboriginal Students	BY
Business Administration	ADM
Chemical Engineering	CHE
Chemistry	CHEM
Chinese	CHNS
Civil Engineering	CE
Classics and Ancient History	CLAS
Computer Engineering	CMPE
Computer Science	CS
Economics	ECON
Education	ED
Electrical Engineering	EE
Engineering	ENGG
English	ENGL
Environmental Studies	ENVS
Fine Arts	FA
Forestry	FOR
Forest Engineering	FE
French	FR
French Linguistics	FR/LING
Family Violence Issues	FVI
Geodesy and Geomatics Engineering	GGE
Geography	GEOG
Geological Engineering	GE
Geology	GEOL
German	GER
German Studies	GS
Greek	GRK
History	HIST
International Development Studies	IDS
Japanese	JPNS
Kinesiology	KIN
Latin	LAT
Law	LAW
Law in Society	LINS
Linguistics	LING
Mathematics	MATH
Mechanical Engineering	ME
Medical Laboratory Science	MLS
Multimedia Studies	MM
Nursing	NURS
Philosophy	PHIL
Physics	PHYS
Political Science	POLS
Psychology	PSYC
Recreation and Sports Studies	RSS
Renaissance College	RCLP
Russian	RUSS
Russian and Eurasian Studies	RSST
Sociology	SOCI
Software Engineering	SWE
Spanish	SPAN
Statistics	STAT
Technology Management and Entrepreneurship	TME
Womens Studies	WS
World Literature and Culture Studies	WLCS

Course Numbers

Although the University is on a course credit system and has tended to move away from the idea of a rigid specification with respect to which year courses should be taken, yet there is some need to provide information as to the level of the course.

The various disciplines and the courses which they offer are presented in alphabetical order.

The course numbers are designated by four digits.

First Digit designates the level of the course:

1	Introductory level course
2	Intermediate level course which normally has prerequisites.
3, 4 and 5	Advanced level course which requires a substantial back-ground.
6	Postgraduate level course

Second and Third Digits designate the particular course in the Department, Division or Faculty.

Fourth Digit designates the duration of the course:

0	Year (or full) course normally offered over two terms.
1-9	Other than full year courses.

Departments may assign specific meanings to these digits; consult the departmental listings.

Students should consult the official **Web Timetable** (www.unb.ca/schedules/TimeTable.htm) to find when courses are offered in a particular year and when they are scheduled. Not all courses listed are given every year.

Codes

The following codes are used in course descriptions:

A -	alternate years	**R** -	reading course
ch or cr -	credit hours	**S** -	seminar
C -	class lecture	**T** -	tutorial
L -	laboratory	**[W]** -	English writing component
LE -	limited enrollment	**WS** -	workshop
O -	occasionally given	***** -	alternate weeks

For example, 6 ch (3C 1T, 2C, 2T) designates a course with 6 credit hours: 3 class lecture hours and 1 tutorial hour per week in the first term; 2 class lecture hours and 2 tutorial hours per week in the second term.

Combinations of class lectures, laboratories, seminars, etc., are indi-cated by a slash line, e.g., 5C/L/S.

Before registration, check all course offerings in the official Timeta-ble. Not all courses listed are given every year

ABORIGINAL STUDIES

Note: See beginning of Section H for abbreviations, course numbers and coding.

Includes courses reserved for students in the Mi'kmaq-Maliseet Institute Programs for Aboriginal Students.

ABRG 1411 Finite Mathematics 3 ch

Introductory mathematics for students with a limited background in mathematics. Topics include algebra, coordinate geometry, matrices and systems of linear equations, linear programming concepts, and elementary probability (for students registered in Mi'kmaq-Maliseet Institute programs only).

ABRG 1412 Elementary Calculus 3 ch

Polynomial, logarithmic and exponential functions. Limits and derivatives. Simple integration. Applications to business and economics (for students registered in Mi'kmaq-Maliseet Institute programs only).

ABRG 3363 Communications: Speaking Practice 3 ch

Writing and presentation of a speech. Students prepare, present, analyze and criticize a variety of speeches, relating skills to classroom teaching (for students in the Bridging Year or BEd for Aboriginal students only).

ABRG 3684 Aspects of Maliseet and Mi'kmaq Culture 3 ch

Historical and contemporary perspectives on changes that have affected Mi'kmaq and Maliseet cultures and societies since the time of contact; emphasis on issues relating to education, economic development, spirituality, self-government, land claims.

ABRG 3685 Mi'kmaq Language 3 ch

Elements of Mi'kmaq: phonology, morphology, syntax. Field methods. Instructional materials and approaches.

ABRG 3686 Maliseet Language 3 ch

Elements of Maliseet: phonology, morphology, syntax. Field methods. Instructional materials and approaches.

ABRG 3686 Wolastoqey Latuwewakon 3 ch

'Ciw wen ketuwokehkimsit eluwehket wolastoqey latuwewakon, tan eltaqahk naka tan eluwikhasik. 'Ciw wen ketuwokisit naka ketuwewestaq.

ABRG 3688 Contemporary Canadian Aboriginal Children's Literature 3 ch

Books for primary and elementary children written by Canadian Aboriginal authors. Examines the Native voice in Native and non-native worlds in relation to traditional beliefs and current cultural concerns.

ABRG 3695 Intermediate Mi'kmaq Language 3 ch

Further studies in Mi'kmaq. Prerequisite: 3 ch in Mi'kmaq Language.

ABRG 3696 Wolastoqey Latuwewakon II 3 ch

Ciw wen keti ankuwokehkimsit wolastoqey latuwewakon, tahalu eluwikhasik, elewestuhtimok naka atkuhkewakonol. Ciw yukt kisi wihqehtuhtit ABRG 3686, 3687, kosona wolitahatok nutokehkikermit.

ABRG 3696 Intermediate Maliseet Language 3 ch

Second-level course in Maliseet, focused on syntax, conversation, storytelling. Prerequisite: ABRG 3686 or 3687 or permission of instructor.

ABRG 4664 Aboriginal Entrepreneurship 3 ch

An introduction to the theory behind successful entrepreneurship; principles and practical application of starting and maintaining a small business within an Aboriginal environment. Guest speakers from local Aboriginal businesses, government agencies, funding institutions.

ABRG 4665 Medicine Wheel and Organizational Behaviour 3 ch

Introduction to the Medicine Wheel and how the values inherent in its teachings can be applied to groups, organizations, and communities. Students will relate ideas and concepts behind the Medicine Wheel to organizational structures in both mainstream and Aboriginal societies.

ABRG 4696 Advanced Maliseet I: Grammar 3 ch

Focus on grammar, word and sentence formation, in speaking and listening, through storytelling, conversation, and songs. Prerequisite: 6 ch in Maliseet Language or permission of instructor.

ABRG 4696 Wolastoqey Latuwewakon III 3 ch

'Ciw yut wen keti ankuwi skicinuwatuwet naka wen keti piyemi woli sotok atkuhkakonol, mecimiw elewestuhtimkopon naka elewestuhtimok, kapiw kaneyal naka pileyal lintuwakonol. 'Ciw yukt kisi wihqehtuhtit kinaq neqcikotok, kosona wolitahatok nutokehkikemit.

ABRG 4697 Advanced Maliseet II: Conversation and Composition 3 ch

Focus on vocabulary development, fluency in speech, literacy skills. Prerequisite: 9 ch in Maliseet Language or permission of instructor.

ABRG 4697 Wolastoqey Latuwewakon IV 3 ch

'Ciw yut wen keti ankuwi kcicihtaq skicinuwatuwewakon, pciliw eluwikhasik, wolama 'tawi olonuwatuwe. 'Ciw yukt kisi wihqehtuhtit kinaq neqcikotok cel epahsiw, kosona wolitahatok nutokehkikemit.

ADMINISTRATION

See "Business Administration."

ANCIENT HISTORY

See "Classics" for course descriptions.

ANTHROPOLOGY

Note: See beginning of Section H for abbreviations, course numbers and coding.

ANTH 1001 Intro to Social & Cultural Anthropology 3 ch (3C)

A wide range of societies from around the world is studied. Selected topics, such as kinship, marriage, economics, politics and religion, are examined in some detail in order to address the question: What do the uniformities and the differences between cultures have to teach us about ourselves?

ANTH 1002 Introduction to Paleo-Anthropology 3 ch (3C)

Paleo-anthropology draws on the sub-fields of biological anthropology and archaeology. This course presents ecological/evolutionary interpretations of changes in human physiology and culture since about 6 - 8 million years ago when the direct ancestors of modern humans became distinct from the direct ancestors of modern chimpanzees and gorillas.

ANTH 2014 Debates in Anthropology (O) 3 ch (3C) [W]

Examines landmark theories and major anthropological figures in order to train students to evaluate anthropological theories as social science and to think more critically about the nature of theory. Prerequisite: ANTH 1001 and 1002 or permission of the instructor.

ANTH 2114 Cross-Cultural Economies 3 ch (3C) [W]

Covers a wide range of economic organizations in bands, tribes and peasant societies, and examines the four major anthropological schools of economic theory.

ANTH 2144 Social Organization and Comparative Institutions 3 ch (3C) [W]

Examines the social structure of a number of small-scale, non-industrial societies. The complexity of social organization in these societies will be analyzed in terms of their ecological, economic, political and family institutions. Concepts such as egalitarianism, nomadism, kinship and exchange will be examined and the effects of social change, development and colonialism discussed.

ANTH 2174 Symbolism and Ritual 3 ch (3C) [W]

Students will examine how rituals and symbols organize social systems. Topics such as taboo, rites of passage, magic, shamanism and other forms of spirit possession are explored. Special attention is paid to the symbolism of religious/political movements. Films and music are used to show the wide range of ritual symbolism in different parts of the world, including North America and Europe.

ANTH 2301 Prehistoric Archaeology: The Americas (A) 3 ch (3C) [W]

Introduction to archaeological methods and theories through an examination of the origin and development of Native American cultures from the earliest traces to European contact. Prerequisite: ANTH 1001 and ANTH 1002

ANTH 2302 Prehistoric Archaeology: Paleolithic Cultures 3 ch (3C) [W]

Introduces archaeological methods and theories through an examination of the paleolithic cultures of Africa, Europe and Asia. Prerequisite: ANTH 1001 and 1002.

ANTH 2502 Introduction to Biological Anthropology 3 ch (2C 1L) [W]

An introduction to the field of biological anthropology, with an emphasis on genetics, evolution, paleo-anthropology, and primatology. Lecture/laboratory format.

ANTH 3051 Work-Study in Anthropology (O) 3 ch (3L)

This course allows students to receive university credit for experience in social science research gained under the supervision of a university-seated researcher or from a non-university organization. Registration: Students may only register after making arrangements for supervision and grading with the department.

ANTH 3053 On-Site Latin American Seminar 3 ch [W]

This on-site seminar is conducted either in Merida, Mexico, or in Cienfuegos, Cuba. It examines the cultural, political and economic organization of the region, while increasing the students awareness of, and involvement in, development issues.

ANTH 3061 Ethnography in Mexico 3 ch

Taught in Mexico during the intersession, this allows university students to receive university credits for experiences in ethnographic research. Research skills include participant observation and interviews.

ANTH 3114 Anthropology of Gender 3 ch (3C) [W]

How do human gender roles vary from culture to culture and over time? How has anthropology attempted to explain these variations? What are the implications for the nature/nurture debate? Examples are drawn from archaeology, physical anthropology and social and cultural studies. Prerequisite: ANTH 1001 and ANTH 1002 and one of ANTH 2114, 2144 or 2174, or permission of the instructor.

ANTH 3184 Cultural Analysis (A) 3 ch (3C) [W]

Ideational theories of culture, particularly those which emphasize cultures as systems of shared symbols and meanings. Contemporary issues in the analysis and interpretation of culture, including the problem of the relationship between culture and social action will be discussed. Prerequisite: ANTH 1001 and 1002 and one of ANTH 2114, 2144 or 2174.

ANTH 3204 Racism 3 ch (3C) [W]

Explores concepts of race and ethnicity as used in anthropology and otherwise. Topics include the genetic basis of human variation, scientific racism, slavery, colonialism, social and economic structures, social class and gender. Cases are chosen from colonial and post-colonial contexts, migrations to Canada, and Native peoples in Canada and elsewhere. Prerequisite: ANTH 1001 and 1002 or permission of the instructor.

ANTH 3244 Advanced Topics in Economic Anthropology (O) 3 ch (3S) [W]

This seminar explores recent anthropological debates about non-western economic systems: how do foragers actually live? how do markets really work? can development really help? Prerequisite: ANTH 2114.

ANTH 3284 Legal Anthropology (A) 3 ch (3S) [W]

Examines the anthropological study of law in society from a cross cultural perspective. Looks at dispute resolution, 'troubleless cases', property and family law as well as the impact of colonial and neocolonial change.

ANTH 3311 Prehistoric Archaeology in Canada (A) 3 ch (3C) [W]

Humans have lived in what is now Canada for at least 11,000 years. This course surveys the development of Native cultures from the earliest traces to European contact. The motivations for, and implications of, the earliest European explorations are also considered. Prerequisite: ANTH 2301 or permission of the instructor.

ANTH 3340 Archaeological Lab School (O) 6 ch (3S 3L) (LE)

Introduces archaeological techniques used to analyse artifacts, bioarchaeological specimens, ecofacts and sediments through participation in a lab research project. Prerequisite: 3 ch of archaeology and permission of the instructor.

ANTH 3341 Work-Study in Museum Studies and Material Culture Analysis (O) 3 ch (3L)

Allows students to receive university credit for experience gained in museum studies, collections management and/or material culture analysis gained outside the university setting. Prerequisite(s): 3 ch of archaeology. Registration: Students may register only after making arrangements for supervision and grading with the department.

ANTH 3345 Acquiring an Archaeological Perspective (A) 3 ch (3S)

This seminar examines the domain and nature of archaeological inquiry, and the relationships among archaeology and other disciplines in the social, physical and natural sciences. Prerequisite: 3 ch of archaeology and permission of the instructor.

ANTH 3350 Archaeological Field School (O) 6 ch (6L) (LE)

Introduction to archaeological field techniques -- site survey, excavation, mapping, profiling and recording -- through participation in a field research project. Prerequisite: 3 ch of archaeology and permission of the instructor.

ANTH 3351 Work-Study in Archaeological Field Research (O) 3 ch (3L)

Allows students to receive university credit for experience gained in archaeological field research outside the university setting. Prerequisite(s): 3 ch of archaeology. Registration: Students may register only after making arrangements for supervision and grading with the department.

ANTH 3413 Language and Culture 3 ch

Taught in Mexico during the intersession, this is an attempt to familiarize students with the languages and cultures of the Yucatan Peninsula.

ANTH 3434 Cross-Cultural Communication (A) 3 ch (3S) [W]

Examines nonverbal communication through the exploration of recent interdisciplinary approaches in the social and behavioral sciences in order to provide the necessary theoretical and content knowledge for cross-cultural communication.

ANTH 3441 Visual Anthropology 3 ch (3C) [W]

Focuses on issues of interpreting visual information. Ethnographic film and other visual representations of society and culture will be considered. Students will examine ethnographic meaning, varieties of approaches, focus of presentation, limits of various media, values of selected techniques, producers messages and biases and theories of visual communication. Depending on availability of resources, the course may include limited practical training in visual ethnography, use and production of films, photography, television/video, and photographic and artifactual and artistic representations. Prerequisite: ANTH 2174 or permission of the instructor.

ANTH 3502 Medical Anthropology 3 ch (3C) [W]

A cross-cultural study of human sickness and health from a biocultural point of view. Topics emphasized are: disease among the non-human primates; medical history in the fossil record; adaptation and disease; ethnomedicine and the traditional healer; the influence of culture on human biology and disease.

ANTH 3522 Human Variation and Adaptation 3 ch (3L) [W]

Why do humans vary from one another and what are the factors responsible for this variation? The focus of this course is to explore the nature and extent of human variation and attempts to explain this variability at the genetic level. The evolutionary framework in which these inherited characteristics came to exist will also be considered. Prerequisite: ANTH 2502.

ANTH 3614 Caribbean 3 ch (3C) [W]

Examines the cultural and social roots of the Caribbean islands and selected adjacent mainland areas, focusing on slavery, indentured servitude, peasant development and migration. Emphasis is given to the Anglophone Caribbean (Jamaica, Trinidad and Grenada, in particular). Readings from Caribbean writers, singers and story-tellers provide insight into the meaning and the cultural dimensions of poverty, oppression and dependence.

ANTH 3662 Canada's First Nations (A) 3 ch (3C) [W]

An overview of the social and cultural research on Aboriginal North America, with particular reference to Canada's First Nations. Some exploration or research into origins, and the peopling of North America will be followed by a detailed examination of traditional Aboriginal ways of living and their current administration. The effects of the fur trade, missions, settlement, and government polocies will be assessed.

ANTH 3665 The Circumpolar World (A) 3 ch (3C) [W]

Nunavut has grown out of an intensive debate about Inuit self-governance. A large part of this debate has been shared with Inuit and Eskimoic groups living in other parts of the Arctic whose cultures and societies often reflect similarities with Canadian Inuit, yet whose administrative and political experiences have differed widely. Here, the cultural world of the Arctic becomes the starting point for understanding the various management strategies adopted by different countries in relation to the circumpolar north and the peoples who live there.

ANTH 3684 Philippines 3 ch (3C) [W]

Familiarizes students with the historical background, political atmosphere, and religions of the Philippine Islands. Places agrarian unrest, guerilla movements, minority group independence movements, economic development and political upheavals in a socio-economic context.

ANTH 3694 Latin America 3 ch (3C) [W]

Relates specific ethnographic studies of Latin American societies to the analysis of colonialism, imperialism and underdevelopment.

ANTH 3704 South Asia 3 ch (3C) [W]

Introduces basic concepts for the analysis of South Asian society, including class, caste, ethnic groups, local and national state and economic relations, in an historical context of colonialism and underdevelopment. Debates surrounding these issues are addressed.

ANTH 3714 Atlantic Canada 3 ch (3C) [W]

Examines ethnographic studies of Newfoundland, Labrador, Nova Scotia, and New Brunswick; emphasis on fishing and farming communities in the context of regional underdevelopment.

ANTH 4011 Colonialism and Inequality (O) 3 ch (3S) [W]

Reviews the inequalities resulting from colonialism and neo-colonialism with emphasis on rural-urban relations, social class, racism and gender. Liberation movements, revolutions, and other attempts at changing the unequal relationships between colonizers and colonized, with special emphasis on internal social inequalities. Theories of colonizations and under development are considered in relation to case studies of selected countries and regions, depending on student interests. Prerequisite: ANTH 1001 and 1002.

ANTH 4012 The Culture of Global Capitalism 3 ch (3C) [W]

Studies the culture of capitalism as it relates to global social issues and current world problems. The approach is comparative with ethnographic material from a variety of geographical areas.

ANTH 4024 Anthropology and Ethics (O) 3ch (3S) [W]

The ethical codes of many national anthropological associations recommend that teachers impress upon students the ethical challenges involved in every phase of anthropological work, as well as encourage them to reflect upon available ethical codes. They also encourage dialogue with colleagues on ethical issues. This seminar provides a format for extended discussions of complex ethical challenges that face anthropologists in their professional work. Pre-requisite: ANTH 1001, 1002, and one of ANTH 2114, 2144 or 2174.

ANTH 4204 Kinship and Marriage (O) 3 ch (3S) [W]

A cross-cultural analysis of kinship structures and marriage forms. Prerequisite: ANTH 1001 and 1002 and ANTH 2144 or permission of the instructor.

ANTH 4214 Comparative Political Systems 3 ch (3C) [W]

Examines theories of the impact of world systems, colonialism, and the state of band and tribal societies. Covers debates on the models of power and hierarchy in state and non-state systems; political change and resistance; accommodation, rebellion and revolution; political ritual and symbolism. Prerequisite: ANTH 1001 and 1002.

ANTH 4224 Anthropology of Religion (A) 3 ch (3C) [W]

Detailed examination of debates and theories in anthropological studies of religion, including shamanism, possession, rites of passage, symbolic and ritual change, revitalization and messianism. Discusses the objectives and scope of anthropological study of religion and examines the relationship between traditional belief systems and cultural formations. Prerequisite: ANTH 1001 and 1002 and ANTH 2174 or permission of the instructor.

ANTH 4234 Rural Development (O) 3 ch (3C) [W]

Examines the process of transformation of contemporary agrarian societies and, by drawing lessons from developing nations, rethinks the question of rural development in terms of sustainability. Prerequisite: ANTH 1001 and 1002.

ANTH 4244 Ethnopolitics and Identity (O) 3 ch [W]

Identity is often as much about politics as it is about cultural heritage, where questions of ethnic purity, locality and social history become key issues in establishing political influence. The political aspects of managing cultural identity are even more transparent when the identities are enmeshed in multiple cultural backgrounds. The inherent difficulties of politicising culture will be examined with particular reference to Canadian Métis and Settler societies, the Coloured communities of South Africa, and Caribbean Creole society. Prerequisites: ANTH 1001 and 1002, and either ANTH 3662 or 3665 or permission of the instructor.

ANTH 4254 Contemporary Debates in Anthropology 3 ch (3C) [W]

This seminar examines contemporary social issues as they affect anthropological theory. It considers problems addressed by anthropologists, including questions of applied anthropology. Topics will vary and may include the role of anthropologists in Native land claims, racism, poverty, gender relations, colonialism, violence and war. Prerequisite: ANTH 1001 and 1002 and ANTH 3011 or permission of the instructor.

ANTH 4304 Archaeology of Atlantic Canada (A) 3 ch (3S) [W]

This seminar examines archaeological understandings of the history and ecology of Native adaptations to the Atlantic region. Early European contacts and settlement are also considered. Prerequisite: ANTH 3311 or permission of the instructor.

ANTH 4502 Issues in Medical Anthropology 3 ch (3S) [W]

A seminar course designed to evaluate the application of medical anthropology in understanding and improving human health problems. A selection of case studies reflecting the various dimensions of medical anthropology in different cultural contexts will be considered. The course begins with an introduction to the research methods used in medical anthropology. The important theoretical constructs that have influenced the field of medical anthropology and their application in research problems will be examined. Prerequisite: ANTH 3502.

ANTH 4522 Human Evolution (O) 3 ch (3L) [W]

Examines the genetic basis of human evolution. With the advent of modern genetic technologies, it has been possible to compare and contrast evolutionary relationships at the genetic level. The current debate in biological anthropology surrounds the origin of anatomically modern Homo sapiens based on DNA evidences. An in-depth examination of fossil evidences along with the genetic picture will be considered. Prerequisites: ANTH 2502; 3522.

ANTH 4602 Anthropology and Genetics (O) 3 ch (3L) [W]

Anthropology is primarily concerned with the study of humankind, while the science of genetics deals with heredity and variation among related organisms. This course introduces the basic concepts of human genetics and examines its application in anthropological research. The course focuses on the Human Genome Project including ethical dilemmas surrounding human genetic research. Prerequisites: ANTH 2502; 3522.

ANTH 4612 Law and Anthropology (O) 3 ch (3C/S) [W]

A seminar which explores recent advances in the cross cultural study of law using examples from the post colonial experience, religious law, family law, human rights and property law. Prerequisite: ANTH 3284 or the permission of the instructor.

ANTH 4702 Gender and Health (A) 3 ch (3S) [W]

A seminar course designed to evaluate the gender dimension of health and disease, and addresses the articulation of gender roles and ideology with health status, the organization of health care, and health policy in a cross-cultural perspective. Gender is a cultural construct, and cultural ideas about womens health and womens bodies differ between social groups and historical periods. Gender issues pertain to men as well, and male gender roles and expectations are also culturally constructed. There are biomedical consequences to the cultural constructions of gender differences. The course will also examine how expressions of gender and power can play a role in prevention and treatment strategies. Prerequisite: ANTH 3502 or 4502.

ANTH 5032 Environment and Society (O) 3 ch (3S) [W]

Examines ecological theories of human-environmental relations, the effects of human activity on the environment including various resource activities such as foraging, agriculture, forestry and fishing. Prerequisites: ANTH 1001, 1002, 2114.

ANTH 5051 Gender Relations (O) 3 ch (3S) [W]

An advanced seminar for majors, honours and graduate students in Anthropology. Focuses on issues of the cultural construction of gender, gendered divisions of labour, feminist anthropology and the post-modern stance. Prerequisite: ANTH 3114 or permission of the instructor.

ANTH 5314 Geoarchaeology (A) 3 ch [W]

The archaeological record exists in a geophysical context. Geoarchaeology is the study of the archaeological record using concepts and techniques drawn from the earth sciences. This seminar considers the role of analogy in geoarchaeological research; remote sensing techniques; stratigraphic theory and methods; processes of deposition, preservation, modification and destruction of archaeological sites and artifacts; materials identification and sourcing; and interpretation of past landscapes. Prerequisites: 3 ch of 3rd level archaeology and 3 ch of geology, or permission of the instructor.

ANTH 5353 Prehistoric Human Ecology (A) 3 ch (3S) [W]

Human ecology is the study of inter-relationships among cultures and their physical, biological and social environments. This seminar considers methods and theories developed for studying the ecology of prehistoric people and cultures. Prerequisite: ANTH 3311 or permission of the instructor.

ANTH 5684 The Anthropology of Literacy and Learning *(Cross Listed: ED 5684)* **3 ch (3S) [W]**

Offers an anthropological look at the role of literacy, formal education and informal learning in a range of settings. The influence and impact of ethnic and cultural identity on systems of learning is explored through reading and discussing selected ethnographies.

ANTH 5701 Theory and Ethnography 3 ch (3S) [W]

Examines contemporary issues in anthropological theory and ethnography such as functionalism, structural-functionalism, structuralism, and problems posed about anthropology as a result of the post-modern critique. Prerequisite: Open only to fourth-year honours and graduate students.

ANTH 5702 Methods in Anthropology 3 ch (3S) [W]

Examines contemporary methods in anthropology and seeks to develop skills in research from the variety of field practices to methodology and theory construction. Topics include ethics, problem formation, types of fieldwork, methods of field observation such as surveys, mapping, genealogies, life histories, taking of field notes, organizing results, use of technology as well as legal, health and funding issues of doing research. Prerequisite: Open only to fourth-year honours and graduate students.

APPLIED SCIENCE

Note: See beginning of Section H for abbreviations, course numbers and coding.

APSC 1013 Mechanics I 5 ch (3C 3L)

Introduction to the fundamental concepts of vector analysis and its application to the analysis of particles and rigid bodies. Newtons three laws of motion and work, energy and momentum of particles. The static analysis of particles, the kinematics and dynamics of particle motion along straight and curved paths and the static analysis of rigid bodies. Lab topics such as kinematics, forces and conservation laws. Corequisite: MATH 1003.

APSC 1023 Mechanics II 5 ch (3C 3L)

Continuation of APSC 1013. Introduction to the rotation of a rigid body about a fixed axis, motion of a rigid body in a plane and energy, momentum and angular momentum of a rigid body in plane motion. The static analysis of structural systems including practical applications such as the analysis of frames, machines, trusses and beams. Centroids, moments of inertia and simple harmonic motion are introduced. Lab topics such as vibrations and equilibrium situations. Prerequisite: APSC 1013. Corequisite: MATH 1003.

ARTS

Note: See beginning of Section H for abbreviations, course numbers and coding.

ARTS 1000 Development of Western Thought 6 ch

This course explores the significant concepts that have shaped the development of Western civilization from the time of Ancient Greece to the present day. Registration for this course is limited to students in the BA degree program.

ARTS 4000 Community Learning 6 ch

For fourth year students in the Faculty of Arts, this course links formal education training with service in the larger community. This linkage provides work experience useful for the career and professional profile of the individual student and brings the skills and talents of Arts students into community organizations. Limited enrollment.

ASTRONOMY

Note: See beginning of Section H for abbreviations, course numbers and coding.

The following two courses cover basic astronomy for non-scientists. No university level mathematics or physics is required but high school math and science courses are an asset. No laboratory is required but students are required to attend at least one viewing session. Telescopes are available for loan to those interested.

Note: These courses may not be taken for credit by Science, Computer Science and Engineering students who should take PHYS 3183 instead. Astronomy courses are offered by the Physics Department with PHYS 3183 and other Astronomy-related courses listed under Physics. Students wishing to AUDIT either ASTR 1003 or ASTR 1013 should get permission from the instructor through the Physics Department.

ASTR 1003 Elementary Astronomy I (A) 3 ch (3C)

Topics: Introduction to the sky, history of astronomy; the solar system - structure and theories of origin; space probes and satellites; a brief introduction to stars - classification, structure, birth and death processes. This course may not be taken for credit by Science, Computer Science and Engineering students. See Note above.

ASTR 1013 Elementary Astronomy II (A) 3 ch (3C)

Topics: Introduction to the sky; the structure of space; properties of stars; interstellar and intergalactic space; quasars, galaxies, and a brief introduction to cosmology. This course may not be taken for credit by Science, Computer Science and Engineering students. See Note above.

BIOLOGY

Note: See beginning of Section H for abbreviations, course numbers and coding.

Prerequisites: All prerequisite courses must be passed with a minimum grade of C. BIOLOGY 1001 OR 1551, 1012 OR 1552, 1006, 1017 are prerequisites for courses in Biology beyond Year I, except as noted.

BIOL 1001 Biological Principles, Part I 3 ch (3C)

Surveys principles of biology from the nuclear level to the cell. Topics include energy capture and use, metabolism, origins of life, prokaryotic and eukaryotic cell structures and functions, heredity and evolution. Note: This course is designed for science students or other students planning to major in Biology. Students intending to major in Biology must also take BIOL 1006. Credit can be obtained for only one of BIOL 1001 or 1551. Prerequisite: CHEM 122 is highly recommended.

BIOL 1006 Applications in Biology, Part I 2 ch (3C/L) [W]

Instruction and laboratory work dealing with applications of Biology at the level of biological molecules and the cell. Pre- or corequisite: BIOL 1001 or BIOL 1551.

BIOL 1012 Biological Principles, Part II 3 ch (3C)

Surveys the structure, function and evolution of selected plants and animals. Topics include ecosystems and ecological interactions. Note: Students intending to major in Biology must also take BIOL 1017. Credit can be obtained for only one of BIOL 1012, BIOL 1552 or BIOL 1923. Prerequisite: BIOL 1001 or equivalent.

BIOL 1017 Applications in Biology, Part II 2 ch (3C/L) [W]

Instruction and laboratory work dealing with applications of Biology at the level of organisms and their ecological interactions. Prerequisites: BIOL 1001 or 1551, and BIOL 1006. Pre- or co-requisite: BIOL 1012.

BIOL 1551 Principles of Biology, Part I 3 ch (3C)

Part I deals with cell structure and function, nutrition, metabolism, classical and molecular genetics and reproduction. Designed for students in the Faculties of Education, Kinesiology, and those students in the Faculty of Arts not planning on majoring in Biology. A background knowledge of elementary Chemistry is recommended. Note: Credit can be obtained for only one of BIOL 1001 or 1551.

BIOL 1552 Principles of Biology, Part II 3 ch (3C)

Surveys the structure, function and evolution of selected plants and animals, and includes discussions of the origin of life, ecosystems and ecological interactions. Students in Science and students majoring in Biology should take BIOL 1001 and BIOL 1012. Note: Credit can be obtained for only one of BIOL 1012, 1552 or 1923. Prerequisite: Grade of C or better in BIOL 1551 or equivalent.

BIOL 1711 Human Anatomy I 4 ch (3C 2L)

This course is a general study of human anatomy which will include the following systems: integumentary, skeletal, muscular, nervous (including eye and ear), cardiovascular, lymphatic, urinary, digestive, respiratory, and reproductive. Kinesiology and Nursing students only. Corequisite: BIOL 1001 or permission of the instructor

BIOL 1752 Human Anatomy II 4 ch (3C 2L)

This course is a continuation of BIOL 1711 which will study human anatomy from a regional perspective, and will expand especially upon the musculoskeletal, nervous, and cardiovascular systems. Kinesiology students only. Prerequisites: BIOL 1711, with a minimum grade of C or permission of the instructor.

BIOL 1923 Botany for Non-Majors 4 ch (3C 3L)

Introduces botanical principles and processes. Considers ecological interactions, organism functioning and maintenance, heredity, cell maintenance, and the origin of life. The form, structure, and function of selected plants are illustrated. Note: Credit can be obtained for only one of BIOL 1012, BIOL 1552 or BIOL 1923.

BIOL 2025 Research Foundations in Cellular Biology 4 ch (1C 3L) [W]

Includes techniques and approaches to the study of life at the cellular level; topics in Biochemistry, Cell Biology and Genetics. Prerequisites: CHEM 1001, 1006, 1012, 1017.

BIOL 2033 Biochemistry 3 ch (3C)

An introduction to the biological chemistry of amino acids, proteins, enzymes, carbohydrates, lipids and nucleic acids. Prerequisites: CHEM 1001, 1006, 1012, 1017.

BIOL 2043 Cell Biology 3 ch (3C)

An introduction to the structure and function of cells. Topics include: structure and function of biological membranes, the endomembrane system, mitochondria and chloroplast structure/function and the cytoskeleton.

BIOL 2053 Genetics 3 ch (3C 1T)

Basic concepts of classical genetics including Mendelian genetics, gene interactions, sex linkage, linkage mapping and recombination, complementation are introduced. These are integrated with current topics including gene and chromosome structure and function, mutation, gene expression, transposable elements, extra nuclear genetics, quantitative and population genetics.

BIOL 2073 Bacteriology 5 ch (3C 3L) [W]

Occurrence, distribution and importance of the major groups of bacteria; bacterial metabolism growth structure and function; introduces the role of microbes in the environment, microbial interactions, biological cycles and the exploitation of microbes by industry. A section on viruses covers all aspects of viral infection in prokaryotes and eukaryotes. Topics include adsorption, chromosomal replication, gene expression and the importance of viruses in such fields as cancer and gene therapy.

BIOL 2083 Botany 5 ch (3C 3L) [W]

Explores diversity in form, structure and function in major plant groups, and how these organisms live and reproduce in their particular environments. Probable homologies and evolutionary relationships are discussed.

BIOL 2093 Zoology 5 ch (3C 3L) [W]

Classification, functional morphology, development and evolution of the major animal groups.

BIOL 2105 Research Foundations in Ecology/Populations 4 ch (1C 3L) [W]

Techniques and approaches to the study of life at the populations level. Includes topics in Ecology, Population Biology and Evolution.

BIOL 2113 An Introduction to Ecology 3 ch (3C)

Introduces concepts of ecology common to terrestrial, freshwater and marine ecosystems. Major themes studied are adaptations by species and the ecology of populations, communities, and ecosystems.

BIOL 2143 Evolution 3 ch (3C)

An introduction to the development of a body of theory explaining biological diversity, from pre-Darwinian ideas to current issues in evolutionary biology.

BIOL 2251 Introductory Microbiology 3 ch (3C)

Introduction to the fundamental concepts of infectious disease microbiology. Discusses bacteria, fungi, viruses, protozoa, helminths and arthropods.(Available as elective to Year III and IV Biology students.)

BIOL 2422 Plant Propagation 3 ch (4C/L)

Provides knowledge and skills by direct involvement with the propagation of plants in greenhouses; also in laboratory using aseptic tissue culture techniques. Field trips provide an overview of commercial, research, and private operations that propagate plants on a large scale. Limited enrollment.

BIOL 2469 Work Term Report I. Cr

A written report on the scientific activities of the work term. Credit for the course is dependent in part on the employer's evaluation of the student's work. Student must be accepted into the Co-operative Work Experience Program in Biology in order to register for this course.

BIOL 2501 Pathophysiology I 3 ch (3C)

Introduces students to the study of the disruption of the normal balance of selected systems of the human body by disease and other perturbations. Note: Limited enrolment. Nursing students and BMLS students have first priority. Others may apply to the Chair of the Department of Biology. Prerequisites: BIOL 2782.

BIOL 2512 Pathophysiology II 3 ch (3C)

A continuation of BIOL 2501 with emphasis on perturbations to the normal functioning of organ systems. Note: Limited enrolment. Nursing students and BMLS students have first priority. Others may apply to the Chair of the Department of Biology. Prerequisites: BIOL 2501.

BIOL 2521 Selected Topics in Pathophysiology 4 ch (4C)

This is a one term course covering diseases/disorders of the major systems of the human body. It will be taught as a combined WebCT and classroom course. Note: limited enrolment. Students enrolled in the Nursing Advanced Standing Programme (ASP) and BMLS students have first priority. Others may apply to the Chair of the Department of Biology. Prerequisites: BIOL 1001, 1006, 1012, 1017 (or equivalents) and/or CHEM 1001, 1006, 1012, 1017 (or equivalents).

BIOL 2721 Human Physiology I 4 ch (3C 2L)

A study of the functioning of selected human systems with an emphasis on comparison of normal to exercise situations. Note: Limited enrolment. Kinesiology students have first priority. Others may apply to the Chair of the Department of Biology and may be accepted depending on career aspirations, GPA and available space. Prerequisite: BIOL 1711

BIOL 2752 Introduction to Human Anatomy 3ch (3C)

This course examines human anatomy from a regional perspective. It will emphasize the musculoskeletal, nervous and cardiovascular systems. Note: Biology majors cannot count this course as a Biology Credit, only as an elective. Students cannot get credit for both this course and BIOL 1752.

BIOL 2782 Human Physiology II 4 ch (3C 2L)

An introduction to the various systems that comprise the human body. Emphasis will be on integration of these systems for maintenance of homeostasis. Note: Limited enrolment. Nursing and Kinesiology students have first priority. Others may apply to the Chair of the Department of Biology. Prerequisites: BIOL 1711, with a minimum grade of C plus BIOL 2721 or permission of the instructor.

BIOL 2792 Introduction to Human Physiology 3 ch (3C)

This course will introduce students to the various systems that comprise the human body with emphasis on the integration of these systems for maintenance of homeostasis. The systems that will be covered in detail are the cardiovascular system, pulmonary system, renal system, endocrine system, gastro-intestinal system and the nervous system. Biology majors cannot count this course as a Biology Credit, only as an elective. Students cannot get credit for both this course and BIOL 2782.

BIOL 3031 Advanced Cell Biology 3 ch (3C)

Examines the principles of gene expression and cellular regulation. The perception of extra- and intracellular signals, intracellular signal transduction pathways and the control of cell function will be examined while emphasizing experimental approaches. Prerequisites: BIOL 2043, and one of either BIOL 2033 or BIOL 2053.

BIOL 3102 Somatic Cytology and Histology 4 ch (2C 3L)

A study of cell structure using prepared slides. Limited enrollment.

BIOL 3132 Advanced Biochemistry 3 ch (3C)

Emphasizes the molecular underpinnings of the healthy and diseased states by extending and integrating essential molecular concepts introduced in Biochemistry - BIOL 2033 and 2043. Prerequisites: BIOL 2033 and 2043.

BIOL 3149 Independent Studies 3 ch (R) [W]

Allows academically strong, highly motivated students to write a report on a subject of interest. The student should discuss the topic with the staff member best qualified to give approval of the subject matter and to give guidance during the year. Application is made to the Director of Undergraduate Studies (Biology Department).

BIOL 3151 Intermediate Metabolism Applied to Sports and Medicine Part I 3 ch (3C)

Principles of intermediate metabolism with particular references to physical exercise and to selected biomedical topics. Prerequisite: BIOL 2033, 2043.

BIOL 3162 Intermediate Metabolism Applied to Sports and Medicine. Part II 3 ch (3C)

A continuation and extension of concepts developed in Part I (BIOL 3151). Prerequisite: BIOL 2033, 2043.

BIOL 3173 Marine Biology Field Course 4 ch (C/L/T)

Introduces the study of the seashore and coastal waters. Emphasizes nature and ecology of littoral flora and fauna and practical methods of study. Held at the Huntsman Marine Science Centre in St. Andrews, N.B. Twelve days in length, given immediately after spring examinations. A charge for accommodation is required. Enrollment limited, selection based on CGPA.

BIOL 3181 Introduction to Embryology 4 ch (2C 3L)

A basic course on animal embryology. Limited enrolment. Prerequisite: BIOL 2093.

BIOL 3206 Advanced Microbiology Laboratory 4 ch (2C 3L) [W]

Biochemical and molecular approaches to the study of bacteria and their viruses. This laboratory course will illuminate topics covered in BIOL 3261 and 3491, so students are advised to takethese courses in their 3rd or 4th years. Limited enrollment. Prerequisites: BIOL 2025, 2033, 2043, 2053, 2073, or equivalents. Co- or Prerequisites: BIOL 3261 or BIOL 3491.

BIOL 3261 Microbial Physiology 3 ch (3C)

Principles of microbial physiology including function and regulation of chemotaxis, transport, catabolism, anabolism and growth; environmental effects of nutrition, energy sources, temperature, aerobiosis, pH, etc. on microbial physiology. The organism of emphasis is the bacterium. Prerequisites: BIOL 2033, 2043, 2053, 2073.

BIOL 3279 Work Term Report II Cr

A written report on the scientific activities of the work term. Credit for the course is dependent in part on the employer's evaluation of the student's work. Student must be accepted into the Co-operative Work Experience Program in Biology in order to register for this course. Prerequsite: BIOL 2469

BIOL 3289 Work Term Report III Cr

A written report on the scientific activities of the work term. Credit for the course is dependent in part on the employers evaluation of the students work. Student must be accepted into the Co-operative Work Experience Program in Biology in order to register for this course. Prerequisite: BIOL3279.

BIOL 3301 Taxonomy of the Flowering Plants 5 ch (3C 3L)

Why is it that the flowering plants are the most recently evolved of all the major plant groups yet they are by far the most diverse and abundant? The diversity of flowering plants and their identification, description and classification will be emphasized in relation to the flora of New Brunswick and major flowering plant families of the world.

BIOL 3311 Immunobiology 3 ch (3C)

Production and function of the immunoglobulins, characteristics of immunogens, prevention of infectious disease, hypersensitivity and allergy, transplantation and autoimmune diseases. Prerequisites: BIOL 2033, 2043 or permission of instructor.

BIOL 3321 Plant Anatomy 5 ch (3C 3L)

The basic internal structure of seed plants and an understanding of the relationships between structure and functions are considered. Plant anatomy is related to growth, including discussion of differentiation and development of plant tissues. The laboratory uses prepared slides, supplemented by fresh material and introduces some staining methods.

BIOL 3332 Plant Growth and Development (A) 5 ch (3C 3L)

Surveys recent advances in the regulation of growth and development of form in plants. Prerequisites: BIOL 3321.

BIOL 3342 Comparative Morphology of Vascular Plants (A) 5 ch (3C 3L) [W]

Introduces principles of the morphology of vascular plants. Aspects of phylogenetic and ontogenetic specialization are investigated using selected vascular plants. Students select and investigate a specific morphological problem of their own choosing. Offered alternate years with BIOL 3332. Prerequisite: BIOL 3321 recommended.

BIOL 3383 Research Foundations in Field Ecology 4 ch (C/L/T)

Introduces field biology with emphasis on the organism, population and ecosystem levels of complexity. Based on direct observation, field techniques and analysis. Held just prior to the beginning of the academic year - 6 days in length. Further work must be completed during the Fall term. Enrollment is limited, based on CGPA. The location of this course may vary. Depending upon the location, accommodation will be required. Please refer to notices posted in the Biology Department. Prerequisite: BIOL 2113 or equivalent.

BIOL 3459 Economic Botany 3 ch (3C)

Discusses concepts and principles that can be derived from the biological, sociological and economic impact of the use of plants for food, shelter, landscaping and general well-being. Considers the different methods and reasons why various plants are cultivated and/or utilized by humans.

BIOL 3491 Virology 3 ch (3C)

The assembly and structure of selected bacterial, animal and plant viruses, the genetics and replication of their chromosomes, the expression of viral genes into proteins and the consequences of infection for the host. Prerequisite: BIOL 2033, 2043, 2053, 2073 or equivalents.

BIOL 3521 Concepts in Plant Physiology 5 ch (3C 3L)

Modern plant physiology integrates aspects of biochemistry, biophysics, molecular biology and stress physiology to address questions of how plants function at both the cellular and organismal level. Topics covered in the course include water and solute transport, photosynthesis and respiration, nitrogen metabolism, signal perception and transduction, hormone synthesis and action, as well as senescence and programmed cell death. Prerequisites: Completion of Year II Cellular Core Module.

BIOL 3541 Plant Ecology (A) 5 ch (3C 3L)

A course on the factors affecting the distribution and abundance of plants, how pattern and structure at the level of populations and communities can be described quantitatively, and how these arise from the interaction of abiotic (climate, fire, soil) and biotic (competition, herbivory) factors.

BIOL 3602 Invertebrate Zoology 5 ch (3C 3L)

In-depth study of invertebrate structure, development and phylogeny. Prerequisite: BIOL 2093.

BIOL 3673 General Parasitology 3 ch (3C)

The biology of animal parasites with emphasis on protozoa, helminths, and parasitic arthropods. Discusses morphology, physiology, ecology and evolution of parasite groups studied. Deals with general, human, and wildlife parasitology. Prerequisites: BIOL 2093.

BIOL 3688 Laboratory Studies in Parasitology 3 ch (1C 3L)

Designed as a follow up to BIOL 3673, this course emphasizes techniques utilized in the study of animal parasites. It involves training in postmortem examination, microscopy, histology, parasite identification, as well as other techniques commonly employed by parasitologists. Enrolment limited to 20 students. Prerequisite: BIOL 3673.

BIOL 3703 Vertebrate Zoology 5 ch (3C 3L)

Stresses interrelationships between structure and function particularly as responses to a variable environment. Considers phylogeny and taxonomy of major groups. Limited enrollment. Prerequisite: BIOL 2093

BIOL 3801 Animal Physiology 3 ch (3C)

This course examines, at a fundamental level, the ways by which animals function, with an emphasis on physiological adaptations to the environment. Topics covered include respiration and circulation, bioenergetics, ionic and osmotic regulation, muscle function, and endocrinology. Prerequisites: BIOL 2033, 2043 or permission of instructor.

BIOL 3873 Ethology (A) 3 ch (3C)

Considers physiological foundations of behaviour and deals with topics of motivation, displacement behaviour, hormones, evolution and learning.

BIOL 3883 Entomology 4 ch (3C 2L)

Ecology, evolution, taxonomy, and diversity of insects, both terrestrial and aquatic. This course studies the most diverse group of animals on Earth: the Insecta. Topics include insect body plans, growth, and development; major evolutionary groups of insects; ecological and economic importance of insects; insect collection and identification. Students will make and curate insect collections (this will be accomplished most easily by students who begin the summer before taking the course; interested students should contact the instructor for more information). Prerequisite: BIOL 2093 or permission of instructor.

BIOL 3908 Laboratory Studies in Vertebrate Physiology 3 ch (1C 3L)

A study of selected physiological concepts via laboratory experimentation, with emphasis on presentation and interpretation of data in relation to the literature. Limited enrolment. Prerequisite: BIOL 2025. Pre- or co-requisite: BIOL 3801.

BIOL 4056 Eukaryotic Cell Biology and Molecular Genetic Laboratory 4 ch (2C 3L) [W]

Current approaches to the study of eukaryotic organisms at the cell and molecular levels. Topics: chromosome structure, genome organization and control of gene expression. This laboratory course will illuminate topics covered in BIOL 3031 and 4082, so students are advised to take these courses in their 3rd or 4th years. Limited enrollment. Prerequisites: BIOL 2025, 2033, 2043, 2053, 2073 Co- or prerequisites: BIOL 3031 or BIOL 4082.

BIOL 4082 Advanced Genetics 3 ch (3C)

Selected topics in genetics that include both classical and molecular approaches, such as genome organization, biochemical genetics, developmental genetics, behavioural genetics, and regulation of cell growth. The process of research, particularly experimental design and interpretation of results is emphasized. Prerequisites: BIOL 2033, 2043, 2053, 2073 or equivalent. Recommended: Completion of the Year II Organismal component.

BIOL 4090 Honours Thesis Project 6 ch [W]

Biology and Biology-Chemistry Honours students who wish to undertake a thesis project are encouraged to make their wishes known to individual members of faculty. If a potential supervisor is found, the student will obtain an instruction sheet from the Undergraduate Biology office and make application to the Chair of Biology for admission into BIOL 4090 before preregistration at the end of the third year. The application is considered at a Departmental meeting, and the decision will be announced. This course involves preparation, design and execution of a research project under the direct supervision of a member of the Department as well as the preparation of a formal thesis and defense of the thesis in a seminar presentation. Note: Minimum CGPA for acceptance is 3.5. A student cannot receive credit for both BIOL 4090 and 4149.

BIOL 4123 Major Evolutionary Transitions 3 ch (3C)

The concept of evolutionary transitions is one of the most important developments in modern evolutionary biology, and is based on the recognition that evolution occurs not only by mutational change but also by the integration of previously independent individuals into new higher-level and more complex evolutionary units. This course explores the general principles (e.g., cooperation, conflict, conflict mediation, division of labour) underlying the evolution of individuality and complexity during several major evolutionary transitions, including the origin of cells, multicellularity, and sex. In addition, the course examines specific evolutionary mechanisms and consequences, such as symbiosis, the evolution of development, germ-soma separation and cell differentiation. Prerequisites: Completion of Year II Cellular Core Module and BIOL 2143.

BIOL 4149 Senior Research Project 5 ch [W]

Gives academically strong and highly motivated students in Year IV an opportunity to do a literature or research project on a subject of interest. The student should discuss the topic with the staff member best qualified to give approval of the subject matter and to give guidance during the year. Application is made to the Biology Director of Undergraduate Studies. A student cannot receive credit for both BIOL 4090 and 4149.

BIOL 4151 Molecular Biology Seminar I 3 ch (4S) [W]

Gene structure and function; DNA replication; immunogenetics; hormonal mechanisms and enzymology.

BIOL 4162 Developmental Biology of Animals 3 ch (3C)

In-depth discussion and analysis of animal development emphasizing biochemical and molecular aspects of the phenomena involved using selected examples. Prerequisites: BIOL 2033, 2043; BIOL 3181 recommended.

BIOL 4191 Wildlife Management (A) 4 ch (3C 2L/S)

Studies biological, economic, and human factors affecting wildlife populations. Prerequisite: Any one of STAT 1213, 2253, 2263, 2264, or equivalent.

BIOL 4223 Diversity, Evolution and Ecology of Marine Plants 5 ch (3C 3L)

This course will survey the diversity of marine plants (seaweed and phytoplankton) relative to one another and the other key lineages of life; exploring their diverse anatomical, cytological, life history and ecological attributes. In the laboratory students will use microscopy to explore vegetative and reproductive features of the various marine plants in our area. A significant component of the laboratory portion of the course will derive from a weekend in the field collecting specimens for personal herbaria and completing biodiversity assessments (a cost may be associated with this trip). Prerequisite: BIOL 2083 or permission of the instructor.

BIOL 4233 Conservation Biology (A) 3 ch (3C/L)

An overview of the theory and practice of maintaining biological diversity at genetic, species, and ecosystem levels. Designed to complement Conservation (FOR 5095) by focusing on scientific principles and technical tools rather than decision-making processes. Co- or Pre-requisite: BIOL 2113 or permission of instructor.

BIOL 4242 Molecular Evolution and Systematics 3 ch (3C)

This course will introduce trends in organismal evolution at the molecular level. Discussion will shift to the realm of molecular systematics from both theoretical and practical perspectives. Prerequisite: Completion of Year II Cellular Module. Recommended: Completion of Year II Ecology/Evolution Module.

BIOL 4272 Molecular Biology Seminar II 3 ch (4S) [W]

Recent advances in molecular and microbiology. Prerequisites: BIOL 3031, 3491 and 3261 or 4082.

BIOL 4289 Work Term Report IV Cr

A written report on the scientific activities of the work term. Credit for the course is dependent in part on the employers evaluation of the students work. Student must be accepted into the Co-operative Work Experience Program in Biology in order to register for this course. Prerequisite: BIOL 3289.

BIOL 4352 Climate Change and Environmental Response 3 ch (3C)

Examines theories and patterns of climate change since the last Ice Age. A variety of paleoecological techniques applied to a number of fossil organisms will be discussed in relation to the information they yield about past environments. Prerequisite: Introductory course in anthropology, biology, or geology. May only be taken by students who have completed two years of their program.

BIOL 4363 Plant Molecular Biology 3 ch (3C) [W]

This course examines current research in plant molecular biology with an emphasis on the regulation of gene expression and signal transduction pathways. Topics discussed include: plant genomics, regulation of photosynthesis, plant growth regulators, organelle molecular biology, organelle-nucleus interactions, light receptors, and environmental stress responses. Prerequisites: Completion of Year II Cellular core module, and BIOL 2083 or permission of instructor.

BIOL 4443 International Ecology Field Course (A) 4 ch (C/L/T)

This course allows students an on-site exposure and understanding of ecological interactions of soil, climate, plants and animals in a region outside of the Maritimes. A 10-14 day field trip to the region is required. Weekly seminars will be held in the period before the field trip. Students will be charged for travel and costs associated with the course. Limited enrolment. Open to biology and forestry students, or with permission of the instructor.

BIOL 4533 Bioinformatics: Computational Analysis of Genes and Genomes 4ch (2C 4L)

Explores computational methods used in sequence analysis of genomes, genes, RNAs, and proteins. Topics include sequence alignment, genome database searching, gene prediction, RNA and protein structure, DNA and protein sequence comparison, and phylogenetic analysis. These topics will be integrated into the context of research in genetics and molecular biology. Limited enrollment. Prerequisites: BIOL2033, BIOL2043, BIOL2053, BIOL2025.

BIOL 4563 Mathematical Biology (A) 3 ch (3C)

Overview of the field of mathematical biology. Development, simulation and analysis of simple mathematical models describing biological systems. Equal emphasis is placed on developing simple models and case studies of successful models. The principal mathematical tools are differential and difference equations, finite mathematics, probability and statistics. This course is intended for students in their third or fourth year having an interest in biological research. Note: This course is currently offered as MATH3473. Students cannot receive credit for both BIOL4563 and MATH3473. Prerequisites: a course in statistics, MATH 2003/2013 or equivalent or permission of the instructor.

BIOL 4570 Experimental Microtechnique 6 ch (3L/S)

An introduction to microscopical techniques used in biology. Emphasizes the principles and practical application of light microscopy and electron microscopy. Discusses histochemistry and immunocytochemistry relative to problems of current interest. Enrolment limited.

BIOL 4723 Ornithology (A) 5 ch (3C 3L) [W]

Studies birds; natural selection, morphological adaptations, migration, behaviour, and reproduction, in an ecological way. Prerequisite: BIOL 2093 or permission of instructor.

BIOL 4732 Mammalogy 4 ch (3C 2L)

Studies mammals, covering taxonomy, adaptations, reproduction, populations, physiology, behaviour and ecology.

BIOL 4741 Fish Biology 4 ch (5C/L/S)

Study of the classification, morphology, anatomy, physiology, behaviour, ecology and exploitation of fish. Prerequisite: BIOL 2093 and BIOL 2105 (or permission of the instructor).

BIOL 4773 Aquatic Ecology (A) 3 ch (3C)

Provides a foundation of understanding of ecosystem processes in freshwaters including streams, lakes, and wetlands. Physical and biological components of such systems will be presented, and concepts and theories defining aquatic ecology will be discussed. Prerequisite: BIOL 2113.

BIOL 4863 Environmental Biology (A) 4 ch (5C/L/S) [W]

Examines the effects of human activity upon the environment, both locally and globally. There may be an additional charge for field trips. Limited enrolment. Pre- or corequisite: BIOL 2113 or equivalent.

BIOL 4899 Population Analyses (A) 3 ch (5C/L/S)

An evaluation of basic sampling and statistical issues for the design, analysis, and interpretation of animal and plant population research. Topics include sampling allocation, sampling sizes, P and Type errors, power and univariate vs multivariate tests; density dependence; assumptions and models; survival and natality rate analyses. Examples are based on contemporary research and literature. Prerequisites: introductory ecology and statistics courses, or permission of the instructor.

BIOL 4992 Aquaculture in Canada 4 ch (5C/L/S) [W]

Examines the biological principles and constraints of commercial and pilot-scale aquaculture in Canada, with emphasis on the Atlantic region. Includes a field trip to St. Andrews, requiring a charge for two days accommodation at the Huntsman Marine Science Centre. Costs are about $85. Limited enrolment. Prerequisite: BIOL 2093 (Introductory Zoology).

BIOL 5473 Experimental Design and Data Analysis in Biology and Forestry 3 ch (3C)

Introduces students who have previously taken a formal class in statistics to the practice and pitfalls of experimental design and data analysis in biology and forestry. It is intended for both graduate students and final year undergraduates (enrolled in an honours or senior research project). It will be jointly taught by faculty members from the Departments of Mathematics/ Statistics, Biology and/or Forestry. Topics will be selected from sampling designs, experimental designs, parametric and non-parametric analysis, power analysis, and regression. The course will include discussion of examples in the literature. Students will also be analysing and interpreting data sets arising from their field of research. Prerequisite: STAT 2264 or equivalent. Students can not receive credit for both BIOL 5473 and STAT 5473.

BIOL 6000 Series courses: (Graduate courses offered by the Department of Biology)

Graduate courses are open to undergraduates who can show that a course is of special value to them in their area of specialization. For details of courses offered consult the Calendar of the School of Graduate Studies and Research.

BRIDGING YEAR FOR ABORIGINAL STUDENTS

For details of the Bridging Year program, see Section D, Aboriginal Student Services and Progams: Mi'kmaq-Maliseet Institute.

Study Skills Development Courses

Non-credit courses in study skills development. Involve the use of on-campus services, non-credit training sessions, and special tutoring sessions.

BY 103N Study Skills Development I

BY 104N Study Skills Development II

Non-Credit Makeup Courses

Non-credit makeup courses in academic areas in which the student's attainments are below an acceptable standard for university study. May entail the use of provincial secondary school curricula or enrolment in secondary classes as such.

BY 105N Secondary Education I: English

BY 106N Secondary Education II: Mathematics

BY 107N Secondary Education III: Biology

BY 108N Secondary Education IV: Chemistry

BY 109N Secondary Education V: Physics

BY 110N Secondary Education VI: Economics

BUSINESS ADMINISTRATION

Course Numbering System

The Faculty of Administration uses the following numbering system for courses offered by the Faculty.

a. The first digit

1	designates an introductory level course.
2	designates an intermediate level course which normally has a prerequisite specified in the course description.
3	designates an advanced level course which has one or more prerequisites specified in the course description.
4	designates an advanced level course with several prerequisites and which normally is taken during the final year of studies.

b. The second digit identifies the nature of the course, as follows:

1 general	**6** quantitative analysis
2 accounting	**7** information technology and e-commerce
3 marketing	**8** employment relations
4 finance	**9** independent study
5 organizational behaviour and management	

c. The third and fourth digits differentiate courses in the same field.

ADM 1015 Introduction to Business 3 ch (3C)

Introduces business topics to students from other disciplines who do not intend to major in business. Topics include business history, forms of organizations, sources and use of business information. Introduces the functional areas of business including: accounting, financial management, marketing, production control, human resources management, and special topics. Not available for BBA degree credit.

ADM 1113 Administration 3 ch (3C) [W]

Introduces the process of administration and the functional components of profit and nonprofit organizations. Considers the environmental framework of management, including societal issues and the distinctive features of Canadian business. This course is restricted to students registered in the Faculty of Administration. BBA students must complete this course during the first 33 ch.

ADM 2163 Verbal Communications 3 ch (3C)

Introduces topics related to business communications, including preparations and delivery of presentation, interviewing, basic speaking and listening skills, and management of business meetings. Emphasis on experiential learning. Prerequisite: open only to BBA students with at least 33 ch completed. BBA students must complete this course during the first 75 ch.

ADM 2164 Written Communication 3 ch (3C) [W]

Reviews basic principles of writing for business, focusing upon report structure and organization, paragraph structure, sentence structure, grammar, punctuation, and word choice, as well as revising and proofreading. Students will submit numerous written assignments. Prerequisites: Open only to BBA students with at least 33 ch. completed. BBA students must complete this course during the first 75 ch.

ADM 2213 Financial Accounting 3 ch (3C)

Examines the identification, measurement, recording, and communication of financial information for managerial decision-making. Reviews basic principles and concepts to convey the conceptual framework of the accounting discipline. Prerequisite: 33 ch. Note: Completion of ADM 1015 strongly recommended for non-BBA students.

ADM 2223 Managerial Accounting 3 ch (3C)

Emphasizes the role of the accounting function in managerial decision-making. Traditional job costing and activity-based costing stressed. Appraises the use of standard costing and variance analysis as tools for management control. Examines flexible budgets, break-even analysis and contribution costing in decision-making. Prerequisite: ADM 2213.

ADM 2313 Principles of Marketing 3 ch (3C)

Provides a foundation of marketing theory and analysis necessary to approach the decision-making process and issues related to the marketing function. Prerequisite: 33 ch.

ADM 2413 Principles of Finance 3 ch (3C)

Analyses the basic tools and concepts of finance and illustrates their application to practical problems faced by managers. Topics include: the time value of money, term structure of interest rates, valuation of financial securities, financial statement analysis, financial planning, working capital management and short-term and long-term sources of financing. Provides an introduction to the techniques of capital budgeting and the concepts of risk and return on options. Prerequisites: ADM 2213.

ADM 2513 Organizational Behaviour 3 ch (3C)

Introduces the contributions of the applied behavioral sciences to the study of work in organizations. Covers the fundamentals of individual and group behaviour, as well as selected topics in motivation, leadership, communication, conflict and organizational change. Prerequisites: 33 ch.

ADM 2623 Quantitative Analysis I 3 ch (3C)

Introduces the methods of data presentation and analysis, and their applications to business problems, including measures of data description, probability concepts and distributions, and statistical decision theory. Also considers sampling theorem, hypothesis testing using different techniques. Prerequisites: 33 ch, MATH 1823 and 1833 or equivalents.

ADM 2624 Quantitative Analysis II 3 ch (3C)

Presents a variety of applications of optimization models to business problems such as allocation, blending, and scheduling. Introduces concepts of production planning, inventory control, network models and sequencing. Prerequisite: ADM 2623. BBA students must complete this course during the first 75 ch.

ADM 2715 Introduction to Information and Communication Technology 3 ch (3C)

Considers the expanding role of information and communications technologies in business and their application. Discusses growing use of online conferencing and presentation software, as well as the field of electronic commerce. Applied focus and use of student assignments employing software tools. This course is not open for credit to Computer Science students.

ADM 3123 Business Law I 3 ch (3C) [W]

Examines the impact of law on business decisions and activities. Includes an introduction to the Canadian legal system, the law of contract and the law of torts. Emphasis given to the identification, evaluation, and management of legal risks in a business context. Prerequisite: 33 ch.

ADM 3155 International Business 3 ch (3C) [W]

Examines issues and problems which arise when business operations transcend national boundaries. Topics include the dimensions of the contemporary international economy, theories of trade and foreign direct investment, the strategic and operational character of international firms and the controls adopted to achieve these goals. Prerequisites: ADM 2313, 2413, and 2513.

ADM 3215 Intermediate Accounting I 3 ch (3C)

Presents in-depth coverage of selected topics in financial accounting. Commences with a review of the theoretical foundation for financial reporting, providing the conceptual background necessary to understand generally accepted accounting principles and alternatives to these principles. Specific emphasis given to the major asset categories found on corporate balance sheets through extensive coverage of cash, receivables, inventories, and capital assets. Prerequisite: ADM 2213.

ADM 3216 Intermediate Accounting II 3 ch (3C)

Continues the examination of the balance sheet commenced in ADM 3215 with extensive coverage of liabilities and shareholders' equity. Specific emphasis directed to several current and controversial topics in accounting - corporate income taxes, earnings per share, and leases. Concludes with an overall look at financial statements and disclosure issues. Prerequisite: ADM 3215.

ADM 3225 Cost Accounting 3 ch (3C)

Examines cost accounting information and its use in managerial control. Deals in detail with cost accumulation, job and process costing, standard costing, and variance analysis. Supplements the material covered in ADM 2223. Reviews the use of costing techniques in other than manufacturing situations. Prerequisites: ADM 2223, 2623.

ADM 3315 Marketing Management 3 ch (3C) [W]

Covers the application of theory and analytical tools from the marketing management perspective. Focuses upon the analysis and solution of complex marketing problems in the contemporary environment. Prerequisite: ADM 2313.

ADM 3345 Marketing Research 3 ch (3C)

Examines the design and conduct of research for marketing decision-making. Includes problem formulation, obtaining and organizing data, advanced analytical techniques, questionnaire design, market testing, and analysis of results. Prerequisites: ADM 3315.

ADM 3375 Marketing of Technological Services and Products 3 ch (3C)
(Cross Listed: TME 3346)

Provides an in-depth approach to the marketing of technology focused on industrial products and services. Includes essentials of marketing, along with aspects of product development, promotional design, distribution, pricing/ budgeting determination, strategic analysis, communication skills, client/customer relations, and considerations for the small business environment. Not available for BBA degree credit.

ADM 3415 Corporate Finance 3 ch (3C)

Examines portfolio theory and valuation capital, capital expenditure decisions, long-term financing decisions, cost of capital, financial structure, dividend policy, and external expansion. Prerequisites: ADM 2413, 2623.

ADM 3435 Financial Markets and Institutions (O) 3 ch (3C)

Examines the role of financial markets and institutions in the transfer of funds in Canada. Reviews the nature of assets and liabilities of financial institutions in the current regulatory framework. Considers the management of assets and liabilities of key depository and non-depository organizations, illiquidity risk, funding risk, default risk, and regulatory risk. Prerequisite: ADM 2413.

ADM 3445 Personal Financial Planning 3 ch (3C)

Based upon the theory of financial decision-making applied to personal finance, covers the financial planning techniques used in professional practice. Topics include: financial goal setting, the life cycle model of financial planning, budgeting, tax planning, cash management, personal credit, investment choices, risk management, and retirement planning. Note: BBA students may not count both ADM 3445 and ED 3872 towards degree credit.

ADM 3573 Organization Design 3 ch (3C) [W]

Examines the factors to be considered in the structural design of an organization. Special attention is given to the organization's external environment and internal decision structures and processes. Prerequisites: ADM 2513, 2623.

ADM 3625 Managerial Forecasting (O) 3 ch (3C)

Considers forecasting functions in an enterprise, quantitative and qualitative techniques and their characteristics, the selection and implementation of forecasting techniques. Emphasizes the basic concepts underlying different techniques and their suitability to various decision-making situations. Prerequisite: ADM 2623 or equivalent, or consent of the instructor.

ADM 3626 Managerial Decision Analysis 3 ch (3C)

Deals with the analysis of decision problems under uncertainty, partial information, risk and competition. Considers the analytic hierarchy process, outranking procedures, and multi-attribute utility theory. Examines the construction and use of indifference curves for the solution of multi-stage decision problems, and the numerical determination of stable solutions for problems with two competitors. Prerequisite: ADM 2623.

ADM 3627 Managerial Data Analysis 3 ch (3C)

Introduces the model-building approach to the analysis of managerial information. Emphasizes the basic steps followed in the process of selecting a given managerial data analysis techniques. Steps entail: (i) definition of the research problem under consideration; (ii) evaluation of the design issues and the appropriateness of the assumptions underlying the technique; (iii) analysis if the estimation issues embedded in the problem and interpretation of the results; and (iv) validation of the results to determine the degree of generalizability. Computerized data basis used to illustrate the various methods of analysis. Prerequisite: ADM 2623.

ADM 3628 Statistical Techniques in Business 3 ch

Examines theory behind statistical techniques such as analysis of variance, simple and multiple regression, non parametric methods of estimation and hypothesis testing, and time series analysis. Examines the application of these techniques to problems in finance and other areas of business administration. Prerequisite: ADM 2623.

ADM 3685 Total Quality Management 3 ch (3C)

Provides a fundamental coverage of total quality management. Includes the basic principles and practices of TQM, the tools and techniques of TQM, and case studies of the implementation of TQM in the manufacturing and service industries. Prerequisite: ADM 2623.

ADM 3713 Management Information Systems 3 ch (3C)

Covers the dynamics of change in computer technology and design of systems as well as the organizational and social consequences of automated decision systems. Prerequisites: Computer literacy requirement, 60 ch.

ADM 3725 Introduction to Electronic Business 3ch (3C)

Introduces business conducted on the Internet. Topics covered include technical foundations including the design of web sites, security; impacts upon corporate strategy; and marketing on the Internet. Prerequisite: 30 ch.

ADM 3815 Human Resources Management 3 ch (3C) [W]

Introduces human resource management and its role in corporate strategy. Topics include: human resource planning; recruitment and selection; employee training and development; performance appraisal; and compensation. Prerequisite: ADM 2513

ADM 3875 Labour Relations 3 ch (3C) [W]

Introduces industrial relations with particular reference to unionized workplaces. Topics include: industrial relations theory; the development, structure and functions of organized labour in Canada; collective bargaining; strikes and industrial conflict; the grievance and arbitration process.

ADM 4115 Management of Innovation and Technology 3 ch (3C)

Examines the strategic management of high technology and other organizations. Emphasizes innovation and the development or commercialization of intangible assets. Introduces tools and techniques for the implementation of appropriate strategies. Prerequisites: ADM 2313, ADM 3573.

ADM 4125 Business Law II 3 ch (3C) [W]

Introduces the law that affects various functional aspects of a business. Topics include: law of business associations including partnerships and corporations; property including real, personal and intellectual; employment including hiring and termination; finance including debtor/creditor, banking and bankruptcy; and marketing including advertising and sales. Emphasis given to the management of legal risks. Prerequisite: ADM 3123.

ADM 4143 Competitive Strategy 3 ch (3C)

Examines the process of strategy formation for the business enterprise as an integrated organization. Emphasizes the problems of defining organizational mission, analysing the dynamics of competitive rivalry, and the determinants of success or failure for alternate types of business strategies based upon a thorough company/industry analysis. Prerequisites: 96 ch, ADM 2313, 2413, 3573.

ADM 4175 Venture Start-up & Entrepreneurship 3 ch (3C) [W] (LE)

Considers the problems associated with starting and operating a small enterprise. Focuses upon actual small business successes and failures. Prerequisite: 66 ch.

ADM 4176 Management of New Enterprise 3 ch (3C) [W] (LE)

Focuses upon the development of a project proposal for starting a new business or a case study of an existing enterprise. Prerequisite: 96 ch.

ADM 4195 Management Internship 3 ch

Provides extensive practical experience in the professional world through the successful completion of 3 co-op work terms. For each work term, a report must be completed and receive a minimum grade of C. The Faculty will register the student for this course at the start of the final year. A student will be awarded CR (credit) for this course. Prerequisites: 2 previous successful work terms with passing work term reports.

ADM 4215 Advanced Financial Accounting I 3 ch (3C) [W] (LE)

Examines the accounting and financial reporting for intercorporate investments and business combinations, including the preparation of consolidated financial statements for parent and subsidiary entities. Also covers segmented reporting. Prerequisites: ADM 2223 and 3216.

ADM 4216 Advanced Financial Accounting II 3 ch (3C) [W] (LE)

Examines the accounting and financial reporting issues for the translation of foreign currency transactions and statements, non-business organizations, partnerships and businesses in financial difficulty. Also covers the conceptual framework for accounting and alternative accounting measurement models. Discusses current financial reporting issues. Prerequisites: ADM 2223 and 3216.

ADM 4218 Financial Statement Analysis 3 ch (3C)

Appraises the role of financial reporting in operating, financing, and investing decisions. Develops appropriate skills in the area of financial statement analysis. Reviews generally accepted accounting principles in Canada and elsewhere, as well as financial statement analysis of companies in different industries or geographic areas. Prerequisites: ADM 2223 and ADM 3415.

ADM 4245 Accounting Theory 3 ch (3C) [W]

Focuses on accounting literature, especially with respect to financial reporting, and accounting standard setting. Prerequisites: ADM 2223; credit or concurrent registration in ADM 3216.

ADM 4275 Auditing 3 ch (3C)

Introduction to the concepts and procedures underlying contemporary auditing. Topics include ethics, legal liability, internal control, audit evidence, audit reports. Prerequisites: ADM 2223; credit or concurrent registration in ADM 3216.

ADM 4295 Internship in Accounting 3 ch [W]

Involves approved work for 80 hours in a term for an accounting department of an organization and under the supervision of a faculty member. Requires work on a project that is evaluated for academic assessment. Note: Open to Honours BBA candidates with a major in accounting. Subject to faculty and placement availability.

ADM 4296 Independent Study in Accounting 3 ch [W]

Preparation of an empirical or theoretical study in accounting under the supervision of a faculty member. Application required at least 30 days prior to the term in which work will be undertaken. Note: Applicants must have completed 96 ch and have attained a cumulative GPA of at least 3.0.

ADM 4315 Salesforce Management 3 ch (3C) [W] (LE)

Applies theory relating to salesforce management from a managers point of view. Requires reading and discussion of articles which present research in the area. Entails the completion of several assignments designed to facilitate interaction with the business community. Prerequisite: ADM 3345.

ADM 4325 Consumer Behaviour 3 ch (3C)

Appraises concepts and their interrelationships in order to develop an understanding of consumer decision-making processes. Includes basic individual determinants of consumer behaviour, environmental influences on consumers, purchase processes, post-purchase processes, market segmentation, brand loyalty, fear appeals. Prerequisite: ADM 3345.

ADM 4326 Customer Satisfaction and Loyalty 3 ch (3C) (LE)

Examines issues relevant to customer satisfaction and loyalty. Topics covered include the marketing concept, continuous improvement, quality, complaint behaviour, expectations, measurement, and relationship marketing. Prerequisite: ADM 3315 or consent of the instructor.

ADM 4335 Contemporary Marketing Issues 3 ch (3C) [W]

Considers contemporary issues in marketing. Taught as a seminar-based course and requires readings and detailed discussions of articles relevant to the selected topics of enquiry. Prerequisite: ADM 3315.

ADM 4336 Market Orientation & Economic Development 3 ch (3C)

Examines theory and practice of market orientation for the creation and generation of enterprise growth or sustainability. Reviews variables that shape market orientation and factors that influence community well-being. Appraises the value and role of the entrepreneur in development initiatives. Emphasis on Atlantic Canada and the north-eastern United States. Prerequisite: ADM 3315.

ADM 4345 Integrated Marketing Communications 3 ch (3C)

Examines forms of marketing communications, emphasizing their role in the Canadian environment. Includes basic communications theory related to basic consumer behaviour theory, media availability and selection, promotion channels, personal selling, industry self-regulation, role of government regulation. Prerequisite: ADM 3345.

ADM 4350 Export Market Entry 6 ch (3C) (LE)

A course on how to plan and implement export tactics and strategy. In addition to the study of global marketing concepts, theories, and analytical tools, students will be expected to prepare a market entry plan. Atlantic-based organizations will participate in the course as case studies. On a competitive basis students will be selected to attend a trade mission. Prerequisites: ADM 3315. Students will not be permitted to obtain credit in both ADM 4355 (or an equivalent) and ADM 4350.

ADM 4355 Global Marketing 3 ch (3C) (LE)

Examines marketing decision-making in an international environment. Identifies and explores marketing problems facing enterprises undertaking expansion beyond domestic market boundaries. Prerequisite: ADM 3315.

ADM 4395 Internship in Marketing 3 ch [W]

Involves approved work for 80 hours in a term for a marketing department of an organization and under the supervision of a faculty member. Requires work on a project that is evaluated for academic assessment. Note: Open to Honours BBA candidates with a major in marketing Subject to faculty and placement availability.

ADM 4396 Independent Study in Marketing 3 ch [W]

Preparation of an empirical or theoretical study in marketing under the supervision of a faculty member. Application required at least 30 days prior to the term in which work will be undertaken. Note: Students must have completed 96 ch and have attained a cumulative GPA of at least 3.0.

ADM 4415 Working Capital Management 3 ch (3C)

Considers areas relating to various components of working capital. Examines practical issues and analytical models for the efficient management of cash, accounts receivable, and inventories, along with the critical appraisal of various sources of short-term funds. Prerequisite: ADM 2413.

ADM 4416 Applied Financial Management 3 ch (LE)

Employs actual and simulated corporate financial cases related to financial planning and control, working capital management and capital budgeting, cost of capital and optimal capital structure, dividend policy, mergers and acquisitions, and international financial management. Prerequisite: ADM 3415.

ADM 4421 Mergers and Acquisitions 3ch (3C)

This course covers the theory and practice of mergers and acquisitions. Topics to be covered include: Valuation techniques and its applications to mergers; Economic forces and timing of merger activity (merger waves); Motives for mergers and acquisitions; market for corporate control; valuing synergies; valuing (target) firms for takeover; accounting for mergers; practical issues in mergers and acquisitions; hostile takeovers; forms of payment; M strategies (offensive strategies used by bidders and defensive strategies used by target firms); The role of the board of directors in takeovers; best practices in mergers and acquisitions; empirical tests and stock market evidence of the benefits of mergers and acquisitions. Prerequisite: ADM 3415.

ADM 4425 Investments 3 ch (3C) (LE)

Covers the investment environment, basic investment concepts, analysis and strategy. Considers investors attitudes toward risk; the Markowitz portfolio theory; capital market theory and its application; the efficient markets hypothesis; expected inflation and yields on securities; options markets; securities markets, technical and fundamental analysis. Entails simulated trading using the Internet. Prerequisites: ADM 2624 and ADM 3415.

ADM 4426 Introduction to Financial Derivatives 3 ch (3C) (LE)

Covers forward contracts, futures, options and swaps. Introduces the markets for each of these financial derivatives and explains their market valuations. Illustrates the application of market valuations of derivative products through numerical problems. Also covers the use of financial derivatives in hedging risk. Prerequisites: ADM 2624 and ADM 3415.

ADM 4435 Entrepreneurial Finance 3 ch (3C)

Examines the theory and practice of financing entrepreneurial firms. Topics include: financial planning and option analysis, firm valuation at different stages of development, financial fundraising with asymmetric information, fundraising alternatives and venture organization. Prerequisites: ADM 2413 and either ADM 3424 OR ADM 3415.

ADM 4445 Theory of Finance 3 ch (3C)

Provides theoretical underpinnings of the concepts and decision-making frameworks in corporate finance. Covers theories of choice of consumption/saving, portfolio investment, real investments, and financial structure. Also covers models of pricing risk, along with the concepts of market efficiency and inefficiency. Prerequisite: ADM 2624, ADM 3415; STAT 3093 or equivalent.

ADM 4450 Student Investment Fund 6 ch (LE) [W]

Presents experiential learning of the actual financial investment process and portfolio management. Students, under the guidance of faculty advisors, manage over a $1,000,000 portion of the pension assets of the New Brunswick Investment Management Corporation (NBIMC), within the investment policies and procedures of that enterprise. Requires detailed analysis of macroeconomic, industry, and company fundamentals. Entails preparation, on a regular basis, of up-to-date reports and presentations of portfolio analysis, selection, and management. Open only to BBA students. Eligible candidates are required to complete an application form and go through an interview. Prerequisites: ECON 1013, ECON 1023, ADM 2223, ADM 2624, ADM 3415, ADM 4425.

ADM 4455 International Financial Management 3 ch (3C) (LE)

Reviews the concept of balance of payments, foreign exchange markets, and exchange rate systems. Examines exchange rate risk and the economics of currency exposure and the international arbitrage process. Topics include: international portfolio management, capital flows including direct investment, the financial of international enterprises, taxation and transfer pricing, capital budgeting, and the cost of capital in an international setting. Prerequisite: ADM 3415.

ADM 4475 (MATH 4853) Mathematics of Financial Derivatives 3 ch (3C)

Basics of options, futures, and other derivative securities. Introduction to arbitrage and partial differential equations. Stochastic calculus and Ito's Lemma. Option pricing using the Black-Scholes model. Put-Call parity and Hedging. Pricing of European and American call and put options. Number methods for the Black-Scholes model: binary trees, moving boundary problems, and linear complementarity. The barrier, and other exotic options. Prerequisites: MATH 2013 and 2213, STAT 2593, and CS 1003 or equivalent.

ADM 4495 Internship in Finance 3 ch [W]

Involves approved work for 80 hours in a term for a finance department of an organization and under the supervision of a faculty member. Requires work on a project that is evaluated for academic assessment. Note: Open to Honours BBA candidates with a major in finance. Subject to faculty and placement availability.

ADM 4496 Independent Study in Finance 3 ch [W]

Preparation of an empirical or theoretical study in finance under the supervision of a faculty member. Application required at least 30 days prior to the term in which work will be undertaken. Note: Students must have completed 96 ch and have attained a cumulative GPA of at least 3.0.]

ADM 4525 Leadership 3 ch (3C) [W] (LE)

Studies theoretical and practical approaches to directing people in organizations. Explores the relative effectiveness of various leadership styles in transforming organizational foci, from a managerial point of view. Prerequisite: ADM 2513.

ADM 4526 Motivation and Work Behaviour 3 ch (3C)

Utilizes recent motivation theories as frameworks to analyse the effectiveness of evaluations and control methods currently found in organizations. Included is the use of information, pay administration, and participation in the design of effective organizational control systems. Prerequisites: ADM 2513 and one of ANTH 1001, POLS 1000, PSYC 1000, or SOCI 1000.

ADM 4535 Ideology, Technology and Business (O) 3 ch (3C) (LE)

Examines how ideology and technology have influenced and shaped today's society. Emphasizes the development and impact of ideology and technology on government-business relations and the freedom of business to operate. Normally open only to third and fourth year students.

ADM 4536 Concept of Work (O) 3 ch (3C) [W] (LE)

Examines changing ideas about the rationales and appropriate organization of workplace activities. Historical shifts in private sector activities are contrasted versus the evolution of intellectual theories. Topics include: Taylorism, the human relations movement, bureaucracy, job enrichment, gender job identification, and the impact of civil rights legislation upon workplace management. Prerequisites: ADM 3573, ADM 3875 Prerequisites: ADM 3573, ADM 3875

ADM 4615 Operations Management I 3 ch (3C)

Presents the concepts of production planning, inventory control, network models, facility planning, scheduling and sequencing, PERT and CPM, queuing models. Prerequisites: ADM 2623 and 2624.

ADM 4616 Operations Management II 3 ch (3C)

Applications of the tools and techniques of operations management. Extensive use of case method. Prerequisite: ADM 4615.

ADM 4645 Special Topics in Quantitative Methods (O) 3 ch (3C)

Examines current issues in quantitative modeling and planning. Special emphasis placed on the managerial interpretation of results, and the problems of implementation. Prerequisites: ADM 2624 and 4615.

ADM 4655 Global Manufacturing Systems 3 ch (3C)

Examines the similarities and differences of actual manufacturing practices in production planning and control throughout the world. Designing to provide insight into practices that lead to superior manufacturing performance. Extensive use of computerized data bases. Prerequisites: ADM 2623 and 2624.

ADM 4656 Location Theory 3 ch (3C)

Provides an overview of the basic models used in location analysis. Includes median centre and covering problems. Also covers brand positioning and voting theory. Considers both discrete and continuous models. Discussion of practical applications of location models. Prerequisites: ADM 2623 and 2624.

ADM 4675 Network Analysis 3 ch (3C)

Introduces the algorithms for optimization related to networks. Emphasizes the applications in transportation, telecommunications, warehousing, and computing networks. Prerequisites: ADM 2624 and 4615.

ADM 4677 Inventory Management 3 ch (3C)

Provides an overview of inventory systems and their impact on materials management. Considers the two fundamental inventory questions (when and how much to order) under a variety of practical considerations. Includes topics such as: economic order quantity, just-in-time inventory systems, fixed-order size, fixed order interval, and deterministic and probabilistic systems. Discussion of practical applications of models. Prerequisites: ADM 2623 and 2624.

ADM 4685 Methods of Quality Control (O) 3 ch (3C) (LE)

Designed for business and engineering students interested in dealing with the quality of production and inspection problems. Deals with various types of Shewhart control charts and various types of acceptance sampling systems and procedures which are widely used in industries to improve product quality and to reduce costs. Sufficient theory is covered to supply practical working rules for the recognition of the limitations of methods, as well as their uses. Discussion of actual cases from industries. Prerequisite: ADM 2623 or equivalent.

ADM 4686 Project Management (O) 3 ch (3C)

Introduces the management tools of project selection and evaluation, the setup of a project team, and the role of a project manager. Discussion includes the quantitative techniques of managing a project in terms of time/cost estimation, scheduling, budgeting, and the other control/monitoring measures of the performance of a project. Prerequisites: ADM 2623 and 2624.

ADM 4687 Scheduling (O) 3 ch (3C) (LE)

Deals with the theory of sequencing and scheduling. Provides in depth coverage of single machine sequencing, problems with independent jobs and general purpose methodologies for single machine problems. Other topics include: parallel machine models, flow shop scheduling, job shop scheduling, network methods for project scheduling, and resource constrained project scheduling. Prerequisites: ADM 2623 and 2624, or equivalent.

ADM 4690 Supply Chain Management 3 ch (3C)

This course will present state-of-the-art design, control, operation, and management of supply chain systems. The course will focus on the integrated management of material flow, information flow, and financial flow at three different levels: strategic, tactical, and operational. Quantitative methods and techniques necessary for the supply chain management will be emphasized along with case studies. Prerequisites: ADM 2623 and ADM 2624.

ADM 4715 Database Management 3 ch (3C)

An introduction to database management systems. Reviews different types of database management systems. Additional topics include data modeling, query languages, database administration, data administration, security, concurrency, control and distributed databases. Prerequisite: ADM3713

ADM 4716 MIS Administration 3 ch (3C)

Focuses on the role of MIS in organizations and the strategic uses of MIS. Covers managing the MIS function (including project selection and management, personnel policies and the structure of the MIS function) and the management of end-user computing and decision support systems. Prerequisite: ADM 3713

ADM 4732 Electronic Business Strategies 3 ch (3C)

Introduces alternate business models and competitive strategies pertinent to emerging e-business. Considers e-business models, revenue models, competitive structure, alliance patterns, and key success factors. Addresses issues of organizational, marketing and financial integration with the existing business. Prerequisites: ADM 3725.

ADM 4771 E-Business Technology 3 ch (3C)

Appraises the current state of e-business technology. Reviews Internet infrastructure and e-business architecture. Examines e-business technology solutions for presentation, catalogue, transaction processing, payment systems, security, customer relationship management, auction technology, systems integration, data warehousing and data mining. Discusses conceptual and practical issues in web design and other e-business applications development. A significant part of assessment entails hands-on lab sessions. Prerequisite: ADM 3725.

ADM 4772 Global Issues in Electronic Business 3 ch (3C)

Critically examines a number of issues related to information and telecommunication technology mediated business. Topics include business models, issues related to business integrity and security, national e-business strategies, competition in cyberspace, global collaborative systems, interface of real communities with virtual communities, ownership of digital property and global distributional issues. Prerequisite: ADM 3725.

ADM 4773 E-Business Entrepreneurship 3 ch (3C)

Overview of the knowledge-based economy and impact of the Internet on organizations. Appraises economic, technological and strategic issues involved in creating new e-business ventures; business models, fundamental processes of value creation and challenges faced by entrepreneurs; accessing venture capital and other financial options for startups. Requires the creation of a new venture, development a website and preparation of a business plan that can be presented to potential investors. Prerequisites: ADM 3725 or equivalent.

ADM 4776 The Law and Electronic Business 3 ch (3C)

Introduces the law that affects electronic business. Examines potential liabilities associated with doing business on-line and explores strategies for managing risk exposure. Topics include the enforceability of electronic contracts, computer crime, rights of domain names, copying on the Internet, and jurisdiction over the Internet. Prerequisites: ADM 3173 and ADM 3725.

ADM 4815 Training and Development 3 ch (3C)

Examines fundamentals of training and development function in organizations. Appraises cycle from needs assessment to evaluation and explores the influence of changes in the workplace and the availability of information technology. Prerequisite: ADM 2513 Prerequisite: ADM 2513

ADM 4825 Compensation Management 3 ch (3C) (LE)

Introduces the strategic role played by pay and benefits in achieving organizational goals. Topics include: forms of financial and non-financial compensation; job analysis and evaluation; pay policy and external competitiveness; pay for performance; performance appraisal; and administration of the pay system. Prerequisite: ADM 3815.

ADM 4826 Employment Law 3 ch (3C)

Introduces the law relating to the individual employer-employee relationship. Examines the common law governing the contract of employment from commencement to termination. Overviews statutory regulation of the employment relationship, including: employment standards; occupational health and safety; workers compensation; and human rights legislation. Note: Students in the MBA/LLB program will not be permitted to obtain credit for ADM 4826 and LAW 3683. Prerequisite: ADM 3123.

ADM 4835 Contemporary Issues in Human Resources Management (O) 3 ch (3C) [W]

Examines current issues in human resource management in North America and abroad. With latitude given to the selection of topics. Prerequisite: ADM 3815.

ADM 4836 Canadian Labour Markets 3 ch (3C)

Introduces institutional dimensions of Canadian labour markets. Examines interactions among households, firms, and social organizations regulating labour exchanges. Prerequisites: ECON 1013, 1023

ADM 4845 Human Resources Planning 3 ch (3C) (LE)

Examines how different organizational strategies require alternate HRM policies and practices. Explores the resource allocation issues necessary for the effective management of people within a given strategy. Prerequisite: ADM 3815

ADM 4846 Human Resources Research and Information Systems 3 ch (3C)

Examines research uses of databases in human resources. Issues include promotion, compensation, absenteeism, turnover, training and development, and discrimination. Prerequisites: ADM 2623, 3815, 3875

ADM 4855 Comparative Industrial Relations Systems 3 ch (3C) [W] (LE)

Provides a comparative study of union-management relations in Western Europe, Japan and other countries. Emphasis will be on comparing and contrasting certain aspects of these industrial relations systems with those found in Canada. Prerequisite: ADM 3875.

ADM 4856 International Human Resource Management 3 ch (3C)

This course will introduce students to important concepts, theories and issues in international human resource management. There are two key aspects to it. First, students need to understand how human resource management systems in other countries differ from those in Canada and, secondly, how human resource management of multinational corporations differ from those of domestic organizations. Consequently, the course will cover such topics as global staffing, global pay, performance management in multinational corporations, global human resource management strategies and global labour relations. Prerequisite: ADM 3815.

ADM 4878 Negotiation and Dispute Resolution 3 ch (3C)

Appraises conflict, negotiation and dispute resolution principles. Focuses on the formulation and implementation of negotiation and dispute resolution. Considers the causes and consequences of conflict, and applies contrasting approaches to negotiations and dispute resolution. Note: Students in the MBA/LLB program will not be permitted to obtain credit for both ADM 4878 and LAW 4103.

ADM 4895 Internship in Human Resources 3 ch [W]

Involves approved work for 80 hours in a term for a HRM department of an organization and under the supervision of a faculty member. Requires work on a project that is evaluated for academic assessment. Note: Open to Honours BBA candidates with a major in HRM. Subject to faculty and placement availability. Prerequisite: ADM 3815

ADM 4896 Independent Study in HRM 3 ch [W]

Preparation of an empirical or theoretical study in HRM under the supervision of a faculty member. Application required at least 30 days prior to the term in which work will be undertaken. Note: Students must have completed 96 ch and have attained a cumulative GPA of at least 3.0.]

ADM 4990 Honours Thesis 6 ch [W]

Individual development and defence before a committee of a written research endeavour under the guidance of a faculty supervisor. Students are advised to consult with their intended faculty supervisor prior to the completion of 97 ch. A written request for admission to this course must be submitted to the Associate Dean, Programs, Faculty of Administration, no later than 1 October of a students final year. Note: Available in designated majors and open only to Honours BBA candidates who have attained a cumulative GPA of at least 3.0. Subject to faculty availability.

ADM 4995 Independent Study 3 ch

Involves planning and carrying out an empirical or theoretical investigation under Faculty supervision. Wide latitude given to the selection of topics and methods of investigation. Application for approval required at least 30 days prior to the term in which work will be undertaken. May require defence of a report before a committee of appropriate Faculty members. Note: Applications normally approved only for senior-year students who have attained a cumulative average GPA of at least 3.0.

CHEMICAL ENGINEERING

Note: See beginning of Section H for abbreviations, course numbers and coding. L* denotes labs held alternate weeks.

CHE 1004 Introduction to Chemical Engineering 3 ch (2C 1L)

An introduction to the nature of the chemical industry. The basis for systems of units and the concept of fundamental units. The basic principles and calculations required to systematically perform material balances on industrial chemical processes. Computer self-teaching programs will be used. A description of some major chemical industries such as petroleum, pulp and paper, sulphuric acid and caustic-chlorine will be presented.

CHE 2004 Mass and Energy Balances 3 ch (2C 1L)

The methods used to systematically perform combinations of mass and energy balances on chemical processes will be discussed in detail. Particular attention will be given to the preparation of computer spread sheets in solving mass balances. Physical property data required for the performance of mass and energy balances including chemical equilibrium will be discussed. A description of some major chemical industries such as fertilizer production, base metals, combustion of fossil fuels along with emissions control and nuclear power generation will be presented. Prerequisite: CHE 1004, MATH 1503.

CHE 2012 Engineering Thermodynamics 3 ch (3C 1T)

Covers the First and Second Laws of Thermodynamics and their application to practical problems; properties of liquid and vapours;. ideal gas relationships; steam and gas power cycles and their application to steam power plants, internal combustion engines and gas turbines; combustion characteristics and heat and mass balances; refrigeration and heat pumps. Prerequisites: : CHEM 1882 or CHEM 1001/1012, or equivalent.

CHE 2123 Chemical Engineering Thermodynamics 3 ch (3C)

The development of thermodynamic work functions and application to chemical and phase equilibria; chemical potential and other partial molal quantities, process industry application of First and Second Laws of equilibrium. Prerequisite: CHE 2012 (or equivalent).

CHE 2401 Applied Organic Chemistry 3 ch (3C)

Introduction to organic chemistry as applied to engineering. Topics include bonding, stereochemistry, functional groups, structure determination, and a survey of typical reactions. Relation to typical process industries, such as: petrochemical, pulp and paper, polymer, detergent, food and biochemical. Note: Course may not be taken by students who have completed CHEM 2401. Prerequisites: CHEM 1882 or CHEM 1001/1012 or equivalent.

CHE 2412 Chemical Engineering Laboratory I 4 ch (2C 3L) [W]

Covers bomb and flow calorimetry, material and energy balance study of the University heating plant, fluid mechanics experiments including flowmeter calibrations and pressure drop measurements in pipes and fittings will be conducted. Interpretation of experimental data, group dynamics, safety issues, report writing and oral presentations. Students will work under close supervision. PrerequisiteS: : ENGG 1013, CHE 2012. Co-requisite: CHE 2703.

CHE 2503 Materials Science 4 ch (3C 3L*)

The principles relating the properties and behaviour of engineering materials to their structure; atomic bonding forces and strength of interatomic and intermolecular bonding forces, atomic arrangements in solids, structural imperfections and atom movements in solids; principles of phase diagrams and their application to multiphase materials, with particular reference to the iron-carbon system; mechanical and electrical properties of engineering material; semiconductors, polymers and ceramics; and their relation to internal structure. Laboratory experiments are conducted to illustrate behaviour of materials. Prerequisites:(CHEM 1882 or CHEM 1001/1012, or equivalent), MATH 1013.

CHE 2703 Fluid Mechanics 3 ch (3C 1T)

hydraulic and energy grade lines. Topics include energy and momentum equations and their application to practical problems including the measurement of flow and transfer of energy, vector diagrams for impulse turbines, flow in pipes, pumps, and fluid forces on immersed bodies. Prerequisite: APSC 1013, MATH 1013.

CHE 3304 Heat Transfer 4 ch (3C 1T)

A comprehensive first course in heat transfer. Thermal conductivity, conduction in composite walls in one, two and three dimensions, with internal generation. Unsteady state conduction. Convection heat transfer coefficients, and analogies. Interphase heat transfer. Coefficients for forced convection, natural convection, condensation and boiling. Heat exchanger design. Radiation heat transfer, evaporation. Note: CHE 3304 is equivalent to ME 3433. Prerequisites: (CHE 2703 or ME 3511), (CHE 2004 or ME 3413/3415).

CHE 3314 Fluid-Particle Interactions 3 ch (3C 1T)

Characterization of particulate materials. Motion of particles in fluids. Flow through porous media. Generation of particulate materials. Particle classification and fluid particle separation. Multiphase pipe flow. Fluidized beds, Filtration, Sedimentation. Prerequisites: CHE 2004, CHE 2703.

CHE 3324 Staged Processes 4 ch (3C 1T)

Analysis and design procedures for mass transfer operations based on equilibrium stage concept. Graphical procedures for simple systems. Numerical stagewise procedures. Mainly distillation, gas absorption and liquid extraction will be discussed. Stage efficiency. Prerequisite: CHE 2004.

CHE 3418 Numerical Methods in Chemical Engineering 3 ch (3C)

Numerical methods, their application in Chemical Engineering, and process design and simulation packages. Systems of linear and nonlinear algebraic equations, curve fitting (regression and interpolation), numerical integration and differentiation, systems of ordinary differential equations. Prerequisites:CS 1003 or equivalent, MATH 1503.

CHE 3423 Chemical Engineering Practice School 4 ch [W]

A two week industrial practice school in selected industrial process plants scheduled after spring examinations. Groups of students, with Faculty supervisors, are assigned to engineering projects to be carried out on industrial process units. Students are required to present an oral report to plant operating and technical personnel at the end of the practice session. A written report is also required. As there will be practical limitations to the number of students in any one practice school, application for positions in this course will be treated on a first-come, first-served basis. This course is strongly recommended as a technical elective for students not planning to complete either the co-op or professional experience programs. Prerequisites: CHE 2004, CHE 2412.

CHE 3424 Chemical Engineering Laboratory II 3 ch (1C 4L) [W]

Experiments in heat transfer, fluid mechanics, fluid-particle interactions and other unit operations, which underlie the practice of chemical engineering, will be conducted. Interpretation of experimental data, group dynamics, safety issues, report writing and oral presentations are emphasized. Students will work under limited supervision. Prerequisite: ENGG 1103. Co-requisites: CHE 3304, CHE 3314.

CHE 3434 Chemical Engineering Laboratory III 3 ch (1C 4L) [W]

Experiments in fluid-particle interactions, heat transfer, mass transfer and other unit operations, which underlie the practice of chemical engineering, will be conducted. Interpretation of experimental data, group dynamics, safety issues, report writing and oral presentations are reinforced. Students will work under minimal supervision. Prerequisites:CHE 2412, (CHE 3424 or (CHE 3304 and CHE 3314)).

CHE 3505 Chemical Process Design 4 ch (3C 1L 1T)

This course provides the students with opportunities to design equipment commonly found in industrial operations. Previously learned fundamentals, such as mass and energy balances, thermodynamics, fluid mechanics, dynamics, and material science, will help the student to study the so-called short-cut techniques and other abbreviated and useful methods (e.g. codes) for specifying equipment and isolating important elements of a design project. In addition, special emphasis will be placed on the introduction and application of interactive computer-based process design and simulation tools. Prerequisites: CHE 2004, CHE 2012, CHE 2503, CHE 2703, ENGG 1013, APSC 1023.

CHE 4101 Chemical Reaction Engineering I 4ch (3C 1T)

Application of principles of chemical kinetics to the design of chemical reactors. Simple idealized isothermal reactors (batch, plug flow, continuous stirred tank reactor) for single and multiple reactions. Adiabatic and non-isothermal reactors. Optimal choice of temperature. Residence time distribution and non-ideal flow systems. Prerequisite: CHE 3304.

CHE 4225 Process Design Project 6 ch (2C 2T 2L)

Combines elements of chemical process design, economics, and safety. Topics covered include flowsheet preparation, shortcut design methods, modelling and simulation of industrial processes, cost estimation, risk assessment, project management, and environmental regulations. Students are required to develop a conceptual design for an industrial process. A comprehensive report and an oral presentation of the design work are required. Prerequisites: CHE 3314, CHE 3505, ECON 1073. Co-requisites: CHE 4101, CHE 4341, CHE 4601.

CHE 4314 Air Pollution Control 3 ch (3C)

Sources of air pollution; modeling atmospheric dispersions; pollution control in combustion; particulate control methods; control of gaseous emissions; industrial odour control; indoor/ in-plant air quality. Prerequisite: CHE 3314. Co-requisite: CHE 4341.

CHE 4341 Mass Transfer Operations 4 ch (3C 1T)

Fundamentals of the theory of mass transport. Operations in continuous contractors including gas absorption, liquid extraction, humidification and drying. Prerequisites: ChE 3324. Co-requisite: ChE 3418.

CHE 4404 Chemical Engineering Laboratory IV 3 ch (6L*) [W]

Experiments to characterize feedback control systems, gas absorption columns, chemical reactors, distillation columns and other unit operations, which underlie the practice of chemical engineering, will be conducted. Students will apply their knowledge of interpretation of experimental data, group dynamics, laboratory safety and report writing throughout this course. Experiments will be conducted independently. Prerequisite: CHE 3424 or CHE 3434. Co-requisites: CHE 4101, CHE 4341, CHE 4601.

CHE 4601 Process Dynamics and Control 4 ch (3C 1T)

Basic techniques for the dynamic analysis of elementary processes; the characteristics of controllers, control valves, measurement devices and transmitters; feedback control loops; stability of loop from the viewpoint of the roots of the characteristic equation and root locus techniques. Prerequisites: MATH 3503, CHE 2703 or equivalent, (CHE 3304 or ME 2613).

CHE 4724 Special Topics in Chemical Engineering 3 ch (3C)

CHE 4734 Special Topics in Chemical Engineering 2 ch (2C)

CHE 4744 Special Topics in Chemical Engineering 1 ch (1C)

CHE 4814 Chemical Engineering Report 3 ch (6L)

The major requirement of this course is a report on a subject approved by the Department. Suitable topics include experimental studies, design projects, literature surveys, feasibility studies and computation projects. Oral presentations of the work will be required.

CHE 4914 Thesis 6 ch (12L) [W]

The thesis is a research project done under the supervision of a faculty member. Progress depends largely on the initiative and diligence of the individual. A detailed report is submitted on completion of the project to gain credit for the course. An oral presentation is also required.

CHE 5114 Chemical Reaction Engineering II 3 ch (3C)

Prediction of conversion in non-ideal flow reactors (segregated flow, bypassing and dead space, axial dispersed plug flow). Taylor dispersion in pipes and packed beds. Stability and control of nonisothermal reactors. Effects of heat and mass transfer in heterogeneous catalytic reactors. Detailed analysis of some industrially important reactor systems.

CHE 5124 Adsorption and Adsorption Processes 3 ch (3C)

Surface forces, physical adsorption and chemisorption, thermodynamics of adsorption and derivation of simple model isotherms (Langmuir, Volmer, B.E.T., virial, B.L.R., Freundlich, etc.), adsorption of mixtures. Characterization of adsorbents and catalysts. Adsorption kinetics, intracrystalline diffusion in zeolites, dynamics of adsorption columns and adsorption processes.

CHE 5234 Oil & Gas Process Engineering 4 ch (3C 1T)

An introduction to the physical, chemical, and engineering principles used in the processing of natural gas, petroleum, and bitumen. The nomenclature, common processes, basic designs, and relevant regulations will be covered. Prerequisites: CHE 2004, CHE 2123 or approval by the instructor.

CHE 5254 Polymer Reaction Engineering and Polymer Processing 3 ch (3C)

Basic polymer concepts. Polymer structural characteristics and properties. Mechanisms, kinetics and reactors for polymerization. Polymer rheology and transport processes. Processing applications and the effects of processing on polymer properties. Prerequisites: CHE 2503, CHE 2703, MATH 3503. Co-requisite: CHE 3304 or equivalent.

CHE 5313 Energy and The Environment 3 ch (3C)

Multi-disciplinary topics related to fuel and the environment, with emphasis on large scale electrical power production using fossil and nuclear fuels. Energy conversion technology and limitations. Five modules taught by faculty members from various Engineering departments: Energy Principles, Energy Management, Power Generation, Nuclear Energy, and Electrical Energy.

CHE 5314 Chemical Process Industries 3 ch (3C)

A technical overview of selected chemical industries with consideration of their impact on the environment. Emphasis is on current process technology and pollution control methods. Environmental guidelines and regulations are also presented. Five modules,. each covering a specific chemical industry, taught by Chemical Engineering faculty.

CHE 5344 Combustion 3 ch (3C)

Survey of energy sources and the present means of conversion; laminar and turbulent diffusion flames; premixed flames; combustion kinetics and explosion mechanisms; ignition characteristics of solid, liquid and gaseous fuels; conflagration and detonation waves; fluid dynamics in combustion systems; analysis of practical problems associated with each of the above topics.

CHE 5434 Transport Phenomena 3 ch (3C)

Advanced heat, mass, and momentum transfer. One dimensional transport, penetration theory, and simple convection. Correlations and dimensionless groups. Fluid mechanics, including non-Newtownian and multiphase systems. Derivation of differential and partial differential transport equations.

CHE 5524 Mathematical Methods in Chemical Engineering 3 ch (3C)

Solution of the ordinary and partial differential equations encountered in heat, mass, and momentum transport as well as in reactor design. Perturbation solutions and stability analysis are applied to simple systems and adiabatic reaction. Extensive analysis of simple heat and mass transfer via separation of variables and Green=s functions. Assignments involve solutions to specific problems encountered in Chemical Engineering. Co-requisites: CHE 3304, MATH 3503.

CHE 5534 Process Identification for Advanced Control 4 ch (3C 3L*)

A practical course which emphasizes design of experiments, time series analysis, system model identification, statistical process control, basic multivariable controls, and constrained and unconstrained optimization, all in the context of controlling industrial processes. Prerequisites: STAT 2593, CHE 5614 or ME 5643 or EE 4343.

CHE 5614 Chemical Process Control 3 ch (3C)

Frequency response of processes, control hardware, open and closed control loops. Nyquist diagrams. Experimental determination of frequency response data. Control loop tuning procedures. Multivariable control, open loop and feed forward control. Cascade control, adaptive control. Direct digital control. Prerequisite: CHE 4601 or equivalent.

CHE 5714 Electrochemical Engineering 3 ch (3C)

Electrochemical flux equations. Reversible cells. Energy producing cells. Energy consuming cells. Corrosion. Applications to include discussion of primary and secondary batteries, electrolytic processes, corrosion suppression.

CHE 5744 Steam Supply Systems 3 ch (3C)

Historical and descriptive introduction to fossil fuel fired boilers. Introduction to different reactor types. Complex Rankine cycles. Steam plant efficiencies. Energy and exergy analysis. Heat transfer in fossil fuel fired boilers. Coal fired systems. Thermal transport and steam generation. Steam plant heat exchangers. Analysis of real plant data. Prerequisites: CHE 2012 or ME 3413; CHE 2703 or ME 3511.

CHE 5754 Steam and Gas Turbines 3 ch (3C)

Development of steam turbines and review of steam cycles. Turbine thermodynamics and energy conversion. Impulse and reaction blading. Mechanical design of turbine components and operational considerations. Efficiency calculations. Review of gas cycles. Gas turbine thermodynamics. Gas path design. Combined cycle systems. Prerequisites: CHE 2012 or ME 3413; CHE 2703 or ME 3511.

CHE 5764 Special Topics in Power Plant Engineering 3 ch (3C)

CHE 5804 Nuclear Chemical Processes 3 ch (3C)

Actinide properties; uranium, thorium, zirconium ore extraction processes; uranium, deuterium separation processes; nuclear fuel production; fuel reprocessing. Reactor constructional materials; coolant chemistry; chemical control systems. Decontamination. Radioactive waste management.

CHE 5824 Corrosion Processes 3 ch (3C)

Introduction: corrosion and its costs, corrosion measurement, general materials and environment affects. Types of corrosion: uniform, galvanic, crevice, pitting, intergranular, selective leaching, erosion-corrosion, stress-corrosion, hydrogen effects. Corrosion testing: materials selection. Electrochemical principles: thermodynamics, electrode kinetics, mixed potentials, practical applications. High temperature corrosion. Nuclear plant corrosion, fossil plant corrosion, other industrial environments. Prerequisites: CHE 2503, CHEM 2622.

CHE 5834 Nuclear Engineering 3 ch (3C)

Radio-active decay, fission energy, nuclear interactions, neutron scattering and absorption. Neutron diffusion elementary reactor theory, four and six factor formulae, neutron flux variation. Reactor kinetics, source multiplication, decay heat, reactor start-up and shut down. Fuel burnup, fission product poisoning, refuelling. Temperature and void effects on reactivity, reactor control. Fuel handling and waste disposal. This course is intended for senior level students. Prerequisites: CHE 2012 or ME 3413; CHE 2703 or ME 3511.

CHE 5844 Nuclear Safety and Reliability 4 ch (3C 1L)

The philosophy of safety design and operation of nuclear power reactors, responsibilities for safe operation. The role and place of regulatory agencies. The concept of risk, quantitative risk assessment. Methods for calculation of frequency and consequences of reactor accidents and evaluation of the safety level of a nuclear station. Case studies of past reactor accidents, lessons learned, and effect on future operation.

CHE 5854 Nuclear Heat Removal 3 ch (3C)

Reactor types and coolant systems, fuel element design and coolant characteristics. Reactor heat generation, heat transfer from reactor fuel, heat transport in coolant, boiling characteristics, two-phase flow, elementary thermal hydraulics. Steam generator design and operation. Reactor operational limits, transient conditions. Other two-phase phenomena. Loss-of-coolant accidents. Prerequisites: CHE 2012 or ME 3413; CHE 2703 or ME 3511.

CHE 5877 Advanced Nuclear Systems 3 ch (3C)

Evolution of thermal and fast fission reactors. Different coolant types - gas, water, organic, liquid metal. Nuclear breeding; advanced fuel cycles. Nuclear fusion processes. Fusion reactor concepts. Prerequisites: CHE 2012 or ME 3413; CHE 2703 or ME 3511.

CHE 5913 Pulp Production 3 ch (3C)

Wood and chip requirements; overview of pulping processes; mechanism and variables in mechanical and chemimechanical pulping, general principles of chemical pulping, kraft cooking, sulphite cooking, extended and oxygen delignification, pulp washing, pulp bleaching, recovery of pulping chemicals. Prerequisites: CHEM 3801, MATH 1013, or instructor's permission.

CHE 5923 Papermaking 3 ch (3C)

Overview of pulping and papermaking processes; pulp and paper properties; requirements for different grades of paper and board; stock preparation; applications of fluid mechanics; wet-end chemistry; dry-end operations. Prerequisites: MATH 1013; CHE 2703 or ME 3511, or instructor's permission.

CHEMISTRY

Valid WHMIS (Workplace Hazardous Materials Information System) certification is required for all students who wish to take CHEM laboratory courses. WHMIS certification workshops will be provided. Please contact the Chemistry Department at least two weeks prior to the start of each term for schedule.

Note: See beginning of Section H for abbreviations, course numbers and coding.

CHEM 1001 General Chemistry I 3 ch (3C 1T)

An introduction to atoms and molecules, chemical equations and reactions, the periodic table, the electronic structure of atoms, and chemical bonding as well as an introduction to organic chemistry including structure and bonding, functional groups, isomers, reactions, polymers and spectroscopy. An adequate high school background in maths, physics and chemistry is required.

CHEM 1006 General Chemistry Laboratory, Part I 2 ch (3L)

Topics include: qualitative analysis, investigation of inorganic reactions, a simple organic synthesis and construction of bonding and geometry models of organic and inorganic species. WHMIS certification required (see beginning of Chemistry Courses section for details). Co-requisite: CHEM 1001.

CHEM 1012 General Chemistry II 3 ch (3C 1T)

An introduction to gases, thermochemistry, rates of reaction, chemical equilibrium, spontaneity of reactions, intermolecular forces, reactions in aqueous solution, acids and bases, acid-base equilibria, solubility equilibria, redox reactions, and electrochemistry. Restricted to students in the Faculty of Science and those in other faculties who intend to take more than two main stream courses in chemistry. Prerequisite: Chem 1001 (C or higher); Pre or Co-requisite: Math 1003.

CHEM 1017 General Chemistry Laboratory, Part II 2 ch (3L)

Topics include: ideal gases, heats and rates of reactions, chemical equilibria, acid-base and solubility equilibria, redox titrations, voltaic cells and electrolysis. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisite: CHEM 1006; Co-requisite: CHEM 1012.

CHEM 1553 Hitchhikers Guide to Chemistry 3 ch (3C)

This course is intended for Arts or other students not in Science and Engineering and who have little or no chemistry background. The course will cover the basic principles and concepts of atoms and molecules, chemical bonding, acids and bases, and organic compounds. The material will be applied to the understanding of everyday chemistry including proteins, carbohydrates, polymers, acid rain, etc. This course cannot be used as a substitute for any other first level Chemistry course.

CHEM 1801 General Chemistry - Basic Concepts, Organic Chemistry and Biochemistry 3 ch (3C 1T)

Intended primarily for non-Science students who have insufficient chemistry background. Covers the nature of atoms and molecules, the periodic table, chemical bonds, stoichiometry, valence and acid-base reactions as well as classification and reactions of organic compounds, organic polymers, proteins, carbohydrates, nucleic acids, and steroids.

CHEM 1882 General Chemistry-Physical and Inorganic Chemistry 5 ch (3C 1T 3L)

Intended primarily for non-Science students who require an introduction to physical and inorganic chemistry. Covers chemical equilibria, electrochemistry, thermodynamics and chemical kinetics. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisite: CHEM 1801 ("D" grade not acceptable) or 70% in Grade 12 Chemistry.

CHEM 2111 Introductory Analytical Chemistry 5 ch (3C 3L) [W]

Theory and practice, topics include concepts of acid-base, redox, precipitation and solvent extraction equilibria; sample handling and preparation; calibration techniques; error analysis and regression analysis; titrimetric and spectrophometric analysis. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisite: CHEM 1012 and 1017.

CHEM 2201 Inorganic Chemistry I 3 ch (3C)

Periodic properties of the atoms. Bonding, structures and reactions of inorganic compounds. Prerequisite: CHEM 1012 ("D" grade not acceptable).

CHEM 2222 Inorganic Chemistry II 3 ch (3C)

Bonding, structures and reactions of inorganic compounds. Prerequisite: CHEM 2201 ("D" grade not acceptable).

CHEM 2237 Inorganic Chemistry Laboratory 2 ch (3L) [W]

Introduction to preparation techniques in inorganic chemistry. Emphasis on Main Group and Transition element chemistry. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisite: CHEM 1017, CHEM 2201, CHEM 2416 Co-requisite: CHEM 2222.

CHEM 2401 Organic Chemistry I 3 ch (3C)

An introductory course. Topics include bonding, elementary stereochemistry, optical isomerism, functional groups, structure determination, reactions of Alkenes and Alkynes. Prerequisites: CHEM 1012 or CHEM 1882. ("D" grade not acceptable).

CHEM 2416 Chemistry Laboratory I 2 ch (3L)

Introduction to experimental chemistry (Organic) Part I, with emphasis on the structure determination of organic compounds. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisite: CHEM 1017 ("D" grade not acceptable). Co-requisite: CHEM 2401.

CHEM 2422 Organic Chemistry II 3 ch (3C)

A continuation of CHEM 2401. Topics include stereochemistry, alkyl halides, nucleophilic reactions, alcohols, ethers, substitution and elimination reactions and their synthetic utility. Prerequisite: CHEM 2401 ("D" grade not acceptable).

CHEM 2601 Chemical Thermodynamics 3 ch

The three laws of thermodynamics, thermochemical calculations, chemical equilibria, introduction to phase rule. Prerequisites: MATH 1013 or equivalent, CHEM 1012; Co-requisite: MATH 2003 or equivalent.

CHEM 2622 Electrochemistry and Chemical Kinetics 3 ch

Elementary electrochemistry, electrochemical cells, electrolysis, electromotive forces, applications of EMF measurements. Reaction kinetics and mechanisms, uni- bi-, and termolecular reactions, catalysis, enzyme catalysis, chain reactions, reaction dynamics, steric effects and transition state theory. Prerequisite: CHEM 2601 (or CHE 2123 for Chemical Engineering students only) ; Co-requisite: MATH 2003 or equivalent.

CHEM 2637 Chemistry Laboratory II 2 ch (3L) [W]

Introduction to experimental chemistry (Physical) Part II. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisite: CHEM 1017 ("D" grade not acceptable). Co-requisite: CHEM 2622.

CHEM 2857 Organic Chemistry Laboratory 2 ch (3L)

A Laboratory course for non-Chemistry Majors designed to accompany CHEM 2422. Approximately 30 hours of laboratory work are involved. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisite: CHEM 2416; Pre- or Co-requisite: CHEM 2422.

CHEM 2886 Analytical Chemistry Laboratory for Chemical Engineers 2 ch (3L)

This course teaches the basic techniques and concepts of chemical analysis. Covers handling skills, titration methods (conventional and potentiometric) and spectrophotometry (UV - visible, and flame atomic absorption/emission). WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisites: CHEM 1012 and CHEM 1017.

CHEM 3001 Introductory Quantum Chemistry 4 ch (3C 1L)

Molecular symmetry. Basic quantum theory and solutions for simple models. The orbital (Hartree-Fock) model for molecules. The Huckel model. Selected contemporary topics. Includes a computer laboratory component. Prerequisite: MATH 2003/2213 or equivalent.

CHEM 3003 Biocomputing in Drug Design I 5 ch (3C, 3L)

Introduction to biocomputing in the pharmaceutical industry. Topics include molecular modeling, rational drug design, high throughput screening and combinatorial chemistry, protein modeling and 3D bioinformatics. Course includes lectures and a computer laboratory component. Note: This course is cross-listed as CS 3003. Prerequisites: CHEM 1012 and BIOL 1012, or permission of instructor. CHEM 2401 or BIOL 2033 are recommended.

CHEM 3132 Intermediate Analytical Chemistry 5 ch (3C 3L)

Principles and applications of both equilibrium-based and basic instrumental methods of analysis. Topics include non-aqueous and complexometric titrations, analytical separations, potentiometry, analytical spectrophotometry, gas chromatography, elementary chemometrics, sample preparation and method development. Experiments are designed to illustrate the application of these methods in the analysis of real samples and in the study of analytical principles. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisite: CHEM 2111.

CHEM 3202 Inorganic Chemistry III 3 ch (3C)

Covers transition metals and introduction to organometallic chemistry. Prerequisites: CHEM 2222 and CHEM 3001.

CHEM 3221 Inorganic Chemistry IV 3 ch (3C)

Selected aspects of main group inorganic chemistry emphasizing periodic trends. Prerequisites: CHEM 2222.

CHEM 3236 Inorganic Chemistry Laboratory 3 ch (3L) [W]

Advanced preparative techniques in inorganic chemistry. Applications of IR, NMR and UV-VIS spectroscopy. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisite: CHEM 2237.

CHEM 3401 Organic Chemistry III 3 ch (3C)

Covers aldehydes, ketones, carboxylic acid derivatives, enolates, carbanion chemistry and organic synthesis. Prerequisite: CHEM 2422.

CHEM 3416 Organic Chemistry Laboratory II 2 ch (3L)

Functional group transformations such as alcohols to ketones, acids to esters, etc. via a variety of synthetic methods will be performed. IR, NMR and other spectroscopic methods will be applied to product characterizations and/or structure elucidations. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisite: CHEM 2416. Co-requisite: CHEM 3401 or CHEM 3421. Note: Credit can be obtained for only one of CHEM 2857 or CHEM 3416.

CHEM 3421 Organic Chemistry IV 3 ch (3C)

Covers spectroscopic aids, aromaticity, electrophilic aromatic substitution, alicyclic molecules, ethers, epoxides, alcohols and structure determination. Prerequisite: CHEM 2422.

CHEM 3503 Medicinal Chemistry I(A) 3 ch (3C) [W]

Structure, properties and chemistry of nucleic acids (DNA and RNA). Unusual DNA structures. Modern probes of DNA structure, DNA binding and cleaving agents, protein-DNA interactions, and other aspects of DNA recognition. Chemical mutagens and carcinogenicity. The chemical aspects of modern biochemistry tools (synthesis, sequencing, cloning, etc...) will also be covered. Prerequisites: BIOL 2033 and BIOL 2043. Co-requisites: CHEM 3401 or CHEM 3421.

CHEM 3513 Medicinal Chemistry Seminars 3 ch (3C)

Selected Topics in Medicinal Chemistry. Prerequisite: CHEM3401.

CHEM 3523 Medicinal Chemistry II (A) 3 ch (3C) [W]

Protein structure: from amino acids to multi-subunit entities. Overview of protein function. Probes for protein structure. Molecular recognition of proteins. Principles of enzymology. The organic chemistry of enzyme catalysis. Chemical aspects of modern protein chemistry tools (sequencing, synthesis, etc.). Protein engineering, catalytic antibodies, ribozymes and catalytic RNA. Prerequisites: BIOL 2033, BIOL 2043 and either CHEM 3401 or CHEM 3421.

CHEM 3602 Molecular Spectroscopy 3 ch (3C)

Molecular Spectroscopy, electronic, vibrational and rotational spectra of diatomic and polyatomic molecules. Radiative and non-radiative transitions. Nuclear magnetic resonance and electron-spin resonance spectroscopy. Co-requisite: CHEM 3001.

CHEM 3616 Physical Chemistry Laboratory (Molecular Spectroscopy) 2 ch (3L) [W]

Spectroscopic techniques and applications in the ultra-violet, visible, infrared and nuclear magnetic resonance regions. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisite: CHEM 2637. Corequisite: CHEM 3001.

CHEM 3621 Statistical Thermodynamics and Theories of Reaction Rates 3 ch

Probability distributions, ensembles, Maxwell-Boltzman distribution, partition functions, hard sphere collision theory, potential energy surfaces, transition state theory, reaction dynamics. Prerequisite: Math 2003/2013 or equivalent, CHEM 2622, CHEM 3001.

CHEM 3801 Chemistry in Pulp and Paper 3 ch (3C) [W]

This course treats the chemistry of wood and different pulping processes with emphasis on the general chemistry of the pulping and bleaching processes and the analytical methods as applied to wood and pulp. The students will acquire the chemistry background for the processes and technologies of the pulp and paper industry. Prerequisites: CHEM 2401 or CHE 2401, and CHEM 2622.

CHEM 3886 Physical Chemistry Laboratory for Chemical Engineers 2 ch (3L)

This course consists of experiments in chemical kinetics and electrochemistry. Topics include order of reaction, activation energies, reaction mechanisms, solution conductivities, enzyme kinetics and fast reaction kinetics. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisite: CHEM 2622

CHEM 3897 Organic Chemistry Laboratory for Chemical Engineers 1 ch (3L)

This course provides experience in the basic experimental techniques commonly used in organic chemistry. It illustrates several reaction types in organic chemistry and provides examples of functional group transformations. WHMIS certification required (see beginning of Chemistry Courses section for details).

CHEM 3903 Work Term Report I CR

A written report on the scientific activities of the work term. A component of the grade will be the employers evaluation of the student. (Students must have a GPA of 3.2 or better for CHEM COOP program.)

CHEM 4000 Senior Research Projects 6 ch [W]

CHEM 4000 is a project based course where students conduct research under the supervision of a chosen faculty member. Students must be in their final year of any Chemistry program or in any interdepartmental program involving Chemistry (including General Science) and must have a CGPA of 3.0 or better. Students are encouraged to contact potential supervisors and must apply in writing to the CHEM 4000 coordinator by August 15 of that year. Upon consideration by the potential research supervisors, successful applicants will be notified during the first week of the Fall term. A minimum of at least 6 scheduled hours per week is required and one seminar presentation will be required at the end of the academic year. WHMIS certification required (see beginning of Chemistry Courses section for details). Pre- or Co-requisite: 4th year level lecture courses in selected project area.

CHEM 4003 Biocomputing in Drug Design II 4 ch (3C 2L)

A follow-up of CHEM 3003. Topics include pharmacophore perception, solvation models, free-energy calculations, multivariate statistics, genetic algorithms, principal component analysis, virtual drug libraries, chemical diversity and cheminformatics. Course includes lectures and computer laboratory component. Note: This course is cross-listed as CS 4003. Prerequisite: CHEM/CS 3003.

CHEM 4007 Advanced Synthetic Methods Laboratory 3 ch (3L)

Further work in the inorganic and organic chemistry laboratory. Experimental projects will provide students with an opportunity to do further work in previously encountered topics, and to gain practical experience in more advanced topics. Some emphasis will be placed on the role of chemical research. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisites: CHEM3236 and CHEM3416 or Departmental approval.

CHEM 4013 Intermediate Quantum Chemistry 4 ch (3C 1L)

The spin-restricted and unrestricted Hartree-Fock methods, and their algebraic analogs. Density functional theory. Rayleigh Schrodinger perturbation theory. A sampling of advanced methods. The laboratory component includes practical molecular calculations. Prerequisite: CHEM 3001.

CHEM 4017 Advanced Instrumental Methods Laboratory 3 ch (3L)

Further experimental work in the analytical and physical chemistry disciplines. Experimental studies will provide students with an opportunity to do further work in previously encountered topics, and to gain practical experience in more advanced topics. Some studies may involve original chemical research. WHMIS certification required (see beginning of Chemistry Courses section for details). Prerequisites: CHEM3132 and CHEM3616 or Departmental approval.

CHEM 4111 Instrumental Analytical Chemistry I 3 ch (2C 2L)

A coordinated laboratory-lecture course to introduce the principles of instrumental analysis, operational aspects of analytical spectroscopy and chromatography. The laboratory component is designed to study the operation, application and limitation of selected methods which will form the basis of optimization and method development. Real materials are used to illustrate the common sample preparation methods. Students will use spreadsheet, word processor and program language extensively for data analysis and presentation. Prerequisites: CHEM 3132 and CHEM 2622.

CHEM 4112 Advanced Analytical Chemistry 2 ch (2C)

Advanced Topics in Analytical Chemistry. Prerequisite: Departmental approval.

CHEM 4222 Advanced Inorganic Chemistry 2 ch (2C)

Advanced topics in Inorganic Chemistry. Prerequisite: Departmental approval.

CHEM 4422 Advanced Organic Chemistry 2 ch (2C)

Advanced topics in organic chemistry. Prerequisite: Departmental approval.

CHEM 4622 Advanced Physical Chemistry 2 ch (2C)

Advanced topics in physical chemistry. Prerequisite: Departmental approval.

CHEM 4832 Pulp and Paper Testing 3 ch (3L) [W]

This course treats the chemical and physical testing methods related to pulp, paper and their manufacturing processes. The student will acquire a general knowledge of the testing methods frequently used in the Pulp and Paper Industry. Prerequisites: CHEM 2880 or 2111/3132/4801.

CHEM 4903 Work Term Report II CR

A written and oral report on the scientific activities of the work term. A component of the grade will be the employers evaluation of the student. (Students must have a GPA of 3.2 or better for CHEM CO-OP program.)

CHEM 4909 Directed Studies in Advanced Chemistry 3 ch

Students may pursue directed studies in specific areas and topics related to chemistry. These studies may involve any of the chemistry disciplines. The content and process of each directed study will be determined through negotiation between a student and the supervising faculty member(s). Departmental approval is also required.

CHEM 4919 Directed Studies in Advanced Chemistry 3 ch

Students may pursue directed studies in specific areas and topics related to chemistry. These studies may involve any of the chemistry disciplines. The content and process of each directed study will be determined through negotiation between a student and the supervising faculty member(s). Departmental approval is also required.

CHINESE

Note: See beginning of Section H for abbreviations, course numbers and coding.

Courses in Chinese Language are offered at the Introductory level and occasionally at the Intermediate level if resources are available.

CHNS 1013 Introductory Chinese I 3 ch

This introductory course acquaints students with some of the fundamentals of Modern Standard Chinese (Mandarin) and provides basic oral communication skills. Romanized transcription is used. Note: not open to Mandarin and Chinese dialect speakers.

CHNS 1023 Introductory Chinese II 3 ch

This course is a continuation of Chinese I (CHNS 1013). It aims to expand the basic communicative skills, and also progressively introduces a limited number of characters for reading comprehension purposes. Note: not open to Mandarin and Chinese dialect speakers. Prerequisite: CHNS 1013.

CIVIL ENGINEERING

Prerequisites and corequisites are indicated for specific courses where required. Under exceptional conditions the prerequisite or corequisite requirement may be waived with the consent of the instructor and the Department Chair.

The availability of elective courses should be verified with the Department of Civil Engineering before selection.

Notes:

1. See beginning of Section H for abbreviations, course numbers and coding.
2. All prerequisite, core and technical elective courses must be passed with a C or better.
3. **+** indicates laboratory periods are scheduled for alternate weeks.
4. (W) indicates courses with a significant amount of writing in English.(HIST 2925 or SOCI 2534 in the CE CORE program also has a (W) designation.)

CE 2023 Mechanics of Materials 5 ch (3C 3L)

Elastic and plastic stress, strain; behaviour of beams and columns; torsion; material strength. Prerequisite: APSC 1023. Co-requisite: MATH 1013.

CE 2512 Materials for Civil Engineers 4 ch (3C 2L)

The manufacture and use of Portland cement, concrete, and concrete products. Structure, production, physical properties, and use of ferrous and nonferrous metals, bituminous materials, wood, and plastics. Preservation of materials. Prerequisite CHE 2503.

CE 2603 Construction Engineering I 3 ch (2C 1T)

Responsibilities and relationships of participants in the construction industry. Standard contract documents, contractor resources and project control. Restricted to students with at least 60 ch succesfully completed.

CE 2703 Introduction to Fluid Mechanics 4 ch (3C 1T)

Physical properties of liquids and gases, fluid statics, kinematics of fluid flow, energy considerations in steady flow, momentum and dynamic forces in fluid flow, fluid measurements, introduction to forces on immersed bodies. Prerequisites: CE 1013, MATH 1013

CE 3033 Structural Analysis 5 ch (3C 3L)

Influence lines, calculation of deflections, flexibility analysis, stiffness analysis and approximate analysis. Prerequisite: CE 2023.

CE 3053 Reinforced Concrete Design I 4 ch (3C 2L)

Introduction to design of reinforced concrete structural elements by limit states design. Design of beams and one way slabs for flexure and shear, bond and development of reinforcement, serviceability limits, columns, and footing design. Includes a short introduction to the National Building Code. Prerequisite: CE 3033. Corequisite CHE 2512.

CE 3063 Structural Steel Design I 4 ch (3C 2L)

Design of tension and compression members, trusses and beams, plate girders and connections in steel. Prerequisite: CE 3033.

CE 3113 Soil Mechanics I 4 ch (3C 3L+)

Consolidation, shear strength, stresses under loaded areas, effects of water on soil behaviour. Prerequisite: GEOL 1001, GEOL 1026, CE 2023. Co-requisite: CE 2703 or CHE 2703.

CE 3123 Foundation Engineering I 4 ch (3C 1T)

Lateral earth pressures, shallow and deep foundations, stability of cuts and slopes. Prerequisite: CE 3113.

CE 3201 Transportation Engineering 5 ch (3C 3L)

Principles of transportation engineering: modal characteristics, travel demand functions, traffic flow theories and models, and vehicle-track principles. Highway transportation classification, elements and design principles. Laboratory work is field-oriented and involves elementary traffic studies. Prerequisite: STAT 2593

CE 3403 Introduction to Environmental Engineering 4 ch (3C 3L)

Introduces the problems and principles of control or modification of the environment. Considers an environmental dimension to all planning, design and analysis functions carried out by engineers. Restricted to students with at least 60 ch completed.

CE 3713 Hydraulics and Hydrology 5 ch (3C 3L)

Water flow in pipes; computer-based analysis of pipe networks; characteristics of pumps; open channel flow; similitude and dimensional analysis. The hydrological cycle; precipitation, runoff and hydrograph analysis; the rational method; flood and drought frequency analysis; groundwater flow. Prerequisites: CE 2703 or CHE 2703.

CE 3933 Numerical Methods for Civil Engineers 3 ch (3C)

Numerical methods appropriate to the solution of deterministic problems in civil engineering. Considers root finding, interpolation, integration, solution of systems of algebraic equations, ordinary and partial differential equations. Prerequisites: CS 1003 or equivalent, MATH 1013, MATH 1503.

CE 3963 Engineering Economy 3 ch (3C)

Basic methods of engineering economy including time value of money, compound interest models, interest and discount rates, and depreciation; critical path methods. Emphasis is placed on commonly used computational procedures. Restricted to students with at least 60 ch completed. Prerequisite: CS 1003 or equivalent.

CE 3973 Technical Communications 3 ch (3C) [W]

Written, oral and visual communications are covered. Written communication skills are enhanced through the preparation of engineering documents. Oral communications topics include public speaking and rules of order for conducting a meeting. Visual communications include the uses of videotape equipment, preparation of transparencies and slides for projection, and preparation and projection of computer generated images. Students are responsible for organizing a technical conference. Restricted to students with at least 90 ch completed. Prerequisite: ENGG 1013.

CE 4613 Construction Engineering II 3 ch (3C)

Construction of temporary works and construction methods. Includes excavations, trenches, stabilization, sheet piling, cofferdams, formwork, falsework, scaffolding, failure and accident statistics, costs and liability. Emphasis on application of the NB Occupational Health and Safety Commission Act and Regulations to construction. Restricted to students with at least 110 ch completed. Prerequisite: CE 2603.

CE 4923 Systems Design 3 ch (3C)

Techniques such as multiple linear regression, stepwise regression, time series analysis, forecasting, nonparametric tests, and optimization are applied to the design and operation of civil engineering systems. Prerequisite: STAT 2593.

CE 4973 Team Design Project 4 ch (1C 6L) [W]

Working in teams, students will complete an engineering design project that draws on their knowledge and skills obtained in previous courses. Student teams will design a structure, system, or process to meet a broad range of specified constraints. Students will manage their projects professionally, prepare a comprehensive written report, and present their design work orally. Prerequisite: CE 3973.

UPPER LEVEL ELECTIVE COURSES

CE 5013 Earthquake Engineering 3 ch (3C)

Historic and analytic evaluation of the effect of earthquakes on structures. The analytic evaluation will be based on an analysis of the dynamic response of the structural system when modelled as a single or multidegree of freedom system. Structural design concepts which minimize the effects of earthquakes will also be covered. Prerequisite: CE 3033.

CE 5033 Bridge Design 4 ch (3C 3L)

Design of girder, truss, rigid frame, and continuous bridges with special emphasis on highway bridges. Economics and layout of bridges, optimum proportions, influence lines and moment envelopes for indeterminate structural systems. Prerequisites: CE 3033, CE 3053, CE 3063.

CE 5043 Structural Engineering 4 ch (3C 2L)

Advanced methods of structural analysis and design, including matrix stiffness analysis of plane structures (trusses, beams and frames). Fundamental concepts related to the stiffness method are introduced during the development of a simple computer program for plane frame analysis, and approximate methods of analysis are used to check computer solutions. Prerequisites: CE 3033, CE 3053, CE 3063.

CE 5053 Reinforced Concrete Design II 5 ch (3C 3L)

Continuation of CE 3053. Includes a review of fexure and shear requirements for limit states design, serviceability limits and deflection calculations, torsion, slender columns, continuity, two-way slabs, and footing design. Consideration of prestressed concrete, strut-and-tie modeling, and comparison with ACI design code requirements. Requires a group design project. Prerequisite(s): CE 3033, CE 3053.

CE 5063 Structural Steel Design II 4 ch (3C 2L)

Materials behaviour, plastic design principles, tension and compression members, beams and connections. Numerical stability analysis, multistorey building design. Computer applications. Prerequisite: CE 3033, 3053, 3063.

CE 5073 Structural Masonry Design 4 ch (3C 2L)

Review of structural principles and codes relating to masonry and properties of masonry components; analysis and design of components; architectural and construction considerations related to masonry. Prerequisites: CE 3033, CE 3053, CE 3063.

CE 5083 Structural Wood Design 3 ch (3C)

Introduction to structural principles and codes relating to wood design. Consideration will be given to the design of individual elements (beams, columns, etc.) and systems of elements (shear walls, laminated bridge decks, etc.), as well as available computer software to assist in wood design. Prerequisite: CE 3033.

CE 5113 Soil Mechanics II 4 ch (3C 2L)

Soil mechanics principles, elastic and plastic stress conditions, arching, compression and consolidation, bearing capacity, stability, drainage. Prerequisite: CE 3123.

CE 5132 Foundation Engineering II 3 ch (3C)

A continuation of earlier soils engineering courses dealing with shallow foundations (including design of reinforced concrete footings), deep foundations, excavations, cofferdams and factors relating to foundation design. Prerequisite: CE 3123.

CE 5141 Embankments I 3 ch (3C)

Engineering for earthfill structures such as dams, dykes, causeways and other embankment structures employed in civil engineering projects. Prerequisite: CE 3113.

CE 5153 Waste Geotechnics 4 ch (3C 3L*)

Design of sanitary landfills, with emphasis on clay liners and composite liners. Properties of geosynthetics. Geotechnical properties of municipal solid waste. Landfilling procedures. Hydrological evaluation of sanitary landfills. Site selection. Prerequisite: CE 3123.

CE 5201 Road Materials and Structures 4 ch (3C 2L)

Soil classification, compaction, and stabilization for optimum use in road construction. Structural and hydraulic aspects of small scale drainage systems for roads. Prerequisites: CE 3113, CE 3713.

CE 5212 Pavement Design I 4 ch (3C 3L)

A study of the design and construction of highway pavements. Production and testing of bituminous materials, design of bituminous mixtures, thickness design for flexible pavements, design of rigid pavements, and construction methods. Prerequisite: CE 3113.

CE 5222 Traffic Engineering 4 ch (3C 3L)

Single vehicle and traffic stream characteristics; traffic studies; surveys, and analysis; traffic control devices; operations and economics of intersections and interchanges; traffic accident studies; legal and administrative aspects. Prerequisite: CE 3201.

CE 5232 Transport Facility Design 4 ch (3C 2L) [W]

Topics focus on the analysis and design of highway and rail infrastructure and incorporate the economic, environmental and operational issues associated with facility development. Aerodrome planning, airport design standards and capacity concepts are also discussed. Special lectures will cover topics such as airport operations, pipeline construction techniques and marine vessel and port design. Prerequisite: CE 3201.

CE 5241 Introduction to Pavement Management Systems 3 ch (3C)

Basic concepts in pavement management; programming of investments over a network of roads; optimization of individual level project investment; pavement evaluation techniques; structure and manipulation of data banks for pavement management systems. Prerequisite: CE 3201.

CE 5313 Urban Planning 3 ch (3C) [W]

Introduction to city and regional planning. The evolution of cities, discussion of planning in municipal administration, principles of land use, urban transportation, municipal services, subdivision design, comprehensive planning, master plans, programs, planning studies, and the administration and enforcement of planning regulations. Restricted to students with at least 90 ch completed.

CE 5342 Site Planning 3 ch (2C 3L)

To better appreciate the comprehensive nature of site analysis and the physical, social and environmental impacts of engineering works on a site and its surroundings. To incorporate site characteristics to enhance a project in terms of costs, appearance and energy efficiency. This course will be limited to a maximum of 18 persons. Restricted to students with at least 90 ch completed. Prerequisite: CE 5313.

CE 5402 Environmental Planning for Capital Works 3 ch (2C 2L) [W]

Application of environmental principles in the planning, design and construction of civil engineering projects including highways, pipelines and land developments. Elements of the environmental planning process and characteristics of environmental risk analysis as they relate to environmental impact assessment are stressed. Restricted to students with at least 90 ch completed. Prerequisite: CE 3403.

CE 5411 Water Supply and Wastewater Removal 4 ch (3C 2L)

Layout and design of water and sewer systems including analysis of alternatives in system requirements. Specific topics include water and wastewater volumes, transportation and distribution of water, collection and conveyance of wastewater, and pumping stations for water and wastewater systems. Prerequisite: CE 3713.

CE 5421 Water Quality and Treatment 4 ch (3C 2L)

Applied water chemistry, epidemiological analysis, water analysis, water treatment processes and design, water treatment systems and plant design, public health issues and case studies. The content is tailored towards drinking water quality and treatment issues. This will be supplemented by detailed design of unit operations and processes involved in the treatment of drinking water. Prerequisites: CHEM 1882 (or equivalent) and CE 3403 or CHE 2004, or permission of course instructor.

CE 5432 Wastewater Treatment and Pollution Control 4 ch (3C 2L)

Applied wastewater microbiology, wastewater analysis (physical, chemical, and biological), wastewater treatment processes, industrial and municipal wastewater treatment and management, wastewater treatment systems and plant design. The course content will focus on treatment and management issues of wastewater from industrial, municipal, and domestic sources. Pollution control strategies and protocols are also examined. Prerequisites: CHEM 1882 (or equivalent) and CE 3403 or CHE 2004, or permission of course instructor.

CE 5473 Elements of Environmental Engineering for Chemical Engineers 1 ch (1C 1L)

Applications of microbiology in environmental engineering. Microscopic examination and biological tests of water and wastewater samples. Restricted to Chemical Engineering students with at least 90 ch completed. Prerequisite: CHEM 1882 or equivalent, CHE 2004, or permission from course instructor.

CE 5503 Concrete Technology 4 ch (3C 2L)

In this course the properties of cement and concrete materials are studied. Topics include (i) materials for concrete, such as portland cements, supplementary cementing materials, aggregates, and chemical admixtures; (ii) procedures for mix proportioning, batching, mixing, transporting, handling, placing, consolidating, finishing, and curing concrete; (iii) precautions necessary during hot- and cold-weather concreting; (iv) causes and methods of controlling volume changes; (v) commonly used control tests for quality concrete; (iv) introduction to special types of concrete. Applicable ASTM, AASHTO, ACI, and CSA standards are discussed. Prerequisite CE 2512.

CE 5603 Construction Equipment and Methods 4 ch (3C 1T)

The use and application of equipment in the construction industry; engineering fundamentals applicable to construction engineering and management practice. Lifting, excavating, transporting, compacting and tunnelling equipment; equipment finance, costs and economics are covered. Application of computers in construction equipment and methods. Restricted to students with at least 100 ch successfully completed. Prerequisite: CE 2603.

CE 5612 Construction: Financial and Industry Issues 3 ch (3C)

The course focuses on the financial aspects of construction including methods and techniques for: estimating costs of construction; project financing and managing risks; and monitoring and controlling costs. The course will also introduce current issues within the industry, primarily from the financial perspective (e.g., infrastructure management, sustainable construction, quality management, technology adoption). Restricted to students with at least 100 ch successfully completed. Prerequisite: CE 4613.

CE 5623 Project Management 4 ch (3C 1T)

Application of management methods for construction projects. Emphasis on supervisory management, contracts, and management methods. Application of critical path methodology for work organization and management control, including planning and scheduling, resource management, optimization techniques and cost control methods. Restricted to students with at least least 100 ch successfully completed. Prerequisite: CE 2603.

CE 5702 Open Channel Hydraulics 4 ch (3C 2L)

Fundamental concepts of specific energy, velocity distribution in open channels; uniform flow in channels; gradually varied steady flow, water surface profiles, backwater computations, transitions; rapidly varied steady flow, hydraulic jumps, flow over spillway sections; introduction to unsteady flow. Prerequisite: CE 3713.

CE 5712 Water Resources Engineering 3 ch (3C)

Principles of planning water resources projects; flood control, hydro-power, irrigation development; multipurpose river basin development; analysis of costs and benefits, elements of system optimization in water resources; case histories of project planning and evaluation. Prerequisite: CE 3713.

CE 5742 Engineering Hydrology 4 ch (3C 2L) [W]

Elements of hydrometeorology, precipitation, storm analysis, stream gauging, ground water hydraulics, evaporation, runoff, hydrograph analysis, unit hydrograph techniques, stream flow routing, flood frequency analysis, snowmelt, introduction to flood forecasting. Prerequisite: CE 3713.

CE 5753 Engineering Hydrogeology 4 ch (3C 3L)

Covers important topics in quantitative hydrogeology, including: principles of saturated and unsaturated groundwater flow, solutions to groundwater flow problems, well hydraulics and pumping tests, introductory groundwater geochemistry, and contaminant migration and attenuation processes in groundwater. Prerequisite: CE 2703 or CHE 2703, GEOL 1001, GEOL 1026.

CE 5913 Special Studies in Civil Engineering I 1 ch

(See description for CE 5933.)

CE 5923 Special Studies in Civil Engineering II 2 ch

(See description for CE 5933.)

CE 5933 Special Studies in Civil Engineering III 3 ch

With the approval of the Department Chair and under the guidance of a member of the faculty, a student may perform special studies and investigations related to the undergraduate program. The extent of the work will determine the amount of credit. Students may receive credit(s) for one of CE 5913, CE 5923 and CE 5933 only. Restricted to students with at least 110 ch.

CE 5943 Research Project 4 ch (1C 6L) [W]

Each student will work on an approved research project. The student will: present a proposal which will serve as a basis for the project; carry out work on the project with the guidance of an approved supervisor; submit written progress reports at specified times; write a final report at the completion of the project; present the subject of the report orally; and attend similar presentations by colleagues. Prerequisite: CE 3973.

CLASSICS AND ANCIENT HISTORY

Below are brief descriptions for the courses which deal with material in English translation.

Descriptions of Latin and Greek language courses can be found under the GREEK and LATIN course sections.

Note: See beginning of Section H for abbreviations, course numbers and coding.

INTRODUCTORY LEVEL COURSES

The courses 1003, 1303, 1403, 1413, 1503 and 1903 are designed for students in the first or second year of their programs, and may be taken in any order. The courses are open to all students.

CLAS 1003 An Introduction to Ancient History: from Mesopotamia to Rome 3 ch (3C) [W]

An introduction to the history of the ancient Near East, Egypt, Greece and Rome, from the emergence of the Sumerian civilization in the fertile crescent to the fall of the Roman Empire in the West. Emphasis will be placed on the political and social developments of the Greek and Roman cultures.

CLAS 1303 Uncovering History, Discovering Archaeology 3 ch (3C) [W]

How archaeology has shaped our understanding of the earliest civilizations of Europe and the Middle East, from the romantic exploits and spectacular discoveries of early archaeologists to more recent developments in archaeological science and organization, and how it continues to contribute to our knowledge of the monuments, art and everyday life of past societies.

CLAS 1323 Introduction to Ancient Art 3ch

A survey of the history of painting, sculpture and the minor arts from the ancient world. The emphasis is on the art of Mediterranean cultures, including Egyptian, Minoan, Mycenaean, Greek, Roman and early Christian.

CLAS 1403 The Ancient Greeks 3 ch (3C) [W]

An illustrated introduction to the religion, literature, art and philosophy of the ancient Greeks.

CLAS 1413 The Romans 3 ch (3C) [W]

A survey of the political, military, literary, and architectural achievements of the Romans.

CLAS 1503 Introduction to Mythology: The Gods and Heroes of Greece and Rome 3 ch (3C)

A survey of the myths which helped to shape the life and thought of the classical civilizations of Greece and Rome. Emphasis will be placed on myths describing the gods and their powers, the beginnings of the world, the earliest humans, the tales of the heroes, and miraculous experiences in the lives of ordinary persons. Students who have successfully completed CLAS 3503 or CLAS 3513 may not enroll in this course.

CLAS 1903 Sports and Recreation in Greece and Rome 3 ch (3C) [W]

An examination of the values of ancient society as reflected in sport and recreational activities and the importance of the Greek and Roman models for modern sport. Topics include: religious festivals and funeral games, the organization and events of the ancient Olympics, sports heroes as popular idols, amateurism vs. professionalism, Roman 'blood' sports, gladiators, athletics as part of education, the difficulty of establishing rules, cheating, governing bodies and sports bureaucracies.

CLAS 2643 Rome: the Eternal City I 3ch

An introduction to the history of Rome from ancient times to the Renaissance. Taught on location in Italy. Students may not receive credit for both CLAS 2643 and 3643. Travel costs not included in tuition.

ADVANCED CLASSICS COURSES

CLAS 3003 Ancient History: The Greeks from the Bronze Age to the Persian Wars 3 ch (3C) [W]

Focuses on the Birth of Ancient Greece and traces its development to the end of the Archaic period. Includes: Greek prehistory, the early historical period, the origin of democracy and the crucial defeat of the Persian invasions of 490 and 480 B.C.

CLAS 3013 Ancient History: Greece in the Classical Age 3 ch (3C) [W]

Studies the social and political history of Greece in the 5th and 4th centuries B.C., including Athens' rise to cultural and political brilliance, her rivalry with Sparta, and the Greeks' ultimate failure to resolve their internal conflicts in the face of the Macedonian threat.

CLAS 3023 Ancient History: Alexander and the Hellenistic World 3ch (3C)

The social and political impact of Alexander the Great, his empire and his successors on the Mediterranean world, down to the Roman conquest.

CLAS 3033 Ancient History: The Rise of the Romans 3 ch (3C) [W]

Rome from its village origins to the conquest of the Mediterranean world. Examines the link between Rome's diplomacy and wars of expansion, and her internal politics--the early kings, the tensions and balances of the Republic, and the role of Julius Caesar and others in its collapse by 31 B.C.

CLAS 3043 Ancient History: The Roman Empire 3 ch (3C) [W]

Rome as the capital of western civilization, from the emergence of the imperial system under Augustus to its final decline in Western Europe in the 5th century A.D. Considers the impact of the Roman army, administration, culture and law on ancient and modern thought.

CLAS 3053 The Roman Army 3ch (3C) [W]

Examines the development of the Roman legions, from their beginnings as a peasant conscript army to their imperial conquests and fame as a professional fighting force. Topics discussed include: organization, armament, strategy and logistics, social impact, the Roman navy, auxiliary forces, and the legions' significance as a model for modern armies.

CLAS 3063 Caesar Augustus: Architect of the Roman Empire 3 ch (3C/S) [W]

Examines the controversial career of Caesar Augustus, from his unexpected rise to power to his establishment of the Imperial system of government at Rome, through systematic analysis of the primary sources, using the Res Gestae, Augustus' own public statement of his achievements, as a starting point.

CLAS 3073 Ancient History: Jewish Civilization from the Babylonian Exile to the Great Revolt 3 ch (3C) [W]

An examination of the social, cultural, intellectual and political history of the Jews during the period of the second temple (516 BCE - 70 CE).

CLAS 3303 Classical Archaeology 3 ch (3C) [W]

Greek and Roman civilizations approached through their material remains: coins, inscriptions, architectural forms, building materials, civil engineering and land use.

CLAS 3353 Greek Art 3 ch [W]

A study of the art of ancient Greece. Examines the development of painting, sculpture and minor arts from their earliest beginnings to the Hellenistic Age.

CLAS 3363 Roman Art 3 ch (3C) [W]

A study of the art of ancient Rome. Examines the development of painting, sculpture and minor arts in the Roman Mediterranean from their earliest beginnings to the Late Roman Empire.

CLAS 3403 The Comic Theatre of Greece and Rome 3 ch (3C) [W]

The development of comedy from the kômos in Greece; the reading, in English translation, of an Old Comedy by Aristophanes, a satyr-play by Euripides and a New Comedy by Menander; the development of comedy in Rome through the reading of plays by Plautus and Terence. The history of the theatre, its changing structure, conventions, the production of plays and their performance and the festivals at which they were performed.

CLAS 3413 The Tragic Theatre of Greece and Rome 3 ch (3C) [W]

The history of the Theatre of Dionysus in Athens and a survey of the origins of Greek tragedy; the reading in English translation of a representative sample of the plays of Aeschylus, Sophocles and Euripides; the dramatic festivals at which they were performed, the production and performance of the plays, the dramatic conventions. The role of the serious theatre in Rome; a tragedy of Seneca, in English translation, is read.

CLAS 3423 The Hero in Ancient Epic 3ch (3C) [W]

An exploration of the hero through a survey of Greek and Latin epic, including the works of Homer, Apollonius, Virgil and Statius. While the emphasis is on a literary appraisal, aspects of history, religion and society will also be used to examine the changing nature of the hero and heroism in ancient society.

CLAS 3503 Greek Mythology I - The Gods and Their Cults 3 ch (3C) [W]

The Greek myths of creation and the Greek gods and their mythology. The historical origins of the gods, the development of Greek religion from pre-historic times. Parallels are adduced from Middle Eastern mythologies. Major Greek religious sites are illustrated.

CLAS 3513 Greek Mythology II - The Saga Myths and Their Origins 3 ch (3C) [W]

The Bronze Age in the Aegean and the place in it of the Greek sagas, with their Mycenaean origins. Major Minoan and Mycenaean sites are illustrated.

CLAS 3523 The Mythology and Religion of the Romans 3 ch (3C) [W]

A study of the legends surrounding the foundation and growth of early Rome and of the Italian gods. Roman religion is studied under such headings as prayer, sacrifice, divination, the religious year and calendar, priests and emperor-worship. [Not open to students who received credit for CLAS 4023.]

CLAS 3603 The Art and Architecture of Greece I 3 ch [W]

A study of the art and architecture of Greece organized around visits to important archaeological sites and major museums in Greece. Travel costs not included in tuition.

CLAS 3613 Mythology and Archaeology I 3 ch [W]

The mythology and cults of the Greek gods, seen in the context of the archaeological remains of some of their major cult centres, and the Mycenaean origins of the sagas of the Greek heroes from the focus of this course. Travel costs not included in tuition.

CLAS 3623 The Art and Architecture of Greece II 3 ch [W]

Directed study of selected topics in Greek art and architecture undertaken through visits to important monuments, archaeological sites and museums in Greece. Travel costs not included in tuition.

CLAS 3633 The Art of Imperial Rome 3 ch [W]

A study of the art and architecture of Classical Rome organized around visits to important monuments, archaeological sites and museums in Italy. Travel costs not included in tuition.

CLAS 3643 Rome: from Ancient Times to the Renaissance 3ch (3C)

A study of the ancient and mediaeval history of the city of Rome, through on-site examination of the material remains. Students may not receive credit for both CLAS 2643 and 3643. Travel costs not included in tuition.

CLAS 3653 Mythology and Archaeology II 3 ch [W]

Directed study of selected topics in the mythology and cults of the Greek gods undertaken through study of the archaeological remains of major cult centres in Greece. Travel costs not included in tuition.

CLAS 3663 Religion in Ancient Rome 3 ch [W]

A study of religion in Rome from its pagan origins to the rise of Christianity in the late Empire, based on first-hand examination in Rome of temples, altars, churches, sculpture, inscriptions and other material in situ and in museums. Travel costs not included in tuition.

CLAS 3673 Ancient Cities and Civilizations of Western Turkey: Myth, Cult and History 3 ch [W]

A study of the history and civilizations of western Asia Minor, in particular the Hittite, Lydian and Graeco-Roman. Myth, cult and history are introduced in varying degrees as appropriate to the various sites visited during the tour. Particular attention is paid to the Greek cities of the Aegean coast, their sanctuaries, public buildings and theatres. Travel costs not included in tuition.

CLAS 3683 The Art and Architecture of Asia Minor: Hellenistic, Roman and Early Christian 3 ch [W]

A survey of the art and architecture of Asia Minor, organized around visits to important archaeological sites and major museums in Turkey, and studying selected remains from the Hellenistic, Roman and early Christian periods, including sculpture, temple architecture, and examples of the early Christian basilica. Travel costs not included in tuition.

CLAS 3703 Socrates 3 ch (3C/S) [W]

Examines the central intellectual, political, religious and social controversies of the Golden Age of Greece (450-350 BC), by focussing on Socrates in conflict with both the citizens of Athens and the new professional teachers, the Sophists.

CLAS 3723 Ancient Science 3ch (3C) [W]

An examination of the development of scientific theory and practice among the ancient Greeks and Romans.

CLAS 3733 Ancient Philosophers 3 ch (3C) [W]

A survey of the various forms of philosophical literature produced in the classical civilizations of Greece and Rome.

CLAS 3803 The Graeco-Roman Background of the New Testament 3 ch (3C) [W]

Examines the social, literary, philosophical and religious milieu in which the writing of the New Testament took place.

CLAS 3813 The Early Church 3ch (3C) [W]

The history of Christianity from the apostles to the fifth century: its organization and doctrinal development, and its interaction with Roman civil authority and paganism.

CLAS 3903 Women in Ancient Greece 3 ch (3C) [W]

Examines the portrayal of women in ancient Greek literature and the realities of womens lives as reconstructed from the historical, legal, and archaeological records.

CLAS 3913 Love and Sexuality in Greece and Rome 3 ch (3C) [W]

A study of Greek and Roman attitudes towards love and sexuality. Literary and artistic evidence will be used to explain why scenes of erotica were widely on display within the ancient home and in the public realm. Analysis of these attitudes in their own context will be combined with a discussion of how they relate to modern values and gender issues. Topics include social morality, homosexuality, marriage and adultery, erotic art, fertility rituals, and pornography.

CLAS 3923 Roman Law 3 ch (3C) [W]

A survey of the development and practice of the Roman legal system, upon which all modern civil law systems are based. Topics include: sources of Roman law and legal institutions; legal procedure; Roman legal concepts (persons, property, obligations, succession); equity and social change in legal reform; survival and modern revival.

CLAS 3933 Pompeii and Herculaneum: History and Culture of the Bay of Naples 3 ch (3C) [W]

This course examines the region of the Bay of Naples, concentrating on its two main centres, Pompeii and Herculaneum, as well as the numerous villas in the surrounding area. Literary and artistic evidence will be used to discuss the region's historical development, its art and architecture and its literary and philosophical contributions to Roman life.

CLAS 4903 Directed Reading in Classics 3 ch [W]

A course offering Classics Honours students an opportunity to undertake a program of reading in a specific area of Classical studies under the supervision of a Faculty member. Major students will not normally be permitted to register for this course.

CLAS 4904 Directed Reading in Classics 3 ch [W]

A course offering Classics Honours students an opportunity to undertake a program of reading in a specific area of Classical studies under the supervision of a Faculty member. Major students will not normally be permitted to register for this course.

CLAS 4913 Independent Studies in Classics 3 ch [W]

A course offering Classics Honours students an opportunity to undertake a specific research project under the direction of a supervising Faculty member. Major students will not normally be permitted to register for this course.

CLAS 4914 Independent Studies in Classics 3 ch [W]

A course offering Classics Honours students an opportunity to undertake a specific research project under the direction of a supervising Faculty member. Major students will not normally be permitted to register for this course.

CLAS 5003 Topics in Greek History 3 ch (3C) [W]

A detailed study of a specific period chosen from Ancient Greek history. Uses primary sources (in translation) to illuminate the chosen topic. Prerequisites: CLAS 3003 and 3013; or permission of the instructor.

CLAS 5013 Topics in Roman History 3 ch (3C) [W]

A detailed study of a specific theme or period from Roman history. Uses primary sources (in translation) to illuminate the chosen topic. Prerequisites: CLAS 3033 and 3043, or permission of the instructor.

COMPUTER ENGINEERING

Note: See beginning of Section H for abbreviations, course numbers and coding.

CMPE 2013 Simulation and Engineering Analysis 4 ch (3C 3*L)

An introduction to modelling and numerical methods as applied in the solution of engineering problems. Linear equations, polynomials, statistical tools, numerical integration and difference equations. Simulation tools such as MATLAB will be used. Prerequisite: CS 1073 or equivalent, EE 1013 or equivalent, MATH 1013; MATH 1503 or equivalent.

CMPE 3213 Advanced Software Engineering 4 ch (3C 3*L)

The methods and tools of software engineering applicable to engineering systems (such as real time or embedded systems) are considered with engineering emphasis. Topics include design tools and techniques, project management, requirements definition, specifications, testing, verification and validation, maintenance for the engineering system context. Prerequisite: CS 2013.

CMPE 3533 Signals and Systems 4 ch (3C 3*L)

Topics covered are signal representation, orthogonality, Fourier series, Fourier transform, system concepts, Fourier to Laplace transform, transfer function, convolution, time and frequency domain signals, frequency response, poles and zeros, system. Credit will not be given for both CMPE 3533 and EE 3513 or CMPE 3533 and EE 3313. Prerequisites: APSC 1013 or equivalent, MATH 2513, MATH 3503, EE 2783. Co-requisites: STAT 2593, APSC 1023 or equivalent.

CMPE 4000 Computer Engineering Design 6 ch (6L)[W]

Working in teams, students will complete computer engineering design project that draws on their knowledge and skills obtained in previous courses. Student teams will design a structure, system, or process to meet a broad range of specified constraints. Students will manage their projects professionally, prepare a comprehensive written report, and present their design work orally. Prerequisite: 120 ch in the engineering program.

CMPE 4223 Safety-Critical System Design 4 ch (3C 3*L)

This elective covers safety and reliability issues with respect to software design engineering and the implementation of engineering systems using computers and information networks; definitions of reliability, availability, safety, maintainability, testability and dependability; software fault tolerance and software testing, quantitative methods for evaluation of reliability. Prerequisites: CS 1303, STAT 2593, CMPE 3213.

CMPE 4233 Topics in Computer Engineering 4 ch (3C 3*L)

A selected area of computer engineering with a unifying theme will be explored in depth. The topics covered are selected from one or more of the following areas: computer architecture, parallel processing, operating systems, concurrent system performance, network based parallel computing, embedded system issues, computer system modeling and analysis. Prerequisite: EE 3232.

CMPE 4513 Algorithms in Real Time 4 ch (3C 3*L)

This course presents a unified approach for implementing algorithms in real time systems that solve a wide class of engineering problems. Both theory and implementation issues are addressed. Case studies include: a) modeling and simulating signals, systems and events, b) implementing digital control systems and c) implementing digital and adaptive filters. Prerequisites: EE 3323, EE 4543, CMPE 2013.

CMPE 4543 Communications Network Engineering 4 ch (3C 3*L)

Network architecture and hardware, network design, network algorithms and protocols, high performance multimedia networks, performance analysis are covered. Prerequisites: EE 4243, MATH 2513, EE 3232.

COMPUTER SCIENCE

The Timetable should be used to check the term and time a course is offered. Some courses may not be offered every year.

* Only undergraduates in their final year and with a B average or better are eligible to take 5th level courses.

Note: See beginning of Section H for abbreviations, course numbers and coding.

CS 1003 Introduction to Computer Programming 4 ch (3C 1T 2L)

Intended for Science, Applied Science and Engineering students. Introduces the use of digital computers. Includes: problem analysis, algorithm design, and program structure. Use of procedures, loops, and arrays. Debugging and verification of programs. Note: This course may not be taken for credit by CS students. Prerequisite: High School Mathematics.

CS 1013 Computer Science Concepts (C/C++) 4ch (3C 1T 2L)

This course explores advanced language features and introduces software engineering. Topics include data abstraction, encapsulation, inheritance, polymorphism, recursion, file processing, use of libraries and modules, numerical applications, machine representation of data, and computer organization. This course may not be taken for credit by CS students. Prerequisite: CS 1003.

CS 1043 Introduction to Computers 3 ch (3C 1T)

Intended to give an overview of Computer Science for students in Arts, Administration and Kinesiology. Topics include: hardware and software concepts, algorithm design, program development, introduction to a high level language (JavaScript), Windows, presentation software, spreadsheets, the Internet, the World Wide Web and HTML. Note: This course may not be taken for credit by Engineering and Computer Science students.

CS 1073 Introduction to Computer Programming in Java 4 ch (3C 1T 2L)

Covers fundamental Java concepts such as decisions, loops, arrays, classes and methods; focusing on problem analysis, algorithm design, and program structure. Introduction to the Java API libraries. Prerequisites: High School Mathematics.

CS 1083 Computer Science Concepts (Java) 4 ch (3C 1T 2L)

Continues CS 1073. Advanced language features and algorithms, including: recursion, sorting and searching; data abstraction, encapsulation, inheritance, polymorphism; simple data structures and files. Program documentation, testing and debugging. Prerequisites: CS 1073.

CS 1303 Discrete Structures 4 ch (3C 1T)

Introduces topics in discrete mathematics important in computer science, including: propositional logic, predicate logic, proofs, sigma notation, mathematical induction, elementary set theory. Note: credit will not be given for both CS 1303 and MATH 2203. Prerequisite: High School Mathematics

CS 2013 Software Engineering I 4 ch (3C 1T 2L)

Introduction to the discipline of software engineering. Examines all phases of the software development life cycle, from initial planning through implementation and maintenance. Particular emphasis is placed on designing, producing, and testing well-structured programs. Introduces selected advanced features of the Java programming language. Prerequisite: CS 2023 or CS 1083 plus an approved course with a programming component.

CS 2023 Procedural Program Development 4 ch (3C 2L)

This course examines program development using the C language. Topics include: organization of programs into procedural components, multi-file program organization, inter-file type checking, and development and maintenance techniques. Unix features for program development are included. Prerequisite: CS1083. Note: Credit will not be given for both CS2023 and CS1003 (in C).

CS 2333 Computability and Formal Languages 4 ch (3C 1T)

This course introduces students to some of the fundamental ideas in theoretical computer science. Functions and relations, formal languages, finite automata, regular languages, context-free grammars, context-free languages, push-down automata, pumping lemma, Turing machines, Church-Turing thesis, recursive and recursively enumerable languages, Chomsky hierarchy, the halting problem and other unsolvable decision problems. Prerequisites: CS 1303, 30 ch, and (CS 1073 or CS 1003).

CS 2513 Introduction to Information Systems 4ch (3C 1T)

Concentrates on developing information system applications. Topics include: event-driven programming, file processing, relational database systems, user interface design, database design, and component architecture. The development environment is Visual Basic. Prerequisites: CS1083 or (CS1073 with a B minimum and CS1083 as a co-requisite).

CS 2525 Microcomputer Applications 3 ch (3C)

Introduces students to several software packages commonly available on microcomputers and discusses criteria for evaluating microcomputer systems in different situations. Note: Not for Computer Science students. Credit will not be given for both CS 2513 and 2525. Prerequisites: CS 1003 or CS 1043.

CS 2605 A Selected Language for Programmers (O) 1 ch (1C)

Introduces a selected programming language to students who have already been exposed to at least one programming language. This course is given in 13 1-hour lectures throughout the term. Prerequisites: CS 1083 or equivalent (e.g. CS 1013, CS 1063).

CS 2685 C++ Programming for Programmers (O) 1ch (1C)

Introduces the object-oriented features of C++ to programmers who have already been exposed to Java and C. This course is given in 13 1-hour lectures throughout the term. Prerequisites: CS1083 and CS2023 or knowledge of Java and C.

CS 2703 Multimedia Applications (O) 3 ch (3C 2L)

Introduction to multimedia applications development. Multimedia building blocks: capturing, storing, editing, retrieving, distributing of sound, pictures, and video clips. Creation of world wide web pages, authoring tools. NOTE: Not intended for Computer Science students. Credit will not be given for both CS 2703 and CS 3703. Prerequisites: CS 1043, CS 2525.

CS 2813 Computer Organization I 4ch (3C 2L)

Introduction to computer organization, digital design techniques, combinational and sequential circuits, machine level representation of data, computer architecture, instruction sets and assembly language programming principles. Prerequisites: CS1083, CS1303.

CS 2875 Introduction to Computer-Telephony Integration(CTI)(O) 3 ch (3C)

Introduction to CTI: CTI application software; CTI standards; and, application programming interfaces. Introduction to Interactive Voice Response (IVR) application software. Discussion of CTI in the business environment. Prerequisites: None. This course may be of interest to students in other Faculties as an elective.

CS 3003 Biocomputing in Drug Design I (O) 5 ch (3C 3L)

Introduction to biocomputing in the pharmaceutical industry. Topics include molecular modeling, rational drug design, high throughput screening and combinatorial chemistry, protein modeling and 3D bioinformatics. Course includes lectures and a computer laboratory component.Note: This course is also cross-listed as CHEM 3003. Prerequisite: CHEM1001/1012 and BIOL 1001/1012, or permission of instructor. CHEM2401 or BIOL2033 are recommended.

CS 3013 Software Engineering II 4 ch (3C 2L)

Examines software development processes and management, visual modeling and Unified Modeling Language, requirements capture, use case analysis, system design and implementation, components, forward and reverse engineering, software engineering tools, testing techniques, configuration management, and project management. Prerequisite: CS 2013.

CS 3025 Human-Computer Interaction 4 ch (3C 3L)

Software design for interactive computing. Topics include: human-computer interaction principles, interface design guidelines, the design and execution of usability studies. The characteristics of various styles of interaction are explored. Emphasis is on user-oriented interfaces. Students design, implement, and perform a usability study on an interactive software application. Prerequisite: 70 ch and CS 2013.

CS 3113 Introduction to Numerical Methods 4 ch (3C 1T 2L)

Intended for Computer Science and Engineering students. Error analysis, convergence and stability. Approximation of functions by polynomials. Numerical quadrature and differentiation. The solution of linear and non-linear equations and the solution of ordinary differential equations. This course will emphasize the development of computer algorithms and stress the influence of finite precision and arithmetic on computational results. This course is also listed as MATH 3413. Credit will not be given for both CS 3113 and MATH 3413. Prerequisites: (CS 1003 or CS 1073) and (MATH 1503 or MATH 2213 or equivalent).

CS 3323 Introduction to Data Structures 4 ch (3C 1T 2L)

Presents major techniques in representing and manipulating data structures: lists, trees, stacks, queues, strings, arrays, graphs, sets and symbol tables. Covers sorting, searching and dynamic storage handling. Formal specification of data structures. Prerequisites: CS 1303 and (CS 2023 or CS 2013).

CS 3413 Operating Systems I 4ch (3C 2L)

This course examines the fundamental role of an operating system in relation to the operation of applications. Essential theory of operating systems is covered, including process, process synchronization, interprocess communications, process scheduling, storage (primary and secondary) management, resource sharing, security, I/O, and user interfaces. At least one of the major Unix shell languages will be covered. Prerequisites: CS2023, CS2813. Note: Credit will not be given for CS3413 with either CS2403 or CS3403.

CS 3503 Systems Analysis and Design I 4 ch (3C 1T)[W]

Introduces students to the life cycle of computer-based information systems. Covers tools and techniques used in systems analysis and design. Emphasizes communication skills, both written and oral. Prerequisite: 70 ch and CS 2513.

CS 3513 Database Management Systems I 4 ch (3C 2L)

Information systems development lifecycle from a database perspective. Entity-Relationship modeling. Relational data model. Database design and normalization. Internal database structures. Interactive and embedded SQL. Stored procedures and triggers. Data integrity and security. Oracle is used as the development environment. Prerequisites: CS 2013 and CS 2513.

CS 3703 Multimedia Design 4 ch (3C 2L)

Introduction to the design and production of multimedia applications. Includes issues in capture, storage, and effective use of images, sound, and video; animation; multimedia and hypermedia design principles; authoring tools. Prerequisite: CS 2513 and 70 ch.

CS 3813 Computer Organization II 4ch (3C 2L)

Advanced concepts in assembly language programming, functional organization of a computer system, organization of CPU, microprogramming, organization of I/O, interrupts, memory organization, cache and virtual memories, performance enhancements, pipelining, superscalar processors. Prerequisite: CS2813

CS 3903 Information Technology Internship 4 ch

This course provides extensive practical experience in the professional world through the successful completion of four 4-month work terms (co-op and/or PEP). For each work term, a work term report must be completed and receive a minimum grade of C. A student will register for this course at the start of the final year, having completed the fourth co-op and/or PEP work term. A student will be awarded CR (credit) for this course. Prerequisite: 4 previous successful work terms with passing work.

CS 3913 Algorithms I 4 ch (3C 1T)

Examines the characteristics of algorithms that lead to efficient computer solutions of discrete problems. Different algorithms will be developed for the same problem and compared using both analytical and experimental techniques. Prerequisites: (CS 2333 or CS 2303), and CS 3323.

CS 3997 Professional Practice 3 ch (3C) [W]

Covers social context of computing, professional and ethical responsibilities, risks and liabilities of computer-based systems, intellectual property, privacy and civil liberties, and I.S.P. certification through CIPS. Instructs students in the preparation of technical reports in Computer Science. Involves an independent study component resulting in a technical report, typically a survey paper. Covers basic writing, oral presentation and library skills. Prerequisite: Enrolment in the BCS program and 70 ch completed.

CS 4003 Biocomputing in Drug Design II (O) 3ch (2C 1L)

A follow-up of CS 3003. Topics include pharmacophore perception, solvation models, free-energy calculations, quantitative structure activity relationship (QSAR), virtual drug libraries, chemical diversity and cheminformatics. Course includes lectures and computer laboratory component. Note: This course is cross-listed as CHEM4003. Prerequisite: CHEM/ CS3003.

CS 4015 Software Architecture and Design Patterns (O) 4 ch (3C 2L)

Examines pattern-oriented software architecture and development, architectural styles and patterns, design patterns, pattern systems and applications, pattern languages, and implementation techniques in various programming languages. Prerequisite: CS3013.

CS 4025 Internet-based Software Engineering (O) 4ch (3C, 2L)

Software technologies, methods, and processes for developing Internet-based e-business and enterprise applications. Internet standards and protocols, distributed objects and components, and client-server programming. Distributed software design for functionality, performance, reliability, and security. Evaluation and implementations of technologies. Prerequisites: CS2513, CS3013.

CS 4115 Numerical Methods II (O) 4ch (3C 1L)

The numerical solution of systems of ordinary differential equations, and partial differential equations of elliptic, hyperbolic, and parabolic type that arise from physical systems. This course is a basic introduction to finite difference methods, including the associated theory of stability, accuracy and convergence. Students will gain practical experience using state-of-the-art numerical solvers and visualization tools while solving practical problems from the physical and biological sciences. Cross-listed as MATH4503. Prerequisite: One of CS3113, MATH3043, MATH3073, MATH3503, CHE3418, ME3522 or CMPE2013.

CS 4405 Operating Systems II 4 ch (3C 3L)

Covers the structure and design of operating systems. Processor management. Storage management, input/output. Factors affecting performance. Centralized systems, multiprocessor and distributed systems. Prerequisite: CS3413 (or CS3403), CS3813.

CS 4515 Systems Analysis and Design II (O) 4 ch (3C 1T)[W]

Involves the application of systems analysis and design methodologies to actual business problems. Projects make up a large portion of the course. Emphasizes communication skills and teamwork. Limited enrolment. Prerequisites: CS 3503, CS 3513 highly recommended.

CS 4525 Database Management Systems II 4 ch (3C 1T)

Advanced logical database design issues. Physical database design including query optimization, transaction management, concurrency control, and recovery. Object-oriented and object-relational database systems. Information system architecture including parallel database systems. Prerequisite: CS3413 and CS3513.

CS 4535 Introduction to Computer Security (O) 4 ch (3C 1L)

This course is an introduction to cryptography and the security of networks and databases. Topics include: classical encryption; modern encryption techniques such as Triple DES, IDEA, Blowfish, RC5, and CAST; public key encryption; elliptic curve cryptography; message authentication, message digest functions,; Kerberos, electronic mail; PGP; methods for relational database security, including access control, MAC; and DAC. Prerequisites: MATH 1503 or MATH 2213.

CS 4613 Programming Languages 4 ch (3C)

Structure and major characteristics of contemporary programming languages; Formal definition, syntax, semantics. Comparative study of principal language concepts and their treatment in imperative, functional, logic, and object-oriented languages. Study includes languages such as: Modula-2, C++, SCHEME, and PROLOG. Prerequisites: CS 2013 and 90 ch.

CS 4725 Introduction to Artificial Intelligence (O) 4 ch (3C 2L)

General overview. Description matching, goal reduction. Exploring alternatives; searching. Problem solving paradigms; generate-and-test systems, rule-based systems, expert systems. Programming tools: an introduction to the Scheme dialect of LISP. Prerequisites: (CS 2333 or CS 2303), and CS 3323.

CS 4735 Computer Graphics 4 ch (3C 3L)

Input and output graphics devices. Introduction and user perspective of graphics systems. Internals and system interfaces. Various algorithms such as vector generation, curve generation, character generation. Windowing and clipping. Basics of interactive graphics programing. Geometrical transformations including rotation, scaling, translation, perspective transform, etc. Geometric modeling. Prerequisite: (MATH 1503 or MATH 2213), and CS 2023.

CS 4745 Introduction to Parallel Processing (O) 4 ch (3C 2L)

Parallel computer architectures, design and analysis of parallel algorithms, parallel programming languages, case studies, selected numerical and non-numerical applications. Prerequisites: CS 3813.

CS 4805 Embedded Systems (O) 4 ch (3C 1T)

This course will give an overview of the characteristics and design of embedded systems. Topics include formal models and specification languages for capturing embedded system behavior; techniques for specification, exploration and refinement; tools for validation, verification, and simulation; and quality and performance metrics. Prerequisites: CS3413 and CS3813.

CS 4815 Advanced Computer Architectures (O) (3C 3L) 4 ch

Study of design of advanced computer architectures. Instruction-level parallel processors (ILPs), pipelined processors, VLIW architectures, superscalar processors. Instruction-level data-parallel architectures: SIMD architectures, associative and neural architectures, data-parallel pipelined and systolic architectures, vector architectures. Thread and process-level parallel architectures, multi-threaded architectures, distributed memory architectures, shared memory architectures. Prerequisite: CS 3813.

CS 4825 Microcomputer Systems (O) 4 ch (3C 3L)

The organization of microcomputer systems will be examined in detail. Peripherals are considered as building blocks and their architecture and operation are discussed. The modular structure of control software in a real-time environment is studied including interrupt handling, polling and handshake operations. Introduction to single-chip microcomputer and development systems. Prerequisites: CS 3813.

CS 4835 Computer Assisted Logic Design 4 ch (3C 3L)

Analysis of sequential machines; synchronous and asynchronous operations; design of sequential machines. Algorithms in computer-assisted logic design. Universal logic elements and threshold logic. Control logic for Digital Systems. Prerequisite: CS 2813.

CS 4865 Data Communications and Networking I 4 ch (3C 3L)

Transmission modes and codes, error control. Network building blocks and topology, line protocols and control. Network architectures, reliability and security, multi-domain, networks. Prerequisites: CS 3813.

CS 4875 Introduction to Interactive Voice Response Systems (O) 4 ch (3C 3L)

Introduction to Interactive Voice Response (IVR). Review of the application environment: telephone systems, information processing systems, business environment. Overview of hardware standards, both telephony and computing. Overview of software standards: telephony (call) control, operating systems, application programming interfaces. Discussion of: interface principles applied to interaction over the telephone; principles of voice generation and synthesis, and voice recognition. Application of principles to provision of service by means of IVR. Prerequisites: CS 2013, CS 2513, CS 2875.

CS 4885 CTI Application Design and Development (O) 4 ch (3C 3L)

Review of the Computer Telephony Integration application environment. Call control: principles, standards, application programming interfaces. CTI agent user interface design and implementation. CTI integration with business information systems. Overall design and implementation. Relationship of the CTI applications to the business model. Recommended to be taken concurrently with CS 4875. Prerequisites: CS 2875.

CS 4905 Introduction to Compiler Construction (O) 4 ch (3C 2L)

Organization of a compiler, including compile-time and run-time symbol tables, lexical scan, syntax scan, object code generation and error diagnostics. Prerequisite: CS 4613.

CS 4935 Advanced Algorithmic Techniques 4 ch (3C 1T)

This course covers advanced algorithmic techniques for problems such as genetic matching, text searching and parsing, operating system resource optimization, automatic map generation, virus checking, and cryptography. Topics include dynamic programming, randomization, NP-completeness, approximability, on-line and parallel algorithms, and regular expressions. Prerequisite: CS3913.

CS 4965 Computational Biology (O) 4 ch (3C 1L)

Gives an overview of computational problems and algorithms for problems associated with a variety of analyses of biolgoical molecular data. Focuses on the computational complexity of these problems and algorithms, and an understanding of the problems and potential solutions. Topics include string and sequence matching, structure comparison and analysis, evolutionary trees, and gene expressions analysis. Some commonly used tools will also be examined. No prior knowledge of biology is required. Prerequisite: CS 3913.

CS 4983 Senior Technical Report 2 ch (2C) [W]

Builds on the skills developed in CS 3983 through the preparation and presentation of a technical report, which is typically a critical analysis paper. Prerequisite: CS 3997.

CS 4997 Honours Thesis 4 ch [W]

This course provides the student with the opportunity to undertake a project at a depth not provided elsewhere in the curriculum. Planning the thesis is done in the term prior to completion. The project topic must have the approval of a supervisor before the start of term. The student submits detailed proposal, schedule, progress reports, and final thesis report to the thesis coordinator with the supervisor's approval. A seminar is required. Detailed guidelines available from coordinator in the preceding term. Offered as an eight month course. Prerequisite: CS 3997. Open to all CS students in their final year with a B average in the previous assessment year or a B cgpa. To receive an Honours designation please refer to the CS Curriculum regulations in the program Section of the Calendar.

CS 4999 Directed Studies in Computer Science (O) 4 ch

Students may pursue directed studies in specific areas and topics related to Computer Science. The content and process of each directed study will be through negotiation between a student and the supervising faculty member(s). Prerequisite: Faculty approval and at least 100 ch.

CS 5015 Fundamentals of Logic Programming (O) 4 ch (3C 2L)

Examines logic programming, Prolog and declarative languages. Topics include propositional logic, first order logic, resolution, design and applications of logic programs and implementations of logic programming systems. Prerequisite: (CS 2333 or CS 2303), and CS 3323 or permission of the instructor.

CS 5725 Artificial Neural Systems (O) 4 ch (3C 1T)

Introduction to the theory, architectures, and application of Artificial Neural Systems. Topics include fundamental models of artificial neural systems, learning rules, supervised, unsupervised and reinforcement learning in single and multi-layer neural networks, radial-basis function networks, principal component analysis, self-organizing maps, adaptive resonance theory, stochastic machines, learning capacity and generalization. Prerequisites: (CS 2333 or CS2303), and 3 terms of calculus and statistics.

CS 5735 Geographical Application Design and Development (O) 4 ch (3C 2L)

Aesthetics of geographical application design. Spatial extensions to UML, business applications with 2D vector and image data, map labeling, visualization and editing of surface and volumetric datasets, database integration, WWW deployment, incorporating real-time positioning, international standards. Prerequisite: Map projections (e.g. GGE2413 or permission of instructor) and proficiency in an object-oriented programming language.

CS 5745 The Computer and the Mind (O) 4 ch (3C)

In the course, the main issues confronting scientists and engineers dealing either with the understanding of the mind or with the design and development of intelligent software and machines are discussed. In particular, a brief overview of the sensation and perception mechanisms as well as of the known computational models for the basic intelligent processes is given. A sizable portion of the lectures is devoted to the history of the relevant areas. Prerequisite: Courses in discrete mathematics and linear algebra or permission of the instructor.

CS 5865 Data Communications and Networking II (O) 4 ch (3C 3L)

Advanced concepts of the analysis and design of data networks and their operation. It is planned to cover the following areas in depth: Networks, Interfaces, Line Protocols, Network Analysis, Local Area Networks, Network Maintenance, Public Carrier Services, Standardization. Prerequisites: CS 4865.

CS 5905 Topics in the Theory of Computing 4 ch (3C)

A selected area of computing with a unifying theme will be explored in depth. The topics covered are selected from one or more of the following areas: algorithms, artificial intelligence, automata, computability, computer organization, languages, and theoretical concepts of programming. Prerequisites: CS 2303, Discrete Structures or a course in Algebra, and approval of the instructor.

ECONOMICS

Note: See beginning of Section H for abbreviations, course numbers and coding.

Course Numbering System

First Digit

The numbers 1 to 5 designate the level of the course, prerequisites, and other conditions of admission.

1	Designates a course with no prerequisites or other restrictions on admission.
2	Designates a course normally open to any student who has completed at least one year of university work.
3	Designates a course with one formal prerequisite; any student who has completed the prerequisite is admitted (normally the student will have completed at least one year of university work).
4	Designates a course with at least one formal prerequisite; any student who has completed the formal prerequisite(s) is admitted if he/she also completed at least two years of university work.
5	Designates a course open only to students with a substantial background in Economics, or the equivalent (normally there is at least one formal prerequisite). All 5 courses are joint undergraduate/graduate offerings (i.e. are listed as 6 courses in the School of Graduate Studies Calendar). Admission is at the discretion of the instructor.

*Formal prerequisites are specified in the course description. When a prerequisite is listed as recommended, a student without the course must consult the instructor before registering.

Second Digit

The numbers to 9 designate subject classification within the discipline of Economics.

0	Economic Theory
1	Money and Banking
2	Public Economics
3	Economic History
4	International Economics
5	Economic Growth and Development: Regional Economics
6	Mathematical Economics & Quantitative Methods
7	Resource Economics
8	Applied Economics
9	Other Areas

Third and Fourth Digit

These digits identify courses within each subject classification.

ECON 1001 Economics in the Real World: Micro 3 ch [W]

This course differs from conventional microeconomic courses in two main ways. First, because we are confident of the power of economic reasoning, this course opens out the orbit of study to include all human behavior B not just market behaviour. Second, because we are aware of the limitations of economic reasoning, we expose the political and philosophical ideas underlying conventional economic conclusions and the biases they create. This course is open to all students except those whose programs require ECON 1013 or 1073.

ECON 1002 Introduction to the New Economy 3 ch [W]

This course is designed for students in Arts, Computer Science, Education, Science, Forestry, Nursing and Kinesiology. It is intended to introduce students to the macro economic concepts and the role of government in the new economy. More specifically, the course content will explore the following core topics: globalization, international trade, information technology revolution, economic development, money and banking, national income, machinery of government, public policy, health care, natural resources, innovation, inflation, unemployment, cultural/social issues, regional disparity, education and environmental issues. This course is open to all students except those taking ECON 1023 and 1073.

ECON 1013 Introduction to Economics : Micro 3 ch

An introduction to demand and supply, pricing, market structure, and government intervention. Students with credit in Econ 1001 may not take this course for credit.

ECON 1023 Introduction to Economics : Macro 3 ch

An introduction to national income determination, unemployment, inflation, banking and exchange rates.

ECON 1073 Economics for Engineers 3 ch

An introductory course designed for students in engineering and computer science programs. Topics covered include price, production and cost theory; aggregate supply, aggregate demand; money and banking; public finance; and international economics. Open only to engineering and computer science students.

ECON 2009 Understanding Economics Through Film (O) 3 ch [W]

This course develops a vocabulary and a set of tools to analyse films, and utilizes the motion picture to establish the context for teaching economics concepts. Plots and subplots of selected films are used to illustrate problems and issues that are amenable to economic analysis. Through a combination of readings, lectures, discussion and films, students will develop a set of skills characterized as an economic way of thinking. The course is designed for undergraduates with no previous economic training.

ECON 2015 The Economics of Strategic Thinking 3 ch

Strategic thinking is the art of outdoing an adversary, knowing that the adversary is trying to do the same to you. All of us must practice strategic thinking at work as well as in everyday life. As a business manager, political adviser, lawyer and in the day-to-day pursuits of life (such as buying a car) you will be trying to win the competition. This unit is about the basic principles students can adopt in the attempt to become a better competitive strategist in business and daily life. The unit draws these principles from the fields of business, politics, law, sports, warfare, fiction and modern art forms such as the movies. Prerequisite: any first year Economics course.

ECON 2103 Introduction to Money and Banking 3 ch

Introduces theory of money, history of monetary systems, deposit creation, central and commercial banking, monetary policy and foreign exchange. Prerequisite: Any First Year Economics Course.

ECON 2203 Introduction to Public Finance 3 ch (W]

Emphasis is on public expenditure policies, intergovernmental fiscal relations, and fiscal policy. Prerequisite: Any First Year Economics Course.

ECON 2505 Information Technology and the Canadian Economy 3 ch [W]

Blends economic analysis, economic history and public policy to spotlight the role of economics in the context of the revolution in information technology. Topics include: the structural evolution of the Canadian and regional economies, the emergence of knowledge based industries, the economic costs and benefits of education, the demographic and skill composition of Canada's labour force, the economics of technological change and the contemporary role of the information technology, the impact of information technological developments on human rights, the role of the private and public sectors in the new transnational global economy. Prerequisite: Any 3 ch introductory Economics course.

ECON 2705 Canada and the New Global Economy 3 ch [W]

This course will examine the Canadian economy in the context of the new global economy of the 21st century. Economic theory, economic history and public policy will be the backdrop for a discussion of the trilogy of interactive economic forces that define the new global economy- globalization, trade liberalization and the information technology and communications revolution. Prerequisite: any first year economics course.

ECON 2905 Contemporary Issues in the Canadian Economy 3 ch [W]

Examines a variety of contemporary economic issues, including inflation, unemployment, economic growth, regional disparity, monetary and fiscal policies, the new international economic order, bilateral and multilateral trade agreements. Prerequisites: Any First Year Economics Course.

ECON 3013 Economic Theory I: Microeconomics 3 ch

Microeconomics has two main purposes. First, it is a foundation course in the study of economics; it provides the essential building blocks for higher level economics and finance courses. Second, microeconomics can be directly applied to help solve the day-to-day decisions of business managers; issues such as pricing, production, advertising, and strategic interaction. It achieves this through extensive use of real-world examples and short case studies. Prerequisite: Any first year economics course.

ECON 3023 Economic Theory I: Macroeconomics 3 ch

Macroeconomics seeks to understand the way in which national economies function, and they way they interact with each other at the international level. Key questions are: the determination of a country's standard of living and rate of growth; the causes of recessions, unemployment, and inflation; the determinants of exchange rates and the benefits (or costs) of currency unions; and the determinants of interest rates. This course is an essential building block for higher level study in economics and finance, and is indispensable for understanding stock markets and financial investment. Prerequisite: Any first year economics course.

ECON 3055 Public Policy Analysis 3 ch

Provides students with the analytical tools to evaluate public policy. It will cover the following topics: the role of government in market economies, the constitutional division of responsibilities in the Canadian federation, the criteria for evaluating public policy; the economic tools used to evaluate public policy, the economic analysis of selected government policies, the economics of intergovernmental fiscal relations. Prerequisite(s): ECON 1013 and ECON 1023 or ECON 1001 and ECON 1002.

ECON 3112 The Political Economy of Russia and Ukraine 3 ch (3C) [W]
(Cross Listed: POLS 3112)

Examines the political, economic and social dynamics of government in the two Slavic nations in the post-Gorbachev era.

ECON 3203 Public Finance Analysis 3 ch

Analyzes federal, provincial, and local expenditure and taxation by governments. Both theory and evidence (with an emphasis on Canadian institutions) are emphasized. Prerequisite(s): Any first year Economics course.

ECON 3343 The European Union in Transition 3 ch (3C) [W]
(Cross Listed: POLS 3343)

This course examines the economic, political, and legal aspects of the EU and its member states. Topics included are money and finance and government institutions and further political/economic integration with Eastern Europe. This course is an elective in the Law and Society program.

ECON 3361 Eastern Europe in Transition 3 ch (3C) [W]
(Cross Listed: POLS 3361)

This is an introduction to the politics and economics of Eastern Europe. The course examines how the countries of Eastern Europe, Eurasia and the former Yugoslavia emerge into a market system and integrate with Western Europe and the rest of the world. Money, banking, trade, and government policies will be emphasized.

ECON 3401 International Economics: Trade 3 ch

Introduces the theory of international trade. Topics include mercantilism, comparative advantage, gains from trade, terms of trade, factor endowment and industrial organization models of trade, income distribution effects of trade, international movements of capital and labour, protectionism, trade agreements and economic development. Prerequisite: EITHER ECON 1013 and ECON 1023, OR ECON 1001 and 1002, OR ECON 1073; ECON 3013 recommended.

ECON 3412 International Economics: Finance 3 ch

Introduces the financing of trade and capital flows among nations. Topics include balance of payments, foreign exchange markets and exchange rates, macroeconomic policy under fixed and flexible exchange rates, and international monetary systems. Prerequisite: EITHER ECON 1013 and ECON 1023, OR ECON 1001 and 1002, OR ECON 1073; ECON 3023 recommended.

ECON 3504 Regional Economic Theory and Policy 3 ch

Concerned with the general theory of regional economic disparities and economic development, and the role of governments (federal and provincial) in alleviating disparities. Emphasizes current problems and policies pertaining to Atlantic Canada. Prerequisite: Any First Year Economics course.

ECON 3633 International Public Law 3 ch (3C) [W]
(Cross Listed: POLS 3633)

Examines the sources of law such as custom and treaties and addresses specific issues in the international system: the law of armed conflict, human rights, dispute settlement, intergovernmental and supranational organizations, intellectual property rights, the environment, and the relationship between business corporations, sovereign states and private citizens.

ECON 3665 Mathematical Economics I: Economic Analysis 3 ch

Emphasis is on use of mathematical tools in economic theory. Prerequisite: ECON 1013 AND ECON 1023 or 1073 plus Mathematics requirement for Honours and "A" Majors.

ECON 3702 Cost-Benefit Analysis 3 ch [W]

Principles of cost-benefit analysis including consideration of walfare economics, the treatment of intangibles, non-efficiency considerations, time discounting, evaluation criteria, uncertainty and risk. Prerequisite: Any First Year Economics Course.

ECON 3724 Economics of Human Resources 3 ch

How do employers recruit the best employees for the job? How important is money relative to other factors when it comes to hiring and keeping employees? Should good performance on the job be rewarded or should bad performance be penalized? The purpose of this unit is to provide the student with the economic tools of analysis to answer these questions as well as many other important questions in the area of human resource management. Topics include education and training decisions, hiring and turnover, compensation and worker incentives, measuring performance, promotions as a motivator, and team-based production. The analysis of the main issues will be reinforced and complemented with reference to a series of firm-level case studies. Prerequisite: Any first-year economics course.

ECON 3744 Recreation Economics (O) 3 ch (3C)

Discusses applications of economic principles to outdoor recreation planning and policy decisions. Management and allocation issues are addressed with emphasis on approaches which make outdoor recreation as socially beneficial as possible at the lowest possible cost. Any first year economics course, or permission of the instructor.

ECON 3755 Environmental Economics 3 ch

Examines interaction of ecological and economic systems. Considers population growth and food supply, non-renewable resources, and population. Prerequisite: Any First Year Economics Course.

ECON 3794 Natural Resource Economics I 3 ch

Primarily applied economics in natural resource management. Involves the application of economic theory to resource-related problems. Includes resource scarcity and conservation, intertemporal allocation of natural resources, common property resource management and environmental quality. Prerequisite: Any First Year Economics Course.

ECON 3801 Economics of Transportation I 3 ch

Examines the role played by transportation in the location of economic activity and other aspects of economic development. Prerequisite: Any First Year Economics Course.

ECON 3815 Introduction to Health Economics 3 ch (3C)

The course discusses applications of economic principles and empirical analysis to health and health policy. It considers such matters as the demand for health care, and the supply of health services both through health practitioners and hospitals; the economic effects of health insurance, health economic evaluation techniques, and public policy formulation. Emphasis is on Canadian health programs and policies. Prerequisite: Any First Year Economics Course.

ECON 3831 Contemporary China 3 ch (3C) [W]
(Cross Listed: POLS 3831)

The course studies various macro-economic and political aspects of a modern China in transition. China's global position (defence and foreign policies) will also be examined.

ECON 3845 Introduction to Law and Economics 3 ch [W]

This course applies the tools of economic analysis to the study of legal rules and institutions. Topics and case studies in three core areas of the law - property, contracts, and crime and punishment - are used to illustrate and develop two related ideas. The first is that economic principles have guided significant developments in the evolution of the law in many areas, and an understanding of these economic principles will lead to a better understanding of the law as it is currently practiced. The second is that economic analysis can be used to assess and critique current law from a social perspective, leading to improved public policy evaluation and formation in all areas of civil and criminal law. Prerequisite: Any first year economics course or permission of the instructor.

ECON 3865 Energy Economics 3 ch

Applies economic theory to energy issues. Demand for energy and supply of energy are explored in terms of non-renewable and renewable energy resources. Markets for energy resources are discussed. Specific attention is directed to petroleum markets and OPEC behaviour. Public policy issues associated with the energy sector such as the environment and sustainability are addressed. Prerequisite(s): Any first year economics course.

ECON 4013 Economic Theory II - Microeconomics 3 ch

Focuses on advanced theory of choice. Topics include choice under uncertainty, the theory of the firm, oligopoly theories, game theory, general equilibrium, and the distribution of income. Prerequisite: ECON 3013.

ECON 4023 Economic Theory II - Macroeconomics 3 ch

Emphasizes theory of investment, consumption, money and employment, neoclassical monetary equilibrium, and Keynesian and post-Keynesian models. Prerequisites: ECON 3013 and 3023.

ECON 4203 The Taxation of Personal Income: Principles and Practice (O) 3 ch

The taxation of personal income in Canada. Topics include the concept of taxable income; capital gains; dividends; deduction vs credits; tax rates; economic efficiency and equity; form alternative s of taxation. The Canadian tax treatment of personal income is examined in detail. Pre-requisite or co-requisite: ECON 2203 or ECON 3203.

ECON 4213 The Taxation of Business Income: Principles and Practice (O) 3 ch

The taxation of corporate income in Canada. Topics include the structure of the corporate tax system; the concept of integration; typical tax planning strategies. Taxation of partnerships and trusts will be discussed briefly. The Canadian tax system is examined in detail. Pre-requisite: ECON 2203, or ECON 3203; ECON 4203.

ECON 4625 Econometrics I 3 ch

Introduction to basis econometric techniques for estimating and testing economic models. Topics include: review of basic statistics, the nature of econometric models and economic data, regression analysis, hypothesis testing, and applications. Emphasis is on intuition and applications. Prerequisites: 6 ch Introductory Statistics (e.g. ADM 2623, ADM 3628); and ECON 3013 and ECON 3023.

ECON 4775 The Economics of Canadian Immigration 3 ch [W]

An analysis of the role of international migration on the course of Canadian economic development. Prerequisites: Any First Year Economics Course.

ECON 5013 Topics in Microeconomic Theory 3 ch

Considers the advanced theory of production and consumer demand, expected utility theory, theory of the market, elements of game theory, general equilibrium and welfare. Prerequisites: ECON 3013 and ECON 4013.

ECON 5023 Topics in Macroeconomics 3 ch

Examines neoclassical, Keynes and Keynesian models, and static, dynamic, equilibrium and disequilibrium models. Prerequisites: ECON 4013 and 4023.

ECON 5285 Public Policy Research 3 ch (3R)

This course provides practical experience in public policy analysis through supervised research. Students will complete research projects assigned by the instructor. These projects are policy-oriented and are chosen in consultation with sponsoring agencies. A formal presentation of the results is required at the end of the course. Prerequisites: ECON 3013, ECON 3023 or permission of the instructor.

ECON 5515 General Regional Economic Theory 3 ch

Examines the history and evolution of location theory from the standpoint of individual producers in urban centers. Prerequisite: Some background in Economics.

ECON 5625 Econometrics II 3 ch

Review of matrix algebra. Errors in variables, instrumental variables, simultaneous equations, qualitative and limited dependent variables, dynamic models, model selection criterion, causality, unit roots, single equation cointegration methods. Emphasis is on practical application of simultaneous methods. Prerequisite: ECON 4625 or permission of the instructor.

ECON 5645 Applied Econometrics 3 ch

This course builds on the material covered in ECON 4625 Econometrics I. There are two main objectives to the course: first, to extend the classical model to consider a variety of related topics that are central to data analysis in the social sciences, including discrete and limited dependent variables, lagged dependent variables, panel data, and simultaneous equations; and second, to develop the application of the theory to empirical analysis by considering a variety of real-world examples. Prerequisite: ECON 4625.

ECON 5665 Mathematical Economics II 3 ch

Economic applications of optimizing techniques are considered primarily in the context of linear models. Prerequisites: ECON 3665, or MATH 2003 and 2013, and ECON 3013.

ECON 5724 Economics of Human Resources 3 ch

Attention given to the economics of the education process, the theory and implications of innovation, the effects of education and technological change on the distribution of income, and the role of education and technological change in economic growth. Prerequisites: ECON 3013 and 3023.

ECON 5755 Environmental Economics II 3 ch

Applies economic theory to real-world environmental issues. The theory of environmental externalities is first explored. Then various applications are introduced such as environmental valuation techniques, computable general equilibrium modeling, and environmental accounting procedures. Such environmental issues as deforestation, urban air pollution, and water pollution will be covered. Prerequisite(s): ECON 3755 or permission of the instructor.

ECON 5775 Economics of Fisheries Management 3 ch

Considers the economic theory of the fisheries problem, optimal management of the resource and economic modelling of fisheries. Prerequisite: ECON 3013, or permission of the instructor.

ECON 5794 Natural Resource Economics II 3 ch

Economic theory applied to management of fishery, forestry and mineral sectors of the economy. Prerequisite: ECON 3794, or at discretion of instructor.

ECON 5803 Transportation Problems and Policies 3 ch

Focuses on basic tools of economic analysis to determine demand and supply in transporation markets. Considerable attention is devoted to the derivation of market and aggregate demand for transportation services as well as to cost functions as determinants of supply of transportation services. Efficient pricing of transportation services is analysed. Investment criteria are reviewed to determine the efficient pricing. Market failures and imperfections of transportation markets are examined. Prerequisite(s): ECON 3801 or permission of the instructor.

ECON 5815 Health Economics 3 ch (3C)

The course discusses and analyses the health economics literature. A set of topics will be selected by the instructor for consideration. Likely topics will include demand theory and measurement as applied to health care markets, production and supply theory (in the context of health markets), health economic evaluation methods, managed competition approaches to health care, and public policy analysis. Other topics may be introduced in accordance with the instructor's priorities, or the specific interests of the students. ECON 3013, ECON 3023 or the permission of the instructor.

ECON 5825 Industrial Organization: Theory 3 ch

Covers welfare economics of competition and monopoly, determinants of industrial structure, theories of industrial pricing, rationalization, technological innovation, and foreign ownership. Prerequisites: ECON 3013, or at discretion of instructor.

ECON 5835 Industrial Organization: Policy 3 ch

Economics of regulation and intervention, anti-combines policy, policy issues concerning the control of mergers, monopoly, predatory pricing, collusion, resale price maintenance. Prerequisite: ECON 5825, or at discretion of instructor.

ECON 5855 Law and Economic Analysis 3 ch

Applications of microeconomic theory to social and legal policies: problems in private property, intellectual property rights and licensing, contractual error, liability and negligence, legal efficiency, and criminal justice. Prerequisite: ECON 3013 or permission of the instructor.

ECON 5989 Topics in Economics I 3 ch (R 1S)

ECON 5999 Topics in Economics II 3 ch (R 1S)

Directed study/reading programs. Workshops or seminars will be held as required. Students should apply to the Department of Economics in September or January for permission to take one of these courses.

EDUCATION

ED courses are normally not available to non-education students. Exceptions are ED 4791, ED 3021, ED 3031, ED 3043, ED 3063.

ED 3011 Professional Ethics for Practitioners of Adult Education 3 ch

Introduction to ethical theory and philosophical approaches to reflective practice emphasizing self-examination, decision making, and ethical standards in the field of adult education. Participants use field experience to support readings and case studies.

ED 3015 Practicum in Adult Education 3 ch

Practical, field-based learning-based on an individualized learning contact and completed in teaching, learning or other appropriate adult education settings such as training, literacy, tutoring, curriculum development, etc. The intent of the practicum is to help learners develop observational, critical and reflective skills as well as skills appropriate to their work with adults.

ED 3021 Human Development and Learning: An Overview 3 ch

Developmental perspectives on human growth and learning.

ED 3022 Aboriginal Identity and Development in Education 3 ch

Development of personal and social identity among children in aboriginal communities. Implications for classroom practice.

ED 3023 Learning and Development in School Cultures 3 ch

An exploration of the role of theories of learning and development in the production and reproduction of school culture. The work of predominant theorists will be examined in relation to the lived experience of teachers, students, and administrators as well as official school policies, procedures, and curriculum documents, to explore the connections between theory in practice and theory in the academic literature.

ED 3024 Understanding the Adult Learner 3 ch

Explores the characteristics of learners in formal and nonformal education settings and identifies learning processes and conditions as they influence adult learning.

ED 3031 The Education of Exceptional Learners 3 ch

Provides the student with an introduction to the field of knowledge associated with exceptional learners.

ED 3033 Teaching in a Cultural Context 3 ch

How teachers respond effectively to the culture of children as individuals and to the culture of their people, with regard to a variety of cultural contexts, including Canadian aboriginal cultures.

ED 3041 The Theory and Practice of Education 3 ch

Introduces the dominant theories which influence and shape current thinking and practices in school environments today. Key ideas, their origins, teaching responsibilities, and the components of professional practice are discussed. The course is intended to orient education students to teaching as a profession.

ED 3042 History of Educational Ideas 3 ch

A course designed to inform beginning teachers about the most significant ideas (and the people who originated them) that have influenced the development of contemporary education.

ED 3043 Aboriginal Education 3 ch

Traditional aboriginal pedagogy and concepts of education in comparison with those which have shaped formal schooling. Roles and responsibilities of schools, teachers, and communities in educating aboriginal students.

ED 3044 History of Childhood 3 ch

A course that follows the changing public perception and treatment of children in western society from the Seventeenth Century to the present. Children in Maritime Canada are featured prominently.

ED 3051 School Law and Organization 3 ch

An overview of the legal, organizational, financial and professional aspects of schools and school systems.

ED 3052 School Law and Organization: Band Controlled Schools 3 ch

As above, but with a focus on band-controlled schools.

ED 3061 Students, Schools, Equity and Social Justice 3 ch

Explores the social, economic, cultural, and political contexts of learners lives, discourses of social difference, equity and social justice. Topics include: sexism, gender bias, racism, class oppression, homophobia, and heterosexism, harassment and violence, and the questions these issues raise for schools, curricula and classroom practice.

ED 3063 Health Promotion in Schools 3 ch

Examines concepts and inter-relationships among nutrition, exercise, and well-being within educational contexts.

ED 3110 Methods and Strategies in Adult Education: An Introduction 6 ch

Examines key topics in applied terms to prepare new instructors for the first year of teaching. Topics include: planning instructional segments; writing objectives; evaluating students, programs and teaching; using and assessing teaching strategies, audio-visual aids and learning resources. Students will participate in micro-teaching activities.

ED 3113 Communication Practices for Adult Education 3 ch

Identifies general theories of and strategies for oral, written and visual communications. Students will be expected to assess their skill levels in all three areas.

ED 3211 Introduction to Art Education 3 ch

Addresses the history, rationales, developmental theories, curriculum planning, and basic art-making skills essential for teaching art at the elementary, middle, and high school levels. Visual understanding and how it can be increased through school art programs is a key consideration.

ED 3212 Art Media for Schools 3 ch

This course builds on the art making skills introduced in the course - Introduction to Art Education. Other Art Media will also be explored along with curriculum development as a component of school-based art education. Prerequisite ED 3211.

ED 3218 Visual Arts Studio I 3 ch

Studio practice in one or more visual arts media.

ED 3219 Visual Arts Studio II 3 ch

Advanced studio practice in one or more visual arts media.

ED 3241 Music for the Classroom Teacher 3 ch

Examines appropriate methodology, skills and content for the elementary classroom teacher to use in teaching music in a variety of settings. Students will sing, play an instrument, listen and move to music.

ED 3242 The History of Popular Music 3 ch

Includes study of the roots and development of jazz, musical theatre and contemporary popular music.

ED 3361 Internet Literacy 3 ch

Theoretical issues arising from Internet, along with practical skills needed to gain familiarity with this network. How Internet challenges the way we create, disseminate, acquire and own knowledge. Note: This course may not be taken for credit by Computer Science students.

ED 3362 Access to Literacy 3 ch

Although the teaching of reading is regarded as one of the fundamental tasks of the school system, there is relatively little attention paid to what is being read. In this course students will learn: how to find out about books; how to recognize a genuine work of imaginative literature when they encounter one; and how to talk about books among themselves and with children.

ED 3415 Developing Numeracy 3 ch

The study of number relationships and approaches to developing number sense in children and adults.

ED 3416 Developing Geometrical Concepts 3 ch

The study of geometric relationships and approaches to developing spatial sense in children and adults.

ED 3421 Teaching Mathematics in the Elementary School: Field Based 3 ch

Focus on appropriate methodology for teaching mathematics at the elementary school level. A field-based component will ensure some teaching opportunity in a public school. Prerequisite: ED 3415.

ED 3424 Teaching Mathematics in the Elementary School 3 ch

Focus on appropriate methodology for teaching mathematics at the elementary school level. Students must demonstrate an adequate mastery of the mathematics content underlying the curriculum prior to completion of this course. Prerequisite or corequisite: ED 3415 or a MATH course.

ED 3475 Movement Education for the Elementary Teacher 3 ch

Overview of physical education programs in elementary schools. Program planning, practical work.

ED 3476 Teaching Creative Dance 3 ch

This course will focus upon the teaching of creative dance to elementary school children. It will include practical classroom sessions, lesson planning and ideas on integrating dance and the academic curriculum. This course may not be used as a substitute of ED 3475.

ED 3486 Movement Education for Older Children 3 ch

An in-depth class in methods and materials applied to the teaching of games, dance and gymnastics to older children. Practical application.

ED 3494 Introduction to the Teaching of Secondary Physical Education 3 ch

An introductory methods class that examines the meaning of being physically educated, the nature of the school physical education curriculum and the instructional process.

ED 3511 Introduction to Science Education 3 ch

An introduction to the teaching of science across and for particular learner levels.

ED 3512 The Nature(s) of Science: Implications for Teaching Science 3 ch

Provides an opportunity for participants to explore their models of the nature of science and consider the implications these models have on teaching and learning science.

ED 3513 Science Education Policy and Practice 3 ch

An introduction to current policies and practices in science education.

ED 3514 Instructional Intelligence and the Science Teacher 3 ch

In this course, students will be encouraged to develop their instructional intelligence by exploring a variety of theories and bodies of literature, such as multiple intelligences theory, learning styles, and brain compatible learning and how these theories can be used to enhance science teaching and learning. Prerequisite: ED 3511 or permission of the instructor.

ED 3561 Introduction to Second Language Education* 3 ch

Examines the principles of learning and teaching a second language (SL). Emphasizes the development of communicative SL activities and the creation of learner-centred lesson plans. * Required course for CTESL candidates. Students may receive credit for ED3561 or ED3562 but not both.

ED 3562 Initiation à la didactique du français langue seconde (FLS)* 3 ch

Étude des caractéristiques et des objectifs de divers programmes de FLS (par ex., français de base, français intensif, immersion). Examen des fondements de lapprentissage, de lenseignement et de lévaluation du FLS. Élaboration et application dactivités communicatives. *Required course for French second language specialists. Students may receive credit for ED 3562 or ED 3561 but not both. Pre-requisite: A French oral proficiency certificate with a minimum level of Advanced from the New Brunswick Department of Training and Employment Development. Students who have graduated from a francophone (i.e., French first language) high school will be exempted from this requirement upon presentation of their graduation diploma.

ED 3621 Introduction to the Social Studies 3 ch

Consideration of the history of social studies, debates about the content of social studies and the current state of social studies in Canada.

ED 3641 Geography in Education 3 ch

Scope and purpose of geography in education. Trends and source materials, including the use of maps, air photos, satellite images. Two laboratory sessions.

ED 3862 Information and Communication Technology I 3 ch

This course is designed to introduce students to basic concepts and practices in the integration of application software within curriculum-based topics. Emphasis is placed on the development of electronic portfolios of technology-enhanced teaching materials for the classroom.

ED 3943 Introduction to Technology Education 3 ch

Examines the development of technology education as a field of study and explores the context in which technology is taught in schools, applied in industry and its impact on society. Current technology applications are examined in areas such as: transportation, construction, communication, manufacturing and bio-technologies.

ED 3976 Technology Education for Special Students 3 ch (3C)

Examines techniques necessary for offering effective Technology Education for instruction to students with special needs.

ED 4000 Student Teaching for BEd (4 year) Program1 18 ch

Fifteen weeks of school and classroom experience. Additional regulations are included in the Education General Regulations under Field Experiences Practicum (Student Teaching)in Section G of the Calendar. Prerequisite: Only students who have been officially admitted to the BEd (4 year) program may register for ED4000. For further information contact the Chair of the Student Teaching Department.

ED 4001 Field Experience I for BEd Consecutive Students 0 ch

Must be completed before ED 5000.

ED 4002 Field Experience II for BEd Consecutive Students 0 ch

Must be completed before ED 5000.

ED 4003 Field Experience I for BEd Concurrent Students 0 ch

Must be completed before ED 5000.

ED 4004 Field Experience II for BEd Concurrent Students 0 ch

Must be completed before ED 5000.

ED 4012 Diversity and Inclusion in Adult Learning 3 ch

Examines culturally-defined values, beliefs, and assumptions; how cross-cultural communication plays out in formal and informal situations, work environments, and the wider community; and how to create quality international and cross-cultural learning experiences. Develops practical strategies for ensuring meaningful inclusion and for creating safe climates that model the principle of valuing differently acquired wisdom.

ED 4031 Towards Diversity in the Classroom 3 ch

Examines how schooling reproduces and produces social inequality and explores liberatory pedagogical practices, particularly in relation to dimensions such as class, "race", gender, and sexuality.

ED 4032 Adult Learners with Special Needs 3 ch

Examines the nature of special learning needs in relation to sensory, cognitive, physical, emotional and learning capabilities, and considers methods and strategies for helping to meet these needs in teaching-learning settings.

ED 4042 Introduction to Adult Education 3 ch

Examines the development of adult education as a field of practice and explores the characteristics of adult education in a variety of contexts with specific emphasis on national and provincial contexts.

ED 4045 Train the Trainer: Theory and Practice 3 ch

Explores theoretical and practical components of workplace training designed to improve organizational effectiveness and individual performance. Learners examine emergent training topics in a variety of workplace contexts. Prerequisite: ED 3024.

ED 4051 The Community College 3 ch

Examines the historical, philosophical, political and economic contexts of community colleges, their current practices and policies and future trends with particular emphasis on Canada and New Brunswick.

ED 4061 Advising and Mentoring Adult Learners 3 ch

Examines the characteristics of helping relationships in educational and work settings. Focus will be on the development of skills and strategies conducive to effective advising, coaching and mentoring through collaborative learning, reflection and practice. Prerequisite ED 3024.

ED 4075 Bilingualism and Education 3 ch

The nature of language learning in a bilingual context. Issues of literacy and cognitive development, the interrelationship of two or more languages in a single individual, and classroom practice in a bilingual setting will be explored.

ED 4089 Gifted Education: Introduction 3 ch

The identification, development and approach to the gifted and talented are examined in terms of their intellectual, social and emotional characteristics.

ED 4102 Transition to Adulthood 3 ch

Explores the principles of adult learning and their application to teaching, planning, problem solving, and motivating learners who are in transition from full-time attendance in educational programs to adult work and life roles.

ED 4110 Methods and Strategies in Adult Education: Theory and Practice 6 ch

Based on learners' needs, interests and experience, theoretical and practical components of instructional strategies are explored in-depth. Particular attention is paid to the integration of instructional methods and strategies with adult learning models.

ED 4113 Introduction to Distance Learning in Adult Education 3 ch

Provides an opportunity to explore and become familiar with currently available learning technologies to deliver distance education programs and courses. Use of these technologies will be required throughout the course.

ED 4164 Techniques of Teaching 3 ch

Students will learn to design lessons following lecture, Socratic discussion, or combination formats and learn the appropriateness of each. Classroom skills of positioning, elocution, questioning, listening, eye contact, and so on will be learned and practised in mini-teaching sessions in front of small peer groups. Causes of student behavior problems will be analyzed and strategies for dealing with disruptive students developed.

ED 4191 Independent Studies 3 ch

Students will normally be limited to 6 ch of independent study. Prerequisite: Permission of an instructor is required before registration.

ED 4211 Integrated Learning through Art 3 ch

Art education theories and practices as they apply to learning across the curriculum.

ED 4212 Developmental Theories in Art Education 3 ch

A critical look at developmental theories as they have been applied to artistic and aesthetic learning.

ED 4241 Music in the Elementary School 3 ch

Study of methods and materials current in the elementary school. Development of skills and curriculum. Study of the young learner and music. Prerequisite: 9 ch in music courses or permission of the instructor.

ED 4242 Music in the Middle School 3 ch

Study of methods and materials current in the middle school. Development of skills and curriculum. Study of the middle school learner and music. Prerequisite: 9 ch in music courses or permission of the instructor.

ED 4243 Music in the Senior School 3 ch

Study of methods and materials current in the senior school. Development of skills and curriculum. Study of the senior school learner and music. Prerequisite: 9 ch in music courses or permission of the instructor.

ED 4352 Poetry K-12 3 ch

Poetry is probably the most reluctantly taught subject in the school system. Yet it offers one of the most potent links with our cultural and linguistic heritage. This course provides access to texts and to a range of discussion strategies that can be used throughout the school system.

ED 4354 Literacy Learning in Early Years 3 ch

Current theories of the nature of literacy learning and their relationship to instructional practices in the early years.

ED 4355 Literacy Learning in the Middle School 3 ch

Current theories of the nature of literacy learning and their relationship to instructional practices in the middle years.

ED 4356 Literacy Learning in the Young Adult Years 3 ch

Current theories of the nature of literacy learning and their relationship to instructional practices in young adult years.

ED 4404 Trends in Mathematics Education 3 ch

Current issues in teaching mathematics, Grades K-12. Prerequisite: Teaching experience; at least one previous course in mathematics education.

ED 4451 Health Education 3 ch

Examines curriculum and pedagogy in a range of elementary, middle and secondary school programs that come under the rubric of health education. Includes analyses of underlying assumptions, the organization of knowledge, and pedagogical approaches to this subject area.

ED 4488 Teaching of Games for the Secondary Physical Education Teacher 3 ch

Concepts, skills, strategies for games taught in secondary schools. Practical application. Prerequisite: ED 3494 or permission of the instructor.

ED 4494 Teaching Methods in Secondary Physical Education 3 ch

Teaching process: styles, materials, space, facilities, and equipment. Practical application. Prerequisite: ED 3494 or permission of the instructor.

ED 4511 Advanced Studies in Science Education I 3 ch

Advanced studies in the teaching and learning of science for the early years/middle school/young adult learners. Prerequisite: Introductory Methods course.

ED 4562 Advanced Studies in ESL Education 3 ch

Examines communicative language teaching in the context of ESL classrooms. Emphasizes varied teaching methods, curriculum development and evaluation of second language learning. Prerequisite: ED 3561 or ED 3562 or equivalent.

ED 4567 Enseignement du français langue seconde (FLS) aux niveaux intermédiaire et secondaire* 3 ch

Analyse de programmes détudes et de ressources didactiques pour les divers programmes de FLS (par ex., français de base, français intensif, et limmersion.) Exploration de lenseignement du français dans ces programmes. Examen des principes et des pratiques reliés à lenseignement de diverses matières scolaires (par ex., français, sciences humaines, sciences) en immersion. Planification et enseignement dactivités et de leçons. Planification à long terme. Pre-requisite ED 3562.

ED 4568 Le développement langagier en classe de langue seconde 3 ch

Examen du processus d'acquisition d'une langue seconde. Analyse du langage des apprenants. Planification de stratégies pédagogiques efficaces pour la correction des erreurs. Prerequisite: ED 3560 or equivalent.

ED 4569 Enseignement des arts langagiers en français langue seconde à lélémentaire 3 ch

Étude des principes et des pratiques qui favorisent une approche équilibrée denseignement des arts langagiers qui comprend la compréhension et lexpression orale et écrite, ainsi que le visionnement et la représentation visuelle. Examen des liens entre la langue et les diverses matières. Création dactivités dapprentissage, planification de leçons ainsi que planification à long terme. Prerequisite: ED 3562 or equivalent.

ED 4620 Introduction to Teaching Social Studies 6 ch

Issues and problems in social studies instruction. Students will develop initial competence in a number of selected aspects of social studies teaching. Corequisite or Prerequisite: ED 3621

ED 4621 Learning to Learn in Social Studies and Science 3 ch

The course focuses on how teachers can assist students to become better learners. Particular strategies are examined including the use of concept maps, advance organizers, framing, chunking, metaphor, rehearsal, imagery and mnemonics. Middle school to adult. Prerequisite: ED 4620 or 6 ch in ED Science.

ED 4622 Global Education 3 ch

An examination of the global education movement and its implications for curriculum and instruction. Students will be involved in a cross cultural experience, the examination of global education materials, and a curriculum development project. Prerequisite: 3 ch in teaching methods.

ED 4641 World Regional Geography I 3 ch

Investigation of pedagogical approaches to physical, economic, political, and social factors as applied to Europe, Africa, the Middle East and India.

ED 4642 World Regional Geography II 3 ch

Investigation of pedagogical approaches to physical, economic, political, and social factors as applied to Southeast Asia, China, CIS, Latin America and North America.

ED 4643 Geography of Canada 3 ch

Investigation of pedagogical approaches to settlement patterns, urbanization, resource development, land use and economic characteristics of the various regions. Attention given to applications in the New Brunswick school curriculum.

ED 4644 Geography of the United States 3 ch

Investigation of pedagogical approaches that focus on the interrelationship of human activities and environmental factors within the various regions of the US. Attention is given to economic/resource characteristics as these apply to the New Brunswick school curriculum.

ED 4686 Teaching the Aboriginal Learner 3 ch

Teaching methods, learning strategies, program planning, with emphasis on a particular learning level.

ED 4688 Teaching Aboriginal Childrens Literature 3 ch

Examines the philosophy and process of teaching Aboriginal Literature in an integrated curriculum for primary and elementary children. Includes practical classroom experience.

ED 4761 Philosophical Foundations of Home Economics 3 ch

Exploration of historical development and philosophy of home economics and home economics education, options for professional practice.

ED 4771 Children, Families and Society 3 ch

Advanced study of child development within the family from birth through six years. Particular emphasis will be placed on the development and implementation of programs for children in educational settings.

ED 4773 Families and Society-Family Development 3 ch

A developmental approach to family studies including marriage, parent child relations, families in later life as well as other developmental issues and transitions related to the family life experience.

ED 4774 Family Economic Issues 3 ch

An examination of specific resource management issues related to families. Examines work and family, poverty, intrafamily resource allocation and power, economic implications of separation and divorce and aging.

ED 4775 Family Resource Management 3 ch

Introduction to the principles of management as applied to the use of family resources. Resource management concepts as related to family careers, and to different family types.

ED 4791 Nutrition Concepts 3 ch

An examination of nutrients in the human diet, the relationship between diet and health, nutritional assessment, nutrition education, dietary guidance and current nutrition issues.

ED 4862 Information and Communication Technology II 3 ch

An advanced course in the integration of ICT in the classroom. Students should have previously taken ED 3862 or be able to demonstrate sufficient background knowledge in application software. Focus will also include emerging trends in educational technologies.

ED 4863 Computers in the Classroom 3 ch

This course will study current research and practices in the integration of computer technology in Business Education, ICT, and other subject areas. Students are required to demonstrate best practices in the areas of using computers as a tool, tutor and tutee in education in the development and presentation of technology enriched lessons within their area of curriculum.

ED 4864 Educational Software Analysis 3 ch

This course is designed to examine current trends and research in educational software evaluation. Students will focus on both curriculum-based software as well as administrative applications intended for professional use in and out of the classroom.

ED 4945 Graphic Communications Systems 3 ch

A synthesis of the broad spectrum of communications technologies, including the use of technical illustration, multiview projections, digital imaging, computer aided publishing and basic CAD.

ED 4973 Special Topics in Technology Education

Research of current and emerging trends and development in technology, Technology Education and educational/ instructional technology.

ED 5000 Field Studies Practicum for Consecutive and Concurrent BEd Programs 15 ch

Fifteen weeks of school and classroom experience. Additional regulations are included in Education General Regulations under Field Experiences Practicum, Section F. Prerequisites: 1) Admission to the BEd (Consecutive or Concurrent program); 2) 30 ch in B.Ed. courses including: At the secondary level 9 ch in one area of concentration; At the elementary level 12 ch including ED 3424, a course in Literacy at the elementary level, ED 3511 or ED 3621 and a course in either Art, Music or Physical Education; 3) at least 90 ch of course work in the other degree for concurrent students; 4) CGPA at least 2.0; 5) Students must have been enrolled in the B.Ed. for one year from the formal date of their admission before they are eligible for an Internship. 6) Completion of ED 4001 and ED 4002 or ED 4003 and ED 4004. 7) Police Background Check (See Note: Section G: Field Experiences Placements and Practicum.)

ED 5010 Advanced Practicum in Adult Education 6 ch

A practical, field-based learning experience in which learners will apply and practice previously acquired adult education principles and practices and will monitor themselves through using mentoring, collaboration, and peer consultation. Prerequisite: Practicum in Adult Education, or its equivalent.

ED 5011 Preparing for Prior Learning Assessment 3 ch

Through the use of reflection, self-assessment and personal journals, participants will create an experience-based dossier which will describe their personal philosophy, current professional practices, and needs for further learning. Prerequisite: ED 3024 or equivalent.

ED 5013 Special Topics in Education 3 ch

In consultation with faculty advisor. (Intended for students in the DAUS.)

ED 5021 Constructivist Theory in Practice 3 ch

An exploration of contemporary educational thought concerning constructivist theories of learning and development. School policies, curriculum development and evaluation procedures, as well as the students' personal experiences as learners and teachers will be examined in relation to constructivist theory.

ED 5022 Transformative Learning 3 ch

Explores new concepts for working with adult learners. Investigates critical thinking, critical self-reflection and transformative learning. Prerequisite: ED 3024 or equivalent.

ED 5026 Educational Psychology 3 ch

Psychology in public education. Theories of learning; practical application in the classroom.

ED 5027 The Psychology and Education of the Adolescent 3 ch

An examination of the social and educational issues pertaining to adolescent development.

ED 5031 Creating Supportive Environments for Learning 3 ch

Examines theory and practice related to learning environments and strategies for dealing with behaviour challenges and for children with various types of special needs.

ED 5032 Inclusion from the Early Years 3 ch

An examination of personal, societal and school assumptions about the meaning and importance of inclusion in life and learning from childhood. Inclusive models of education will be examined.

ED 5033 Special Topics in Education 3 ch

In consultation with faculty advisor. (Intended for students in the DAUS.)

ED 5043 Special Topics in Education 3 ch

In consultation with faculty advisor. (Intended for students in the DAUS.)

ED 5044 The School and Society 3 ch

Study of Interrelationships between community, students and schools.

ED 5045 Philosophies of Education 3 ch

A study of various contemporary formulations of the meaning, aims, methods, and purposes of education, as well as the theories of human nature from which they are drawn.

ED 5046 Educating At-Risk Students 3 ch

Characteristics of the at-risk student. Psychological, social, and economic effects of dropping out. Remedial strategies involving learning, teaching, counselling, school climate, and school organization. Exemplary programs for at-risk students and for dropout prevention.

ED 5053 Middle Level Education 3 ch

Of interest to both experienced and student teachers, this course will focus on the physical, intellectual, psychological and social characteristics of 10- to 14-year-olds and the implications for effective instruction. Additional topics will include Middle School organization, curriculum integration, and teaming.

ED 5054 Changing Roles in the Education Workplace 3 ch

Reflection on professional relationships among teachers, administrators and parents. Recent changes in school law and a study of decision making processes in education will be considered.

ED 5055 Changes in Elementary Education 3 ch

Examines changes in teaching practice at the elementary level provincially, nationally and internationally.

ED 5056 Changes in High School Education 3 ch

Examines changes in teaching practice at the high school level provincially, nationally and internationally.

ED 5062 Cultural Constructions of Childhood 3 ch

An historical examination of cultural constructions of childhood and family and the implications of these various constructions upon the education of young children.

ED 5063 Societal Trends for Adult Education 3 ch

Examines societal trends, such as violence, substance abuse, environmental concerns, economic recessions etc., as these affect programs, policies and strategies in adult education.

ED 5065 Personal Growth and Helping 3 ch

Examines the major theories which explain how people develop and function from a psychological, emotional, social, and spiritual perspective and how this information may be used to help others in educational environments.

ED 5072 Teaching Gifted Students 3 ch

An examination of school wide enrichment models, curriculum differentiation, and the social and emotional needs of gifted learners. Note:In addition to work on campus, students will be required to complete a Fall practicum requirement either in their public school setting or independently. (Course offered in Summer Session only.) Prerequisite: Permission of the instructor is required before registering.

ED 5075 History of Education 3 ch

Current problems: aims, curriculum, teaching, administration and ideas viewed from an historical perspective.

ED 5076 Religion and Spirituality in Education 3 ch

This course will examine the controversial issue of religion and spirituality in education. It will examine how faith and visions of life impact education, values and the philosophy of education, religion and the history of education, visions of life in the curriculum, faith expressions in the classroom, and teaching about religion and spirituality.

ED 5078 Communication Disorders in the Classroom 3 ch

This course will provide an introduction to speech and language development in preschool children. It will also provide an overview of academic and classroom difficulties that may result from impairments in speech and/or language.

ED 5086 Special Education Field Experience 3 ch

Provides a school-based experience working with students with special needs under the direction of faculty and resource teachers. Enrolment is limited. Prerequisite: ED 3031. Permission of the instructor is required before registering.

ED 5091 Learning Disabilities: Introduction 3 ch

Concepts, definitions and terminology. A preventive approach.

ED 5094 Program Design for Students with Significant Learning Difficulties 3 ch

Examines a variety of mental, physical, and emotional impairments that require instructional intervention. Includes strategies for task analysis, educational assessment, and program design.

ED 5096 Behavioural/Emotional Disorders: Introduction 3 ch

An overview of various emotional and behavioral disorders of children and young people and the ways in which coping and management strategies can be applied to develop self-discipline and control. Prerequisite: ED 3031.

ED 5098 Counselling/Special Education Internship I 3 ch

Prerequisite: BEd or permission of the Chair.

ED 5099 Counselling/Special Education Internship II 3 ch

Prerequisite: BEd or permission of the Chair.

ED 5101 Senior Seminar In Early Years Education 3 ch

Through portfolio construction, senior students will reflect upon and evaluate educational theorizing and practice in both the university and school classrooms.

ED 5102 Curriculum and Evaluation in the Early Years 3 ch

Examines characteristics of early years learners and the role of the teacher as observer and curriculum developer in theory and practice.

ED 5105 Connecting Home and Schooled Literacies 3 ch

This course will examine the theory and practice of connecting home and school for the development of a literate community.

ED 5141 Orientation to Counselling 3 ch

Examines the role of the guidance counsellor at all levels in the public education system. Topics include: comprehensive school counselling programs, services, individual and group counselling, consultation, student appraisal, educational and career planning.

ED 5142 Career Guidance 3 ch

Explores the ways to stimulate career development at each level within the public education system. Topics include: definition of career guidance, theories of vocational development, career education in the curriculum, and career assessment and counseling.

ED 5143 Group Theory and Skills 3 ch

Explores the theory and experiences necessary to understand group dynamics and effective group skills with applications to the public education system. Topics include: group dynamics, leadership, team building, decision-making, communication, effective use of controversy and creativity in group decision making.

ED 5151 Autobiography and Education 3 ch

An examination of published autobiographical narratives, student autobiographies and the research on autobiography as it relates to education.

ED 5152 Special Topics in Adult Education 3 ch

Emergent topics not normally addressed through regular course offerings and special topics which might be addressed by visiting faculty.

ED 5154 Power of Images 3 ch
(Cross Listed: FNAT 3703)

Explores the visual mode of learning to reveal its subtle and not-so subtle power to communicate and inform. Images found in fine arts, computer graphics, design, advertising, and journalism provide the subject matter for analysis. Images will be investigated in terms of their cultural, social, and historical contexts. To understand how images communicate, methods of analysis and image-making will be explored. Prerequisite: previous course in visual art, art education, or media.

ED 5155 Entrepreneurship in Adult Education 3 ch

Introduces participants to the theory and strategies of Entrepreneurship as it relates to the adult learning environment. Examines the current status and future trends of Adult Education enterprises.

ED 5156 Special Topics in Adult Education (0) 3 ch

Designed to explore areas of special interest or concern in adult education.

ED 5157 Community Professionals as Agents of Change (A) 3 ch

Practitioners in various disciplines can build the capacity of communities to drive socioeconomic and systemic change necessary for enhanced sustainability. This course explores various adult education-related principles and strategies and enables participants to work on community development problems. (Offered every other year.)

ED 5161 Curriculum Theory 3 ch

Theory, current trends, and the role of the teacher in curriculum development.

ED 5162 Integrated Curriculum for the Aboriginal Learner 3 ch

Culture-based education: design, development, and implementation. Appropriate evaluation and assessment.

ED 5164 Learning with Technology in Adult Education 3 ch

Utilization of a range of instructional technologies, application of educational technologies for teaching and learning. Note: This course may not be taken by Computer Science students.

ED 5165 Cooperative Learning 3 ch

Examines research and practices in Cooperative Learning. Students will design a field-based project.

ED 5166 Cultural Studies and Critical Pedagogy 3 ch

The study of the entire range of a society's arts, beliefs, institutions, and communicative practices and its application to education.

ED 5167 Interpreting Play for Curriculum Development 3 ch

An exploration of the literature on play including play as reflective pedagogy. A variety of theoretical perspectives will be brought to the interpretation of children's play. The teacher's role in creating physical and social environments that facilitate cognitive, emotional, social, spiritual and physical growth will be examined.

ED 5171 Assessing Adult Learning 3 ch

Identification of the principles and techniques underlying a variety of assessment methods for learning and teaching. Students will be expected to construct instruments and apply alternative assessment strategies.

ED 5172 Holistic Models of Curriculum and Evaluation 3 ch

Holistic models for the development and evaluation of integrated curricula in schools. An examination of theory in practice to be offered at different learner levels.

ED 5173 Educational Statistics 3 ch

Statistics; descriptive and inferential. Includes central tendency, variability, normal curve, correlation and regression, probability, hypothesis testing, chi square, "t" test.

ED 5174 Introduction to Standardized Testing Instruments 3 ch

An examination of selected standardized tests used in the public school system.

ED 5175 Classroom Assessment 3 ch

An examination of current assessment issues, procedures, and techniques and how these can be used to improve teaching and student learning.

ED 5181 Feminist Theory and Education 3 ch

Explores how feminist theories have re-thought educational practice, with specific focus on issues of knowledge, curriculum, classroom pedagogy, research, and educational policy.

ED 5182 Problem Solving with Young Children (Subject, Learner Levels) 3 ch

Examines research and theory of problem solving with young children. Emphasizes teacher's role as facilitator of problem solving across the curriculum.

ED 5183 Diversity in Adult Learning Styles 3 ch

Examines the dimensions of cognition, learning, personality styles and their implication for teaching adults. Dimensions will be examined on three levels: understanding yourself, understanding others, group dynamics. Prerequisite: ED 3024

ED 5184 Parental Involvement in Schooling 3 ch

A critical examination of the theory and practice of parental involvement in schooling. A variety of current practices will be examined to explore how professional and parental knowledge/ expertise are distinguished and how power relations are constructed.

ED 5191 Independent Studies 3 ch

Students will normally be limited to 6 ch of independent study. Prerequisite: Permission of an instructor is required before registration.

ED 5193 The Design and Delivery of Middle School Curriculum 3 ch

The study of developmentally appropriate curriculum for the middle level learner. Students will have an opportunity to examine effective curriculum delivery models. Topics will include: curriculum design and integration, scheduling, instructional practices, and resource-based learning.

ED 5194 Issues in Middle Level Education 3 ch

A study of some of the issues in Middle Level education. A research-based approach will be used to examine issues that are currently relevant to Middle Schools. Students will have an opportunity to choose topics for individual and/or group examination.

ED 5212 Curriculum Development in Art Education 3 ch

Knowledge, skills, and understanding for developing art curricula at various learning levels.

ED 5213 Issues in Art Education 3 ch

An examination of local, national, and international issues currently being debated in art education.

ED 5241 Philosophy of Music Education 3 ch

A course rooting methodology in significant, current philosophical trends tailored to students planning to teach music at any level. Prerequisite: 9 ch in music courses permission of the instructor.

ED 5242 Special Topics in Music Education 3 ch

Includes reflection upon the practicum (or teaching) experience, curriculum issues in music education, other topics of current interest and the completion of individual research projects in music education. Prerequisite: 9 ch in music courses plus a methods course or permission of the instructor.

ED 5272 Changing Teaching Practice 3 ch

Examination of teaching practices in light of current pedagogical theory. Specific attention to varying learning styles and modalities, developmental issues and student centered learning.

ED 5273 Interdisciplinary Instruction 3 ch

Explores the theory and practice of interdisciplinary teaching with specific reference to each of the elementary, middle level, and secondary levels of schools.

ED 5313 Cultural Studies through Theatre Theatre (Elementary, Middle, Secondary) 3 ch

Theatre practices rooted in critical theory and cultural production will engage participants in an exploration of inclusive practices. No experience necessary.

ED 5314 Drama Across the Curriculum (Middle, Secondary) 3 ch

Group process drama will be employed to study in any curriculum subject, such as history, mathematics, science and social studies. No experience necessary.

ED 5315 Dramatization of Literature (Elementary, Middle) 3 ch

The interpretation and understanding of literature will be studied through various theatre practices, including readers' theatre, chamber theatre, monologues, dramatic scripts, and other media such as film.

ED 5352 Teaching Writing (Middle, Secondary) 3 ch

This course introduces discourses about and approaches to teaching and evaluating writing in schools, including traditional approaches, writing process, genre modelling and critical studies.

ED 5353 Teaching Secondary English I 3 ch

Aims, materials, methods of teaching language, literature, and composition. Middle school and high school.

ED 5354 Teaching Secondary English II 3 ch

A sequel to ED 5353. Emphasis on planning course units, evaluation in English, and the integration of English and other subjects. Prerequisite: ED 5353.

ED 5355 The English Curriculum 3 ch

Philosophical, historical, and other forces affecting English curricula. Undergraduate-graduate seminar. Prerequisite: ED 5353 or permission of instructor.

ED 5357 Media Literacies 3 ch

Advanced educational media production techniques. Emphasis on video tape production. Individualized media projects.

ED 5358 Critical/Cultural Literacy (Middle, Secondary) 3 ch

An examination of literature from different cultural groups using the theories and pedagogical practices of critical literacy.

ED 5361 Challenging the Authority of Texts 3 ch

English studies are predicated on textual authority; something authored and true. Students will be introduced to contemporary discourses which teach otherwise. Practical approaches offer alternative strategies to formalism structures bogging down English studies in schools.

ED 5362 Symbolic Representation in Children's Play, Pictures and Print 3 ch

Examines theory in practice of young children and symbolic representation as the context of their emerging literacies.

ED 5363 (T)roping the Primitive and the Child 3 ch

"The primitive" and "the child" are often troped together, figured as innocent and in need of instruction and protection. By examining the history of this construction, and by unpacking its implications, it is possible to revise primitive/child figures in ways more in touch with contemporary sensibilities. In so doing we begin to revise our pedagogical practices especially with regard to issues such as censorship.

ED 5364 Issues in Online Learning 3 ch

Using the World Wide Web as a research tool to explore practical and theoretical issues underlying communications technologies and online learning.

ED 5365 Designing Web Resources to Meet User Needs 3 ch

Students learn and apply a strategy to conceive and design user-centered World Wide Web resources. Students are expected to have basic skills in HTML and the software they choose to work with.

ED 5366 Teaching Online 3 ch

Explores practical, technical, and theoretical considerations for teaching and learning online. Students will complete a practicum or project. Students are expected to be skilled in using the Internet and software needed to access it. Delivered over the World Wide Web.

ED 5422 Teaching High School Mathematics 3 ch

Prerequisite: A previous course in mathematics education and 12 ch of mathematics (MATH) or 6 ch of mathematics and 6 ch of chemistry or physics.

ED 5423 Teaching Middle School Mathematics 3 ch

Focus on appropriate methodology for teaching mathematics at the middle school level. Prerequisite: ED 3415 or corequisite or permission of instructor.

ED 5428 Mathematics Across the Curriculum 3 ch

Explores ways in which mathematics fits into an integrated curriculum, grades K-12.

ED 5429 The Role of Language in the Teaching of Mathematics 3 ch

Examines how the language of mathematics affects its acquisition and how appropriate use of writing and literature can enhance the learning of mathematics. Prerequisite: methods course or teaching experience in mathematics.

ED 5451 Special Topics in Health Education 3 ch

Explores specific areas of current interest and concern in health education, as defined by students, faculty, and classroom teachers.

ED 5494 Teaching Physical Education 3 ch

A post-internship course for secondary physical education majors. Emphasis on contemporary trends in teaching physical education in public schools. Practical application.

ED 5511 Special Topics in Science Education I 3 ch

Designed to explore areas of interest or concern in science education. Prerequisite: ED 3511 or permission of the instructor.

ED 5512 Special Topics in Science Education II 3 ch

Designed to explore areas of interest or concern in science education. Prerequisite: ED 3511 or permission of the instructor.

ED 5513 Special Topics in Science Education III 3 ch

Designed to explore areas of interest or concern in science education. Prerequisite: ED 3511 or permission of the instructor.

ED 5521 Science Education Seminar and Project 3 ch

Students who select either of the certificate programs will participate in advanced discussions concerning science education and develop projects that reflect some area of science education they would like to explore further and which demonstrate their understanding of science education.

ED 5566 Field Experience in TESL 3 ch

A practicum in the area of teaching English as a second language (TESL). This course is a requirement for students enrolled in the Certificate in TESL.

ED 5621 Senior Project in Social Studies 3 ch

Students will complete individual projects in areas such as: conceptions of social studies, social studies curriculum evaluation and development, and research in social studies. Projects will be presented publicly as part of a senior conference. Available only to social studies concentrators. Prerequisite: Permission of an instructor is required before registration.

ED 5622 Comparative Social Studies Education 3 ch

Examines social education curricula from a comparative perspective. Among the topics considered are: concepts of citizenship preparation, the role of the academic disciplines, the place of ethical and religious studies, and the impact of high stakes examinations. Prerequisites or Cor-equisites: ED 3621 and ED 4620.

ED 5623 Teaching Canadian Studies 3 ch

An examination of the ways in which school curricula in social studies and language arts have dealt with the question of Canadian identity and the exploration of alternative ways to treat that topic. Various conceptions of Canadian identity will be examined along with the historic, geographical and cultural forces that have given rise to them.

ED 5641 Geography of Natural Resources 3 ch

An introductory survey of ecological systems, population problems, pollution concerns, water issues, energy needs, mineral exhaustion, and related concepts. Students will have the opportunity to develop teaching materials around these issues.

ED 5642 World Settlement Patterns 3 ch

Rural resources and problems are emphasized, including agriculture and forest management. Attention will be given to urban growth. This content pertains to middle and senior high geography curricula.

ED 5643 Political Geography 3 ch

Structure and functioning character of the State. Boundaries, capital cities, core areas, mini-states, and territorial seas. Political patterns and geopolitics. These topics are pertinent to the high school curriculum.

ED 5644 Geography of China and Japan 3 ch

The physical environment is examined with an emphasis on the role and importance of the cultural, economic, and political features which are unique to these two countries. Study will allow comparisons with other countries. Teaching materials will be developed. The material is relevant for the middle school curriculum.

ED 5683 Aboriginal Education Seminar 3 ch

Historical trends and contemporary issues in classroom practice and curriculum development.

ED 5684 The Anthropology of Literacy and Learning 3 ch
(Cross Listed: ANTH 5684)

Offers an anthropological look at the role of literacy, formal education and informal learning in a range of settings. The influence and impact of ethnic and cultural identity on systems of learning is explored through reading and discussing selected ethnographies.

ED 5685 Teaching Aboriginal Language 3 ch

Methods, curriculum development for Maliseet or Mi'kmaq as a second language. Introductory linguistics.

ED 5691 Instructional Design Processes 3 ch

Introduction to instructional systems design (ISD) and alternative new processes, used to develop e-learning and classroom materials. Students will explore ways these processes may be used and will have opportunities to implement them.

ED 5698 Multimedia Studies in Education 3 ch

The theoretical and practical applications of multimedia technologies across the curriculum will be explored.

ED 5699 Cultural Studies through Multimedia 3 ch

Critical analysis of the cultural products and practices surrounding multimedia in education will be examined.

ED 5781 Home Economics Education for Middle Learners 3 ch

Planning and implementing home economics/family studies programs and instruction to meet needs and interests of middle school learners in a variety of settings.

ED 5782 Home Economics for Young Adult/Adult Learners 3 ch

Planning and implementing home economics/family studies programs and instruction to meet needs and interests of high school and adult learners in a variety of settings.

ED 5947 Computer Aided Drafting 3 ch

Concepts and applications of computer aided drafting. Introduction to hardware and software with focus on current CAD software.

ED 5973 Special Topics in Technology Education 3 ch

Research of current and emerging trends and development in technology, Technology Education and educational/ instructional technology.

ED 5973 Special Topics in Technology Education

Research of current and emerging trends and development in technology, Technology Education and educational/ instructional technology.

ED 5975 Presentation Strategies in Technology Education 3 ch

Development of presentation competencies: delivery strategies, techniques, learning styles, management and resources.

ED 5976 Instructional Technology Across the Curriculum 3 ch

A critical examination of the role of instructional technology across the curriculum. Technologies and strategies for integration to enhance classroom instruction will be developed and evaluated.

ED 5977 Program Development in Technology Education 3 ch

Principles and practices for determining knowledge, skills, and attitudes for teaching/learning.

ELECTRICAL ENGINEERING

Note: See beginning of Section H for abbreviations, course numbers and coding.

The * denotes labs which are held on alternate week labs.

A grade of C minimum is required for all prerequisite and all core and technical elective courses used for credit towards the B.Sc.E. degree.

EE 1013 Electricity and Magnetism 4 ch (3C 1T 3*L)

An introduction to the fundamentals of electricity and magnetism and applications. Covers concepts of charge, voltage, current, power, energy, electric and magnetic fields, and the electromagnetic spectrum. Includes resistors, resistance, Ohms law, Kirchoffs voltage and current laws, branch current analysis, some electrical properties of materials. Electric sources, simple series, parallel, and series-parallel dc circuits are examined. The basic concepts of digital switching logic are introduced, including gates and truth tables. Energy conversion and simple electric machines are examined. The behaviour and use of common sensors and transducers are discussed.

EE 2213 Digital Systems I 4 ch (3C 1T 3*L)

Introduces the design of digital systems. Combinatorial and sequential logic and computer-based designs. Prerequisites: CS 1073 or equivalent, EE 1013 recommended.

EE 2683 Electric Circuits and Machines (for non-electricals) 4 ch (3C 1T 3*L)

Network analysis including ac. Introduction to transformers, dc machines and ac machines. Prerequisites: EE 1013 OR equivalent, MATH 1013.

EE 2703 Introduction to Engineering Design 4 ch (3C 2L)

The emphasis is multi-disciplinary design methodologies and environmental design engineering in a team environment. Topics include: design specifications and requirements, design verification, the implementation cycle, environmental impact, project management, economic evaluation and safety assessment. A multi-disciplinary design project is an integral part of the course. Prerequisites: at least 50 ch in an engineering program.

EE 2723 Electric Circuits and Electronics (for non-electricals) 4 ch (3C 1T 3*L)

Network analysis including ac. Introduction to electronic devices and circuits. Prerequisites: EE 1013 OR equivalent, MATH 1013.

EE 2773 Electric Circuits 4 ch (3C 1T 3*L)

A.C. circuits. Phasors. Network Analysis. Network theorems. Polyphase systems. Prerequisites: MATH 1013, EE 1013 OR equivalent.

EE 2783 Networks 4 ch (3C 1T 3*L)

Topics include Laplace transform methods, network functions, frequency response, filters, one port networks. Prerequisites: EE 2773, MATH 1503 or equivalent. Co-requisites: MATH 2513 and MATH 3503 or equivalents.

EE 3013 Technical Writing 3 ch (2C 2L) [W]

This course is intended for students who are competent in written English. It teaches methods for communicating effectively and efficiently in a technically oriented environment: writing techniques; the planning, structure and content of technical documents (technical correspondence, informal reports, formal reports); technical illustrations.

EE 3121 Electronics I 4 ch (3C 1T 3*L)

Properties of semiconductor materials and devices, simple amplifiers and switching devices. Prerequisite: EE 2773.

EE 3132 Electronics II 4 ch (3C 1T 3*L)

The use of transistors, op-amps and other building blocks in linear circuit applications. Prerequisite: EE 2783, EE 3121.

EE 3181 Electronic Surveying (for GGE students) 4 ch (3C 3*L)

Covers topics relevant to the application of electrical engineering to geomatics engineering. Prerequisite: : EE 1013 or equivalent.

EE 3221 Digital Systems II 4 ch (3L 1T 3*L)

Register transfer systems and datapaths, microprocessors, microprocessor architecture and operation, instruction formats, assembly language programming, procedures and parameter passing, system bus timing, interfacing memory and simple IO ports, interrupts. Prerequisite: EE 2213.

EE 3232 Digital Systems III 4 ch (3C 1T 3*L)

Microcomputer system bus timing, decoding and interfacing, parallel data handshaking and interfacing, serial data protocol and interfacing, interfacing to digital to analog converters and analog to digital converters, multiple interrupts and interrupt handling, direct memory access, secondary storage. Prerequisites: EE 3221, EE 3121.

EE 3253 Computer Aided Engineering Systems 4 ch (3C 3*L)

Hardware and methods for the development of computer applications for engineering, including: workstation architectures, applications interface designs and standards, porting and customizing applications, input/output interfaces, networked operation, workstation system management, distributed applications. Prerequisites: EE 3221, CS 2013.

EE 3313 System Dynamics 4 ch (3C 1T 3*L)

Modelling of physical systems, block diagram representation, mathematical model of dynamic systems, linear and nonlinear systems, open and closed loop systems, analysis in the time domain, stability, analysis in the frequency domain, identification of dynamic systems. Credit will not be given for both CMPE 3533 and EE 3313. Prerequisites: APSC 1023 or equivalent, MATH 2513, MATH 3503, EE 2783.

EE 3323 Linear Control Systems 4 ch (3C 1T 3*L)

Modelling, Analysis and Design of dynamic systems: open and closed loop control systems, feedforward and feedback controllers, performance measures, stability, tracking and disturbance rejection, analysis and design in the time domain, analysis and design in the frequency domain. Prerequisites: EE 3313 or CMPE 3533.

EE 3513 Signals 4 ch (3C 1T 3*L)

Signal theory. Periodic and pulse signals. Convolution integral. Random signals. Harmonic analysis. AM and FM communication systems. Credit will not be given for both CMPE 3533 and EE 3513. Prerequisite: EE 3313 or CMPE 3533. Co-requisite: STAT 2593.

EE 3613 Electric Machines 4 ch (3C 1T 3*L)

Covers the basic theory of magnetic circuits, transformers, dc motors/generators and ac polyphase machines, including synchronous and induction machines. Prerequisites: APSC 1023, MATH 2513, EE 2773.

EE 3811 Electromagnetic Fields 4 ch (3C 1T 3*L)

Static and time-varying fields including vector calculus. Maxwell's equations. Prerequisites: MATH 2513, MATH 3503, EE 1013.

EE 3822 Electromagnetic Waves 4 ch (3C 1T 3*L)

A second course. Electromagnetic waves including propagation, radiation, transmission lines and wave guides. Prerequisites: EE 3811, EE 2773.

EE 3833 Electromagnetic Fields and Waves 4 ch (3C 1T 3*L)

Topics include static and time-varying fields including Maxwell's equations, electromagnetic waves, transmission lines. For Computer Engineering students. Prerequisites: MATH 2513, MATH 3503, EE 2773.

EE 4000 Electrical Engineering Design 6 ch (6L) [W]

Working in teams, students will complete an electrical engineering design project that draws on their knowledge and skills obtained in previous courses. Student teams will design a structure, system, or process to meet a broad range of specified constraints. Students will manage their projects professionally, prepare a comprehensive written report, and present their design work orally. Prerequisite: successful completion of 120 ch in the engineering program.

EE 4013 Thesis I 2 ch (4L) [W]

Covers the development of a proposal and the preliminary design for a project which will serve as the basis for the thesis to be completed in EE 4023 Thesis II. Students may work individually or in approved groups. Each student will present a proposal, commence work on the project, and submit written progress reports. Supervision is by ECE faculty. Prerequisite: Completion of 120 ch in the engineering program.

EE 4023 Thesis II 4 ch (8L) [W]

Completion of the work proposed in EE 4013 Thesis I. May involve theoretical, experimental and/or computer studies. Supervision is by ECE faculty. A substantial written document as well as a public presentation of the completed project is required. Prerequisite: EE 4013

EE 4033 Senior Project 4 ch (8L)

An independent project. Students work under the supervision of a chosen faculty member. Students are responsible for finding a supervisor and initiating the project. Deliverables include a comprehensive report detailing the work. Prerequisite: successful completion of 120 ch in the engineering program.

EE 4142 Electronic Circuit Design 4 ch (3C 3*L)

Considers the philosophy and practice of the design of semiconductor circuits. Prerequisite: EE 3132.

EE 4163 Instrumentation Design 4 ch (3C 3*L)

This course considers the design of a general purpose data acquisition system. Topics include transducers, signal conditioning, digitization, microcontroller interfacing, output interfacing and noise. Prerequisites: EE 3132, EE 3232.

EE 4173 Devices and Circuits for VLSI 4 ch (3C 3*L)

Introduction to circuit design and layout. Basic digital gates and clocked systems. Basic RF circuits and components and devices for RF. CAD tools for simulation and layout. Prerequisites: EE 2213, EE 3132.

EE 4243 Data Communications 4 ch (3C 3*L)

Digital transmission system components. Standards. The telephone system. Asynchronous and synchronous data transmission and protocols. Data networks. Prerequisite: EE 3221. Co-requisite: EE 3232.

EE 4253 Digital Communications 4 ch(3C 3*L)

Covers the fundamentals of digital communications, coding and modulation techniques, telecommunications, modems, modern applications, and current international standards. Prerequisites: EE 3221, EE 3513 or CMPE 3533.

EE 4261 Microprocessor System Design 4 ch (3C 3*L)

A hardware oriented course with emphasis on the components and techniques used in the design of small microprocessor systems. Prerequisites: EE 3232 or CS 4825.

EE 4273 Real-Time Operation of Microcomputers 4 ch (3C 3*L)

Real time systems, basic concurrency theory including scheduling, mutual exclusion, process management, synchronization, communication, operating system kernels, real time system hardware, implementation of embedded systems. Prerequisite: EE 3232 Recommended: EE 3253.

EE 4283 VLSI Systems Design 4 ch (3C 3*L)

Tools and methods for the design of CMOS digital Application Specific Integrated Circuits. One or more design projects. Prerequisite: EE 3232.

EE 4343 Industrial Control Systems 4 ch (3C 3*L)

An introduction to many practical aspects of control systems analysis, design and implementation. Prerequisites: EE 3323 or CHE 4601 or ME 4623.

EE 4353 Robotics 4 ch (3C 3*L)

Covers the principles of robot motion and robotic control. There is an emphasis on laboratory work that validates the theory developed in the course work. Prerequisites: EE 3221, EE 3313 or CMPE 3533.

EE 4411 Power System Analysis 4 ch (3C 3*L)

Introduces many components of a power system. Prerequisites: EE 3613, EE 3313 or CMPE 3533.

EE 4422 Power System Operation 4 ch (3C 3*L)

An introduction to the operation of electric power systems including large system studies. Prerequisite: EE 4411.

EE 4532 Communication Systems 4 ch (3C 3*L)

Introduces analog and digital communication in the presence of noise. Techniques and application of basic information theory. Prerequisite: EE 3513 or CMPE 3533.

EE 4543 Digital Signal Processing I 4 ch (3C 3*L)

Network function specifications, sampling, z-transforms. Digital filters; representation, types, realizations, functions from impulse and frequency responses, hardware implementation. Prerequisites: EE 2213, EE 3513 or CMPE 3533.

EE 4552 Digital Signal Processing II 4 ch (3C 3*L)

Fourier Methods, Fast Fourier Transform, Filter design, Windows, State Variable Methods, Estimation. Prerequisite: EE 4543.

EE 4563 Optical Communication Systems 4 ch (3C 3*L)

Photonics, devices, optical sources, photodetectors, optical receivers, optoelectronics, optical signal processing, digital transmission, wavelength division multiplexing. Prerequisite(s): EE 3121, EE 3513 or CMPE 3533.

EE 4641 Electrical Design 4 ch (3C 3*L)

Deals with the philosophy of designing electrical apparatus. Prerequisites: EE 3121, EE 3613.

EE 4653 Power Electronics 4 ch (3C 3*L)

Deals with high current rectifiers and inverters. Design parameters and practical firing circuits are analyzed. Prerequisites: EE 3121, EE 3613.

EE 4853 Microwave Engineering 4 ch (3C 3*L)

Topics related to modern microwave systems including design and measurement of passive microwave circuits. Prerequisite: EE 3822 or 3833.

EE 4863 Optical Fiber Communications 4 ch (3C 3*L)

Optical fibers: properties, structure and fabrication. Ray optic and electromagnetic characterizations: modes, waves, power launching and coupling. System design, applications and economics. Prerequisite: EE 3822 or 3833.

EE 4933 Introduction to Biomedical Engineering 4 ch (3C 3*L)

Application of electrical engineering to living systems and to health care. Prerequisite: EE 3121

ENGINEERING

Note: See beginning of Section H for abbreviations, course numbers and coding.

ENGG 1013 Design and Communication 6 ch (3C 3T 3L) [W]

A project-based course integrating the theory and practices learned in co-requisite courses. Design and communication aspects will be emphasized, focusing on engineering activities and life-long learning, design process and methodology, technical writing and presentations, graphics, information sources, teamwork and assessment strategies. Co-requisites: APSC 1013, MATH 1003, MATH 1503.

ENGG 4003 The Engineering Profession 2 ch (2C) [W]

Institutional structures of engineering in Canada, the code of ethics for engineering, by-laws of the provincial association of professional engineers, personal responsibility and personal liability of the employee-engineer are considered. Presentations are made by practicing professional engineers and other invited lecturers to assist the students with integrating the social, legal, economic, aesthetic and other non-technical aspects into engineering. Restricted to students with at least 125 ch completed in the Engineering degree programme.

ENGG 5003 Commercial Law: Engineering 2 ch (2C)

Elementary business law, dealing particularly with the legal duties and liabilities of the professional engineer, construction and engineering contracts and labour law. Prerequisite: Restricted to students with at least 110 ch in the engineering degree program.

ENGLISH

General Notes on Courses

Courses whose numbers begin with the digit 3 are normally open only to students in their third and fourth years. Courses whose numbers begin with the digit 5 are normally open only to students in Honours.

There is a prerequisite of 6 credit hours in English at the introductory or intermediate level for all advanced-level courses in English, unless special permission is obtained from the instructor of the advanced-level course.

Each spring the Department compiles a Handbook with a timetable of courses to be given in the following academic year. For information about instructors, texts, methods of instruction, assignments and examinations required, etc., you should consult this Handbook, available from the department office. For further information, consult the instructors.

Other Literatures: Consult the course listings for Classics, French, German, Greek, Latin, Russian, and Spanish, and for World Literature and Culture Studies.

Children's Literature: Consult the course listings for Education under Literacy Education.

Note: See beginning of Section H for abbreviations, course numbers and coding.

Introductory - Level Courses

Note: All introductory courses in English emphasize writing skills and provide many opportunities for students to practise and improve their writing.

ENGL 1000 Introduction to 20th-Century Literature in English 6 ch (3C) [W]

A survey of twentieth-century literature. Approaches and texts will vary from section to section. Required for Majors and Honours. For details please refer to Department Handbook.

ENGL 1010 English as a Second Language 6 ch (3C) [W]

A practical course in the written and spoken use of language designed to meet the requirements of students whose native tongue is not English and whose proficiency in the English language is therefore less than that required in other first-year English courses. Students are grouped according to level of proficiency and are required to use only English.

ENGL 1103 Fundamentals of Clear Writing 3 ch (3C) [W]

A study of the basic principles of clear prose writing, focusing on essay structure and organization, paragraph structure, sentence structure, grammar, punctuation, and word choice, as well as revising and proofreading. Students will submit numerous written assignments.

ENGL 1104 Fundamentals of Effective Writing 3 ch (3C) [W]

A further examination of the basic principles of prose writing, with special attention to larger patterns of organization and development used in prose exposition and argument. Prerequisite: a grade of C or better in ENGL 1103, or equivalent.

ENGL 1144 Reading and Writing Non-Fiction Prose 3 ch (2C 1T) [W]

By studying non-fiction prose models and by writing essays, students will work to improve their writing, explore techniques to craft effective essays, and develop critical and analytical skills applicable to a wide range of disciplines. Tutorials use exercises and discussions to assist this development.

ENGL 1145 An Introduction to Prose Fiction 3 ch (2C 1T) [W]

Two weekly lectures examine a variety of short stories (and perhaps one or two novels) from the 19th, 20th, and 21st centuries. Weekly small tutorials teach critical and writing skills (such as grammar, punctuation, organization, and argumentation) applied to the course readings.

ENGL 1146 An Introduction to the Novel (O) 3 ch (2C 1T) [W]

Examines a brief range of novels from the nineteenth and twentieth centuries.

ENGL 1163 An Introduction to Drama 3 ch (3C) [W]

Studies representative plays from different historical periods to demonstrate the nature and development of drama.

Intermediate - Level Courses

ENGL 2010 Literary English for Non-Anglophones 6 ch (3C) [W]

More advanced than English 1010. Exclusively for students whose native tongue is not English and designed to bridge the gap between the proficiency called for in English 1010 and the academic study of English. Examines prose and poetry and includes extensive composition. Emphasis falls on the subtleties of English expression. Successful completion of English 1010 or equivalent proficiency is a prerequisite.

ENGL 2170 Principles of Drama Production 6 ch (3C plus practical)

An introduction to directing, acting, and staging, with practical experience in university theatre. Open to students at all levels. Enrolment will be limited to 25 students, with priority given to those who have signified their intention to the instructor before registration.

ENGL 2195 Creative Writing: Poetry and Drama 3 ch (3C/ WS) [W] (LE)

Introduction to the writing of poetry and drama, with a focus on basic technique, style, and form. Combines writing exercises and lectures on the elements of writing, but also introduces the workshop method, by which students provide critiques of each others work and develop editorial skills. May include assigned readings.

ENGL 2196 Creative Writing: Fiction and Screenwriting 3 ch (3C/ WS) [W] (LE)

Introduction to the writing of fiction and to screenwriting, with a focus on basic narrative technique, style, and form. Combines writing exercises and lectures on the elements of writing, but also introduces the workshop method, by which students provide critiques of each others work and develop editorial skills. May include assigned readings.

ENGL 2263 Shakespeare and Film (O) 3 ch (3C) [W]

Film directors have transformed Shakespeare into one of today's hottest cultural properties, rekindling a profitable relationship with the world's greatest playwright that dates back to the first days of late-nineteenth-century cinema. The screen has now overtaken both the written text and the stage as the medium in which most people discover and appreciate Shakespeare. In this course we shall study some examples of this flourishing exchange between Shakespeare and film in terms of artistic expression and social practice. Required readings will include single-volume editions of the plays; a film studies handbook; and screenings of the films (at least two versions of each play).

ENGL 2603 Literature of Atlantic Canada (O) 3 ch (3C) [W]

Examines poetry, fiction, and/or drama written by Atlantic Canadians. The course will emphasize the prevalent themes explored by Maritime and Newfoundland authors, including the search for personal and regional identity, human relations to landscape and the natural world, and the meaning of "home place."

ENGL 2608 Introduction to Contemporary Canadian Literature (O) 3 ch (3C) [W]

An introduction to recent Canadian fiction, non-fiction, poetry, and/or drama in its social and cultural context.

ENGL 2703 Introduction to American Literature (O) 3 ch (3C) [W]

An introduction to modern and postmodern American fiction, non-fiction, poetry, and/or drama in its historical and cultural context.

ENGL 2901 A Survey of English Literature to 1660 3 ch (3C) [W]

Examines selected works of English literature from the early medieval period to 1660, including poetry, prose, and drama. Prerequisite: a grade of C or better in ENGL 1000 or its equivalent.

ENGL 2902 Survey of English Literature 1660-1900 (including Milton) 3 ch (3C) [W]

Examines selected works of literature in English from 1660 to 1900, including poetry, prose, and drama. Prerequisite: a grade of C or better in ENGL 1000 or its equivalent.

ENGL 2903 Literature of the Abyss (O) 3 ch (3C) [W]

An examination of literary texts that address one or more of the following: fear, suspense and/or horror; monsters and the grotesque; criminality and detection; violence and war; love gone wrong; estrangement and alienation. The specific focus and the selection of texts will vary from year to year.

ENGL 2905 Survey of English Literature: Beginnings to late 18th Century 3 ch (3C) [W]

A survey of English literature from its beginnings to the late eighteenth century. (For Open Access students only.) Prerequisite: Grade of C or better in ENGL 1000 or its equivalent.

ENGL 2906 Survey of English Literature: Romantics to Moderns 3 ch (3C) [W]

A survey of English literature from the end of the eighteenth century. (For Open Access students only.) Prerequisite: Grade of C or better in ENGL 1000 or its equivalent.

Advanced - Level Courses

ENGL 3003 Old English I (A) 3 ch (3C) [W]

Introduces the language, literature, and culture of the Anglo-Saxons. Emphasis is on working towards a reading proficiency.

ENGL 3004 Old English II (A) 3 ch (3C) [W]

Continues the study of the Anglo-Saxon period begun in Old English I. Considers a greater number of texts, and demands a more sophisticated level of literary and linguistic analysis.

ENGL 3006 Linguistic Introduction to Canadian English (A) *(Cross Listed: LING 3006)* 3 ch (3C) [W]

Introduces various ways of describing the structure, especially syntactic, of language. English, specifically Canadian English, is used as a model. Assumes some acquaintance with linguistic analysis; students will normally have taken either LING 2401 (Introduction to Language) and 3411 (Phonetics and Phonemics) or ENGL 3010 (History of the English Language).

ENGL 3010 History of the English Language (A) *(Cross Listed: LING 3010)* 6 ch (3C) [W]

After a brief consideration of the nature of human language, introduces students to phonetics and the International Phonetic Alphabet. Then traces the history of the English language from its Indo-European origins to its present state. Focuses on the various kinds of linguistic change: those affecting sounds, forms, and vocabulary.

ENGL 3040 Chaucer & Co. (A) 6 ch (6C) [W]

Examines a wide variety of medieval literature, ranging from courtly romance to bawdy fabliau to dream-vision, alliterative heroic verse, lyrical poetry, verse satire, and drama. Also explores the historical and intellectual context of the individual works: the politics and shifting social structures of this period, the way people lived and thought, their culture and customs, and many other aspects of the Middle Ages. Precise course content varies from year to year, but will usually include selections from Chaucer's Canterbury Tales.

ENGL 3083 Literary Theory and Critical Practice 3 ch (3C) [W]

A study of the development of literary theory and criticism, with some attention to critical practice. Recommended for the Majors and Joint Honours programs and required for the Single Honours program.

ENGL 3110 Expository Writing 6 ch (3WS) [W]

A workshop course in advanced non-fiction prose writing, for those who expect writing to be an important element in their future careers. Principles and techniques of writing are examined in models of good prose, and then applied in frequent exercises, which are themselves sampled and discussed. Open to intermediate and advanced-level students of all faculties, but enrollment is limited to 18; preference given to those who apply to the instructor in writing before registration.

ENGL 3123 Creative Writing: Poetry 3 ch (3WS) [W]

A creative writing course aimed at developing skills in the writing of poetry. It involves prescribed readings, exercises, workshops and discussions. Prerequisite: permission of the instructor.

ENGL 3143 Creative Writing: Short Fiction 3 ch (3WS) [W]

A creative writing course aimed at developing skills in the writing of short fiction. It involves prescribed readings, exercises, workshops and discussions. Prerequisite: permission of the instructor.

ENGL 3163 Creative Writing: Drama (O) 3 ch (3WS) [W]

A creative writing course aimed at developing skills in the writing of drama. It involves prescribed readings, exercises, workshops and discussions. Prerequisite: permission of the instructor.

ENGL 3170 Advanced Drama Production 6 ch (3 hours/wk plus practical work)

An advanced course in directing, acting, and staging, this practical course gives students close contact with more demanding standards of production. Enrolment is limited to students who have taken the introductory course or who have had comparable experience. Interested students should first meet with the instructor.

ENGL 3175 Director's Theatre 3 ch (3C)

Explores a number of theatrical texts from the viewpoint of the stage director. Students will study selected scripts as performance texts for the contemporary stage rather than as literary artifacts. Prerequisite: ENGL 2170, ENGL 3170, or equivalent knowledge of and experience in practical theatre production.

ENGL 3183 Screenwriting and Writing for the New Media 3 ch

An exploration, through practical exercises, of the fundamental principles of writing for both the screen, including new media, and interactive narrative, with an emphasis on feature films and dramatic television. Taught in a workshop format and limited to 15 students. All prospective students must submit a 3-5 page treatment or story idea for a producible half-hour film script.

ENGL 3193 Film Analysis I : Introduction to Film Analysis 3 ch

Basically a course in cinematic literacy, this course introduces students to a variety of theories and modes of analysis of film with an emphasis on classic narrative films from the North American and European traditions.

ENGL 3194 Film Analysis II: Film History - An Introduction 3 ch

An introductory history of the principal trends within mainstream fictional and documentary filmmaking with an emphasis on Silent Film: Early Cinema 1880-1919; The Late Silent Era 1919-1929; The Development of Sound Cinema 1927-1945; The Postwar Era 1946-1960; Contemporary Cinema 1960-98. Note: ENGL 3193 is a prerequisite for Film Certificate students.

ENGL 3260 Shakespeare 6 ch (3C) [W]

A study of selected plays.

ENGL 3263 Shakespeare's Predecessors and Contemporaries (A) 3 ch (3C) [W]

A study of English medieval and Renaissance drama, excluding Shakespeare.

ENGL 3283 Early Renaissance Poetry and Prose (A) 3 ch (3C) [W]

Examines a wide variety of 16th-century poetry and prose, including sonnets and other lyric poetry, allegorical epic, early prose fiction, statements on literary theory, and contemporaneous commentary on political events, as well as early translations of a few major works of the European Renaissance. Also explores the historical and intellectual contexts of the works, and the politics and social structures of this age of exploration and experimentation.

ENGL 3284 Poetry and Prose of the Later Renaissance (including Milton) (A) 3 ch (3C) [W]

Examines a wide variety of non-dramatic poetry and prose from the end of the reign of Elizabeth I to just after the Restoration (1660). The course explores the poetry of Donne and the Metaphysical poets, Jonson and the Cavalier poets, Marvell, and the gradually more numerous women writers; it also examines the new forms of prose and includes a selection of Milton's works.

ENGL 3343 The British Novel I (A) 3 ch (3C) [W]

A study of the early development of the novel, from the beginnings to the early 19th century, including such novelists as Defoe, Richardson, Sterne, Burney, Henry and Sarah Fielding, and Austen. Some attention will be paid to the social contexts of the emerging genre, and to its roots in such forms as the letter, the newspaper, and broadsheet criminal biography.

ENGL 3385 Restoration and 18th-Century Literature (A) 3 ch (3C) [W]

A study of selected works of 18th-century literature. The emphasis in the course (whether it focuses on drama, poetry or prose) will depend upon the instructor.

ENGL 3400 The Romantic Period (A) 6 ch (3C) [W]

A study of English literature written between 1789 and 1832 in the context of intellectual, social, political, and religious forces. Emphasis will be on the major poets (Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats), with some attention given to Romantic essayists and critical texts.

ENGL 3410 Victorian Literature (A) 6 ch (3C) [W]

A study of major Victorian poetry and non-fiction prose.

ENGL 3443 The British Novel II (A) 3 ch (3C) [W]

A study of major novels from the mid 19th century to the early 20th century.

ENGL 3535 Modern British Poetry (A) 3 ch (3C) [W]

Examines the diverse poetic production of 20th-century Britain, including examples of traditional artistic concerns, technical innovations, war protest, social criticism, whimsy, emotional turmoil, and political commentary.

ENGL 3540 The Modern British Novel (A) 6 ch (3C) [W]

A study of ten 20th-century British novels which both reflect and challenge various literary and social conventions. The selection varies, but will always try to show the overall development of the novel by including both early representatives and novels published within the last few years.

ENGL 3610 Canadian Prose and Poetry (A) 6 ch (3C) [W]

A study of the development of Canadian writing, with emphasis on poetry and shorter prose works.

ENGL 3640 Canadian Novel (A) 6 ch (3C) [W]

A study of selected Canadian novels.

ENGL 3703 American Poetry and Prose before 1900(A) 3 ch (3C) [W]

A survey of early American poetry and prose from colonial times to the late 19th century examining key cultural and historical moments in the development of the United States as a nation through written and oral texts, with attention to issues such as colonization, slavery, nature and landscape, education, and national identity.

ENGL 3704 American Poetry and Prose since 1900 (A) 3 ch (3C) [W]

A close study of selected works of 20th- and/or 21st-century American poetry and prose ranging from modernist to recent writing.

ENGL 3743 American Fiction before 1900 (A) 3 ch (3C) [W]

A survey of American novels, short stories, and other narratives written before 1900.

ENGL 3744 American Fiction since 1900 (A) 3 ch (3C) [W]

A close study of selected works of 20th- and/or 21st-century American fiction ranging from modernist to recent writing.

ENGL 3815 Literatures of the Postcolonial World (A) 3 ch (3C) [W]

A survey of writing in English from one or more regions such as Africa, the Caribbean, South Asia, and Australia/New Zealand. The major genre studied will normally be fiction, although drama, poetry, and/or non-fictional prose may also be included. Texts studied exemplify themes characteristic of formerly colonized societies (e.g., the impact of inherited power relations; racial consciousness and conflict; place and displacement; language, identity, and difference) and are discussed in their historical, cultural, and political contexts. Specific regions and texts will vary from year to year.

ENGL 3877 Modern Drama (A) 3 ch (3C) [W]

A survey of major developments in 20th-century theatre. Plays will be studied with attention to their often controversial engagements with social and political issues, moral debates, and theatrical conventions, as well as their connections to movements such as realism, modernism, expressionism, and absurdism.

ENGL 3883 Women's Writing in English (A) 3 ch (3C) [W]

A study of women's writing in English from a range of historical periods. Texts will vary from year to year, but will include poetry, drama, fiction, and/or non-fiction written primarily by British, American, and Canadian women. Attention will also be paid to relationships between women's writing and history, contemporary feminist and gender theory, and social issues such as identity, sexuality, class, and race.

ENGL 3966 An Introduction to Canadian Film (A) 3 ch (3C)

An introduction to the study of Canadian film both in terms of its place in the world film scene and in terms of Canadian culture. The primary material is recent Canadian feature films and documentaries, but some attention is also given to the history of Canadian film as seen through the eyes of two of its major institutions, the NFB and the CBC.

ENGL 3973 Science Fiction Film (A) 3 ch (3C)

An introduction to the study of selected classic and recent science fiction films, the course examines the ways in which these films draw on, rework, and transform established themes and conventions of the genre: the mise-en-scene of future worlds, the myth of masculine mastery of nature, otherness in the figures of the alien or humanoid machine, and power and authority and their relationship to technology.

ENGL 3980 Directing and Acting for Film and Television 6ch (3C/WS) (LE)

A hands-on course exploring the various methods and theories of directing and acting for film and television with a full awareness of the current market for directors and actors in Canada. Several professional guest directors and actors will visit the class throughout the course, and short video and film projects will be produced throughout the course as calling cards for those enrolled in the course. Taught co-operatively with the Directors Guild of Canada and ACTRA. Limited to 20 students. Prerequisite: The normal prerequisite is ENGL 3999.

ENGL 3990 Advanced Film Production 6ch (3C/WS) (LE)

A hands-on course in the various elements of 16mm film production including workshops in the use of various camera, lighting, sound, and editing equipment for film and in the other film departments such as direction, costumes and makeup/ hair, art design and set decoration and props, unit management, production office procedures, and grip duties. Several substantial productions will be undertaken. Taught cooperatively with the New Brunswick Filmmakers' Co-Op and the Film Industry of New Brunswick. Limited to 20 students. Prerequisite: ENGL 3999.

ENGL 3999 Film and Video Production 3 ch

Designed to provide students with a specific knowledge of hands-on film and video production, this course explores the various elements of 16mm film production, contemporary methods of video production, and film and video post-production by way of several actual productions shot by different groups of students in the class. Along the way students will learn about the use of various cameras, lighting, sound, and editing equipment for film and video and gain a knowledge of how the key film departments work--including direction; costumes and makeup/hair; art design; set decoration, and props; unit management; production office procedures; and grip duties. Class members will serve various positions on three short video productions and one short film production to be shot on film, transferred and edited on video on a non-linear system. Taught cooperatively with the New Brunswick Filmmakers' Co-Op.

Special Topics in English

These courses explore topics of general interest through selected texts. Since these courses change annually, students should consult the departmental Undergraduate Handbook for each year's offerings. Students from other faculties are invited to enroll.

Honours Seminars

These seminars are intended specifically for students in the English Honours Program. However, other students who have demonstrated a high level of competence in literary studies may be admitted to the seminars when space is available by applying to one of the Co-Directors of Majors and Honours, preferably before the general university registration period. The subjects of Honours seminars change each year. Interested students should consult the Departmental Handbook.

ENGL 5000 Honours Report in English Language 6 ch [W]

By arrangement with the ELLE Program Director. Students will select a topic, compile a reading list, and produce a 40-60 page report based on this program of reading.

ENGL 5004 Old English IIB 3ch (3C) [W]

Continues the study of the Anglo-Saxon Period begun in Old English I. Considers a greater number of texts, and demands a more sophisticated level of literary and linguistic analysis. In addition to the regular course work for ENGL 3004, a seminar presentation and a paper based on it will be required. Students may not get credit for both ENGL 3004 and ENGL 5004. Prerequisite: ENGL 3003.

ENGL 5005 Directed Reading in English Language and Linguistics 6 ch [W]

A reading course at the Honours level for ELLE students only. Students will develop a program of reading and assignments in one of the following areas: composition, rhetoric, semantics, generative linguistics, historical linguistics.

ENVIRONMENTAL STUDIES

ENVS 2003 Introduction to Environmental Studies 3 ch (3 C/S)

This course broadly covers issues relating to the impact of human activity on air, water and soil environments. It covers the causes and effects of pollution, challenges to remediation, and suggests courses of action for reducing human impact. In addition to formal lectures, the course will include guest lectures, special projects, debates and advocacy efforts to improve the environment.

ENVS 2023 Understanding Environmental Issues 3 ch (3 C/S)

This course expands upon the material presented in ENVS2003 by emphasizing the complexity of environmental issues and the need to understand the full range of scientific, technical, social, economic, moral, political, legal and other factors relevant to a particular case at hand. Case studies will be used to explore the personal (individual) and societal (collective) causes and consequences of various environmental matters. A small number of in-depth studies will be used to illustrate the interconnectedness and complexity of factors relevant to understanding the causes, consequences and solutions of environmental problems.

ENVS 4001 Applied Environmental Problem Solving 3ch (3 C/S)

This course focuses attention on the implementation of environmental problem solving techniques. Students will learn many practical methods for assessing problems and justifying solutions. These may include such activities as preparing media pieces and briefing notes to government officials, setting up environmental impact assessments and audits, testing for water/soil/air contamination, and surveying the public/industry on various issues. Throughout these activities, students will be required to critically examine the social, political, philosophical, economic, and ecological outcomes of their activities.

ENVS 4002 Stakeholder Approaches to Environmental Problem Solving 3 ch (3 C/S)

Most environmental issues have many sides including scientific, social, political, and economic, and comprise multiple players and stakeholders promoting divergent points of view. This course is designed to explore these elements in detail. Current national, regional and local problems will be brought to the class by a number of guest speakers in order to help students critically analyze the roots of the problems and possible solutions. The problems discussed will include such issues as environmental scope, biodiversity decline, climate changes, air and water quality, population and consumption per capita, biotechnology and genetically altered foods.

FAMILY VIOLENCE ISSUES

Note: See beginning of Section H for abbreviations, course numbers and coding.

FVI 2001 Introduction to Family Violence Issues 3 ch

Introduction to current theories, research and practice in family violence issues. Topics will include: themes of violence; dynamics of violence; gender relations; attitudes, myths, and realities surrounding family violence; public versus private nature of family violence. Research from various perspectives will be evaluated. Prerequisite: Admission to the Certificate Program or permission of the instructor.

FVI 2002 Antecedents and Patterns of Family Violence 3 ch

Provides a historical and current overview of the societal catalysts/contributors to, and the patterns of, family violence. Explores why members of marginalized groups (e.g., the poor, women, children, immigrants, First Nations persons, gays, lesbians, disabled and the elderly) are often at especially high risk of being victimized by violence in intimate relationships. Prerequisite: Admission to Certificate Program or permission of the instructor.

FVI 3001 Violence in Society 3 ch

An examination of the social origins of family violence. Topics include: militarism; pornography; sports; media; hierarchical workplaces; schools; patriarchy; racism; heterosexism; contributions of government and the criminal justice system. A critical analysis of the part played by social institutions and policy in accommodating family violence. Prerequisite: Admission to Certificate Program or permission of the instructor.

FVI 3002 The Social and Psychological Contexts of Abuse 3 ch

An examination of the psychological and social dynamics of abuse, and the consequences of these dynamics for the ways in which survivors present themselves to members of helping professions, e.g., health care workers, employers, educators, lawyers, clergy, social workers, therapists, alcohol and drug workers. Review of the necessity for and characteristics of a 'whole person' approach to survivor assessment. Prerequisite: Six credit hours from FVI 2001, 2002, 3001; or permission of the instructor.

FVI 3003 Counselling Interventions in Response to Family Violence 3 ch

Overview of strategies essential to crisis counselling and other forms of counselling that are relevant to family violence. Topics include: the impact of violence on family members; methods of effective assessment and crisis intervention; homicide/suicide prevention; counselling orientation and models; individual, family and group approaches to counselling; ethical considerations; counselling children and teens; responding to 'hidden victims'; and making appropriate referrals. The crisis counselling section will include a skill development component. Prerequisite: Six credit hours from FVI 2001, 2002, 3001; and 3002; or permission of the instructor.

FVI 3004 Inter-disciplinary Responses and Obligations 3 ch

Identification of common signs and symptoms of abuse. Methods of assessment. Provision of a safe environment. Reporting, referring, and follow-up care. Topics include: techniques for specific situations (e.g. women, children, the elderly); conflict resolution; safety; requirements for use as evidence in justice system; responsibilities of professional workers; cognitive interviewing; audio and video taping of witnesses and survivors; liability; confidentiality. Prerequisite: Six credit hours from FVI 2001, 2002, 3001; or permission of the instructor.

FVI 3005 Family and Criminal Legal Systems 3 ch

An overview of: family violence legal issues pertaining to: (a) family law - e.g., custody; access; mediation; supervised visitation; requirements to report abuse; legal aid; peace bonds; police protection; enforcement of family court orders; separation and divorce; (b) the criminal justice system - e.g., implications of criminalization of abuse; role of police; mandatory charging; informing spouse about release of abuser; process through justice system of survivor; witness impact statements; role of probation officer; probation period. Prerequisite: Six credit hours from FVI 2001, 2002, 3001; or permission of the instructor.

FVI 3006 Understanding and Treating Woman Abuse Offenders 3 ch

Examines the major theories of men's violence against women in intimate relationships and explores the different treatment and prevention models which have evolved from these theories. Topics include: psychological and social dynamics of abusers, role of assessment in treatment, treatment interventions, ethical issues in treating offenders, Aboriginal programs, preventive programs, efficacy of treatment and preventive programs. Prerequisite: Six credit hours from FVI 2001, 2002, 3001; or permission of the instructor.

FVI 4001 Erosion of the Social Safety Net - Consequences for Family Violence Service-Providers 3 ch

Issues related to burnout and stress management for service-providers, their co-workers, and their clients. A critical overview of the human, social, and economic costs of the erosion of the social safety net. Strategies for stress management, coping with burnout, and societal-level reforms. Prerequisite: Six credit hours from FVI 2001, 2002, 3001; or permission of the instructor.

FVI 4002 Multidisciplinary Approaches to Family Violence 3 ch

Presents strategies which will assist professionals in coordinating their efforts to help survivors through creation of 'whole person' community approaches. Topics include: helping agencies' diverse and overlapping mandates; referral processes; inter-agency communication; support and debriefing; team dynamics; community resources; interface with policy makers. This course is required for the FVI Certificate. Prerequisite: Six credit hours from FVI 2001, 2002, 3001; and 15 credit hours from any of the listed courses.

FVI 4005 Individual Studies 3 ch

An individualized study of a topic of interest to the student, in consultation with instructor/mentor and approval of the Director of the Muriel McQueen Fergusson Centre for Family Violence Research. Prerequisite(s): Six credit hours from FVI 2001, 2001, 3001; or permission of the instructor.

FVI 4006 Individual Studies 3 ch

An individualized study of a topic of interest to the student, in consultation with instructor/mentor and approval of the Director of the Muriel McQueen Fergusson Centre for Family Violence Research. Prerequisite(s): Six credit hours from FVI 2001, 2001, 3001; or permission of the instructor.

FINE ARTS

Note: See beginning of Section H for abbreviations, course numbers and coding.

FNAT 2113 Introduction to Music 3 ch [W]

Introduction to the history, language, and elements of Western music; development of basic skills of music-making.

FNAT 2114 Introduction to Music Appreciation 3 ch

Introductory course in music appreciation for the classical music lover with little or no music background. This course covers elements of music, performing media, and historical music periods from the Middle Ages to the Twentieth Century. The student will be introduced to music terminology, important composers and will develop listening skills. May require attendance to a symphony and additional lab fee.

FNAT 2123 Music Theory I 3 ch [W]

Introductory course in music theory for those students with some musical background. Students who successfully complete FNAT 2113, have come through well-rounded high school music programs, or conservatory exams should enter at this level.

FNAT 2124 Music Theory II 3 ch [W]

This is a second-level course on the fundamentals of music. Content includes rhythmic subdivisions, non-harmonic tones, harmonizing of melodies, secondary chords, principles of chord progression, seventh chords and elementary modulation.

FNAT 2143 Introduction to Jazz Theory 3 ch

Students will gain an understanding of the theoretical concepts of the jazz language. This includes chords, scales and modes, chord construction and terminology, typical jazz melodies, bass lines and rhythms. The purpose of the course is to give a basic vocabulary used in the jazz idiom. Students will develop the capacity to converse musically and verbally with other musicians and learn a theoretical foundation that will assist in future self-teaching.

FNAT 2703 Visual Arts I (studio) 3 ch [W]

Same as ED 3218. Studio practicum in one or more visual arts.

FNAT 2704 Visual Arts II (studio) 3ch [W]

Same as Ed 3219. Advanced studio practice in one or more visual arts media.

FNAT 2797 Rock and American Popular Music 3 ch

This course is a survey of the history of Rock music from its origins in the late nineteenth century to the present day. Topics addressed include: the effects of technology in the music industry, role of African-American music in the development of popular music, the developments of Jazz, R, and early Rock and Roll, and the white appropriation of African-American music. The course finishes with a survey of recent trends of disco, new wave, heavy metal, rap and alternative music.

FNAT 3000 Studio Work 6 ch

Practical work in one of the fine arts disciplines. Students must seek permission of the appropriate director before registering.

FNAT 3001 Studio Work 3 ch

Practical work in one of the fine arts disciplines, offered as an alternative to the FNAT 3000 format. Students must seek permission of the appropriate director before registering.

FNAT 3002 Studio Work 3 ch

Practical work in one of the fine arts disciplines, offered as an alternative to the FNAT 3000 format. Students must seek permission of the appropriate director before registering.

FNAT 3113 Computers in Music, an Introduction 3 ch [W]

The use of computers in all facets of the music industry from music theory and history to analysis and MIDI applications.

FNAT 3123 Musical Composition 3 ch [W]

A course in harmony, counterpoint, and other basic elements of composition for students with some musical background and literacy. Prerequisite: FNAT 2124 or its equivalent or the permission of the instructor.

FNAT 3133 Conducting 3 ch [W]

Basic conducting techniques as applied to wind, string, and vocal ensembles and the interpretation of various types of music. Permission of the Director of Music required before registering.

FNAT 3703 The Power of Images 3ch [W]
(Cross Listed: ED 5154)

Same as Ed 5154. The integral relationship between visual images and other areas of study. Analyses and interpretations of a variety of images from pop culture, western and non-western art, childrens books, film, video, family photos, and advertisements, as these influence knowledge and understanding of oneself and others. Prerequisite: previous course in visual art, art education, or media.

FNAT 3796 Music of Canada 3 ch

Introduction to Canada's rich and diverse traditions, institutions, and industry. From the musical traditions of the First Nations peoples, through the music of the early settlers, to today's diversity of styles, Canada's music will be studied in its cultural and historical contexts. No prerequisite.

FNAT 4704 Readings in Contemporary Art Theory 3 ch

A seminar-based approach to the in-depth consideration of contemporary art theory and practise. Individual research projects to include written, oral and visual presentations.

FOREST ENGINEERING

Note: See beginning of Section H for abbreviations, course numbers and coding.

COURSE COURSES

FE 1511 Introduction to Forest Engineering 2 ch (1C 2L)

A non-technical course to provide students with a broad understanding of the forest engineering profession and to introduce them to the issues that forest engineers will be required to face as they follow their various career paths. Using field trips, panel discussion and in-class exercises, students will be introduced to the three main technical disciplines of forest engineering: structures used in natural environments, work processes in factory and forest settings, and forest operations planning.

FE 3033 Structural Analysis and Design I 3 ch (2C 2T)

Consideration of structural analysis and design with emphasis on underlying principles: beams, cantilevers, compression members, trusses, limit analysis of plane frames, arches, walls and foundations. Prerequisite: CE 2023.

FE 3143 Natural Resource Geotechnique I 4 ch (3C 3L)

An examination of soils engineering related to natural resource industries: exploration methods, physical and mechanical characteristics of soils, stresses imposed by loads on soil structures, effective stress principle, shear strength, bearing capacity, seepage in soils, slope stability, frost action, access road structure design, methods used to strengthen subgrades, special problems. Prerequisites: GEOL 1001, 1026, CE 2023 and either CE 2703 or CHE 2703.

FE 3233 Forest Operations Research I 4 ch (3C 2L)

Introduces operational research methods for solving resource-constrained planning problems and for the analysis of stochastic systems. Topics include linear programming, integer programming, mixed-integer programming, network models and simulation. Students learn to create and solve models that represent real forest engineering problems, and how to present results appropriately. They learn to critically analyze assumptions that are inherent in modelling technology or in formulation, and to accurately describe and interpret the essential elements of models. Prerequisites: FOR 2265, STAT 2593.

FE 3303 Thermal Engineering 4 ch (3C 3*L)

Laws of thermodynamics, basic measurements. Heat transfer with applications to building and pipe insulation and heat exchanger design. Fuels and their combustion. Internal combustion engines. Laboratory work complements the foregoing and requires preparation of comprehensive written reports. Prerequisites: APSC 1023, EE 1013, MATH 1013 and either CE 2703 or CHE 2703.

FE 3363 Machine Design I 3 ch (2C 3*L)

Use of electric resistance strain gauges to determine working stresses. Safety, stress concentration and surface design factors. Static and dynamic working stresses. Fatigue design. Application of the foregoing to the design of various components. Design of shafts including critical speed considerations. Design of belt and roller chain power transmission systems. Introduction to design of fluid power transmission systems. Prerequisite: APSC1023, EE 1013, CE 2023 and CHE 2503.

FE 3601 Forest Engineering Economics 3 ch (3C)

Economic role of forest engineers as managers. International and national productivity. Resource Triangle, Compound Interest, Equivalence. Money, interest, and inflation. Depreciation techniques and capital recovery. Capital investment. Profits, shares, bonds and taxes. Investment Models. Asset replacement, life-cycle costing, benefit-cost analysis. Financial statements and ratios. Emphasis on practical applications of the theory to forest operations.

FE 3703 Forest Operations Concepts 3 ch (2C 3L)

An introduction to the major tree harvesting concepts relating to wood procurement in eastern Canada. Emphasizes the felling, off-road transfer and processing functions which are carried out prior to delivery of wood in various forms to the forest products industry. Representative machines are discussed as to their application within the concepts being considered. Normally taken by students in their second year.

FE 3773 Forest Engineering Operations 3 ch (2C 3L)

Provides students with the basic knowledge and techniques required to undertake the analysis and evaluation of contemporary industrial forest operations, including the supporting infrastructure that is required. Prerequisites: FOR 1001, FE 3233, FE 3601, FE 3703.

FE 3803 Wood Technology 3 ch (2C 3L)

Molecular, cell wall and anatomical structure of wood. Relative density, dimensional changes and moisture effects. Measuring industrial wood products (for example pulpwood, sawlogs, chips, pulp and lumber). Wood biodeterioration.

FE 5780 Forest Operation Planning Project 8 ch (2C 4L)

Integrated long, medium and short-term planning of all major elements of contemporary industrial forest operations including harvesting, wood transport, road construction and maintenance, stand establishment, machine management and other support functions. Students learn to apply the knowledge and techniques from previous courses to the problems of planning and managing operations constrained by the requirement for sustainable, multi-objective natural resource management. A team-taught, case study approach is used. Prerequisites: FOR 3005, FE 3773.

FE 5933 Forest Engineering Professional Workshop 2 ch (3L)

Panel discussions, seminars and workshops dealing with the professions of Engineering and Forestry. Organization of both professions in New Brunswick and Canada, legislation regulating both professions, bylaws, codes of ethics and social responsibility, Occupational Health and Safety Acts and the requirements imposed with particular reference to New Brunswick. Each student must successfully complete examinations in Professional Practice and Ethics, submit and present a report on an assigned topic, and participate actively in all seminars and workshops. Prerequisite: Only for senior students in the last two terms of the BScFE program.

FE 5990 Project Report 6 ch (W)

In order to graduate, each student is required to identify a forest engineering subject of interest and submit a project proposal to the FE Program Committee. Once the proposal is approved, the student must research the subject, submit an extensive formal written technical report and make an oral presentation on the project. Prerequisite: Only for senior students in the last two terms of the BScFE program.

FE 5995 Structural Design of Forest Engineering Systems 6 ch (2C 2T)

Students will define, design, and defend the logic of structures used in forest and other natural environments. Students will integrate elements of structural design with environmental and economic risk assessment. Emphasis will be given to the use of project layout tools (design of plans and profiles). Students will work in teams, develop a solution strategy, and present a comprehensive solution orally and in writing. Prerequisites: Only for students in the last two terms of the BScFE program.

ELECTIVE COURSES

FE 3306 Applied Geomorphology (A) 3 ch (3C/L)

Basic course in terrain analysis. Provides skills required for identifying important Quaternary landforms on airphotos. Prerequisite: Introductory geology course, or permission of the instructor.

FE 3313 Introduction to Thermal Engineering 3 ch (3C)**

Topics covered include: laws of thermodynamics; measurement of temperature and pressure using various methods; heat transfer by conduction, convection and radiation with applications to buildings, piping storage tanks, heat exchangers and other industrial equipment; characterization and combustion fuels; internal combustion engines; air compressors. Prerequisites: MATH 1013 and either CE 2703 or CHE 2703.** service course.

FE 3873 Physical and Mechanical Properties of Wood (A) 3 ch (2C 3L)

Strength properties, thermal properties, electrical conductivity, the movement of moisture in wood, effects of strength-reducing defects, stress grading, and processing parameters on properties. Prerequisite: FE 3803, or permission of instructor.

FE 4043 Structural Analysis and Design II 3 ch (2C 2T)

Extension of work in FE 3033 to more complex problems (e.g. statically indeterminate frames): introduction to design codes containing data on loadings and material resistances. Application of computers in structural analysis and design. Prerequisite: FE 3033.

FE 4623 Forest Operations Financial Management (O) 3 ch (2C 2L)

A course designed to familiarize students with the fundamentals of financial management in industrial settings. Deals with the concepts and principles of accounting, the use of accounting information, financial analysis, the management of assets, capital budgeting and the design of financial information systems. Case studies are used to illustrate concepts and techniques and their relevance to engineers and foresters.

FE 4853 Processing of Wood Products (A) 3 ch (2C 3L)

Wood as an industrial material. Processing of wood to make traditional primary products such as lumber and pulp; secondary products such as laminated products, construction panels; modern structural composites. Emphasis is on manufacturing process, as quality control and applications of these products. Prerequisite: FE 3803, or permission of instructor.

FE 4863 Wood Engineering (A) 3 ch (2C 2T)

Links courses in structural analysis, wood technology and construction wood products. Focus is on design of building and bridge superstructures. Prerequisite: FE 3033, FE 4853, or permission of instructor.

FE 5143 Natural Resources Geotechnique II (A) 4ch (3C 3L)

Extension of work in FE 3143 to more complex problems, including: consideration of retaining structures, slope stability, deep foundations, geosynthetics, aggregate test methods and specifications, and structural design of access roads. Prerequisite: FE 3143, or permission of the instructor. (Technical elective offered alternate years, usually alternating with FE 5761. Packages selected geotechnical topics of relevance to construction of resource access roads.)

FE 5252 Forest Operations Research II 3 ch (2C 3L)

During the two-hour lecture period, attention is focused on problem formulation and the application of operations research techniques to Forest Engineering problems. The two-hour tutorial period is devoted to wood inventory problems, selecting and scheduling tree harvesting machines by linear programming, production studies by multiple regression and monogram techniques and some applications in dynamic programming. Prerequisite: FE 3233

FE 5373 Machine Design II (O) 4 ch (3C 3*L)

Design and application of open and closed loop fluid power systems, bearings, clutches, brakes, threaded fasteners and other machine elements. Laboratory exercises deal with design and operation of fluid power circuits. Prerequisite: FE 3363.

FE 5612 Industrial Engineering 3 ch (2C 3L)

Economic geography. Plant location analysis. Plant layout and facilities planning. Machine management and maintenance engineering. Work measurement: work standards, time study, work sampling, predetermined time/motion systems. Methods engineering. Lab periods include seminar, industrial visits and practical exercises applying IE theory to engineering problems. Prerequisite: Restricted to students with at least 120 credit hours.

FE 5622 Human Factors Engineering 3 ch (2C 3L)

An interdisciplinary study of the interaction of humans and their workspace. Physiological principles of work and energy. Anthropometry. Biomechanics. The ergonomics of workspace and job design. Fatigue. Work/rest schedules and nutrition. The physiological and psychological effects on humans of noise, vibration, lighting, vision, and the workspace environment. Lab periods include seminars and practical design exercises applying human factors and ergonomic theory to workspace problems. Prerequisite: Restricted to students with at least 120 credit hours.

FE 5761 Transportation of Forest Products (A) 3 ch (2C 2L)

Transportation of forest products from roadside to mill, including, (i) government regulations, (ii) roadway characteristics: route location, forest road classification, and geometric design, and (iii) vehicle characteristics: gradability, power requirements, and scheduling. Emphasizes trucking, but includes a discussion of the rail and water modes of raw forest product transportation. Prerequisites: : APSC 1023. Restricted to students with at least 100 credit hours.

FE 5873 Performance of Structural Wood Systems (A) 3 ch (2C 3L)

Creep, connections, wood-framed construction, light frame trusses, fire performance, built-up components, preserved wood foundation, glulam structures, maintenance and inspection techniques. Prerequisite: FE 3873, or permission of instructor.

FE 5910 Directed Studies in Forest Engineering 3-6 ch

In special cases, and with the approval of the Faculty a student may carry on directed studies of specific problems in Forest Engineering.

FE 5911 Directed Studies in Forest Engineering 3-6 ch

In special cases, and with the approval of the Faculty a student may carry on directed studies of specific problems in Forest Engineering.

FE 5912 Directed Studies in Forest Engineering 3-6 ch

In special cases, and with the approval of the Faculty a student may carry on directed studies of specific problems in Forest Engineering.

FE 5990 Project Report 6 ch [W]

In this course, a student identifies a forest engineering subject of interest and submits a project proposal to the Instructor. Once the proposal is approved, the student must research the subject, submit an extensive formal written technical report and make an oral presentation on the project. Prerequisite: Only for senior students in the last two terms of the BScFE program.

FORESTRY

Note: See beginning of Section H for abbreviations, course numbers and coding.

A minimum grade of C is required for prerequisite courses.

CORE COURSES

FOR 1000 Introduction to Forestry 8 ch (1C 2T 3L)

To introduce the many aspects of the professional practice of forestry including the multi-dimensionality of forest values and forest management as a design challenge. A problem-based approach to learning is used to create learning objectives for the remainder of the program; to begin development of quantitative and qualitative skills; to instill the habit of inquiry and to begin development of understanding of social/ethical issues in forestry.

FOR 1901 Oral and Written Communication I 2 ch (3C 3L*) [W]

Introduction and practice in communications skills with emphasis on oral and written forms. Information acquisition and communications related to employment are also covered. Careers and practices in forestry and forest engineering are introduced through field trips and guest lecturers.

FOR 1902 Oral and Written Communications II 2 ch (3C 3L*) [W]

Continuation of FOR1901 including preparation and packaging of technical reports; oral presentations using various forms of visual aids; presentation of data and analyses using tables and figures.

FOR 2006 Forest Dynamics and Management 4 ch (3C 3L)

Focuses on modelling forests and examining the nature of their change with and without intervention. Introduces a decision-making process to manage change in forests.

FOR 2420 Dynamics and Structure of Forest Vegetation 7 ch (3C 3L)

Morphogenesis, anatomy, crown, stem, and wood development, also silvical characteristics of forest vegetation; autecology, environmental requirements, and likely responses to perturbations. Co-requisite: FOR 2435; a basic university course in Biology or Botany.

FOR 2435 Physiological Processes in the Forest 3 ch (2C 3L)

A course dealing with energy conversions in relation to growth, development and functioning of forest organisms, with particular emphasis on trees. Specific topics include environmental and genetic control of growth and development in cells, tissues and organs; phenology; energy capture and flow within and between organisms; contrasting aspects of metabolism between different organisms; aging and senescence; interactions between organisms; survival mechanisms under environmental stress; plant-defense mechanisms. In laboratory sessions, the focus is on wood formation and properties.

FOR 2505 Soils for Plant Growth 3 ch (2C 3L)

Students examine relationships between soils and plants, and related roles of water and nutrients. Factors that restrict root growth, and processes that influence soil development are revealed through field exercises and laboratory work. Effects of natural and anthropogenic disturbances on forest soils and subsequent plant responses are emphasized.

FOR 2886 Wood Technology 3ch (2C 3L)

Familiarity with wood (including reaction and juvenile wood), bark, and root anatomy is developed using micrographs and samples. Wood identification is done using gross (hand lens) and minute (microscopic) features with the assistance of texts and keys. Physical properties of wood (specific gravity, moisture content, and dimensional change) are illustrated in laboratory experiments. Practical problems are used to familiarize students with measurement of wood products including the effects of moisture, log scaling by weight and volume, lumber and panel products measurement, pulp yield and comparative units of mass and volume measurement. Presentations with illustrations and product samples are used to familiarize students with the materials and products made from wood.

FOR 2936 Forest Hydrometeorology 3 ch (2C 3L)

Introduces principles of forest hydrometeorology. Topics include energy transfer, radiation laws, energy balance, wind, evaporation, precipitation, climatology, snow cover and snow melt processes, the hydrological cycle and water balance, surface runoff, flow routing, and other atmosphere-land surface processes. Scales from local to regional, or from the individual to stand/population levels, are covered. Includes introduction of systems and modelling tools available at UNB, including ArcView GIS, LanDSET, and the Energy Balance Model.

FOR 2973 Introduction to Computer Software for Data Analysis 2 ch

Six-day camp prior to fall term. Introduction to a variety of computer software and analytical techniques. Topics include modelling software, spreadsheet techniques, statistics, presentation software, GIS database techniques, Internet searching and Windows operating Systems. Prerequisite: FOR 1000.

FOR 3005 Silviculture And Stand Intervention Design 5 ch (3C 6L)

Takes a design-based approach to silviculture. Students develop stand intervention plans for the main stages of stand development integrating the biology of growing trees, engineering of conducting operations, and economics of costing operations.

FOR 3006 Forest Management 4 ch (3C 6L)

Continuation of FOR 3005. Introduction to linear programming in forest management. Introduction to elements of resource modelling and productivity assessment (e.g. water flow) at the stand level. Analysis of the impact of alternative interventions at the operational level and their integration with strategic and tactical plans, including: financial and socioeconomic evaluation of forest management and resulting value flows; and risk management for insect or pathogenic attacks and wildfire. Post-implementation assessment of activities as a critical part of the management process. Prerequisite: FOR 2006, FOR 3005, or permission of instructor.

FOR 3285 GIS in Forestry I 3 ch

An introduction to geographic information systems. A web-based course involving exercises with the ArcView GIS in forest inventory, mapping and planning using PCs. Not recommended for 1st year students, must be Windows literate.

FOR 3303 Photogrammetry, Photo-interpretation and Remote Sensing 3 ch (3C/L)

Interpretation of airphotos of forested areas, stand measurements, tree species composition, and site characterization. Remote sensing products other than airphotos, such as digital optical images, thermal infrared, and radar images will be introduced. Basics in digital image processing in order to use such images as GIS layers is also covered. Prerequisite: Not recommended for 1st and 2nd year students.

FOR 3445 Forest Ecology: Populations and Communities 4 ch (3C 3L)

To understand and link processes acting on individuals, populations, and communities in space and time. To predict the response of individuals, populations, and communities to disturbance and to understand the implications of such responses for management of populations, communities, and ecosystems. Prerequisite: FOR 2420, 2505.

FOR 3456 Forest Watershed and Forest Fire Management 3 ch (2C 3L)

Emphasizes the principles of management of watersheds and fire at the stand and landscape level. Influences of climate, topography/terrain, and stand and fuel types are covered. Concepts of watershed conservation are introduced as well as principles and models dealing with water retention and flow, and carbon and nutrient cycling in primary forest watersheds. Fire management concepts deal with the Fire Weather Index system, the Fire Behaviour Prediction system, fire ecology, and fire management strategies, tactics and operations. Prerequisites: FOR3445 or permission of instructor.

FOR 4005 Social Values in Forest Management 3 ch (3C)

Introduces techniques of consensus building, problem formulation and hypothesis formulation used to integrate complex and conflicting value demands. Recognizes the different ethical approaches and their implications in land-use planning. Introduces students to the policy process and to evaluation of socioeconomic performance.

FOR 4096 Forest Landscape Design and Management 5 ch (3C 3L)

Integrates value-flow planning with landscape planning by: 1) introducing students to the concepts and techniques used in dealing with the spatial dimensions in forest management planning; 2) introducing students to the difficulties involved with management for a complex set of demands, where resources demanded have production functions that include complex spatial and temporal relationships of inputs, many of which are unknown; and 3) exposing students to techniques available to forecast landscape patterns resulting from flow driven management planning, and to design landscape patterns based on analysis of natural dynamics. Prerequisite: FOR 3006, or permission of instructor.

FOR 4545 Biodiversity and Ecosystem Management 4 ch (3C 3L)

To learn concepts and measurements about biophysical landscape dynamics, strategies for the maintenance of biodiversity, and ecosystem based forest management. To use contemporary examples of management of ecosystems. Prerequisite: Prior ecology course.

FOR 4625 Integrated Management of Insects and Fungi 4 ch (3C 3L)

Presents a common approach to management of insects and fungi and their interactions at the stand/population and landscape levels. Major components to be discussed are: monitoring and prediction of hazard and risk; damage prediction based on organism population dynamics; management strategies and tactics including acquisition and deployment of resources, control methods and cost benefit analyses. Taxonomy of major families of insects and diseases will be covered in laboratory sessions. Prerequisites: FOR3445, FOR3455, and FOR3006, or permission of instructor.

FOR 4973 Forestry Field Camp II 2 ch (9D)

An intensive 6-day series of field exercises, starting before the Fall Term, involving low student/faculty ratios, and designed to improve integrative and quantitative-forecasting skills. Evening sessions provide overviews of the scope of forest-ecosystem management generally, and in relation to the specific field-camp situation. Students are charged for food and lodging and part of travel costs. Prerequisite: Substantial completion of Years 1-3 core.

FOR 4992 Individual Project I 3 ch

To introduce students to research/problem solving, use of literature, the library; and to require a written project proposal and oral presentation of such by end of term. This course is a necessary prerequisite, to be followed immediately by FOR 5991 in the subsequent term.

FOR 5020 Management Practicum 8 ch (1C 3L)

Practical exercise in forest landscape management, designed to provide an opportunity to integrate skills and knowledge gained throughout the program. Forest Ecosystem Management and Forest Engineering students will work on the same project to design landscape management plans at the strategic, tactical and operational levels. The practicum will be based on real forests. Through consultation with clients and/or members of the public, goals will be developed. Plans will be derived to integrate these goals. Teams will be responsible for project management, including planning, budgeting and report preparation.

FOR 5991 Individual Project II 3 ch

Conduct a research or problem-solving exercise that was proposed in FOR 4992. To include a written report and oral presentation at the end of term, and other requirements during the term.

ELECTIVE COURSES

FOR 2205 Quantitative Methods 3 ch (2C 3L)

Applications in collection, organization, and analysis of basic forestry, biological and other environment-related data. Emphasis on the use of statistics as a problem-solving and decision-making tool through basic numerical and visual statistical techniques, iterative computer graphics, and programming.

FOR 2265 Computer Programming for Forestry 3 ch (3L)

Introduces object-oriented programming using VB.NET and forestry applications. Previous programming experience not assumed. Prerequisite: FOR 1000, or permission of instructor.

FOR 2275 Relational Database Management in Forestry 3 ch

This online course introduces DBMS (database management system) concepts, terminology and techniques, using MS Access and forestry data and applications.

FOR 2345 Meteorology and Hydrology (A) 4 ch (3C 3L)

Introduces basic aspects of meteorology, hydrometeorology, and hydrology at global, regional and local scales. Emphasis is given to soil-vegetation-atmosphere interactions. Topics include energy balances, thermal, wind, and precipitation regimes, and phenomena associated with the hydrological cycle.

FOR 2933 Bioethics in Forestry 3 ch (3C)

This course deals with the moral decision-making in the management of the forest, its land, atmosphere, and living organisms. It considers uses and abuses of the forest environment that raise ethical issues of importance and integrity. The course will include an introduction to ethical principles and systems of ethics, dynamics and decision-making individually as well as collectively, concepts and assumptions about the environment, the rights of nature, conflicting values about nature implicit in anthropocentrism and biocentrism, and the need for interdisciplinary dialoguing in the formulation of policy, laws, and regulations.

FOR 3853 Problem-Solving and Interpersonal Communication 3 ch (3C/S)

Designed to help develop skills in solving problems and communicating with others. Models will be presented and used. Emphasizes student participation and leadership.

FOR 4013 Basic Woodlot Management 3 ch (3C)

Introduction to basic woodlot management, covering such topics as planning, harvesting, silviculture, Christmas trees, maple products, wildlife and recreation, economics, owner characteristics and organization, government programs and policies and industry relations as they relate to small woodlots. Prerequisite: Open to 4th- and 5th-year Faculty of Forestry and Environmental Management students, or permission of instructor.

FOR 4101 Forest Economics 3 ch (3C)

This course applies economic tools to help make informed forestry decisions that will most effectively meet private and social goals. Prerequisite: Some experience with regression analysis.

FOR 4205 Quantitative Forest Characterization (O) 3 ch (4C/1L)

Students will construct from raw data sets a qualified forest characterization suitable for input to forest level planing models. Model runs will be made using that input and compared to assess sensitivity of outcomes to inputs.

FOR 4206 Forest Biometry II (A) 3 ch (2C 2L)

Additional topics in data collection and analysis, including multiple linear regression; analysis of covariance; basic principles of experimental design; analysis of factorial arrangements of treatments; analysis for some special-purpose designs. Prerequisite: STAT 2253, or permission of instructor.

FOR 4283 Introducing ArcGIS in Forestry 2 ch

This web-based course introduces ArcView 8.X and its application in forest mapping and inventory. You'll use ArcCatalog, ArcMap and ArcToolbox in composing maps, georeferencing digital imagery, integrating GPS data, defining and transforming coordinate systems, and building a geodatabase. Not available for credit for Computer Applications Minor students. Prerequisite: FOR 3285.

FOR 4284 Advanced ArcGIS in Forestry 2 ch

This web-based course explores advanced geoprocessing capabilities in ArchInfo 8.X. You'll explore applications in forest analysis and planning using ArcCatalog, ArcMap and ArcToolbox. You'll measure forest values, calculate landscape metrics, identify management units and stratify forest stands spatially as well as aspatially. Prerequisite: FOR 4283.

FOR 4285 GIS in Forestry II 4 ch (1C 3L)

You'll finish the course with ArcInfo skills, including accessing and manipulating large databases, integrating digital imagery and GPS observations, digitizing features and AML scripting. You'll experience ArcInfo's command line syntax, as well as its graphical user interface in the ArcGIS suite. Prerequisite: CS 1003 or equivalent, FOR 3285.

FOR 4313 Digital Image Processing in Remote Sensing 3 ch (3C 3L)

To initiate students to the processing of digital images as acquired by Earths Observation Satellites like LANDSAT-TM, SPOT-HRV and NOAA-AVHRR. Computer-based. Course includes: Characteristics of digital images; Image display; Pre-classification processing; Image corrections and other pre-processings; Image classification; Spatial image processing and analysis. Prerequisite: FOR 3303 or permission of the Instructor.

FOR 4321 Vascular Plant Origins 3 ch

This introductory level course in paleobotany critiques the natural history of terrestrial plant morphogenesis, considering the fossil record from preCambrian to Jurassic. Emphasis is on vascularisation and related physiological adaptations needed for plants to adjust from aquatic to land habitats. Prerequisites: GEOL 1001 or 1012 or 1063, BIOL 1012 or 1551 or 1923.

FOR 4437 Methods in Tree Physiology Research (A) 3 ch (6L)

Introduction to experimental physiology. Hands-on training in use of equipment including uv/vis spectrophotometry, tissue culture and general procedures. Prerequisite for students intending to do FOR 4992/5991 in physiology Prerequisites: BIOL 1012, BIOL 1017, FOR 2420 2435, or permission of instructor.

FOR 4456 Forested Ecosystems (A) 3 ch (2C 3L)

An analysis of the forest as an ecosystem, focusing on the interactions among ecosystem components (vegetation, soil, water, atmosphere, wildlife) and the effects of perturbations on the ecosystem. Analysis of the major forest ecosystem types of Canada and the adjacent U.S.A. Prerequisite: FOR 3445, or an introductory ecology course, or permission of instructor.

FOR 4466 Advanced Studies in Forest Plants and Their Environment 4 ch (3C 3L)

The course addresses ecophysiological relationships within forest stands (energy capture, respiration, photosynthate allocation, transportation, etc.) integrated to the stand level. Specialized topics include tree nutrition (nutrient deficiencies, diagnosis, mediative action), ecotoxicology (role of heavy metals) and reactions of trees to air pollutants (S02, oxone) and climate change.

FOR 4506 Advanced Studies in Forest Soils and Hydrology 4 ch (3C 3L)

Advanced studies addressing impacts of forest management of forest soils and streams. Topics include sustainability of soil quality, site preparation effects on soil moisture, nutrient supply, soil temperature, water balance, snowmelt, water quality, role of riparian buffer zones.

FOR 4576 Forest Hydrology and Aquatic Habitat 3 ch (3C)

Intermediate level course, to provide understanding of relationships between forest land use and the hydrologic cycle. Topics include basic hydrological principles, hydrometric data analyses, generation of runoff, erosion and water quality as it relates to fish habitat.

FOR 4586 Fire Management (A) 3 ch (2C 2L)

Topics covered include fuels and fire behavior, fire danger rating, prevention, prediction, detection, suppression, and overall planning and fire management systems.

FOR 4602 Ecology of Forest Insects (A) 3 ch (2C 3L)

Evaluates factors influencing insects in forest communities with emphasis on predator-prey, parasitoid-host and insect-plant interactions as well as natural selection, physiological constraints, behaviour and population dynamics.

FOR 4615 Insect Management 3 ch (2C 3L)

Taxonomy, importance and ecology of major insect families; damage assessments, insect population dynamics and control strategies and tactics.

FOR 4655 Wildlife Investigational Techniques (A) 3 ch (3C/L)

Designed to introduce techniques available for conducting investigations in support of management objectives. Labs will provide hands-on experience from radio telemetry to necropsy techniques. Prerequisites: Substantial completion of Year 3, BScF, or permission of instructor.

FOR 4656 Wildlife: Scale and Forest Landscapes 3 ch (3C/S)

An evaluation of the analyses and interpretations of scale and landscape patterns for wildlife, from individual species to communities of species, building on the evolution from the traditional thinking of wildlife habitat.

FOR 4676 Disease Control 3 ch (2C 2L)

Survey of important tree diseases; impacts on tree and forest growth; control methods.

FOR 5095 Conservation (A) 3 ch (3C/S)

Readings, discussions and projects to explore the societal roots, ethics, policy development and management issues associated with conservation in both the developed and third worlds. Prerequisite: Open to final-year BSc and BScF students.

FOR 5303 Remote Sensing of Natural Resources 3 ch (3C/L)

Introduction to remote sensing methods for observing Earth's surface at different levels (ground, airplane, satellite). Allows quantitative understanding of data acquired in visible, infrared and microwave wavebands. Provides applications of remote sensing in forestry, agriculture, geology, oceanography, hydrology, and environmental studies. It does not deal with photo-interpretation. Recommended for students intending to do FOR5990 in remote sensing. Prerequisite: FOR 4313.

FOR 5411 Seed Production of Conifers 3 ch (2C 3L)

Development of reproductive structures, pollination, fertilization, embryogeny and seed formation in conifers. Factors affecting periodicity of seed production, assessment of potential seed production, quantitative aspects of seed production, and measures of seed quality. Prerequisite: FOR 2420 or permission of instructor.

FOR 5412 Forest Nursery Practices (A) 3 ch

Students become familiar with the full range of topics related to seedling production for forestry. Students learn greenhouse techniques by growing seedlings from seed.

FOR 5421 Forest-Tree Genetics and Breeding 3 ch (2C 3L)

Introduction to the principles of variation and inheritance, and the development of breeding programs integrated with silviculture.

FOR 5437 Biochemistry of Trees (A) 3 ch (2C 3L)

Introduction to metabolic pathways of economic or ecological significance, including biosynthesis of pectin, hemicelluloses, starch, callose, cellulose, lipids, terpenoids, flavanoids, pigments, and lignin. Prerequisites: BIOL 1012, BIOL 1017, FOR 2420, 2435, or permission of instructor.

FOR 5452 Ecological Modelling (A) 4 ch (2C 3L)

A workshop course in the modelling of ecological systems. Each student builds a model. Prerequisite: Concepts of forest ecology or equivalent; some knowledge of computer programming, or permission of instructor.

FOR 5582 Fire Effects 2 ch (2C)

An advanced course dealing with the effects of fire, and the implications of these effects for landscape management. Prerequisites: FOR 3005, 3445, 4586, or permission of instructor.

FOR 5655 Wildlife Management Practices 3 ch (3C)

Detailed study of current wildlife management practices. Emphasizes case histories and analysis of objectives, underlying assumptions, policies, and structure of wildlife management programs. Prerequisites: Substantial completion of Year 3, BScF, or permission of instructor.

FOR 5713 Advanced Stand Intervention Planning (O) 3 ch

Silviculture and the dynamics of complex stand structures managed on an uneven-aged basis is the focus. Stand intervention plans are developed, defended and implemented.

FOR 5881 Kiln Drying and Preserving Wood 3 ch (3C/L)

Kiln drying theory and practice. Experience operating a dry kiln. Preservative treatment and sapstain control processes and chemicals. Properties of treated wood.

FOR 5910 Directed Studies in Forestry 3-6 ch

With approval of the Faculty, a student may carry on directed studies of specific problems or areas in forestry.

FOR 5911 Directed Studies in Forestry 3-6 ch

With approval of the Faculty, a student may carry on directed studies of specific problems or areas in forestry.

FOR 5912 Directed Studies in Forestry 3-6 ch

With approval of the Faculty, a student may carry on directed studies of specific problems or areas in forestry.

FOR 5973 International Forest Studies 3 ch

This course focuses on the biophysical, historical, social and economic factors influencing forest management in a region outside of Canada. The purpose of the course is to better understand forest management practices within the Canadian context by gaining an understanding of how these factors influence forest management in a region outside of Canada. A 10 to 14-day field trip to the region is required. Prominent forestry professionals from across Canada will join with the students. Each year a new region is selected. Students will be charged for travel costs associated with this course. Limited enrolment.

FRENCH

Note: See beginning of Section H for abbreviations, course numbers and coding.

Students taking a French course at UNB for the first time should read the section entitled "French Placement Test" under "General Information" in Section G - FRENCH, of this Calendar. Students continuing in French should read the other paragraphs of the section entitled "Courses".

INTRODUCTORY LEVEL COURSES

FR 1034 Communication orale et écrite I 3 cr (3C)

Développement des habiletés d'écoute, d'expression orale ainsi que des stratégies de lecture et d'écriture. L'accent est placé sur la communication orale. Révision de la grammaire. Cours pour finissant-e-s du programme cadre. Fermé aux francophones et aux étudiant-e-s ayant participé à un programme d'immersion en milieu scolaire.

FR 1034 Oral and Written Communication I 3 ch (3C)

Develops language proficiency in all four skills: listening, speaking, reading and writing. Emphasis is on oral communication. Review of selected grammatical points. Designed for students who have completed high school French. Not open to Francophones or to students who have participated in immersion programs in school.

FR 1044 Communication orale et écrite II 3 cr (3C)

Approfondissement des notions grammaticales de base. Préalable: FR 1034 ou l'équivalent.

FR 1044 Oral and Written Communication II 3 ch (3C)

Emphasis on the reinforcement of basic grammatical concepts. Prerequisite: FR 1034 or equivalent.

FR 1124 Cours pour francophones I 3 cr (3C)

Affinement de la perception des valeurs d'usage des mots, repérage des faux amis et enrichissement du vocabulaire. Travaux pratiques écrits. Réservé aux étudiant-e-s scolarisé-e-s en français.

FR 1124 Course for French Speakers I 3 ch (3C)

Aims at refining the student's perception of the different values of word usage, at identifying false cognates and at enriching vocabulary. Written exercises. Reserved for students whose schooling was in French.

FR 1144 Cours pour francophones II 3 cr (3C)

Amélioration de l'expression écrite, apprentissage de règles et sensibilisation aux principales difficultés de la langue. Étude de textes choisis, exercices d'application et de rédaction. Réservé aux étudiant-e-s scolarisé-e-s en français.

FR 1144 Course for French Speakers II 3 ch (3C)

Aims at improving the student's command of written French, and at imparting a systematic knowledge of the rules and main difficulties of the language. Study of selected texts; written exercises and composition. Reserved for students whose schooling was in French.

FR 1184 Langue et littérature I 3 cr (3C)

Révision de grammaire et examen de divers styles d'écriture visant l'apprentissage de méthodes efficaces de rédaction. Initiation à la littérature d'expression française et aux genres littéraires. Normalement réservé aux diplômé.e.s de programmes d'immersion.

FR 1184 Language and Literature I 3 ch (3C)

Review of grammar and study of various writing styles for the learning of efficient writing techniques. Introduction to Literature in French and literary genres. Normally for graduates of French Immersion.

FR 1194 Langue et littérature II 3 cr (3C)

Suite du FR 1184. Préalable: FR 1184.

FR 1194 Language and Literature II 3 ch (3C)

Continuation of FR 1184. Prerequisite: FR 1184.

FR 1300 Cours pour débutants 6 cr (3C 3C)

Réservé aux étudiant-e-s n'ayant aucune connaissance du français. Voir les renseignements ci-dessus. Nombre limité d'inscriptions.

FR 1300 Beginning Course 6 ch (3C 3C)

Assumes no prior knowledge of French. See General Information (above). Limited enrolment.

FR 1324 Français fondamental I 3 cr (3C)

Développement des habiletés langagières axé sur l'emploi du vocabulaire et la construction des phrases. Exercices oraux et écrits. Destiné aux étudiant.e.s nayant pas suivi un cours de français cadre après la dixième année.

FR 1324 Basic French I 3 ch (3C)

Development of language skills, use of vocabulary and sentence structure. Speaking and writing practice. For students who have not taken French beyond grade 10 Core.

FR 1325 Français fondamental II 3 cr (3C)

Suite du FR 1324. Préalable: FR 1324.

FR 1325 Basic French II 3 ch (3C)

Continuation of FR 1324. Prerequisite: FR 1324.

FR 1334 Français intermédiaire 3 cr (3C)

Perfectionnement des habiletés de communication mettant l'accent sur la prononciation et la grammaire de base. Fermé aux diplômé.e.s de programmes dimmersion ou de programmes-cadre.

FR 1334 Intermediate French 3 ch (3C)

Improvement of communication skills with an emphasis on pronunciation and core grammar. Not open to graduates of French Immersion or Core French programs.

FR 1704 French Canadian Civilization 3 ch (3C)

Acquaints the student with historical, sociological and cultural aspects of the French Canadian reality. Audio-visual approach and texts. Conducted in English.

FR 2034 Communication orale et écrite III 3 cr (3C)

Développement des habiletés d'écoute et d'expression verbale spécifiques à la vie quotidienne et au monde du travail. Perfectionnement des stratégies de lecture et d'écriture. Révision de la grammaire. Enrichissement du vocabulaire. Fermé aux étudiant-e-s scolarisé-e-s en français et aux étudiant-e-s ayant participé à un programme d'immersion en milieu scolaire.

FR 2034 Oral and Written Communication III 3 ch (3C)

Emphasizes the development of listening and speaking skills needed for social and work situations. Reinforcement of reading and writing strategies. Review of grammatical points. Vocabulary development and enrichment. Not open to Francophones and to students who have participated in immersion programs in school.

FR 2054 Communication orale et écrite IV 3 cr (3C)

Approfondissement des notions grammaticales et des stratégies d'écriture. Préalable: FR 2034 ou l'équivalent.

FR 2054 Oral and Written Communication IV 3 ch (3C)

Emphasis on the reinforcement of grammatical concepts and the development of writing strategies. Prerequisite: FR 2034 or equivalent.

FR 2154 Grammaire et expression écrite 3 cr (3C)

Analyse approfondie daspects grammaticaux et stylistiques; enrichissement du vocabulaire et sensibilisation aux registres; exercices de rédaction. Préalable: FR 1194 ou FR 1124.

FR 2154 Grammar and Written Expression 3 ch (3C)

Extensive analysis of grammatical and stylistic aspects of French; vocabulary enrichment and critical study of various language registers; writing practice. Prerequisite: FR 1194 or FR 1124.

FR 2164 Initiation à la littérature française 3 cr (3C)

Survol dauteurs importants de la littérature française. Examen plus approfondi de textes choisis. Apprentissage de lexplication de texte et de la dissertation.

FR 2164 Introduction to French Literature 3 ch (3C)

Survey of major authors in French literature. In-depth study of selected texts. Introduction to textual analysis and essay writing.

FR 2174 Le français au XXIe siècle 3 cr (3C)

Description du français contemporain. Français standard et variantes régionales, mots et tournures à la mode, expressions idiomatiques. On abordera les principales difficultés du français.

FR 2174 French in the 21st Century 3 ch (3C)

A description of contemporary French. Standard French and regional variants, trendy expressions, idiomatic expressions. Discussion of common difficulties of the French language

FR 2184 Aspects de la francophonie canadienne 3 cr (3C)

Étude multidisciplinaire des cultures dexpression française du Canada. Aperçu historique de la présence française en Amérique. Examen des rapports socio-politiques et culturels entre le Québec, lAcadie, lOntario et lOuest canadien. Mise en lumière des discours identitaires que sous-tendent littérature, arts visuels, cinéma et culture populaire. Perspectives dévolution des minorités francophones dans le contexte du multiculturalisme et de la globalisation des marchés. Destiné principalement aux diplômé-e-s des programmes dimmersion et aux francophones.

FR 2184 Aspects of Canadas Francophone Societies 3 ch (3C)

Multidisciplinary study of Canadas French-speaking cultures. Historical survey of French presence in America. Inquiry into the socio-political and cultural relations between Québec, Acadia, Ontario, and Western Canada. Focus on the representation of identity in literature, visual art, film, and popular culture. Consideration of multiculturalism as well as globalization and their impact on Francophone minorities. Intended primarily for graduates of French Immersion programs and for students whose schooling was in French.

FR 2244 Corrective Phonetics 3 ch (3C)

Designed to improve students' pronunciation, through practical exercises including laboratory work, and to familiarize them with the fundamental principles of French phonetics and the International Phonetic Alphabet. Not open to francophones or graduates of Immersion programs.

ADVANCED LEVEL COURSES

FR 3034 Perfectionnement de l'expression orale I 3 cr (3C)

Développement de l'expression orale et de la compréhension de la langue parlée. Écoute d'enregistrements, notamment de bulletins radiophoniques d'information, et débats sur des sujets d'actualité. Fermé aux étudiant-e-s scolarisé-e-s en français et aux étudiant-e-s ayant participé à un programme d'immersion en milieu scolaire.

FR 3034 Advanced Oral French I 3 ch (3C)

Develops oral expression by discussion of topical subjects and aural comprehension through recordings, including broadcasts. Not open to Francophones and, normally, not open to students who have participated in immersion programs in school.

FR 3044 Grammaire et stylistique - niveau avancé 3 cr (3C)

Étude de structures grammaticales et de leurs applications stylistiques.

FR 3044 Advanced Grammar and Stylistics 3 ch (3C)

Study of advanced grammatical structures and their stylistic applications.

FR 3054 Rédaction I 3 cr (3C)

Fournit aux étudiant-e-s les outils permettant de s'exprimer par écrit dans un français correspondant à leur niveau.

FR 3054 French Composition I 3 ch (3C)

Aims at giving students the tools to express themselves in written French at a level appropriate to their standing.

FR 3064 Français langue des affaires 3 cr (3C)

Principes de la communication et de la rédaction en milieu de travail. L'accent portera sur l'acquisition des termes et tournures de la langue du commerce, de la banque et des affaires. Préalable: FR 2054 ou FR 2154.

FR 3064 Business French 3 ch (3C)

Principles of communication and writing in the workplace. Emphasis is on the acquisition of terminology and language structures specific to commercial, banking and business contexts. Prerequisite: FR 2054 or FR 2154.

FR 3204 Stylistique comparée (français/anglais) 3 cr (3C)

Mise en opposition et analyse de divers aspects de chaque langue. Dégager les problèmes précis que pose la transposition du français en anglais et vice versa. Éléments de théorie de la traduction.

FR 3204 Comparative Structure 3 ch (3C)

Contrastive study of the principal grammatical structures of English and French emphasizing the differences in structure which exist even though the same concepts are being expressed.

FR 3504 Introduction aux études littéraires 3 cr (3C)

Initiation à deux techniques fondamentales d'analyse littéraire: explication de texte et dissertation.

FR 3504 Introduction to Literary Studies 3 ch (3C)

Introduction to two basic techniques of literary study: explication de texte and dissertation.

FR 3524 Roman et cinéma 3 cr (3C)

Étude d'oeuvres françaises et québécoises, de leurs adaptations cinématographiques et des problèmes posés par le passage du langage littéraire à celui du cinéma.

FR 3524 The Novel and Film 3 ch (3C)

Comparative study of selected French and French-Canadian novels, and their adaptation in film. Study of problems arising from the passage from literary language to that of the screen.

FR 3534 Écrits de femmes 3 cr (3C)

Survol de la littérature féminine contemporaine acadienne, québécoise, africaine et française. Approche : critique féministe. (Cf. cet annuaire sous Women's Studies.)

FR 3534 Women's Writings 3 ch (3C)

Selected texts by Acadian, Québécois, African and French women authors, studied in the context of feminist issues in literary scholarship. (See Calendar entry under Women's Studies.)

FR 3554 Survol de la littérature noire d'expression française 3 cr (3C)

Vue d'ensemble d'oeuvres africaines et antillaises. Principaux axes de réflexion: le mouvement de la négritude, le colonialisme et la tentation du "masque blanc."

FR 3554 Introduction to Black Literature Written in French 3 ch (3C)

Introduces students to the study of African and Caribbean works. Emphasis falls on the "négritude" movement, colonialism and the temptation of the "white mask."

FR 3564 Folie et littérature 3 cr (3C)

Étude des rapports entre les auteurs, leurs oeuvres et la folie en littérature.

FR 3564 Madness and Literature 3 ch (3C)

Study of the representation of madness in selected literary texts.

FR 3574 Littérature pour la jeunesse 3 ch (3C)

Étude d'une variété d'oeuvres pour la jeunesse, des plus actuelles aux plus classiques. Le repérage des stéréotypes racistes, sexistes et sociaux sera au coeur de l'analyse.

FR 3574 Literature for Children and Young Adults 3 ch (3C)

Literary texts for children and young adults. Study of racial, social and sexist stereotypes found in works ranging from the classical to the contemporary.

FR 3584 Auteurs non francophones écrivant en français 3 cr (3C)

L'émergence de l'Europe comme entité politique coïncide avec la parution remarquée d'ouvrages écrits en français par des non francophones. Nous tenterons une description sociologique, littéraire et formelle de ce phénomène dont Agota Kristof (Hongrie), Milan Kundera (Tchéquie), André Makine (Russie) et Nancy Huston (Canada) constitueront les exemples à l'étude. Les étudiant-e-s qui ne font ni une concentration, ni une spécialisation en études françaises, peuvent remettre leurs travaux en anglais.

FR 3584 Non Francophone Writers Writing in French 3 ch (3C)

The unification of Europe coincides with an increased number of works written in French by non Francophones. We will describe this recent phenomenon using sociological, literary and formalist approaches of works by Agota Kristof (Hungary), Milan Kundera (Czech Republic), André Makine (Russia), Nancy Huston (Canada). Classes to be held in French; students not registered in French Majors or Honours Program may submit their assignments in English.

FR 3624 Littérature française de la Renaissance à l'Âge classique 3 cr (3C)

Survol des mouvements littéraires ayant marqué le XVIe et le XVIIe siècle français; étude d'auteurs représentatifs de diverses pratiques littéraires telles que le roman (La Fayette), l'essai (Montaigne), le théâtre (Racine), la poésie (Ronsard).

FR 3624 French Literature from Renaissance to Classicism 3 ch (3C)

Survey of major literary movements in the 16th and 17th centuries in France; study of writers representing various literary genres: novel(La Fayette), essay (Montaigne), drama (Racine), poetry (Ronsard).

FR 3634 Littérature française des Lumières 3 cr (3C)

Survol de l'évolution des idées et de la philosophie au XVIIIe siècle en France; étude de textes représentatifs de diverses pratiques littéraires telles que l'autobiographie (Rousseau), le roman (Graffigny, Diderot), l'essai (Voltaire).

FR 3634 French Literature in the Enlightenment 3 ch (3C)

Survey of the evolution of thought and philosophy in 18th Century France; study of texts representing various literary genres such as autobiography (Rousseau), novel (Graffigny, Diderot), essay (Voltaire).

FR 3654 Littérature française 1800-1850 3 cr (3C)

Aspects du Romantisme français, marqué par une conscience nouvelle du rôle de l'artiste, et par le triomphe du roman (Constant, Balzac, Gauthier, Stendhal) et de la poésie lyrique (Hugo, Nerval, Lamartine).

FR 3654 French Literature 1800-1850 3 ch (3C)

Aspects of French Romanticism, marked by a new awareness of the role of the artist and the triumph of the novel (Constant, Balzac, Gautier, Stendhal) and of lyrical poetry (Hugo, Nerval, Lamartine).

FR 3664 Littérature française 1850-1900 3 cr (3C)

Le réalisme, le naturalisme, l'Art pour l'Art, le décadentisme, découlant tous du Romantisme, tentent de situer l'individu face au progrès. Étude des textes de Flaubert et Zola, Sand et Maupassant, Baudelaire, Verlaine et Mallarmé.

FR 3664 French Literature 1850-1900 3 ch (3C)

Realism, naturalism, l'Art pour l'Art, the Decadents: these literary movements are all rooted in Romanticism and attempt to answer the questions haunting the individual in an increasingly technological world. Works by Flaubert and Zola, Maupassant and Sand, Baudelaire, Verlaine and Mallarmé will be analyzed.

FR 3674 Le roman français contemporain 3 cr (3C)

Nous ferons une lecture attentive de quelques romans représentatifs de la seconde moitié du XXe siècle. Les courants intellectuels, les préoccupations esthétiques, politiques, sociales et morales qui se dégagent de ces oeuvres seront abordées.

FR 3674 Contemporary French Novel 3 ch (3C)

Examines selected works from the second half of the Twentieth Century. Explores intellectual contexts of the works, as well as the aesthetic, political, social and moral concerns outlined in them.

FR 3684 Théâtre français 3 cr (3C)

Du marivaudage à l'absurde, de la satire au burlesque, le théâtre se révèle un art de l'interpellation. Étude des formes dramatiques dans des pièces de Molière, Marivaux, Beaumarchais, Rostand, Ionesco.

FR 3684 French Theatre 3 ch (3C)

From "marivaudage" to the absurd world of Ionesco, from satire to burlesque, French drama showcases an art of interpellation. Technical aspects of dramaturgy will be analyzed in plays by Molière, Marivaux, Beaumarchais, Rostand and Ionesco.

FR 3814 Poésie du Canada français 3 cr (3C)

Étude des courants poétiques les plus marquants du Canada français: symbolisme, régionalisme, surréalisme, nationalisme, contre-culture, formalisme et féminisme. Analyse du langage poétique, de la versification et des figures de style.

FR 3814 Poetry of French Canada 3 ch (3C)

Important poetic movements of French Canada: symbolism, regionalism, surrealism, nationalism, counter-culture, formalism, and feminism. Study of the language of poetry, versification, and figures of speech.

FR 3834 Écrivaines québécoises contemporaines 3 cr (3C)

Lanalyse de lévolution de la pensée féministe dans le roman féminin québécois. (Cf. Cet annuaire sous Womens Studies).

FR 3834 Contemporary Québécois Women Writers 3 ch (3C)

Studies the evolution of feminist thought in novels written by Québécois women. (See Calendar entry under Womens Studies).

FR 3844 Écriture migrante au Québec 3 cr (3C)

Depuis les années 1980, un flux migratoire dans les centres urbains du Québec donne lieu à une littérature dite transculturelle ou migrante. Axes de réflexion : exil, rêve du retour, identité et acculturation. Étude des enjeux de lécriture et de ses modes dexpression romanesque, poétique et dramatique en milieu minoritaire.

FR 3844 Immigrant Writing in Quebec 3 ch (3C)

Since the 1980s, a rise in immigration in the urban centres of Quebec has led to the development of transcultural or immigrant literature. Main focus on exile, fantasy of return, identity and acculturation. Study of issues of writing and its various forms, including fiction, poetry and drama, in a minority setting.

FR 3854 Littérature acadienne 3 cr (3C)

Introduction à la littérature acadienne dans ses diverses manifestations. Une attention particulière sera portée aux textes contemporains. Principaux axes de réflexion: quête d'identité, débuts de modernité.

FR 3854 Acadian Literature 3 ch (3C)

Introduction to Acadian literature in its diverse aspects. Special attention will be paid to contemporary works. Concentration on search for identity, beginnings of modernism.

FR 3864 La littérature canadienne-française du XIXe siècle 3 cr (3C)

A partir de quelques oeuvres représentatives, la formation d'une écriture romanesque et poétique, spécifique au Canada français; son évolution de la rébellion de 1837 jusqu'à la fin du XIXe siècle, ses qualités et ses défauts. Étude de l'influence prédominante du contexte socio-culturel: lutte entre rouges et ultramontains, thèse du messianisme compensateur, censure et autocensure.

FR 3864 French Canadian Literature of the XIX Century 3 ch (3C)

Based on certain representative works, study of the birth of a specific and distinct style of writing in the poetry and novel of French Canada, its evolution from the rebellion of 1837 to the end of the XIX century, its qualities and shortcomings. Study of the predominant influence of the socio-cultural context: the struggle between the tories and the "ultramontains," the thesis of compensating messianism, censorship and self-censorship.

FR 3874 Le roman canadien-français de 1900 à 1960 3 cr (3C)

Pendant la première moitié du XXe siècle se propage au Canada français une idéologie qu'appuie l'élite au pouvoir et qui lie à la survie du peuple canadien-français, à la religion et à l'agriculture. En littérature, plusieurs écrivains épousent cette idéologie. Ils célèbrent la patrie de même que les séductions de la campagne québécoise : terre, clocher, etc. Étude de l'évolution de cette littérature qui se voulait représentative du mode de vie et des idéaux canadiens-français.

FR 3874 The French-Canadian Novel from 1900 - 1960 3 ch (3C)

The first half of the twentieth century bears witness to an ever popular ideology favoured by those in power, linking the survival of the French Canadian people with religion and agriculture. In literature, many writers promote this ideology. They celebrate the qualities of the Québec countryside, the soil, the Church, the homeland. Looks at the evolution of this literature which saw itself as representing the lifestyle and ideals of French Canadians.

FR 3884 Théâtre du Canada français 3 cr (3C)

Lecture de grandes oeuvres dramatiques du Canada français. Étude de la dramaturgie, de la mise en scène et de la théâtralité.

FR 3884 The Theatre of French Canada 3 ch (3C)

Reading of major works by French Canadian playwrights. Study of dramaturgy, production, and theatricality.

FR 3894 Le roman canadien-français contemporain 3 cr (3C)

Le roman canadien-français depuis 1960 est marqué par l'urbanisation, la contestation et l'éclatement des valeurs traditionnelles. Étude des oeuvres représentatives de ce refus global du passé et de cette quête d'un prochain épisode libérateur tant du point de vue politique que de celui de l'illustration d'une nouvelle forme laïcisée du mythe national ancré dans la modernité et l'espace américain.

FR 3894 The Contemporary French-Canadian Novel 3 ch (3C)

Since 1960, the French Canadian novel has been marked by a thrust towards urbanization, by the rejection and disintegration of traditional values, and by the search for a new freedom. Representative works of this era will be studied both from a political point of view and as illustrating a new type of national, secular myth anchored in modernism and the North American continent.

FR 4034 Perfectionnement de l'expression orale II 3 cr (3C)

Amélioration de l'expression orale. Présentations, discussions et débats sur des sujets d'actualité.Fermé aux étudiant.e.s scolarisé.e.s en français.

FR 4034 Advanced Oral French II 3 ch (3C)

Aims at perfecting competence in oral French through presentations, discussions, debates on current topics. Not open to students who attended French-language school.

FR 4054 Rédaction II 3 cr (3C)

Amélioration de l'expression écrite. Rédaction de textes suivis.

FR 4054 French Composition II 3 ch (3C)

Aims at developing competence in writing structured full-length texts.

FR 4504 Étude d'un auteur important 3 cr (3C)

Exploration de l'univers littéraire d'un auteur important de la francophonie.

FR 4504 Study of a Major Author 3 ch (3C)

Study of the works of a major literary author of the French speaking world.

FR 4902 Mémoire de spécialisation 6 cr (R)

Travail sous la direction d'un-e professeur-e du Département. Réservé aux étudiant-e-s faisant une 'Spécialisation simple.'

FR 4902 Honours Report 6 ch (R)

Individual study, under the supervision of a member of the Department, leading to a report. Reserved for Single Honours students.

FRENCH LINGUISTICS COURSES

Note: See beginning of Section H for abbreviations, course numbers and coding.

FR/LING 3404 Introduction à la linguistique 3 cr (3C)

Étude d'aspects phonologiques, morphologiques et syntaxiques, à partir d'exemples tirés du français.

FR/LING 3404 Introduction to Linguistics 3 ch (3C)

Introduction to various sub-disciplines of linguistics (phonology, morphology, and syntax) exemplified through French.

FR/LING 3414 Sociolinguistique 3 cr (3C)

Initiation à l'étude empirique des interactions entre la langue française et son contexte social. Thèmes : variation sociale et stylistique, dialectes et norme, attitudes linguistiques, féminisation du discours, bilinguisme. Préalable: FR/LING 3404 ou léquivalent; FR/LING 3414 et FR/LING 3404 peuvent être suivis simultanément.

FR/LING 3414 Sociolinguistics of French 3 ch (3C)

An introduction to the empirical study of language as it is used in its social context. Topics include: social and stylistic variation, dialects and the "standard," linguistic attitudes, language and gender, bilingualism. Prerequisite: FR/LING 3404 or equivalent; FR/LING 3414 may be taken concurrently with FR/LING 3404.

FR/LING 3424 Phonétique et phonologie 3 cr (3C)

Étude des concepts fondamentaux de la phonétique et de la phonologie. Description des propriétés phonologiques du français contemporain et de leurs diverses réalisations phonétiques. Étude des variantes régionales et sociales. Préalable : FR 3404.

FR/LING 3424 Phonetics and Phonology of French 3 ch (3C)

The concepts and methods of phonetics and phonology. The basic French sound system and its various phonetic realizations depending on dialects and sociolects. Prerequisite: FR 3404.

FR/LING 3444 La créativité lexicale 3 cr (3C)

Le vocabulaire est un système dynamique, capable de se modifier pour répondre aux besoins de la société. Ce cours consiste en l'étude et l'analyse de la structure du lexique, des mécanismes créateurs de la langue et des divers moyens de formation des mots, y compris la dérivation, la néologie, l'emprunt et la métaphore. Préalable: FR/LING 3404

FR/LING 3444 Lexical Creativity 3 ch (3C)

The vocabulary of a language is a dynamic system constantly evolving to meet the changing needs of society. This course consists of the study and analysis of the structure of the lexicon, the creative mechanisms of language, and the various types of word formations, including derivation, neology, loanwords and metaphors. Prerequisite: FR/LING 3404

FR/LING 3454 Histoire de la langue française 3 cr (3C)

Étude de l'évolution du français depuis ses origines latines jusqu'à nos jours. Esquisse diachronique: phonologie, morphologie, syntaxe et vocabulaire de l'ancien français, du français classique et du français moderne. Préalable: FR 3404.

FR/LING 3454 History of French 3 ch (3C)

A study of the evolution of French from its roots in Latin to the present. Old, Middle and Modern French will be sketched: the phonology, morphology, syntax and vocabulary of each period will be studied. Prerequisite: FR 3404.

FR/LING 3464 Syntaxe 3 cr (3C)

Étude de la structure phrastique dans le cadre de la grammaire générative. Présentation de phénomènes typiques du français, illustrant quelques règles syntagmatiques et transformationnelles. Préalable: FR 3404.

FR/LING 3464 Syntax 3 ch (3C)

A study of sentence structure in the framework of generative grammar. Phrase structure and transformational rules will be studied and some classical problems of French syntax will be presented. Prerequisite: FR 3404.

FR/LING 3484 Questions de psycholinguistique 3 cr (3C)

Approche pluridisciplinaire du comportement verbal. Étude de l'acquisition et de la pathologie du langage par rapport aux théories linguistiques et neurolinguistiques.

FR/LING 3484 Issues and Trends in Psycholinguistics 3 ch (3C)

Pluridisciplinary approach to language as behaviour. Developmental and pathological issues are discussed in relation to linguistic and neurolinguistic theories.

FR/LING 4414 Français canadien 3 ch (3C)

Examen de traits caractéristiques du français parlé au Canada, notamment du franco-acadien et du franco-québécois. Préalables: deux cours FR/LING

FR/LING 4414 Canadian French 3 ch (3C)

Examines the major linguistic features of French spoken in Canada, in particular Acadian and Québécois French. Prerequisites: Two courses in FR/LING.

FR/LING 4444 Sémantique 3 cr (3C)

Initiation à l'étude de la signification et de la référence. Survol historique du domaine, sa place au sein de la linguistique générale et parmi d'autres sciences humaines; notions essentielles à l'examen des relations de sens; analyse componentielle. Préalable: FR/LING 3404.

FR/LING 4444 Semantics 3 ch (3C)

An introduction to the study of meaning and reference. Historical survey of the field, and its place within general linguistics and amongst other fields of human sciences; fundamental notions for the examination of meaning relations; componential analysis. Prerequisite: FR/LING 3404.

FR/LING 4464 Théorie linguistique 3 cr (3C)

Mise en place de concepts fondamentaux en linguistique moderne. Étude de la relation entre forme et sens, de la nature des représentations grammaticales et de leur pertinence. Préalable: FR 3464.

FR/LING 4464 Linguistic Theory 3 ch (3C)

Presents fundamental concepts in modern linguistics. Examines the relation between form and meaning, the nature of grammatical representations, and their relevance. Prerequisite: FR 3464.

FR/LING 4465 Morphologie générative 3 cr (3C)

Initiation aux principes et aux règles de base régissant la formation des mots. Présentation et étude de tendances récentes en théorie morphologique. Préalable: FR 3404.

FR/LING 4465 Generative Morphology 3 ch (3C)

Introduction to basic principles and rules governing word formation. Presents and examines recent trends in contemporary morphological theory. Prerequisite: FR 3404.

GEODESY AND GEOMATICS ENGINEERING

The courses presently offered in the Geomatics Engineering Program by the Department of Geodesy and Geomatics are described below.

The first digit of the identification number indicates the level of the course.

The second digit indicates the subject area as follows:

0	measurement, positioning and navigation
1	applied analysis
2	geodesy
3	imaging and mapping
4	information management, modelling and visualization
5	land administration
6	synthesis and design
7	technical communication
8	service course for other disciplines

The third digit carries the course sequence identification integer where "0" refers to the first course, "1" to the second course, and so on.

For list of core courses and technical elective courses, see Section G.

Note: See beginning of Section H for abbreviations, course numbers and coding.

GGE 1001 Introduction to Geodesy and Geomatics 5 ch (3C 3L)

Introductory geodesy and geomatics. Measuring geometry (surveying, hydrography, satellite positioning, navigation, photogrammetry). Understanding measurements (introductory uncertainty & estimation theory). Managing geographic information. Applications of geomatics techniques, including creation of topographic plans from electronic total stations.

GGE 1003 Practicum I 2 ch

Two weeks of practical exercises following spring examinations. Involves optical distance measurement; trigonometric heighting; taping; balancing angles, height differences, traverses; horizontal circular curves; vertical curves; area & volume computations. Prerequisite: GGE 1001 or equivalent.

GGE 1803 Practicum for Civil Engineers 2 ch

Two weeks of practical exercises following spring examinations. Involves optical distance measurement; trigonometric heighting; taping; balancing angles, height differences, traverses; horizontal circular curves; vertical curves; area & volume computations; stream gauging; elementary photogrammetry. Prerequisite: GGE 1001 or equivalent.

GGE 2012 Advanced Surveying 4 ch (2C 3L)

Barometric and trigonometric heighting. Precision differential levelling. Mechanical and optical distance measurements. Electronic angle and distance measurement, total stations, and reflectorless EDM. Coordinate transformations and positioning by trigonometric sections. Route and construction surveys. Geodetic control surveys: from triangulation to GPS. Introduction to the design of surveys and specifications. Prerequisites: GGE 1001, GGE 1003, STAT 2593.

GGE 2013 Practicum II 2 ch

Two weeks of practical exercises following spring examinations. Prerequisites: GGE 2012, STAT 2593.

GGE 2413 Mapping Concepts and Technology 5 ch (3C 3L)

Introduction to computer-based systems and processes for creating, managing, analyzing and visualizing spatial information. Introduction to geographic information systems (GIS), spatial data structures and 2-dimensional spatial transformations. Comparative overview of alternative spatial data collection technologies. Systems-based approaches to desktop mapping, cartographic production and map analysis. Basic properties and applications of common map projections. Prerequisites: CS 1003 or 1073, MATH 1503 or equivalent introduction to matrices and systems of linear equations. Co-requisites: CS 1013 or 1083, MATH 2513 or equivalent.

GGE 2501 Land Administration I 4 ch (3C 1L)

Introduction to the principles of cadastral systems and survey law with a focus on Canadian jurisdictions. An extensive reading list supplements the lecture material. Students will be required to conduct a title search, write property descriptions, review legal cases, and complete other laboratory assignments demonstrating the practical aspects of managing cadastral survey systems.

GGE 3022 Survey Design and Analysis 4 ch (2C 3L)

Specifications for surveys. Systematic and random errors, design, processing and analysis of angle, distance, and height difference measurements. Prerequisites: GGE 2012, GGE 3111, GGE 3202. Co-requisite: GGE 3122.

GGE 3023 Practicum III 2 ch

Two weeks of practical exercises following spring examinations. Prerequisite: GGE 3022.

GGE 3042 Space Geodesy 5 ch (3C 3L)

Principles of space geodesy. The celestial sphere, its coordinate systems, and variations in coordinate systems. Star observations. Time keeping. Satellite based positioning systems, especially the Navstar Global Positioning System (GPS) including observations, development of mathematical models, static and dynamic positioning, error analysis, software structure, and processing considerations. Prerequisites: MATH 1503, MATH 2513, GGE 3202.

GGE 3111 Introduction to Adjustment Calculus 5 ch (3C 3L)

Calculus of variations; quadratic forms; least-squares principles; least-squares method, weight matrix, variance factor; parametric, condition and combined adjustment. Prerequisites: MATH 1503, MATH 2513, STAT 2593.

GGE 3122 Advanced Adjustment Calculus 5 ch (3C 3L)

Hilbert space approach to adjustment, uni- and multivariate statistical testing; approximation, prediction, filtering; constraint functions; weighted parameters. Prerequisites: GGE 3111, MATH 2513; Co-requisite: CS 3113.

GGE 3202 Geodesy I 4 ch (2C 3L)

Introduction to the subject of geodesy; kinematics, gravity field, and size and shape of the Earth; temporal deformations of the Earth. Prerequisites: APSC 1013, 1023, MATH 1503, 2513, GEOL 1001, 1026. Co-requisite: MATH 3543.

GGE 3342 Imaging and Mapping I 5 ch (3C 3L)

Overview and physical basis of remote sensing. Space- and air-borne sensor systems, active and passive sensors. Fundamental geometry of photogrammetry. Image statistics. Rectification of digital imagery. Image enhancement, spectral and spatial filtering. Multi-spectral transformations. Thematic information extraction, classification and accuracy assessment, change detection. Credit will be given for only one of GGE 3342 or GGE 5342. Prerequisite: GGE 2413 or permission of instructor.

GGE 3353 Imaging and Mapping II 5 ch (3C 3L)

Introduction to hydrography: geomatics aspects, trends and prospects, role in offshore management. Depth determination: seabed and seawater properties, non-acoustic methods, underwater acoustics, vertical and oblique incidence methods, bathymetric and imaging methods. Prerequisites: MATH 3543, GGE 3342.

GGE 4022 Precision Surveying 4 ch (2C 3L)

Measurements, processing, and analysis in densification surveys. Control surveys for photogrammetry and construction. Introduction to mining and tunnelling surveys, deformation measurements and analysis, and industrial metrology. Prerequisite(s): GGE 3022, GGE 3023, GGE 3122.

GGE 4042 Kinematic Positioning 5 ch (3C 3L)

Performance requirements, mathematical models, observation methods, processing strategies, uncertainties and other characteristics associated with moving marine, land airborne, and space vehicle positioning, orientation and attitude applications, using autonomous, terrestrial, satellite, and acoustic methods. Prerequisites: GGE 3042, GGE 3122, GGE 3353, GGE 4211.

GGE 4211 Geodesy II 5 ch (3C 3L)

Terrestrial, celestial and orbital coordinate systems; coordinate transformations; positioning in 3 dimensions, on the ellipsoid and on a conformal mapping plane. Height systems. Prerequisites: GGE 3202, MATH 3543.

GGE 4313 Imaging and Mapping III 5 ch (3C 3L)

Analogue, analytical, and digital photogrammetric principles, systems, and products; photogrammetric equations and operations; imaging systems; stereoscopy; photo mosaicing; DEM generation; orthorectification; aerotriangulation; photogrammetric project planning. Prerequisites: GGE 3342.

GGE 4403 Geographic Information Systems 4 ch (2C 3L)

Applications of hardware and software components of geographical information systems (GIS). GIS functions and architecture. Characteristics of GIS data structures and database management systems. Introduction to spatial modelling and analysis. GIS data integration and standards. Prerequisites: CS 1013 or CS 1083, GGE 2413 or permission of instructor.

GGE 4512 Land Administration II 3 ch (2C 1L)

Introduction to modern issues in land tenure and administration from Canadian and international perspectives. Includes the role of property systems in land management, aboriginal rights to land and natural resources, parcel-based land information systems, comparative analysis of land administration systems, coastal zone management, law of the sea, and delimitation of maritime boundaries.

GGE 4541 Geomatics Engineering Economics and Management 3 ch (2C 2L)

Outline of government and professional organizations involved in the management of geomatics in Canada: multi-purpose geomatics programs; the time value of money, depreciation, inflation; national and regional benefit/cost geomatics case studies; decision making in the public sector. Financial statements; break even analysis, decision making in the private sector. Prerequisite: ECON 1073, completion of at least 135 credit hours.

GGE 4623 Practicum IV 2 ch (1C 3*L)

Projects and case studies emphasizing the synthesis of geomatics design. Prerequisite(s): minimum of 135 ch in program. Co-requisite: GGE 4541.

GGE 4711 Technical Report 2 ch (1C 2L)

Preparation of a technical report on a project which demonstrates mastery of senior level courses. This course may be taken in either term. Prerequisite: GGE 2701 or ENGG 1013.

GGE 4723 Thesis 4 ch

May be taken in place of SE 4711 (Technical Report). Permits a student to research one topic in-depth under the direct supervision of a faculty member. The major part of the research should be completed before registration in September. Only students with a well-defined research project, a strong academic background, and good writing skills will be admitted. Prerequisite: GGE 2701 or ENGG 1013 and permission of supervisor.

GGE 5013 Oceanography for Hydrographic Surveyors 3 ch (3C)

Components of physical oceanography and surficial sedimentology that affect the accuracy and operational conduct of hydrographic surveying. Detailed studies of the controls on surface water level (tides, waves and swell, vertical reference surfaces), sound speed structure (seawater properties, propagation and refraction), seafloor processes (deposition and erosion) and bottom backscatter strength (sonar performance, geomorphology, sediment classification). Prerequisite: minimum of 135 ch in program, or equivalent.

GGE 5041 Engineering Surveying 4 ch (2C 3L)

Design and analysis of deformation surveys. Geotechnical measurements of tilt, strain, stress, etc. Special surveying methods and instrumentation of high precision. Application of lasers. Prerequisites: GGE 4022, GGE 3122.

GGE 5061 Mining Surveying 4 ch (2C 3L)

Introduction to mining engineering. Mapping of open pits and underground mines. Shaft plumbing; use of lasers; use of gyrotheodolites. Tunnelling surveys. Rock deformation measurements. Monitoring and analysis of ground subsidence. Prerequisites: GGE 4022, GGE 3122.

GGE 5072 Hydrographic Data Management 3 ch (2C 3*L)

Principles and use of hydrographic data management tools which acquire, clean, store, retrieve, select, interpolate, determine uncertainty, colour-code, and visualize individual and aggregated high density observed depth data points. Hydrographic data layering, analysis, artificial illumination, texturing, and animation. Visualization requirements and standards for safety of navigation. Prerequisites: GGE 3353, GGE 4403.

GGE 5083 Hydrographic Surveying Operations 3 ch

Planning, executing and appropriately presenting the results from a hydrographic survey. Seamanship and piloting. Survey case studies. Six to eight weeks on a hydrographic survey vessel after the spring examinations or before the next fall term. Enrollment is limited to the capacity of the vessel. Students will be responsible for paying their own travel and accommodations for the field work. Prerequisites: GGE 3353, GGE 5013, GGE 5072.

GGE 5093 Industrial Metrology 4 ch (2C 3L)

Spatial measurements of high precision for experiment lay-out and industrial setting-out and quality assurance. Prerequisite: GGE 4022.

GGE 5131 Special Studies in Adjustments 4 ch (3C 3*L)

Hilbert space techniques; sequential techniques; digital filtering; interpolation and approximation; large system techniques. Prerequisite: GGE 3122.

GGE 5222 Gravity Field and Geodetic Networks 4 ch (2C 3L)

Theory of Earths gravity field. Gravimetry and methods of geoid determination. Mathematical models, observational methods, and uncertainties associated with horizontal, three-dimensional, and gravity networks. Prerequisites: GGE 3022, 3122, 4211.

GGE 5242 Special Studies in Geodesy 4 ch (3C 3*L)

Review of coordinate systems. Orbital dynamics. GPS for high precision positioning and navigation. Major practical lab in GPS positioning. Prerequisites: GGE 3202, GGE 4211.

GGE 5332 Special Studies in Photogrammetry 4 ch (3C 3*L)

An in-depth treatment of various topic areas, such as terrestrial photogrammetry, orthophotography and rectification, cameras, instrumentation and auxiliary aids. Prerequisites: GGE 4313.

GGE 5342 Remote Sensing 5 ch (3C 3L)

Overview and physical basis of remote sensing. Space- and air-borne sensor systems, active and passive sensors. Fundamental geometry of photogrammetry. Image statistics. Rectification of digital imagery. Image enhancement, spectral and spatial filtering. Multi-spectral transformations. Thematic information extraction, classification and accuracy assessment, change detection. Credit will be given for only one of GGE 3342 or GGE 5342. Prerequisite: GGE 2413 or permission of instructor.

GGE 5413 Special Studies in Digital Mapping 4 ch (2C 3L)

An in-depth treatment of topics in digital mapping such as software engineering, computational geometry, and three-dimensional data structures. Prerequisite: GGE 4403.

GGE 5521 Survey Law 3 ch (3C)

Review of common and statute law affecting property, boundaries, and surveys. Role of a land surveyor in resolving boundary disputes and as an expert witness. Various types of legal surveys. Professional responsibilities, ethics. Case studies. Prerequisites: GGE 2501, GGE 3022, GGE 3023, GGE 3122, GGE 4211, GGE 4512.

GGE 5532 Land Economy and Administration 3 ch (3C)

Introduces land management and administration from economic and institutional perspectives. Evolving concepts of property and land tenure systems. Role of property institutions in land management. Economic principles in the valuation, allocation, development, and conservation of land resources. Land administration and land information systems. Special issues such as coastal zone mangement, environmental management, aboriginal tenure, and land reform. Prerequisite: GGE 4512.

GGE 5533 Environmental Policy, Law, and Information Management 3 ch (3S)

Presents legal and political context within which environmental engineers work. Examines law and policy issues. Demonstrates how geomatics engineering can assist environmental engineering through GIS, remote sensing, ocean mapping, and other information technologies. Focuses primarily on the Canadian legal and policy regime, drawing on international law and practice where appropriate. Practical assignments and a comprehensive reading list complements the seminars.

GGE 5543 Marine Policy, Law, and Administration 3 ch (3S)

Coastal and marine [offshore] legal issues and how they relate to the framework of policy and administration. Focuses primarily on Canadian legal and policy regime, drawing on international law and practice where appropriate. Law of the sea and delimitation of zones and boundaries; Canadian coastal and offshore jurisdictional and administrative issues; coastline delimitation for various purposes; legal issues related to hydrographic surveys, hydrographic data, and marine accidents. Legal principles involved when designing and planning various marine surveys.

GEOGRAPHY

GEOG 5641 Geography of Resource Management 3 ch

Ecological systems, population problems, pollution concerns, energy needs, mineral exhaustion, and related concepts.

GEOG 5642 Rural Geography 3 ch

Rural resources and problems. Agricultural and forest activities are emphasized.

GEOG 5643 Political Geography 3 ch

Structure and functioning character of the state. Boundaries, capital cities, core areas, mini-states, and territorial seas. Political patterns and geopolitics.

GEOG 5644 Geography of Eurasia (former USSR) 3 ch

Geographical development of the region. Consideration of the interaction among physical zonal patterns and the distribution of the ethnic populations and associated activities, including resource development, is given to economic/resource characteristics as these apply to the NB school curriculum.

GEOLOGICAL ENGINEERING

Note: See beginning of Section H for abbreviations, course numbers and coding.

GE 1026 Geology Laboratory for Geological Engineers 2ch (3L)

An introductory study of: minerals and rocks; physics, chemistry and structure of the earth; geological age determination and summary of historical geology; surface processes, subsurface processes; economic geology of Canada.

GE 2022 Engineering Geology 4 ch (3C 3L)

A study of geological materials and hazards; site investigations; environmental geology; geothermal resources and exploitation; and case histories of geological problems in engineering projects. Equivalent to GEOL 2022. Prerequisite: GEOL 1001 and GE 1026 or equivalent.

GE 4401 Applied Glacial Geology 5 ch (3C 3L)

The characteristics of flow, erosion and deposition by active and stagnant ice masses, facies relationships in processes and products of glaciated terrain. Practical applications, including relevance of sample collection and analyses for geochemical and geotechnical evaluation. Prerequisites: GEOL 2212 and GEOL 2321 or instructor's approval. Equivalent to GEOL 4401.

GE 4412 Applied Rock Mechanics 5 ch (3C 2L)

Acquisition and use of geological data in the construction of engineering structures sited in rocks. Design of slopes in rock considering both the two and the three dimensional cases of sliding failure. Analysis of failed slopes to determine cohesion along the sliding surface. Improvement of rock slopes including the design of rock anchors. Prerequisites: GEOL 1041/1042/ 1045 or equivalent. Equivalent to GEOL 4411.

GE 4432 Rock Mechanics Design 5 ch (2C 3L)

Classification, description and testing of the rock mass and the measurement of in-situ stress. Stability of underground openings and design of tunnel supports. Prerequisite: GE 4411. Equivalent to GEOL 4432.

GE 4442 Mineral Resource Utilization 5 ch (3C 2L)

Mineral exploration, evaluation, exploitation, processing, marketing and conservation.

GE 4973 Team Design Project 4 ch (1C 6L) [W]

Working in teams, students will complete an engineering design project that draws on their knowledge and skills obtained in previous courses. Student teams will design a structure, system, process or resource development plan to meet a broad range of specified constraints. Students will manage their projects professionally, prepare a comprehensive written report, and present their design work orally. Prerequisite: CE 3973

GE 4993 Senior Report II 4 ch (1C 6L)(W)

A written document based on the proposal in Senior Report I. The subject is investigated using all means available to the student with the guidance of an approved supervisor. The student is required to present the subject of the report orally and attend similar presentations by colleagues. Prerequisites: GE 4983.

GE 5153 Waste Geotechnics 4 ch (3C 3L*)

Design of sanitary landfills, with emphasis on clay liners and composite liners. Properties of geosynthetics. Geotechnical properties of municipal solid waste. Landfilling procedures. Hydrological evaluation of sanitary landfills. Site selection. Prerequisites: CE 3113, GE 2022.

GE 5753 Engineering Hydrogeology 4 ch (3C 3L)

Covers important topics in quantitative hydrogeology, including: principles of saturated and unsaturated groundwater flow, solutions to groundwater flow problems, well hydraulics and pumping tests, introductory groundwater geochemistry, and contaminant migration and attenuation processes in groundwater. Prerequisites: CE 2703, GEOL 1001, GEOL 1026, or CHE 2703.

GE 5943 Research Project 4 ch (1C 6L) [W]

Each student will work on an approved research project. The student will: present a proposal which will serve as the basis for the project; carry out work on the project with the guidance of an approved supervisor; submit written progress reports at specified times; write a final report at the completion of the project; present the subject of the report orally; and attend similar presentations by colleagues. Prerequisite: CE 3973.

GEOLOGY

Note: See beginning of Section H for abbreviations, course numbers and coding.

GEOL 1001 The Earth: Its Origin, Evolution and Age 3 ch (3C)

Novas and Supernovas; The Solar Nebula Theory, Catastrophism and Uniformitarianism. Earth as a heat engine. Origin, growth and main features of the Earth's crust. Origin and evolution of oceans, continents and the atmosphere. The rock cycle, seafloor spreading, plate tectonics, mountain building and deformation of the Earth's crust. Earthquakes, igneous and metamorphic processes and their products, including mineral resources. Credit can be obtained for only one of GEOL 1001 or GEOL 1063.

GEOL 1006 Introduction to Geology Laboratory I 2ch (3L)

A laboratory course to accompany GEOL 1001. Prerequisite or co-requisite: GEOL 1001.

GEOL 1012 Earth Processes, Resources and the Environment 3 ch (3C)

Natural resources and environmental problems in the context of the Earth's physical, biological and chemical processes.

GEOL 1017 Introductory Geology Laboratory II 2ch (3L)

A laboratory course designed to accompany GEOL 1012. Prerequisite or co-requisite: GEOL 1012.

GEOL 1026 Geology Lab for Engineers 2 ch (3L)

An introductory study of: minerals and rocks; physics, chemistry and structure of the earth; geological age determination and summary of historical geology; surface processes, subsurface processes; economic geology of Canada.

GEOL 1036 Geology Lab for Foresters 2 ch (3L)

An introductory study of the materials forming the earth and the changes in time and place that fashion the surface of the crust. Geological factors governing water supply, ground configuration, climate, soils. Glaciation and glacial geology are emphasized.

GEOL 1063 Earth Systems Geology (How the Earth Works) 3ch (3C)

Designed primarily for students in faculties other than Science, Engineering and Forestry and Environmental Management. Surveys the origin of the Earth as part of the solar system, formation of a dynamic planet, geophysical and geochemical characteristics, development and evolution of life, plate tectonics, geomorphology, rocks and minerals, deformation, sedimentation, climate change and geological hazards. Geological concepts are discussed through reference to features in parks and other famous sites across Canada. Credit can be obtained for only one of GEOL 1001 or GEOL 1063.

GEOL 1703 Field School (7 days) 3 ch [W]

Introduction to field observations, traversing, sampling and mapping in the first week of May or before classes begin in the fall. Accommodation expenses (Fredericton) paid by the student. Prerequisites: GEOL 1001/1012/1006/1017 or approved equivalent.

GEOL 2022 Engineering Geology 4 ch (3C 3L)

A study of geological materials and hazards; site investigations; environmental geology; geothermal resources and exploitation; and case histories of geological problems in engineering projects. Prerequisites: GEOL 1001, 1026 or equivalent.

GEOL 2131 Mineral Sciences 5 ch (2C 3L) [W]

Introduction to crystallography and x-ray diffraction techniques. Appraisal of the material properties of minerals and selected ceramics. Fundamentals of silicate chemistry and the behaviour of the major rock-forming minerals at varying pressures and temperatures. Laboratories focus on describing the physical properties of the more common minerals and on their identification in hand specimen. Prerequisites: GEOL 1001/1012/1006 or 1017 or equivalent.

GEOL 2142 Chemistry and Physics of Minerals 5 ch (3C 3L)

The study of the compositional variability of minerals and the relationship between mineral composition and mineral assemblage, temperature, pressure, volatile fugacity, cooling rates, etc. The major silicate and oxide mineral groups are emphasized. Laboratories emphasize a variety of methods (polarizing microscope, electron microprobe, x-ray diffraction, IR, UV-VIS and Raman spectroscopy, etc.) for determining the identity, composition and structural state of minerals and crystalline solids. Prerequisite: GEOL 2131.

GEOL 2201 Biogeology I 5 ch (2C 3L)

Nomenclature and taxonomy of main invertebrate groups. Paleoecology and factors governing distribution of modern and ancient organisms. Fossilization processes, life and death assemblages. Selected microfossil groups; taxonomy, function and affinities.

GEOL 2212 Sedimentology I 5 ch (2C 3L)

Weathering and diagenetic processes. Origin, properties and classification of sedimentary rocks. Physical and biogenic sedimentary structures. Sediment transport mechanisms, particularly sediment gravity flows. Stratigraphic principles. Prerequisites: GEOL 1001/1012/1006 or 1017 or equivalent.

GEOL 2321 Structural Geology I 5 ch (2C 3L)

Emphasis on description and classification of folds, faults, foliations, lineations and joints, and the use of primary structures. Labs include geological maps and cross sections, and stereographic projection. Prerequisites: GEOL 1001/1012/1006 or 1017 or equivalent.

GEOL 2602 Principles of Geochemistry 5 ch (3C 3L) [W]

Origin of elements. Theories of the origin and chemical evolution of the earth, atmosphere, and oceans. Laws governing the distribution of elements in the earth. Application of phase diagrams to petrologic problems of the crust and mantle. Chemical weathering. Use of stable and radioactive isotopes in geology. Geobarometry and geothermometry. Hydrothermal process and base-metal ore deposits. Prerequisites: CHEM 1012, 1017 (or equivalent), MATH 1013, GEOL 2131.

GEOL 2703 Field School (14 days) 6 ch [W]

Principles of stratigraphy and geological mapping. Prerequisites: GEOL 1001/1012/1006 or 1017 (or equivalent); GEOL 2131, 2212, and 2321 are recommended. Accommodation expenses are paid by the student.

GEOL 3003 Computer Based Geological Mapping 2 ch

A hands on lab course designed to develop basic skills in the geological application of Geographical Information Systems technology, comprising: A general introduction to the properties and geological use of GIS. Various methods of importing and/or preparing a digital base map. Making a geological map by means of GIS, from field input to publication quality full colour product. Construction of digital terrain models and their application to geological problem solving and data presentation. Principles of digital map and data interrogation, database interrogation and the potential for geological synthesis. Prerequisites: 2nd year field school, or permission of the instructor.

GEOL 3131 Igneous and Metamorphic Petrology 5 ch (2C 3L) [W]

Petrogenesis of igneous and metamorphic rocks with emphasis on their macroscopic textures, mineral associations, classification and field relations. Laboratories concentrate on the identification of the common igneous and metamorphic rocks using hand specimens and thin sections. Prerequisites: GEOL 2142.

GEOL 3202 Biogeology II 5 ch (2C 3L)

Selected topics in paleontology including biostratigraphy, taphonomy, nature of the fossil record, lagerstätten, mass extinctions, paleobiology, origin of life, Precambrian life, fossil communities. Offered alternate years. Prerequisite: GEOL 2201.

GEOL 3322 Structural Geology II 5 ch (2C 3L)

Stress and strain, introduction to deformational behaviour of rocks. Origin of folds, foliations, lineations, joints and faults. Geometrical analysis. Labs will include simple experiments and advanced map problems. Prerequisites: GEOL 2321, GEOL 3131.

GEOL 3402 Ore and Environmental Petrology (A) 5 ch (2C 3L)

Systematic study of the low- to high-temperature sulphide, sulphate, oxide, and hydroxide minerals with emphasis on their structure, composition, crystal chemistry, and phase relations. Laboratory studies emphasize identification of mineral assemblages from supergene weathering environments to magmatic mineral deposits. Includes applications from mineral deposit studies to mine waste remediation. Prerequisites: GEOL 2142, 2602.

GEOL 3411 Rock Mechanics 5 ch (3C 2L) [W]

An introduction to the deformation and fracture of rocks when subjected to a natural or man-imposed stress field. The concepts of stress, strain, stress-strain relations; creep and strength are applied to geological materials. The mechanisms involved in the failure of continuous, discontinuous and layered rocks are discussed. Prerequisites: GEOL 1001/1012/1006 or 1017, or approved equivalent.

GEOL 3442 Environmental Geology 3 ch (2C 1S) [W]

The role of geology in the management of our environment. Largely seminar-based with guest lecturers. Prerequisites: GEOL 1001/1012/1006 or 1017 or approved equivalent.

GEOL 3482 Mineral Resources, Economics, and the Environment 5 ch (2C 3L)

This course presents various types of mineral deposit resources, integrated with economic and environmental considerations with impacts related to exploration and mining activity. Prerequisites: GEOL 2131, 2142, and 3131.

GEOL 3621 Exploration Geochemistry 5 ch (2C 3L)

Application of geochemistry to mineral exploration. Distribution and controls on element migration in rocks and soils. Recognition of anomalous concentrations. Selected case histories. Laboratory covers common analytical methods for rock, soil, and water samples. Prerequisite: GEOL 2602.

GEOL 3631 Geochemistry of Natural Waters 5 ch (3C 3L) [W]

The principals of chemical equilibria, reaction kinetics and transport applied to natural water systems. Chemical weathering and diagenesis. Chemistry of surface waters, ground water and the oceans. Geochemical cycles. Applications to environmental problems. Labs include chemical analysis of water, carbonate equilibria and geochemical modeling. Prerequisites: GEOL 2602 or GEOL 1001/1012/1006 or 1017, CHEM 2201, CHEM 2111.

GEOL 3703 Field School (two weeks) 7 ch

Principles of structural geology and geological mapping. Provides two weeks supervised training in field work and preparation of an independent structural map and report of a selected area. At least the cost of accommodation expenses are paid by the student. Prerequisites: GEOL 2703, 2321, 3322.

GEOL 3713 Environment Geology Field School (two wks) 6 ch

Principles of surficial geology and field sampling of water and recent sediments. Prerequisites: GEOL 2703, GEOL 3442, GEOL 3631.

GEOL 3803 Work Term Report I CR

A written report on the scientific activities of the work term. Credit for the course is dependent in part on the employer's evaluation of the student's work activities. Students must be accepted into the Geology Coop program to register for this course.

GEOL 4101 Igneous Petrology 5 ch (3C 3L) [W]

Study of igneous rocks from the perspectives of magma genesis and differentiation. Particular emphasis is placed on the relationships between the physical/chemical aspects of magmatic systems and the tectonic setting of igneous rocks. Prerequisites: GEOL 2602, 3131.

GEOL 4112 Metamorphic Petrology 5 ch (2C 3L) [W]

Study of metamorphic rocks emphasizing the processes responsible for their formation in terms of heat, pressure and fluid effects related to tectonic setting. Laboratories primarily concentrate on the acquisition of observational skills via hand specimens and detailed petrographic work. Prerequisite: GEOL 3131 or equivalent.

GEOL 4122 X-ray and Electron Crystallography 5 ch (2C 3L)

The direct application of X-ray and electron diffraction techniques as used in fundamental characterization of minerals and other materials. Laboratory work includes the study of minerals using X-ray, electron optical, and other determinative methods. Offered alternate years. Prerequisites: GEOL 2142.

GEOL 4152 Volcanology (A) 5 ch (2C 3L)

Physical volcanologic, textural, petrologic, and petrogenetic study of ultramafic to felsic volcanic systems in a variety of tectonic environments are examined. Emphasis on magma/ melt properties, phase relations and composition, crystallization processes, and gas exsolution and groundwater interaction processes are key. Laboratory studies emphasize petrology of volcanic and volcaniclastic rocks in a variety of geological settings. Prerequisites: GEOL 2131, 2142, 3131.

GEOL 4211 Sedimentology II 5 ch (2C 3L)

Selected topics in sedimentology including sequence stratigraphy, lithofacies analysis, paleoenvironments and their recognition in the rock record including continental (alluvial fan, fluvial, lacustrine), marginal marine (delta, tidal flat, beach, barrier island, estuarine) and marine (shelf, deep water oceanic) systems. Offered alternate years. Prerequisite: GEOL 2212.

GEOL 4241 Historical Geology 5 ch (2C 3L)

Application of geological principles to the evolution of the earth. Normally offered alternate years. Prerequisites: GEOL 2201, 2321, 2212, 3131 or permission of instructor.

GEOL 4312 Geotectonics 5 ch (2C 3L)

Principles of plate tectonics and their application to Phanerozoic, Proterozoic and Archean continental evolution. Labs include sea-floor spreading problems, and seminars on divergent, transform and convergent plate boundaries. Prerequisites: GEOL 2321, 3322.

GEOL 4322 Flow of Rocks 5 ch (2C 3L)

Application of material science to rock deformation. Theory of rock deformation. Development of microstructure and fabric in deformed rock. Labs will be concerned with observation and measurement of microstructure and fabric. Prerequisites: GEOL 3322, 2212, or equivalents.

GEOL 4401 Applied Glacial Geology 5 ch (3C 3L) [W]

Study of the characteristics of flow, erosion and deposition by active and stagnant ice masses, facies relationships in processes and products of glaciated terrain. Practical applications including relevance of sample collection and analyses for geotechnical and geochemical evaluation. Prerequisites: GEOL 2321, 2212, or permission of the instructor.

GEOL 4412 Applied Rock Mechanics 5 ch (3C 2L) [W]

The acquisition and use of geological data in the construction of engineering structures sited in rocks. The design of slopes in rock considering both the two and the three dimensional cases of sliding failure. The analysis of failed slopes to determine cohesion along the sliding surface. The improvement of rock slopes including the design of rock anchors. Prerequisites: GEOL 1001/1012/1006 or 1017 or equivalent.

GEOL 4432 Rock Mechanics Design 5 ch (2C 3L)

The classification, description and testing of the rock mass and the measurement of in-situ stress. The stability of underground openings and the design of tunnel supports. Prerequisite: GEOL 4412.

GEOL 4442 Mineral Resource Utilization 5 ch (3C 2L)

Mineral exploration, evaluation, exploitation, processing, marketing and conservation.

GEOL 4452 Environment Impact Assessment 5 ch (3C 3L)

Baseline assessment studies and site evaluation. Risk/benefit analysis. Overview of relevant environment legislation. Selected case studies. Prerequisites: GEOL 3442.

GEOL 4461 Economic Geology I 5ch (2C 3L)

General features of mineral deposits, their origin, localization and classification, with emphasis on exploration, evaluation and development. Prerequisite: GEOL 3131 or approval of instructor.

GEOL 4472 Economic Geology II 5ch (2C 3L)

Advanced features of mineral deposits, their origin, localization and classification, with emphasis on exploration, evaluation and development. Prerequisite: GEOL 3131 or approval of instructor.

GEOL 4501 Exploration Geophysics I 5 ch (3C 2L)

Introduction to the principles, survey procedures and interpretation techniques of the gravity and magnetic methods of geophysical exploration. Examples of regional, geological and structural problems are used.

GEOL 4512 Exploration Geophysics II 5 ch (3C 2L)

Introduction to principles, survey procedures and interpretation techniques of the electrical and seismic methods of geophysical exploration. The application of these methods is illustrated by examples from exploration of mineral deposits or engineering geology.

GEOL 4611 Physical Geochemistry 3 ch (3C)

Application of thermodynamics and kinetics to geological problems. Multicomponent equilibria and activity coefficients. Water-rock interactions. Prerequisites: CHEM 2601, CHEM 2622, GEOL 2602, CS 1003 or equivalent

GEOL 4612 Isotope Geochemistry 5 ch (5 C/L) [W]

Theory and application of stable and radiogenic isotope geochemistry in geology. Coverage includes radiometic dating, radiogenic and stable isotopic systems in petrology and geochemistry, and applications of radiogenic and stable isotopes to the solution of problems in paleoclimatology and environmental geochemistry. Offered in alternate years. Prerequisites: GEOL 2602, 3131.

GEOL 4803 Work Term Report II CR

A written report on the scientific activities of the work term. Credit for the course is dependent in part on the employer's evaluation of the student's work activities. Students must be accepted into the Geology Coop program to register for this course. Prerequisite: GEOL 3803.

GEOL 4900 Thesis Project 8 ch [W]

Students who intend to undertake a thesis project, either as an elective course or as a requirement for an Honours BSc degree, are advised to consult with their intended faculty supervisor near the end of their third year; requirements and guidelines for the project can be obtained from the Director of Undergraduate Studies. A written request for admission to the Honours programe and/or for permission to take this course must be submitted by the student to the Departmental Chair no later than October 1 of the student's final year; the letter must state the provisional title of the project and the name of the faculty member who has agreed to supervise the project.

GEOL 4913 Independent Studies in Geology 3ch

Advanced studies in a topic in geological sciences. The topic is to be chosen jointly by the student, advisor and Chair of the Department. May be taken for credit more than once. Title of topic will appear on transcript. Prerequisite: Permission of the Department.

GERMAN AND GERMAN STUDIES

Note: See beginning of Section H for abbreviations, course numbers and coding.

GER/GS 1001 Introductory German I 3 ch (3C)

Enables students to understand, speak, read and write simple, idiomatic German by introducing them to the sounds, word forms, sentence structures and basic vocabulary of German. Sections of German 1001 may use different texts and approaches. No prerequisite.

GER/GS 1002 Introductory German II 3 ch (3C)

Continuation of GER 1001.

GER/GS 1033 Reading German for Beginners I 3 ch (3C)

Designed to enable students to read German texts in their respective fields of interest. Based on contrastive grammar, it requires no previous knowledge of German. Students soon learn to understand German texts in their disciplines. No prerequisite. Students who are taking or have previously taken GER 2001/2002 or equivalent (e.g., GER 2013 and GER 2023) cannot take this course.

GER/GS 1043 Reading German for Beginners II 3 ch (3C)

Continuation of GER 1033 (Reading German for Beginners I). Designed to enable students to read more sophisticated German texts than the ones they dealt with in GER 1033. Prerequisite: Only students who have passed GER 1033 with grades of B- and above should consider taking GER 1043. Students who have passed GER 1043 with a grade of B or above may take second year language courses.

GER/GS 1053 Business German I (A) 3 ch (3C) [W]

Language course with special emphasis on texts and situations of the business world and tourist industry . It aims to familiarize the students with the vocabulary used in common commercial correspondence and everyday business affairs as well as to provide a sound base of German grammar. Prerequisite: GER 1001, 1013, 1033 or departmental approval.

GER/GS 1061 German Culture I 3 ch (3C) [W]
(Cross Listed: WLCS 1061)

A survey of German civilization from the time of early European tribal migrations to the rise of nationalism in the nineteenth century. Taking a sociohistorical perspective, students will be acquainted with a selection of key developments within the German-speaking cultures, including aspects of history, literature, music, architecture, and painting. Assigned readings, lectures, and slide shows aim at raising an awareness of the interrelationship between cultural heritage, historical and political developments, and artistic expression. Conducted in English. Open to students of all years. No prerequisites.

GER/GS 1071 German Culture II 3 ch (3C) [W]
(Cross Listed: WLCS 1071)

Significant aspects of German culture from the beginning of the industrial revolution to the end of the 20th century. Topics will vary, but may include: German Impressionism and Expressionism, Early German Film, the Women's Movement, Early German Homosexual Rights Movement, Weimar Culture, Nazi Art, Literature after 1945, Divided and Re-unified Germany, New German Film, and others. Conducted in English. Open to students of all years. No prerequisites.

GER/GS 2001 Intermediate German I 3 ch (3C)

Starting with a review of the fundamentals of GER 1001 and 1002, this course develops a larger vocabulary and deals with more complex sentence structures. It enables the student to read and write German with greater ease and to understand and speak the language more competently. Prerequisite: 6 ch of first year German or departmental approval.

GER/GS 2002 Intermediate German II 3 ch (3C)

Continuation of GER 2001.

GER/GS 2063 Business German II 3 ch (3C) [W]

Continuation of Business German I. Emphasis on working with texts and audio-visual material dealing with the business world. Readings, discussions, and exercises to broaden the students' knowledge of business vocabulary and to increase written and oral proficiency in German. Review and study of German grammar. Prerequisite: GER 1053 or departmental approval.

GER/GS 3011 Modern German Usage I 3 ch (3C)

By discussing contemporary topics, both in the classroom and assignments, the students' competence in German is improved and their skills in idiomatic and written usage are developed. Prerequisite: GER 2001/2002 or equivalent.

GER/GS 3022 Modern German Usage II 3 ch (3C)

Continuation of GER 3011. Prerequisite: GER 3011 or equivalent.

GER/GS 3043 Introduction to German Literature I (from the Beginnings to the Reformation) 3 ch (3C) [W]

Examines a representative selection of German literary masterpieces from various periods and literary genres. Prerequisite: GER 2001/2002 or equivalent.

GER/GS 3053 Introduction to German Literature II (From the Reformation to the Present) 3 ch (3C) [W]

Examines a representative selection of German literary masterpieces from various periods and literary genres. Prerequisite: GER 2001/2002 or equivalent.

GER/GS 3055 Intro to 20th-c German Literature in Translation II 3 ch [W]

Introduces students to some of the major figures and trends in twentieth-century German literature, covering the period from the end of World War II to Germany's reunification. Different types of prose narratives, drama and poetry are examined and discussed in the context of the main intellectual, social and political forces and concerns of the period. Completion of GER/GS 3045 is not required, but recommended. Conducted in English.

GER/GS 3063 Literature of the Holocaust 3 ch
(Cross Listed: WLCS 3063)

Addresses questions on a selection of literary and film responses to the Holocaust in various cultures and genres. Includes the perspectives of Jewish and non-Jewish survivors, children of survivors and others more removed. Particular attention is paid to the ethical and aesthetic challenges the Holocaust poses. Topics include: victims and oppressors, and the role of stereotypes in their depictions; the possibilities and limitations of language to express unimaginable horrors; and the role and appropriateness of literature as medium to respond to the historical, cultural, and psychological complexities of the Holocaust. Texts are read in English translation. No prerequisites.

GER/GS 3066 Early German Cinema (O) 3 ch [W]
(Cross Listed: WLCS 3066)

Beginning with the earliest silent movies and concluding with National Socialist propaganda films, this course offers an introduction to a prolific and important era in German film history: the Weimar Republic and pre-WWII period, 1918-1939. Our discussions will situate the films within larger political and cultural discourses. Emphasis will be placed on such topics as the cinematic response to the trauma of WWI; German national identity; expressionism and modernity; the politics of gender and sexuality; the impact of sound on film aesthetics; the relationship between cinema and other media; the ethics of film production. Films to be studied include features by directors such as Lang, Lubitsch, Murnau, Pabst, Riefenstahl, Sagan, von Sternberg and Wiene. In English.

GER/GS 3072 Studies in Contemporary German Cinema 3 ch
(Cross Listed: WLCS 3072)

Studies the major accomplishments of East and West German cinema of the postwar period, as well as cinematic trends since German unification. We will consider questions of narrative, genre, and authorship, examine film's relationship to other media, and focus on the dynamic interaction between film history and social history. Films to be studied include features by prominent directors such as Wolf, Fassbinder, Wenders, von Trotta, Carow, Dörrie, and Tykwer.

GER/GS 3083 Seminar I: Genre 3 ch (3C) [W]

The development of a particular genre in German literature and an examination of various works in that area. Prerequisite: Departmental approval.

GER/GS 4013 Advanced German Usage I 3 ch (3C)

Development of advanced skills in oral and written expression. Prerequisite: Departmental approval.

GER/GS 4023 Advanced German Usage II 3 ch (3C)

Prerequisite: GER 4013 or departmental approval.

GER/GS 4053 Seminar II: Author 3 ch (3C) [W]

An intensive study of the life and work of a particular author or a number of authors. Prerequisites: Departmental approval.

GER/GS 4073 Literary Texts 3 ch (3C) [W]

Reading and discussion of a selection of German literary texts. Prerequisite: GER 3011 may be taken in conjunction with GER 3022.

GER/GS 3045 Intro to 20th-c German Literature in Translation I 3 ch [W]

Introduces students to some of the major figures and trends in twentieth-century German literature to the end of World War I. Examines different types of prose narratives, drama and poetry in the context of the main intellectual, social and political forces and concerns of the period. Conducted in English.

GREEK

Note: See beginning of Section H for abbreviations, course numbers and coding.

GRK 1203 Introductory Greek I 3 ch (3C)

GRK 1213 Introductory Greek II 3 ch (3C)

GRK 1223 Introduction to Ancient Greek I: Independent Study 3 ch

An introduction to Ancient Greek which presupposes no previous knowledge of the language. Students work independently rather than in regularly scheduled classes. This course is designed for motivated students who are not able to attend the regularly scheduled introductory class.

GRK 1233 Introduction to Ancient Greek II: Independent Study 3 ch

A second term of Ancient Greek, in which students work independently. This course is intended for motivated students who are not able to attend the regularly scheduled introductory class. Prerequisite: GRK 1203 or GRK 1223.

GRK 2203 Intermediate Greek I 3 ch (3C)

Prerequisite: GRK 1213 or 1233.

GRK 2213 Intermediate Greek II 3 ch (3C)

GRK 3203 Advanced Greek I 3 ch (3C)

GRK 3213 Advanced Greek II 3 ch (3C)

GRK 3223 Reading Greek Authors I 3 ch (3C)

GRK 3233 Reading Greek Authors II 3 ch (3C)

GRK 4203 Directed Reading in Greek 3 ch

GRK 4204 Directed Reading in Greek 3 ch

GRK 4213 Greek Prose Composition 3 ch (3C)

This term course provides the basic skills of composing Attic Greek prose. Its purpose is to convert passive reading ability into positive control of the language in both grammar and style. Prerequisite: 3 ch course of advanced-level Greek.

HISTORY

Note: See beginning of Section H for abbreviations, course numbers and coding. .

INTRODUCTORY COURSES

HIST 1001 Past into Present 3 ch (3C) [W]

History starts here, with the news and public debates of today. This course examines how our understanding of the world we live in is shaped by our knowledge of history. The course is divided into three modules, which will vary from year to year, and will range in focus from world crises to popular culture.

HIST 1003 Democracies and Dictatorships (A) 3 ch (3C) [W]

Explores the changing fortunes of democracy and dictatorship in the contemporary era. Why have democracies sometimes become discredited, while the idea of dictatorship becomes appealing? Why do dictatorships crumble? What has been the nature of ordinary life under dictatorships?

HIST 1004 War in the Modern World 3 ch (3C) [W]

Analyzes the history of a current conflict by exploring the domestic and international contexts and options for ending the conflict. Combines lectures, discussion and simulations, to examine the role of allies, armies, paramilitaries, agents provocateurs, multinational corporations, non-government organizations and the United Nations.

HIST 1007 History of the Body (O) 3 ch (3C) [W]

Examines how the body has been imagined, experienced, controlled, and understood, both historically and today, by art, medicine, technology, religion, science and popular culture. Considers the sexualized and pregnant body, the sinful and diseased body, the aesthetic and the medicalized body, and the body as machine from Galen and Descartes to the age of the computer, the cyborg and the gene.

HIST 1021 Women in History 3 ch (3C) [W]

Provides an overview of women's experience in traditional and modern societies in the private and public spheres. Considers women whose lives were controlled by others and women in charge of their own lives. Stress is placed on the past 500 years; the orientation is Western but non-Western cases and examples will also be studied. Topics include women's involvement in the family, myth and religion, social orders, production, trade, domestic service, healing, the arts, thought and scholarship, education, politics, charities and social welfare, crime and its prevention, the law, social reform, war and peace and environmental questions. Restriction: Not open to students who have taken HIST 2021.

HIST 1025 An Introduction to the History of International Relations 3 ch (3C) [W]

An introduction to the history of international relations from the sixteenth to the mid-twentieth century. Examines the evolution of modern international systems, the expansion of world capitalism, the idea of imperialism, the emergence of the nation state, the origins of systemic wars, and the evolution of peacemaking. Restriction: Not open to students who have taken HIST 2025.

HIST 1305 Prohibition and Rum-running in Canada, I827-I948 3 ch (3C) [W]

Introduces the historical method while exploring the controversial theme of prohibition. Examines both protagonists in the struggle: prohibitionists, whose ideology was rooted in evangelical religion and an early strain of feminism, and the "Rummies" who fought to preserve a recreational drinking culture and the economic opportunities which it made possible.

HIST 1315 Canadian History on Film 3 ch (3C) [W]

A survey of selected themes in Canadian history and their representation in documentary and dramatic films.

HIST 1325 Canada Since 1945 (O) 3 ch (3C) [W]

Addresses the major issues of contemporary Canadian history including post-war reconstruction, the emergence of the welfare state, the Quiet Revolution in Quebec, Canadian external relations, immigration policy, regional disparity, political leadership, and national identity. Restriction: Not open to students who have taken HIST 2325.

HIST 1715 History of Visual Culture: Renaissance to Modern (O) 3 ch (3C) [W]

Continues the historical survey of visual culture, beginning with the Renaissance in Italy and ending with contemporary artistic practice in Europe, the United States, Canada, and the non-Western world. Restriction: Not open to students who have taken HIST 2715.

HIST 1815 Military History from Plato to NATO 3 ch (3C) [W]

To study tactics, technology, battle control, logistics and management. Developments will be examined by studying selected campaigns and battles. Restriction: Not open to students who have taken HIST 2815.

FOUNDATION LEVEL COURSES

HIST 2013 Medieval History Part 1: Europe to I200 3 ch (2C 1T) [W]

A survey of Western Europe from the end of the Roman Empire and the appearance of the German peoples until the end of the twelfth century. Centres especially on the major political and social developments of medieval Europe, such as feudalism, the revival of towns, the conflict between Popes and Emperors, the crusades, the flourishing of medieval thought and the role of both women and men in medieval society. Restriction: Not open to students who have completed Hist 1010 or Hist 1005.

HIST 2014 Medieval History Part 2: Europe I200-I500 3 ch (2C 1T) [W]

Continues the survey of the history of Medieval Europe, beginning c. I200 and ending with the Renaissance. Focuses especially on the several crises facing Europeans during the later Middle Ages: popular uprisings, famine, the Black Death, the I00 Years War, Papal schism and the new heretical and intellectual challenges to orthodoxy. Restriction: Not open to students who have completed HIST 1010 or Hist 1006.

HIST 2015 World History (O) 3 ch (3C) [W]

Provides a basic introduction to some of the major events, persons, and ideas which have shaped the history of the world. Special attention is given to the role of science, technology, fine art, and other non-political topics. Designed for undergraduates in all faculties.

HIST 2023 Early Modern Europe Part 1, 1300-1600 (O) 3 ch (2C 1T) [W]

A survey of Western European history which examines aspects of the Italian and Northern Renaissances, early contact with Non-Western peoples, the Protestant and Catholic Reformations and the growth of nation states. Emphasizes developments in the economy and society, education, religion, culture and government. Restriction: Not open to students who have completed HIST 1020.

HIST 2024 Early Modern Europe Part 2, 1600-1800 (O) 3 ch (2C 1T) [W]

Continuation of a survey of Western European history which examines aspects of the rise of absolutist states, the Scientific Revolution, the Enlightenment, overseas expansion and the French Revolution. Stresses developments in the economy and society, government, secular thought, culture, international relations and war. Restriction: Not open to students who have completed HIST 1020.

HIST 2100 Modern Europe 6 ch (2C 1T) [W]

Traces the development of modern Europe from the time of the French and Industrial Revolutions. Considerable emphasis is placed on social and cultural matters. Restriction: Not open to students who have completed HIST 1100.

HIST 2133 Rome: The Eternal City II (O) 3 ch (3C) [W]

An introduction to the history of Rome from the Baroque period to the modern age. Normally taught on location. May not be taken by students who have taken HIST 3133.

HIST 2203 Tudor to Georgian Britain: 1485-1815 (O) 3 ch (2C 1T) [W]

Explores the religious and political turmoil of the sixteenth and seventeenth centuries under the Tudor and Stuart monarchs and the relative political stability achieved in the eighteenth century. Key social and economic issues are also examined, including the transformation of agriculture and manufacturing, the expansion of empire and the impact of wars. Restriction: Not open to students who have completed HIST 1200 or HIST 1245.

HIST 2204 Britain from Waterloo to the 1960s (O) 3 ch (2C 1T) [W]

In 1815 Britain was victorious after nearly twenty-five years of war with France, in the throes of major industrial change, and at the threshold of major political change. This course traces the modern history of Britain through the nineteenth and twentieth centuries, surveying prominent political, economic and social topics. Restriction: Not open to students who have completed HIST 1200 or HIST 1246.

HIST 2300 An Introduction to Canadian History 6 ch (2C 1T) [W]

A general study of Canadian political, economic, and social development from early beginnings to the present. Topics include Native societies, New France, British North America, Confederation, the National Policy, modern Canada and its regions. Restriction: Not open to students who have taken HIST 1300.

HIST 2403 An Introduction to U.S. History Part 1: Colonial Period to Civil War 3 ch (2C 1T) [W]

Examines Aboriginal and colonial beginnings, the American Revolution, early years of nationhood and the coming of the Civil War.Restriction: Not open to students who have completed HIST 1400.

HIST 2404 An Introduction to U.S. History Part 2: Civil War to the Present 3 ch (2C 1T) [W]

Examines the struggle for Black Rights, industrialization and its social and political impact, and the role of the U. S. in world wars and the Cold War.Restriction: Not open to students who have completed HIST 1400.

ADVANCED LEVEL COURSES

Ancient History

The History Department will accept for History credit courses in Greek and Roman History to a maximum of 12 ch. See Classics section of Calendar for course descriptions.

European History

HIST 3001 West Meets East in the Middle Ages, 1050-1450 (O) 3 ch (3C) [W]

Examines contact and conflict among the Latin Kingdoms of Europe, the Byzantine Empire and the Islamic Empire. Considers the crusades, crusader states, the position of the Jews, and the role of trade and intellectual development in the period.

HIST 3003 European Women 1450-1800 3 ch (3C) [W]

Examines the condition of European women from the end of the Middle Ages till the onset of industrialization. Concentrating on Italy, France and England, it considers particular cases as well as general trends. Specific topics include: attitudes toward woman, women's education, legal status, work and contribution to the economy, place in religion and the family and alternatives to family life.

HIST 3005 Popes and Preachers, Saints and Sinners: The Catholic Religion in the Late Medieval and Early Modern Periods (O) 3 ch (3S) [W]

This course will examine the central role of religion in society and culture by comparing and contrasting two interesting eras: the Late Middle Ages (1100 to 1300) and the Renaissance/ Counter-Reformation period (1420 to 1600). The course will compare and contrast a variety of intriguing features of religion and culture of the two periods: the worldview of the Italian people and their beliefs about god, supernatural power, sacraments, saints, relics, pilgrimage, the devil, magic and witchcraft; the churchs various efforts to shape these, mainly through preaching, exorcisms, art and the Inquisitions; and the attempts of the popes to maintain political and social control in the face of difficult and often diverse challenges. It will also examine the relationship between the papacy and the Jews. Normally taught on location.

HIST 3006 The Protestant Reformation (A) 3 ch (3C) [W]

Considers the religious, social and political transformations of northern Europe, especially Germany, in the sixteenth century. Emphasizes the various "Protestant" religious reform movements and their relation to political developments, social unrest and popular revolt in the sixteenth century.

HIST 3007 The Catholic Reformation (A) 3 ch (3C) [W]

Examines the reform tradition within the Roman Catholic Church from the fourteenth century to the French Revolution. Particular attention is paid to the Council of Trent, the new papal bureaucracy, charities and foreign missions. French examples are most frequently studied; the course should interest students of New France as well as students of European history.

HIST 3031 France in the Nineteenth Century: Struggles for Citizenship (O) 3 ch (3C) [W]

Examines the history of France from the Napoleonic Era to the consolidation of the Third Republic at the end of the nineteenth century. After reviewing the legacy of the Revolution, traces the evolution of conflicting visions of the proper type of regime for France in their social, economic and cultural contexts. The struggles of various elements of the French population for the full rights of citizenship form a central theme of the course.

HIST 3033 French Identities in the Twentieth Century (A) 3 ch (3C) [W]

Examines the political, economic, social, and cultural history of France from the Dreyfus Affair to the present. Particular attention is paid to how the French people identified themselves in terms of class, gender, ethnicity, religion and politics,and how these identities interacted, clashed, and evolved during often turbulent times.

HIST 3055 The Twentieth Century: The Generation of World War I (1890-1930) (A) 3 ch (2C 1T) [W]

Examines the impact of World War I and the Russian Revolution on European and North American society, politics and culture and of the rise of Japan on the non-European world.

HIST 3065 The Twentieth Century: The Generation of World War II (1930-1950) (A) 3 ch (2C 1T) [W]

Examines the significance of World War II in the transition from the radical politics of the 1930s to the conformity of the Cold War. Considers the emergence of the super powers and the independence of India.

HIST 3075 The Twentieth Century: The Generation of the 1960's (1950-1975) (A) 3 ch (2C 1T) [W]

Examines the extent to which the 1960s represented a decade of significant change in North America and Europe, in the Communist bloc and the Third World. Social and economic developments are examined as well as the student movement, the Vietnam War, and the Nigerian Civil War.

HIST 3081 The Twentieth Century: The Generation of Today, 1975 to Present (A) 3 ch (2C 1T) [W]

Examines contemporary history through the emergence of the global economy, the development of the women's movement, the rise of new cultural theories and the social and political changes attending the end of the Cold War. Restriction: Not open to students who have completed HIST 3015.

HIST 3085 Germany 1900-1945 (O) 3 ch (3C) [W]

Germany's domestic developments and external relations will be examined with a view to explaining why Germany was the central participant in a world war twice within a generation.

HIST 3095 The Germanies, 1945 to the Present (O) 3 ch (3C) [W]

An examination of the division of Germany and of the two German states created in 1949.

HIST 3103 European Dictatorships in the Twentieth Century (O) 3 ch (2C 1T) [W]

The European challenge to non-Western peoples and the nature of their responsibility in world events. Topics include cultural interaction, impact of the Russian Revolution, the Zionist-Arab conflict, world liberation movements, the Holocaust and mass death.

HIST 3123 Fascist Spectacle: The Aesthetics of Power in Mussolini's Italy (O) 3 ch (3S) [W]

A study of Fascist aesthetic discourse, cultural policy and artistic production. Investigates the intersection of Fascist ideology and aesthetics and reconstructs the symbols, cults, myths, rituals, and cultural configurations of Fascism as a new sacred politics. Normally taught on location.

HIST 3133 Rome: from the Baroque to the Modern Era (1527 to the Present) (O) 3 ch (3S) [W]

Studies the impact of the Catholic Reformation on Baroque Rome, the end of Papal Rome with the unification of the Italian nation, the urban expansion of the late nineteenth century, and Rome's emergence as the capital of Mussolini's New Empire. The creation of the Vatican City State will be studied, and contemporary Roman life and politics will be experienced. Normally taught on location.

HIST 3134 Romanticism and Revolution in Rome (O) 3 ch (3S) [W]

As the decades of faith in Enlightenment reason gave way to the emotional backlash of the Romantics, Rome provided a context for many of the aims of the new generation: the balance between Classicism and Romanticism, between the ruins of civilization and the struggle for a new political order, between nature and the imagination, between the past and the future. Designed as an interdisciplinary exploration of these subjects as they manifested themselves in late eighteenth- and nineteenth-century Rome, this course will consider literature, music, art and philosophy as forces of innovation that helped shape the experience of social and cultural transformation. By visiting, seeing, reading and listening to the new styles of expression embodied by Romanticism, we will explore the political issues central to the new aesthetic that inspired poets and patriots in Romes Revolution of 1848. Normally taught on location.

HIST 3135 Contemporary Italy (O) 3 ch (3S) [W]

Examines the politics, society and culture of Italy from 1945 to the present. Normally taught on location.

HIST 3202 England Under the Tudors (A) 3 ch (3C) [W]

An examination of the circumstances surrounding the revival of good governance associated with the Tudors, the context of the religious changes in the reigns of Henry VIII, Edward VI and Elizabeth, the establishment of the Church of England, and an assessment of the position of England in the world of the sixteenth century. Restriction: Not open to students who have taken HIST 3170.

HIST 3204 The English Civil War (A) 3 ch (3C) [W]

A study of the political, social, economic, religious and intellectual circumstances surrounding the rebellions and civil war in seventeenth century England. Restriction: Not open to students who have taken HIST 3170.

HIST 3241 Continuity, Change and Crisis: Britain, 1700-1830 (O) 3 ch (3C) [W]

Examines population growth, cities, social structure, domestic trade, agricultural development, poverty, industrialization and lives of individual men and women.

HIST 3255 Women's Voices in the Western World, I750-I930 (O) 3 ch (3C) [W]

Considers the processes of change for women in the western world, specifically Britain, Europe and the U.S. Explores patterns of work, education, legal standing and political activism. Addresses the continuities and changes in family life, gender expectations and opportunities

HIST 3265 Material Life and Culture in England, I700-I900 (O) 3 ch (3C) [W]

Considers changing facets of material life, such as dress, food, drink, housing, sport and recreation, and travel. Looks also at attitudes towards common life-cycle events: marriage, child-birth, disease and death, including execution. The material culture of life in England offers insights into evolving structures of society.

HIST 4001 Heretics and Witches in Europe, 1350-1650 (A) 3 ch (2C 1T) [W]

Examines popular religion and magic in Late Medieval and Early Modern Europe and official efforts to transform "popular culture". Emphasizes the medieval inquisitions against heresy (twelfth to fifteenth centuries) and especially the phenomenon of European witch-hunting (fifteenth to seventeenth centuries). Explanations of the causes of the witch-hunt, its victims and eventual decline will be highlighted.

HIST 4002 Renaissance Society (O) 3 ch (3C) [W]

Studies society and culture in the fifteenth and sixteenth centuries. Focuses on developments in commerce, education, ideas, administration, demography, social relations and religious practice in Italy and the rest of Europe.

HIST 4006 The Enlightenment (O) 3 ch (2C 1T) [W]

Examines the social and political thought of the philosophes as well as the nature of the society and government which were the object of their criticism. Particular attention is paid to France in the period 1730-1789.

HIST 4007 The French Revolution (O) 3 ch (2C 1T) [W]

Analyses the nature of the French Revolution. Studies the successive political regimes but pays particular attention to the social aspects of the Revolution including the role of the crowd and the sans-culottes movement, dechristianization, the redistribution of property, the Terror and the White Terror.

HIST 4015 The Origins of the Second World War (O) 3 ch (3C) [W]

Examines the diplomatic history of the twenty years between the two world wars of the twentieth century through a series of conferences in which students will be required to asume the roles of the participating diplomats. Both primary and secondary sources will be utilized in this study.

HIST 4033 The European Left in the Twentieth Century (O) 3 ch (3C) [W]

Examines the evolution of the European Left in the twentieth century. Combines social, intellectual and political history. Topics include: the development of European Socialism to 1914; World War I and the birth of Communism; the role of the Great Depression, antifascism and the Second World War in shaping Socialist and Communist movements; postwar Social Democracy; and the discrediting and collapse of Communism.

HIST 4105 Italy in the Twentieth Century (O) 3 ch (2C 1T) [W]

From the crisis of Liberal Italy in World War I, this course will study the rise and decline of Mussolini's Fascism and the establishment of the Christian Democratic hegemony after 1945. The challenge of Italian Communism will be examined as will the policies of the Vatican in the twentieth century. British and Imperial History

HIST 4241 Britain in the Age of Revolution, 1760-1832 (O) 3 ch (2C 1T) [W]

Studies Great Britain and Ireland in the years of transition from the age of classicism and aristocracy to the age of romanticism and liberal reform. Emphasizes social and political history and the modernization of government.

HIST 4242 Victorian Britain 3 ch (2C 1T) [W]

Examines the social, cultural, and political life of nineteenth-century Britain through such topics as factory and environmental reform, education, unionization, missionary work, emancipation of women, parliamentary reform, and imperial expansion.

Canadian History

HIST 3316 Immigration and Identity in Canadian History 3 ch (2C 1T) [W]

Examines the changing pattern of immigration to Canada from the early seventeenth century to the present, and the contribution of the various immigrant groups to the creation of a sense of Canadian identity.

HIST 3321 Canadian Colonial Society (A) 3 ch (3C) [W]

Examines the formation and nature of community in pre-industrial English Canada. Particular attention given to demography, immigrant and religious traditions, economic and environmental factors, poverty, social structure and the growth of towns.

HIST 3322 Religion and the Development of English Canada (O) 3 ch (2C 1T) [W]

Considers the role of religious beliefs and institutions in the formation of English Canadian communities from the conquest to the mid-twentieth century. The Canadian religious experience is treated in the context of that of the United Kingdom and the United States.

HIST 3325 A History of Sexualities (O) 3 ch (3C) [W]

A survey of the history of changing ideas, identities and practices associated with sexuality in the modern era, c. 1750 - present. Rather than an unchanging biological force, sexuality is a historical and social construction that involves conflict and contestation. Sexuality is also mediated by gender, class, race and ethnicity and has been subject to considerable regulation over time. Topics include religious attitudes and beliefs in pre-industrial and modern times; science, medicine and sexuality, courtship and marriage, contraception and abortion, sexual exploitation; violence and abuse, sexuality and leisure, the regulation of sexuality, the sexual revolution of the 1960s and the construction of alternative sexual identities.

HIST 3331 The Canadian Worker to 1914 3 ch (3C) [W]

The working-class experience in the age of Canada's industrial revolution, focusing on the transformation of the workplace and the rise of the labour question.

HIST 3332 The Canadian Worker since 1914 3 ch (3C) [W]

The working-class experience in Canada since the time of the Great War, focusing on the changing relationships between labour, capital and the state.

HIST 3351 Growing Up In Canada, 1800-1914 (A) 3 ch (3C) [W]

Explores various aspects of childhood and adolescence in Canada during the pre-World War I period. Discusses changes over time and compares the Canadian experience to that of the U.S. and Britain.

HIST 3352 Reform Movements: Seeking Change in Canada before WWI 3 ch (3C) [W]

Focuses on selected social and political movements. Considers the roles played by women as well as men in such movements.

HIST 3353 History of Montreal (O) 3 ch (3C) [W]

Analyses the development of Montreal from mission and fur trade and administrative centre under the French regime to commercial and principal urban centre of Quebec and a major economic and cultural force in twentieth-century Canada. Themes include demographic transformations, urbanization, the geography of social space, urban reform movements, the image of the city in literature and film, and its place in popular culture.

HIST 3364 History of Canadian-American Relations (O) 3 ch (3C) [W]

Surveys the evolving relationship between Canada and the United States from the American Revolution to the Free Trade Agreement. Stresses the twentieth century when Canada gained autonomy over external affairs. Beside the major political and economic components of the relationship, will also examine cultural, social and environmental issues.

HIST 3374 Native People and the State: From the Indian Act to the Royal Commission on Aboriginal People (O) 3 ch (3C) [W]

Examines the complex relationship between Aboriginal peoples and the Canadian state from the mid-1800s to the present. Emphasizes Canadian attempts to assimilate Aboriginal peoples and the means by which Aboriginal peoples have resisted these measures and sought to preserve their collective identities. Topics include: the Indian Act, residential schools, the rise of native political organizations, and the quest for Aboriginal rights and self-government. (Recommended for students in the Law and Society Program.)

HIST 4312 Canada and the Consolidation of Confederation, 1850-1900 3 ch (2C 1T) [W]

Examines the internal and external forces which led to union of the British North American colonies in the 1860s, the regional and ethnic compromises embodied in the Confederation agreement, and the gradual political, economic and social integration of the provinces.

HIST 4313 A History of Women in Canadian Society 3 ch (2C 1T) [W]

A course in social history focusing on the changing roles of women in the public and private spheres in the nineteenth and twentieth centuries, with special emphasis on the role of women in the work force.

HIST 4321 The World We Have Lost (A) 3 ch (2C 1T) [W]

Studies the settlement, growth, economy, family and community life, and decline of the rural community in Eastern Canada and the Northeastern United States between 1750 and 1950.

HIST 4322 The Growth of Canadian Capitalism (A) 3 ch (2C 1T) [W]

Explores the development of a Canadian business community in the nineteenth and twentieth centuries through examination of the pre-Confederation business system, the industrial revolution, the role of business in Canadian development strategies, and the growth of big business.

HIST 4323 The Family in North America (O) 3 ch (3C) [W]

Explores selected themes in the history of the North American family in the nineteenth and twentieth centuries. Topics include demographic trends, courtship and marriage, household and family structures, inheritance and the family economy, the gendered division of labour in the home and the relationship between families and the state.

HIST 4341 History of the Atlantic Provinces to Confederation 3 ch (2C 1T) [W]

Surveys the region from before the advent of written records to its entry into Confederation. It treats the impact of immigrant cultures, struggles for empire, the development of a cultural mosaic, the emergence of distinctive provincial societies and the forces which led to union.

HIST 4342 History of the Atlantic Provinces after Confederation 3 ch (2C 1T) [W]

Surveys the history of the region from Confederation to the present day, with focus on the vicissitudes of the Maritimes within Confederation and movements for social, economic and political reform.

HIST 4351 New Brunswick, 1784-1860 3 ch (2C 1T) [W]

Emphasizes social and administrative history. Topics include the establishment of government (especially administrative and legal systems); Loyalist, British, Acadian and Native interaction; church-state relations; education and schooling; management of Crown lands and the economy; family, household and society. (This course is recommended for students in the Law in Society Program.)

HIST 4352 New Brunswick, 1860 to the Present 3 ch (2C 1T) [W]

Emphasizes the changing role of government in provincial life. Topics include the background of Confederation; religion, language and education; transformations in local government; the politics of railways, energy and highways; transfer payments and social welfare; the growth of the provincial bureaucracy; and the emergence of Acadian and Native issues. (This course is recommended for students in the Law in Society Program.)

American History

HIST 3401 History of the United States: Colonial America (A) 3 ch (3C) [W]

Deals with the exploration, settlement and development of America from the beginning until the eighteenth century both in the context of local history and the broad European-American background. Canada and the Caribbean are also considered.

HIST 3402 The American Revolution (A) 3 ch (3C) [W]

Examines the causes, results and nature of the American Revolution. Themes include imperial relations, the internal development of the colonies and states, the development of revolutionary ideas, and the formation of the federal government.

HIST 3403 The Loyalists (A) 3 ch (3C) [W]

Studies the American Loyalists before, during and after the American Revolution. The first half deals with their emergence, 1763-1776, their role in the War of Independence, their treatment by the rebels, and the Peace Treaty of 1783. The second half deals with their exile in Britain, Sierra Leone, the West Indies, the Bahamas, Bermuda and what became Canada, to about 1814. An epilogue traces their myths, revivals and long-term effects down to the present.

HIST 3407 The United States: Civil War and Reconstruction (A) 3 ch (3C) [W]

Deals with the political, economic, diplomatic, and military dimensions of the civil War. Discusses the development of reconstruction policies both during and after the war and their implementation in the South.

HIST 3408 American Radicalism and Reform (A) 3 ch (3C) [W]

A survey of American social and political movements for change from the founding of the United States to the present. Considers the radical legacy of the revolutionary era, the women's suffrage and abolitionist movements, utopianism, populism, progressivism, radical unionism, anarchism, socialism, communism, African American struggles for civil rights, the new social movements of the sixties, identity politics, and recent resistance to capitalist globalization.

HIST 3411 Modern American Culture 3 ch (3C) [W]

Explores culture in twentieth-century America and its relationship to economic, political, and social change. Emphasizes literature, painting, music and film, but also examines everything from television game shows to shopping malls. Asks if there is any distinctive identity that unifies American culture, and studies the tensions among rural and urban, white and black, male and female visions of American life.

HIST 3413 African America (O) 3 ch (3C) [W]

A survey of African American history from slave times to the present, the course will focus on culture and politics. Among the themes we will explore are ideologies of racism, systems of domination, the nature of resistance, movement building, liberation strategies, African American identity, and the intersection of racial, class, and gender politics.

HIST 3414 Imperial America (O) 3 ch (3C) [W]

Surveys the history of the foreign relations of the United States from its emergence as a world power late in the nineteenth century to its current global pre-eminence. Topics include the "New Imperialism", Wilsonian idealism, inter-war isolationism, the "Good War", the Cold War, Vietnam, "realpolitik", the "New World Order", globalization, and the "War on Terror".

HIST 4455 The Harlem Renaissance (O) 3 ch (3C) [W]

Begins by considering some of the major themes, controversies and personalities in African American history, 1865-1920, in an attempt to contextualize the surge of Black cultural production known as the Harlem Renaissance. The course then focuses on the Renaissance itself, and particularly on the racial, class and gender politics that informed the creation of literature, music and art by African Americans in New York City in the '20s. and '30s.

HIST 4465 The Origins of the Cold War (A) 3 ch (2C 1T) [W]

An examination of the collapse of the Grand Alliance after 1945 and the emergence of a new division of the world based on the leadership of the two superpowers. The course will discuss the ideological, economic and geopolitical dimensions of this transformation, concentrating on the East-West conflict in both Europe and Asia up to the late 1950s, and studying the key events which shaped this conflict: the Truman Doctrine, the Marshall Plan, the Berlin Crisis, NATO, the Korean War and the arms race.

HIST 4495 The United States during the Vietnam Era(O) 3 ch (3C) [W]

This investigation of American culture, politics, and foreign relations during the third quarter of the twentieth century focuses, in particular, on the origins, nature, and consequences of the conflict that came to dominate the epoch. Topics include Cold War doctrine and ideology, the military-industrial complex, the freedom movement and black power, the new left and the counterculture, women's liberation, nation building and counterinsurgency, the anti-war movement, the conservative backlash, Watergate, and the 'Vietnam syndrome.'

Far Eastern, African and Latin American History

HIST 3601 The Emergence of the Developing Nations (A) 3 ch (3C) [W]

Examines the drawing of the peoples of the world into a worldwide market economy, the reaction of non-European peoples to western ideas and their responses to the imposition of European political authority. Attention will be focussed particularly on the period from 1869 to 1939, with a postscript covering the years to the 1960s.

HIST 3602 The Rise of Modern Japan (A) 3 ch (3C) [W]

Focuses on the internal development of Japan from the 1850s to the 1970s. The main themes include: the feudal foundation of Tokugawa Japan, modernization in the Meiji period, the growth of her military power, the parliamentary system in pre-war Japan, the revamping of the Japanese polity and society during the Allied Occupation, the economic "miracle" and Japan's post-World War II political and social developments.

HIST 3603 Modern China: Reform and Revolution (A) 3 ch (3C) [W]

Examines briefly the causes of political and social upheaval in nineteenth century China. Then focuses on the series of revolutions in the twentieth century: Republican, intellectual, nationalist and communist.

HIST 3606 Women in Modern Asia (O) 3 ch (3C) [W]

Examines the economic and social conditions of women in the pre-modern societies of Asia, what role women played in the modernization process, and the real status of women in the contemporary societies of Asia.

HIST 3611 Africa Before 1900 (O) 3 ch (3C) [W]

A study of the various African peoples and of the interaction between African and other cultures, the slave trade, European exploration, and the new imperialism of the late nineteenth century.

HIST 3612 Africa in the Twentieth Century (O) 3 ch (3C) [W]

Studies Africa's intellectual and material response to colonialism; the development of Pan-Africanism, anti-colonial organizations and agitations; and the response of settler and colonial powers.

HIST 3615 History of Slavery 3 ch (3C) [W]

Studies ways in which Western slavery and emancipation were experienced, perceived, explained, symbolized and related to European attitudes. Focuses on the lives of African slaves.

HIST 3625 Diplomatic History of China and Japan (A) 3 ch (3C) [W]

Covers the diplomatic history of Northeast Asia from the Opium War to the early 1970s. Begins with brief examination of China's and Japan's encounter with the West in the mid-nineteenth century. Other themes include Power politics in China, the emergence of Japan, East Asia and the First World War, Sino-Japanese relations between the Wars, World War II in Asia and its settlements, the rise of the People's Republic of China and its impact on international relations.

HIST 3635 The Cultural History of China (A) 3 ch (3C) [W]

Concentrates on the historical evolution of the Chinese culture. Discussion areas include: the emergence of an early Chinese civilization; Traditional China's social structure, economic organization, political system, religion and philosophy, art and literature, science and medicine, and material culture. Attention will also be paid to China's encounter with the Indian civilization as well as with the modern Western civilization.

History of Art and Music

HIST 3701 Approaches to Cultural Studies: From Television to the Computer Age (A) 3 ch (3C) [W]

Analyzes the multiple ways in which individuals, social groups and their cultural products both make meaning within and resist the dominant cultural formations of their place and time. Examines the historical development of cultural studies, as well as its central concerns today. Topics to be covered include theories of culture, critiques of television, cyberculture, and the "political correctness" debate.

HIST 3716 Renaissance Art (O) 3 ch (3C) [W]

Studies the art and architecture of Italy from the early fourteenth century to the middle of the sixteenth century. Themes include the changing status of the artist, the uses of portraiture, and the paragone (painting vs. sculpture) debate.

HIST 3721 The Body in Western Art, 1300 - 1700 (O) 3 ch (3C) [W]

Surveys various representations of the body in early modern European visual culture. Examines the major political, spiritual, gender, and scientific paradigms of the early modern period as informed by historical conceptions of the body.

HIST 3725 History of Baroque and Rococo Art (O) 3 ch (3C) [W]

Covers painting, sculpture, architecture, and other media in seventeenth-century Europe. Among the artists discussed are Rembrandt, Rubens and Vermeer. Topics include art academies, the art market, and women artists.

HIST 3729 Art Now (O) 3 ch (3C) [W]

Surveys contemporary visual culture produced in Europe and North America from 1950 until the present day. Includes discussions of painting, printmaking, sculpture, architecture, and photography, as well as conceptual, performance, installation, and body art.

HIST 3735 The History of Modern Art (O) 3 ch (3C) [W]

Examines the development of painting, sculpture and architecture from 1863 until approximately 1950 in Europe and the United States.

HIST 3736 Canadian Art (O) 3 ch (3C) [W]

Examines Canadian art and architecture from the seventeenth century to the present. Primarily focuses on the substantial Canadian art collections of the Beaverbrook Art Gallery.

HIST 3737 The History of Women Artists (A) 3 ch (3C) [W]

Examines the artistic productions of Western women from the Middle Ages to the present. Topics include the historical position of women within art institutions, women and the decorative arts, and the struggles of contemporary creative women in both Canada and the United States.

HIST 3765 History of Music in Medieval and Renaissance Periods (A) 3 ch (3C) [W]

Introduction to music between 800 and 1600, studying representative styles and putting this music in a historical perspective.

HIST 3775 History of Music in the Late Baroque and Classical Period (A) 3 ch (3C) [W]

Begins with an examination of the stylistic background of music of the Baroque Period, and follows the development of musical form and style through the late Baroque and Classical eras, i.e., from c. 1700 - c. 1830. Some attention will be given to the role of the musician in the context of the social history of the time.

HIST 3785 History of Music in the Romantic Era (A) 3 ch (3C) [W]

Traces musical development in nineteenth century Europe in its cultural-historical milieu, mainly in France and Germany. Examines the development of the orchestra, and the French and Austro-German contribution to that development, the role of nationalism in music and the role of the opera.

HIST 3795 A History of Music in the Twentieth Century (O) 3 ch (3C) [W]

Begins with an examination of the Post-Romantic composers, particularly Mahler and Strauss. Studies Debussy and the Impressionists, the Second Viennese School (Berg, Schoenberg, Webern) and its impact on twentieth-century music and the tonalist composers of the first half of the century. Examines music as an art form in North America.

HIST 3796 History of the Music Dramas of Richard Wagner (O) 3 ch (3C) [W]

An examination of the theoretical constructs behind Wagner's music dramas, the compositional histories of some of the dramas of the 1840's, and then of the Ring Cycle itself. Some attention will be given to the performance history of the dramas as well.

Military History

HIST 3803 War through Film (A) 3 ch (3C) [W]

Examines how selected themes in the history of war have been represented in both documentary and dramatic films, how film has shaped our understanding of the nature of war, and how it is used as an historical document by military historians.

HIST 3804 The Italian Campaign, 1943-45: Strategic Crossroads of the Second World War (O) 3 ch (3S) [W]

This course will introduce students to Allied grand strategy in the war against Nazi-Germany and explore the question whether the Italian Campaign was an effective means of guaranteeing the success of D-Day in Normandy and the victorious drive into Germany. The course centres on visiting the ground on which the difficult and costly diversionary battles took place. Although the course will address the campaign as a whole, special attention will be paid to the highly successful, yet little-known Canadian contribution to the battles at Ortona, the Liri Valley and the Gothic Line. Normally taught on location.

HIST 3811 Unconventional War in the Modern World (O) 3 ch (3C) [W]

This course explores the rise to prominence of unconventional warfare since 1945. It discusses the reasons for dominance of these forms of warfare and the implications of it for governments, military forces and civilian populations. The course introduces students to the concepts of revolutionary war, guerrilla warfare, terrorism, covert action, and counter-insurgency, the theories and their theorists. These themes will be illustrated through a series of case studies, from the insurgencies of the post-1945 anti-colonial period to the ethnic conflicts and genocides of the post-Cold War era.

HIST 3812 War and Diplomacy in the Middle East, 1914-84 (A) 3 ch (3C) [W]

Examines the sources and conduct of warfare in the modern Middle East from World War I to the Persian Gulf Conflict, against the background of emerging nationalism and new states, and great power intervention and diplomacy.

HIST 3814 Conventional War Since 1945 (O) 3 ch (3C) [W]

This course will examine the causes, conduct, and consequences of the major conventional wars fought since 1945. It will explain reasons for the shift of war from Europe to the non-European world; changes in the way war has been conducted, with particular emphasis on technological change and the impact on the battlefield and on non-combatants; and changes in the way military forces are created, commanded and used. These themes will be illustrated through a series of case studies from the Korean War to the war in Iraq.

HIST 3817 History of Peacekeeping (O) 3 ch (3C) [W]

The course introduces students to the study of peacekeeping as a tool of international diplomacy and conflict management. It explores the pre-Cold War origins of the concept, its 'invention' in 1956, its political utility during the Cold War era and its impact on the roles and expectations of the United Nations. The course concludes with a discussion of the decline and transformation of peacekeeping in the post-Cold War era.

HIST 3825 The Nature and Limits of Military Power, 1500-2000 (O) 3 ch (3C) [W]

Explores the uses, abuses and development of military power within Western society since 1500. Focuses on how military power is shaped and limited by the technological, social, political, ideological and economic factors of the day. Restriction: Credit will not be given for both HIST 1004 and HIST 3825; and this course is not open to students who have taken HIST 2825.

HIST 3835 Canada and the Experience of War 1600-2000 3 ch (3C) [W]

Examines how Canadian history has been shaped by military action or the threat of it. Studies Canada as a battleground for European empires in the colonial period, later as an element of British imperial defense policy against the U.S., and finally Canada's emergence as an independent player in the major conflicts of the twentieth century. Restriction: Not open to students who have taken HIST 2835.

HIST 4801 War and Society in the Age of Black Powder 1550-1865 (O) 3 ch (2C 1T) [W]

Examines the nature of warfare in Europe and North America in the Early Modern period.

HIST 4803 The First World War (O) 3 ch (2C 1T) [W]

A military history of World War I, relating events on the various fronts to their social, political and strategic contexts and looking at tactical, technological and doctrinal developments in the use of arms.

HIST 4804 The Second World War: The Sea, Land and Air Campaigns (O) 3 ch (2C 1T) [W]

Examines the campaigns, their technical and tactical developments, and principal personalities.

HIST 4806 Canadian Defence Forces (A) 3 ch (2C 1T) [W]

After sketching the period of British military responsibility, this course traces the development of the regular Canadian forces and the militia up to the present. Introduces the student to some contemporary defence problems.

HIST 4815 Seapower and Empires, 1400-1850 3 ch (2C 1T) [W]

The use of seapower as an instrument of state policy during the period 1500 to ca. 1850. Examines institutional, theoretical, economic, political, social, and technological factors which shaped seapower over the period, with particular attention to Britain's experience.

HIST 4825 Seapower and World Wars 3 ch (2C 1T) [W]

Focuses on the use of seapower and navies as instruments of state policy in the modern world since 1850. Emphasis will be placed on technological, political and strategic use of the sea in peace and war, with particular concentration on the use of seapower in the two world wars of the twentieth century.

HIST 4835 Soldiering Through the Ages (A) 3 ch (3C) [W]

Examines the military experience of the soldier from the Greek hoplite to the modern warrior. Focuses on such subjects as recruitment, training and preparation for battle and wartime experience, through the vast primary literature that chronicles the life of the soldier.

HIST 4841 Intelligence in War and Diplomacy Since 1900 (A) 3 ch (2C 1T) [W]

Examines the growth and function of national intelligence communities in Britain, the U.S. and the Soviet Union. Considers effects of intelligence on policy makers.

HIST 4851 Law and War (O) 3 ch (3S) [W]

Examines legal restraints on armed combat since circa 1500. Explores, among other topics, the recent influence of international legal regimens on military strategy, on land, sea and air action, and on peace-keeping.

HIST 4861 Terrorism in History (O) 3ch (3C) [W]

This course examines the use of terrorism as an agent of political change and repression in history. It introduces students to the debates over the definition and nature of terrorism and over the causes of the phenomenon. It explores the use of terrorism by institutional and state apparatus and by non-state groups, and the theories and theorists which underpinned its use. The course also discusses the impact on victims and societies, and efforts by nation-states and the international community to deal with the issue. Cases used to illustrate the course themes will cover the span of history, but will concentrate primarily on the 20th century.

History of Science

HIST 3905 History of the Physical Sciences (A) 3 ch (3C) [W]

Explores the Copernican and Newtonian Revolutions of the seventeenth century; the cultural consequences of the moving earth and the conception of nature as a great machine; the new world views of the twentieth century associated with the theory of relativity and the quantum theory; and the political, social, and ethical impact of physics through electronics, computers, and nuclear weaponry. Restriction: Not open to students who have taken HIST 2905.

HIST 3915 Darwinism: Origins and Impact 3 ch (3C) [W] (O)

Examines emergence of evolutionary theory in western science with emphasis on Charles Darwin and his predecessors Lamarck, Cuvier, and Lyell. Special attention is paid to the religious, social and philosophical controversy surrounding the reception of the theory, and to the theory's vindication in the twentieth century.

HIST 3925 Technology and Society (A) 3 ch (3C) [W]

Examines contemporary ideas about how technology shapes and is shaped by society and culture, historically and today. Considers theories of technological determinism, technology and religious thought, the role of innovation in industrialization and economic growth; the problems of regulating risky technologies; the impact of Information Technology, and the shaping of Canadian science and technology policy. Restriction: Not open to students who have taken HIST 2925.

HIST 3935 Science, Technology, and Society Studies (O) 3 ch (2C 1T) [W]

Surveys the important new field of "STS Studies", largely through case studies of contemporary science. Topics include the constructivist view of science and the controversies over it; science and gender; techno-scientific controversies and regulatory politics; science and multiculturalism; and postmodernist analyses of science.

HIST 3965 Healing in Early Modern Europe (O) 3 ch (3C) [W]

Examines concepts and experience of disease and healing in Early Modern Europe; emphasizes the social, political, philosophical and religious dimensions of the subject. Topics include plagues and pandemics; astrology and alchemy as healing arts; the role of guilds, pharmacies and hospitals; art and anatomy; dissection; early theories of infection; the professionalization of surgery; chemical and herbal remedies; and faith-healing.

HIST 3975 History of the Life Sciences (A) 3 ch (3C) [W]

Explores the struggle between vitalistic and mechanistic conceptions of life in the development of biology, the emergence of evolutionary theory and its social and religious consequences, and the technological influence of the life sciences on the rise of modern medicine and genetic engineering. No scientific background expected. Restriction: Not open to students who have taken HIST 2915.

HIST 4905 Albert Einstein and the Twentieth Century (O) 3 ch (3C) [W]

Assesses Einstein's historical significance to twentieth century thought through an examination of his career and personality and through a survey of his scientific, political, religious and philosophical writings. Einstein's scientific work, especially the relativity theory, provides the focus for a general examination of the twentieth century revolution in physical theory and of its consequent political and philosophical impact. Stresses the conceptual rather than the technical aspects of Einstein's science and no special background in physics is expected of the student.

HONOURS SEMINARS

History Honours students require the approval of the departmental Director of Honours to enroll in these courses. Other students wishing to enroll in an Honours Seminar must have the approval of the instructor concerned and the Director of Honours.

HIST 5005 Diplomatic History, 1929-1941 (A) 3 ch (3S) [W]

Examines the history of international relations in the decade preceding the Second World War. Particular attention will be paid to the social, economic and cultural impact of the Great Depression on the shaping of national foreign policies.

HIST 5011 Reform and Revolt in Europe, 1500-1555 (A) 3 ch (3S) [W]

Examines the motives behind and relationships between the various movements of reform and popular revolt which convulsed Northern Europe in the sixteenth century. Topics will include the learned reform proposals of Erasmus of Rotterdam, Martin Luther and Jean Calvin; the transmission of ideas in the sixteenth century; the rise of popular movements of reform; the role of women in early reform agitation; the Peasants' Revolt of 1524-26; the beliefs of the radical reformers (Anabaptists and Spiritualists) and their suppression; the rise of Catholic Counter-Reformation movements; and the political developments leading to the Peace of Augsburg in 1555. Not open to students who have taken HIST 5010.

HIST 5012 The Late Reformation and the Rise of Witch-hunting in Europe, 1550-1648 (A) 3 ch (3S) [W]

Will focus on the broader effects of the European Reformation(s) upon religion, society and the beliefs and practices of people in the second half of the sixteenth century. Will examine in particular the relationship between the religious changes and conflict of the Reformation and developments in the governance and regulation of religion, views about women, new ideas about science and magic, the increase in the fear of the devil, and the rise of witch-hunting. Not open to students who have taken HIST 5010.

HIST 5023 French Peasants 1500-1940 (O) 3 ch (3S) [W]

Explores the lives of French peasants from late medieval to modern times. Analyzes such topics as landholding and inheritance, economic life, family, pastimes, religion, education, relations with the state, associations, culture, world view, and women's as well as men's experience.

HIST 5024 France 1700-1792 (O) 3 ch (3S) [W]

Examines aspects of the economic, political, social, religious, intellectual and cultural history of France in the pre-revolutionary and early-revolutionary periods, in an attempt to explain the coming of the French Revolution

HIST 5028 Fascism (A) 3 ch (3S) [W]

Examines the rise of fascist movements and the development of fascist regimes in twentieth-century Europe. Topics to be covered include: the social and cultural roots of fascism, the impact of the First World War, the structures of dictatorship, society and culture under the fascist regimes, racial policy, foreign policy and war, and neo-fascism after 1945. While the course pays particular attention to Italian Fascism and German Nazism, other movements and regimes will be considered. Students who have taken HIST 5026 and HIST 5027 may not take this seminar for credit.

HIST 5032 France, 1870-1970 (O) 3 ch (3S) [W]

Examines selected topics in modern French history. Possible topics include: the Third Republic and its enemies; the nature of the French colonial empire; political polarization; the status of women and the feminist movement; the impact of the First World War; immigration, xenophobia, and racialist thought; social and cultural transformations; the Second World War; the Vichy Regime; the Resistance; post-World War II reconstruction; France and the Cold War; Sartre, de Beauvoir, and intellectual engagement; decolonization and the wars in Indochina and Algeria; the Gaullist regime; the upheavals of 1968.

HIST 5035 The Holocaust (A) 3 ch (3S) [W]

A study of "the Final Solution to the Jewish Problem", the program of genocide developed by German National Socialists against the Jews of Europe from 1933-1945.

HIST 5080 Aspects of German History (O) 6 ch (3S) [W]

An honours seminar which examines one of the following topics each year: 1) The German "Problem"; 2) Germany 1870-1918; 3) Germany 1918-1939; 4) Germany 1945-82. Previous knowledge of German history is recommended but not required.

HIST 5102 The Mental World of Europeans, 1300-1600 (O) 3 ch (3S) [W]

Examines the "mental world" of late medieval/early modern Europeans using the most recent research in the field. Introduces students to the latest studies of popular culture, mentalités, and the "new social history", as applied to Europe. Topics of interest will include: the debate over popular vs. elite culture; the universe as conceived by both learned and unlearned; the differences between "popular" Christianity and official religion; the relationship between magic, religion and science; beliefs about illness, health and medicine; views of death and the afterlife; and others.

HIST 5111 History and Memory (A) 3 ch (3S) [W]

Examines how societies remember the historical events that have shaped them. Analyzes different modes of commemoration and public debates over the meanings of particular events. Topics include the French and Russian Revolutions, the First and Second World Wars and the Holocaust.

HIST 5200 Themes in Tudor and Stuart History 6 ch (3S) [W]

Concentrates on aspects of the reigns of Henry VIII, Elizabeth and/or Charles I.

.

HIST 5240 Regions, Class and Gender: Industrialization and Britain, 1700-1830(A) 6 ch (3S) [W]

Explores shifting patterns of work and patterns of life for women and men facing new economic and social forces. Examines the transformations in family, community and regional life in cities and countryside brought about by the first industrial revolution.

HIST 5245 Women in Industrial Britain (A) 3 ch (3S) [W]

Examines issues pertaining to the lives of women in Hanoverian and Victorian Britain, including fertility and family life, occupation and waged work, marriage and legal standing, education and reform, and the pervasive ideology of Victorian female domesticity.

HIST 5255 Rise of Consumer Culture (O) 3 ch (3S) [W]

Explores the evolution of western market society and the development of popular consumerism, from the 1700s to the 1950s. Assesses the social, economic and political impact of consumerism. Examines also the changing standard of living, the creation of gender norms and evolving relations with non-western societies.

HIST 5311 The Making of Canadian Confederation, 1858-73 (O) 3 ch (3S) [W]

The political, economic and social factors that led to Confederation, an analysis of the struggle for Confederation in each of the British North American colonies and an examination of the relevance today of the decisions made in 1867.

HIST 5330 Class, Gender and Region in Atlantic Canada (A) 6 ch (3S) [W]

Examines the forces which have shaped the history of the region since Confederation and explores how the people of Atlantic Canada have responded to the problem of regional underdevelopment.

HIST 5331 Film and History in Canada (O) 3 ch (3S) [W]

Examines the uses of visual history in the representation and popularization of the Canadian past. Case studies involve both documentary and feature productions from several periods in the history of Canadian film.

HIST 5332 History of Labour in New Brunswick (O) 3ch (3S) [W]

Examines the history of the labour question in New Brunswick. Places the provincial experience in the context of national and international labour and working-class history.

HIST 5335 A History of the Canadian Left 3 ch (3S) [W]

A course in social, political and intellectual history examining the history of the left in Canada from the eighteenth century to the present. Topics include the origins of the radical tradition, utopian and cooperative reform, early socialism and feminism, the Communist Party, the Cooperative Commonwealth Federation, the New Democratic Party, the New Left and other alternatives.

HIST 5342 Environmental History of North America (A) 3 ch (3S) [W]

Examines the interaction of the peoples of Canada and the United States with the natural environment. Topics include the theory and methodology of environmental history, changing patterns of land use, resource depletion and industrial migration, the environmental implications of urbanization, and the intellectual and institutional development of the conservation/environmental movement.

HIST 5345 Natural Resources, Industrialization and the Environment in Atlantic Canada (A) 3 ch (3S) [W]

Explores the political, economic and environmental implications of the dependence on natural resources in Atlantic Canada, through an examination of the historical development of the forest, fishing, agricultural and mining industries from the eighteenth century to the post-Second World War period.

HIST 5350 Quantitative Approaches to History 6 ch (3S) [W]

Introduction to terms and techniques of quantitative research in history. Provides basic tools necessary to understand such research. Considers problems and processes involved in collecting historical data, organizing for statistical analysis, analysis of data and interpretation of results.

HIST 5352 Schooling and Scholars in 19th-Century Canada (O) 3 ch (3S) [W]

Focuses on the world of students and their teachers during the 19th century. Changes in education, which influenced the development of the modern system, will be situated within the broader context of change in Canadian society. Topics include the feminization of teaching; teacher training; curriculum; the relationship between school attendance patterns and such factors as sex, age, geographic location and parents' occupations; and the emergence of free and compulsory education.

HIST 5381 Health and Disease in Historical Perspective (O) 3ch (3S) [W]

Focuses on nineteenth and twentieth century understandings of health and disease in North America. Stresses how gender, class, race/ethnicity affect historical understandings of disease.

HIST 5403 The Loyalists 3 ch (3S) [W]

Studies the Loyalists during the American Revolution and in exile in British North America, Great Britain, Sierra Leone, Bermuda, the Bahamas, the British West Indies and Central America. Also considers their long-term political and social role particularly in Canada, including the Loyalist myth. One week devoted to local Loyalist remains - houses, museum and art gallery holdings, etc.

HIST 5445 US in the Progressive Era 1890-1920 3 ch (3S) [W]

Examines themes in the history of the United States at the turn of the century, including the development of Populism, Progressivism, imperialism, anti-imperialism, and the impact of America's entry into the First World War. Explores the social, cultural, and political consequences of industrialization and modernization.

HIST 5455 The Cold War 3 ch (3S) [W]

A study of the Cold War from the Grand Alliance to the end of the 1950s. The seminar will focus on the foreign policies of the world's Great Powers, especially, but not exclusively, those of the Soviet Union and the United States, the military and political dimensions of conflict, and the Cold War's place in the evolution of the international system of the twentieth century.

HIST 5460 The American Revolution 6 ch (3S) [W]

A concentrated study of the causes, development, and consequences of the Revolution from 1760 to 1787. Emphasizes the growth of revolutionary ideology, the role of the common people, and the impact of the forces of modernization.

HIST 5465 Race in US History (O) 3 ch (3S) [W]

Examines the treatment of Black and Native Americans principally in the nineteenth and twentieth centuries, theories and concepts of race in American culture, and the influence of racial and racist ideas in American politics and policy. Within this broad framework, students will select readings and independent research projects for seminar presentation.

HIST 5475 Modernist Manhattan (O) 3 ch (3S) [W]

Explores the innovations and institutions that made New York City the epicentre of North American modernism. Considers a range of cultural products and processes, including bohemianism, literary and visual culture, the cross-fertilization of "black" and "white" forms and traditions, improvisation and the jazz scene, the grounding of critical authority, the politics of authenticity, and the interplay between the avant-garde and the popular.

HIST 5480 Problems in American History Since 1876 6 ch (3S) [W]

An examination of the political and social history of modern America, focusing on the problems of modernization and industrialization, reform movements, civil and women's rights, economic and social welfare policy, and the emergence of the United States as a world power.

HIST 5490 Film and American History 6 ch (3S) [W]

The course includes a brief history of the movies, particularly in the United States; readings in film theory; discussions of film as historical document; and a detailed study of two selected periods in American history. Students will view approximately ten movies, fictional and documentary, and will prepare a research paper.

HIST 5600 Themes in Modern East Asian History 6 ch (3S) [W]

Selected themes in the political, social, and diplomatic history of East Asia in the late nineteenth and twentieth centuries. Topics chosen for study are not necessarily confined to a single country, but may have bearing on two or more countries in East Asia. Sample topics: the family institution, changing status of the social elite, peasantry and land tenure, Asian nationalism, the Manchurian Incident & Sino-Japanese relations.

HIST 5702 Studies in Popular Culture (A) 3 ch (3S) [W]

Considers debates about the history, status and effects of popular culture, as well as their impact upon the study of history. Emphasizes close readings of contemporary North American visual culture, especially advertising, television, and film.

HIST 5725 The History of Museums 3 ch (3S) [W]

Studies museums from the early modern "cabinet of curiosities" to the modern museum complex. Critical analyses of the social and political functions of exhibitions are emphasized. Includes visits to various museums and galleries.

HIST 5800 War: Themes and Theorists 6 ch (3S) [W]

An in-depth look at the major developments in the theory and practice of war since the fifteenth century. Examines important theorists from Machiavelli to Kahn and such major themes as command, the industrialization of war, logistics and the impact of changing social and political patterns.

HIST 5803 The First World War (O) 3 ch (3S) [W]

Reviews the key points of controversy surrounding the origins, personalities and conduct of the war on the Western Front. Particular attention will be paid to the role of the British Expeditionary Force, of which the Canadian Expeditionary Force was an increasingly important part.

HIST 5804 The Second World War (A) 3 ch (3S) [W]

Examines key events and issues of the military campaigns of the Second World War, and wrestles with how historians and writers of memoirs have portrayed them. Provides a survey of the major historical problems surrounding the conduct of the war, including: the collapse of the West, the German invasion of Russia, the Japanese attack on Pearl Harbour, area bombing, Normandy, and the bombing of Hiroshima and Nagasaki.

HIST 5805 Seapower 3 ch (3S) [W]

Themes in naval history. Uses selected problems to explore the role of naval power in shaping the modern world.

HIST 5812 Themes of War and Diplomacy in the Modern Middle East (A) 3 ch (3S) [W]

Explores major themes relating to the history of war and diplomacy in the region in the twentieth century, including Zionism, pan-Arabism, decolonization, the super powers, the Palestinians, and fundamentalist Islam.

HIST 5815 The Study of War Since 1945 (A) 3 ch (3S) [W]

Examines the conduct of war since 1945 through an exploration of the literature on war in theory and practice. Course will focus on the interaction of strategic theory and doctrine, technology, and society in conventional and revolutionary war.

HIST 5900 The Nature of History 6 ch (3S) [W]

This course is compulsory for third year Single Honours students. It offers an introduction to the nature of the historical discipline, examining questions related to the philosophy of history, research skills and techniques, the history of historical thought and the application of history in the community. Double Honours students may participate in the course but may not count it as one of their required history courses. Open to History Honours students only.

HIST 5910 Fourth Year Reading/Research 6 ch (R) [W]

A reading research course for fourth year students to be supervised by a professor with whom the student is enrolled in a 3 or 6 ch seminar. The supervisor's permission must be obtained prior to 1 October. This course is for fourth year students who are enrolled in at least 12 ch of seminars.

HIST 5920 Honours Thesis 6 ch (R) [W]

A reading and research course open to exceptional Honours students in their fourth year which should be used to produce an Honours Thesis. Permission to take this course must be sought from the professor in the desired field and the project must be approved by the Department. This course may be used as an alternative to a seminar in the fourth year. It requires a CGPA of at least 3.6 in History courses for admission.

HIST 5925 Evolutionary Ideas in Modern Thought (O) 3 ch (3S) [W]

Examines the emergence of evolutionary ideas in western culture with an emphasis on Darwin and his predecessors, and with some attention to subsequent scientific debates over the mechanism of evolution. Primary emphasis is on the impact of evolutionary thinking on religion, philosophy, political and social thought, and ideas of race in the nineteenth and twentieth centuries.

HIST 5945 The Cultural Origins of Science (O) 3 ch (3S) [W]

Why did the Scientific Revolution of the seventeenth century occur in Western Europe and not in China, the Islamic World or the Greco-Roman period? What was the Scientific Revolution and its cause? The course explores these vexed questions through the historiography on the Scientific Revolution, its medieval and Renaissance background, and the context of natural philosophy in other cultures.

INTERNATIONAL DEVELOPMENT STUDIES

Note: See beginning of Section H for abbreviations, course numbers and coding.

IDS 2001 Introduction to International Development Studies 3 ch (3C) [W]

Examines the major social, economic and political characteristics of the Third World, and discusses underdevelopment, dependency, the bases of political and economic domination of the Third World by the developed world, social stratification, the position of elites and the interaction of culture and poverty. Offered annually.

IDS 3002 Seminar in International Development Studies 3 ch (3C) [W]

Deals intensively with all the major issues of development studies and the relationship between the developed and the developing world. Some of the issues covered are globalization, foreign aid, women and development, trade liberalization, ethnic rivalries, urbanization and poverty. Prerequisite: IDS 2001

IDS 3501 Women in the Third World (A) 3ch (3C)

This course will examine the lives of Third World women, focusing on Caribbean women. The changes in women's roles with changes in the economy and society will be studied. Writings and analyses of their situation by Third World women, as well as talks by local researchers and activists, will provide material for study. Offered: In the Caribbean, during Intersession.

IDS 3901 Rhythm, Rhyme and Reason: Music of the Caribbean 3 ch (3C) [W]

Studies the history, socio-political and ethno-cultural origins of Caribbean musical expression. The dominant forms (calypso, reggae, merengue, zouk and their variants) will be examined, with emphasis on their literary and performance values. A multimedia approach is used.

IDS 4003 IDS Practicum 3 ch

The student will be required to conceptualize , create and complete a project in partnership with the staff of the MCAF(Multicultural Association of Fredericton) or similar agency. This project must deal with issues such as refugees, resettlement or cultural readjustment. The student will be mentored by the staff of the MCAF and the Director of IDS, and must chronicle and critically reflect on his/her work as it progresses. This experience will provide the student with valuable practical skills and opportunities to acquire insights into and better understanding and knowledge of new-immigrant and refugee groups. Enrollment will be limited. Prerequisite IDS 2001 and the permission of the Director.

IDS 4900 Honours Thesis in International Development Studies 6 ch [W]

An in-depth independent research project on an important issue concerning development studies. Offered annually. Prerequisite IDS 3002

JAPANESE

Note: See beginning of Section H for abbreviations, course numbers and coding.

Courses in Japanese Language are offered at the Introductory level and occasionally at the Intermediate level if resources are available

JPNS 1013 Introductory Japanese I 3 ch (3C)

Focuses on the fundamental structure of Japanese and practice of communication skills. Introduces writing system of Hiragana. Some aspects of Japanese culture are discussed. Not open to native speakers.

JPNS 1023 Introductory Japanese II 3 ch (3C)

Continuation of JPNS1013. Focuses on pronunciation, reading and writing Hiragana as well as listening skills. Reading and writing Katakana and basic Kanji are introduced and practised. Some aspects of Japanese culture are discussed. Prerequisite: JPNS 1013. Note: not open to native speakers.

JPNS 2013 Intermediate Japanese I 3 ch (3C)

Develops communicative skills necessary for a wide range of everyday situations. Focuses on both conversation and writing systems, developing vocabulary and sentence structures. One hundred Kanji characters are introduced and practised. Prerequisite: JPNS 1013 and 1023.

JPNS 2023 Intermediate Japanese II 3 ch (3C)

Continuation of JPNS 2013. Prepares students for the Level IV Japanese Proficiency Test. Prequisite: JPNS 2013.

KINESIOLOGY

General Information

KIN 1001 is considered to be prerequisites or corequisites to all other Kinesiology (KIN) and Recreation (RSS) courses for students enrolled in one of the degree programs offered by the Faculty of Kinesiology.

Recreation and Sports Studies (RSS) courses are grouped together and listed in their own section of this calendar.

Unless otherwise stated, prerequisite shall mean a D or better in the prerequisite course.

Note: See beginning of Section H for abbreviations, course numbers and coding.

POLICY ON NON-FACULTY OF KINESIOLOGY STUDENTS TAKING KIN AND/OR RSS COURSES

Due to the extensive number of KIN and RSS courses full with a waitlist, and to the highly competitive nature of upper-year admissions, the number of KIN and RSS credit hours that a student not registered in a degree program offered by the Faculty of Kinesiology may register for is limited. Students not registered in a degree program offered by the Faculty of Kinesiology, and wishing to register for KIN and/or RSS courses shall be governed by the following:

1. A student not registered in a degree program offered by the Faculty of Kinesiology must have permission of the course instructor to register in any KIN and RSS course.
2. Normally, all students must have successfully completed all required pre-requisites to a KIN or RSS course prior to admission to KIN and RSS courses. Waiver of prerequisites is permissible only with consent of the Instructor.
3. In all KIN and RSS courses students registered in a degree program offered by the Faculty of Kinesiology will be given priority.
4. Normally, KIN 1001 shall be restricted to students in the degree programs offered by the Faculty of Kinesiology.
5. Normally, KIN 1001 is the pre-requisite to all 2000, 3000 and 4000 level KIN and RSS courses.
6. Normally, students not registered in a degree program offered by the Faculty of Kinesiology shall be limited to twelve (12) credit hours of KIN/RSS courses.

ACTIVITY COURSES

Basic Activity Labs (1 ch):

KIN 2603	Swimming (must pass entry level test) (A)
KIN 2623	Basketball
KIN 2631	Creative Dance (A)
KIN 2642	Dance/Exercise for Older Adults (A)
KIN 2652	Social/Folk Dance (A)
KIN 2661	Dance Composition (A)
KIN 2671	History of Dance (A)
KIN 2691	Field Hockey (A)
KIN 2693	Basic Fitness Theory and Aerobic Dance Leadership (A)
KIN 2701	Golf (A)
KIN 2713	Gymnastics (A)
KIN 2723	Ice Hockey
KIN 2733	Badminton (A)
KIN 2742	Skiing (A)
KIN 2751	Soccer (A)
KIN 2761	Tennis (A)
KIN 2771	Rowing (KIN 2603 - "C" grade or better in KIN 2603, or a White Level in Red Cross) (A)
KIN 2783	Volleyball (A)
KIN 2793	Weight Training (A)
KIN 2802	Wrestling (A)
KIN 2811	Fall Outdoor Recreation (A)
KIN 2812	Winter Outdoor Recreation (Prerequisite: KIN 2811: Fall Outdoor Recreation) (A)
KIN 2821	Canoeing (KIN2603 - "C" grade or better in KIN 2603) (A)
KIN 2831	Special Activity Project
KIN 2832	Special Activity Project
KIN 2841	Rugby (A)
KIN 2851	Special Activity Project (Determined by Faculty)
KIN 2852	Special Activity Project (Determined by Faculty)
KIN 2861	Leadership Activity*
KIN 2862	Leadership Activity*
KIN 2871	Baseball (A)
KIN 2883	Wall Climbing (A)
KIN 2891	Fly-Fishing (A)
KIN 2901	Kayaking (A)

Advanced Activity Labs (2 ch) (Prerequisite: the 2000 level activity):

KIN 3523	Communications Skills
KIN 3623	Basketball (A)
KIN 3723	Ice Hockey (A)
KIN 3742	Skiing (A)
KIN 3753	Soccer (A)
KIN 3783	Volleyball (A)
KIN 3821	Canoeing (KIN 2821; and KIN 2603 - "C" grade or better, or a White Level in Red Cross) (A)
KIN 3831	Special Activity Project
KIN 3832	Special Activity Project
KIN 3851	Special Activity Project (Determined by Faculty)
KIN 3852	Special Activity Project Determined by Faculty)
KIN 3861	Leadership Activity*
KIN 3862	Leadership Activity*

* KIN 2861/KIN 3862, KIN 3861/KIN 3862. Leadership Activities are intended to recognize experiential learning in the area of leadership in physical activity, recreation, sport, and fitness. Students may earn credit either by functioning in a leadership role or by preparing for a leadership role. Only open to Kinesiology students who have completed at least 57 ch, have the most recent sessional GPA of at least 2.5.

* KIN 2831/KIN 2832, KIN 3831/KIN 3832. Special Activity Projects are intended to recognize experiential learning in physical activity, recreation, sport, and fitness not normally taught by the Faculty of Kinesiology. Only open to Kinesiology students who have completed at least 57 ch, have the most recent sessional GPA of at least 2.5.

The Faculty reserves the right to cancel classes for insufficient enrollment.

CRITERIA FOR SPECIAL ACTIVITY AND LEADERSHIP PROJECTS

Any special activity and leadership project (KIN 2831,KIN 2832,KIN 2861,KIN 2862, KIN 3831, KIN 3832, KIN 3861, KIN 3862) must represent an opportunity for significant physical or recreational skill attainment and/or improvement by the student.

Project Criteria:

To participate in any Special Activity or Leadership Project (KIN 2831, KIN 2832, KIN 2861, KIN 2862, KIN 3831, KIN 3832, KIN 3861, KIN 3862) a student must:

1. Have completed 57 ch or more towards the degree.
2. Have a GPA (most recent assessment year GPA) of at least 2.5.
3. Normally start and complete the project in the term in which the project was registered.
4. A one-credit hour course (i.e., KIN 2831,KIN 2832,KIN 2861,KIN 2862) normally must include at least 40 hours of learning (instruction, practice, study, etc.).
5. A two-credit hour course (i.e., KIN 3831,KIN 3832,KIN 3861,KIN 3862) normally must include at least 80 hours of learning (instruction, practice, study, etc.).
6. All projects must be approved by the course coordinator before the student may register for the course.
7. A student shall be allowed to register for a maximum of six (6) credit hours of special project and leadership courses, i.e., KIN 2831, KIN 2832, KIN 2861, KIN 2862, KIN 3831, KIN 3832, KIN 3861, KIN 3862.

KIN 1001 Introduction to Kinesiology 3 ch (3C 1T)
(Cross Listed: RSS 1001) **[W]**

This course is designed as a thematic introduction to the academic discipline of Kinesiology. The course surveys the basic concepts, theories and analytical methods of Kinesiology and their application to the study of human movement in recreation, sport, exercise and physical activity. Weekly sessions include three lectures and one tutorial. KIN 1001 is restricted to students registered in the Faculty of Kinesiology.

KIN 2032 Introduction to Sport and Leisure Psychology 3 ch (3C) [W]

Provides an introduction into the psychological influence of sport, physical activity, and leisure on the individual. Current social psychological theory about sport, physical activity and leisure behaviour will be examined through a wide variety of sport, leisure, and exercise psychology topics.

KIN 2051 Prevention and Care of Athletic Injuries 4 ch (3C 1.5L)

Covers principles and procedures for the recognition and management of injuries and disorders in physical activity, athletics and sport programs. Prerequisite or Co-requisite: BIOL 2711 or BIOL 1711.

KIN 2062 Introductory Biomechanics 3 ch (3C)

An introductory course emphasizing the qualitative study of the anatomical factors and physical or mechanical laws affecting human motion. Prerequisite: BIOL 2711 or BIOL 1711.

KIN 2072 Introduction to Motor Control and Learning 3 ch (3C)

Introduces the student to the principles of motor skill acquisition and performance as well as the conditions that influence these processes. Topics include information processing, attention, perception, decision-making, motor programs, and feedback. The role of motivation, anxiety, concentration, observational learning and mental practice in motor performance and learning will be examined. Practical applications for sport, physical activity, industry, and the performing arts will be discussed . Lectures only.

KIN 2093 Introduction to Philosophy of Sport, Exercise and Recreation 3 ch (3C) [W]

This course will conduct a philosophical analysis in to the nature of sport, exercise, and recreation by asking questions about the fundamental value and purpose of these activities. Prerequisite: KIN 1001 or consent of the instructor.

KIN 2160 Laboratory Methods in Kinesiology 3 ch (3L)

This laboratory based course introduces the student to the basic laboratory techniques and methods for the collection of kinesiological data. Experienced will be gained through a series of laboratory sessions in each of the exercise science disciplines (motor control, exercise physiology and biomechanics, sport psychology). Instruction pertaining to the application of the introduced techniques will accompany each laboratory session.

KIN 3001 Introduction to Research Methods in Kinesiology 3 ch (3C)
(Cross Listed: RSS 3001)

Introduces basic concepts in research methods and experimental design relevant to the area of kinesiology including recreation and leisure studies. It is also designed to create a better understanding of the principles, concepts, terminology, and instruments used in measurement and analysis in the various sub-domains of kinesiology. The course will focus on the scientific method, with both quantitative and qualitative research being discussed. Topics include: different methods of knowledge, strategies of discovery, ethical issues, observation (systematic and self-report observational methods), measurement (reliability, validity, objectivity), experimental design (randomized and non-randomized designs, survey design and subject selection), and data analysis (descriptive and inferential statistics). Finally, research reporting and the A.P.A. format will also be examined. Prerequisites: STATS 2043 and STATS 3043 or equivalent (STATS 3043 may be a co-requisite).

KIN 3031 Exercise Psychology 3 ch (3C) [W]

An introduction to the study of behaviour in the exercise environment. The course will focus on how psychological factors effect physical performance, how exercise effects psychological development, and on the development of strategies to encourage exercise participation. Prerequisite: KIN 2032 or consent of instructor.

KIN 3032 Sports Psychology 3 ch (3C) [W]

Examines how the principles of psychology are applied in the sport setting to enhance performance. Involves an analysis of the current findings in psychological research into sport with special attention to personality theory, imagery, goal setting, cohesiveness, and spectator behaviour. The course will be based on theoretical considerations and will involve a practical component. Prerequisite: KIN 2032 or consent of the instructor.

KIN 3041 Adapted Physical Activity 3 ch (3C)

Examines the nature and scope of sport, physical education and recreation for individuals with disabilities.

KIN 3061 Advanced Biomechanics 4 ch (3C 2T) [W]

Examines, through lecture and laboratory experiences, the theoretical and applied aspects of the biomechanics of human performance. Prerequisite: C grade or better in KIN 2062.

KIN 3081 Introductory Exercise Physiology 3 ch (3C)

Provides an overview of the field of exercise physiology drawing together the relationships between the prerequisite background and its application to Kinesiology. Acute responses and adaptation of the cardiovascular and respiratory systems to exercise and environmental circumstances will be studied. Prerequisite: C grade or better in BIOL 2782: Human Physiology II or equivalent

KIN 3093 Introduction to Ethics of Sport and Recreation 3 ch (3C) [W]

This course is an introduction to the fundamental principles of ethics, and their application to selected ethical issues in sport. Through intensive reading, open dialogue, and critical reflection, students will be challenged to develop knowledge and skills in evaluating sporting activities from an ethical point of view. Prerequisite: Students must have completed at least 27 credit hours of their degree program.

KIN 3131 Psychological Intervention in Sport and Exercise (A) 3 ch (3C) [W]

Introduction to psychological consulting in the areas of sport and exercise. The course will provide the student with the basic knowledge needed to develop mental skills training programs and will introduce practitioner-athlete consulting process. Prerequisites: KIN 2032, KIN 3032, or KIN 3031, or consent of instructor.

KIN 3161 Introduction to Human Factors 3ch (3C) [W]

This course introduces the physical, biomechanical psycho-social and cognitive demands on workers in both office and industrial settings. Through lectures, student projects and review of current research, the role of proper human factors as a component of the improvement of health and well-being of the worker are explored. The understanding of human physical and psychological capabilities and limitations are incorporated in proper ergonomic design of the workplace environment. [NB. Students successful in KIN 2161 would not be eligible for credit in this course] Prerequisites: Biol 2782, Kin 2062.

KIN 3202 Movement Awareness 3 ch (3C) [W]

The aim of this course is for the student to develop greater awareness of the movement experience. Three approaches are utilized to examine movement: 1) Review of selected literature related to body, mind, and movement; 2) Production of a movement autobiography that details the affects of movement experiences; 3) Participation in movement activities including Hatha Yoga, Tai Chi, Aikido, Zen meditation and Somatic exercises.

KIN 3252 Functional Human Anatomy 4 ch (3C 1L)

Deals with structural and functional anatomy of the human skeletal, articular muscular and peripheral nervous systems and their relationship to movement. Prerequisite: C grade or better in BIOL 2721 and BIOL 2782

KIN 3282 Physical Activity, Health and Wellness 3 ch (3C)

Provides an introduction to holistic health through integrating the concepts of physical activity, fitness, and wellness. The focus will be on the impact that physical activity and physical inactivity have upon the major diseases and disabilities which affect overall health and wellness in industrial and technological based societies. This will be accomplished through summarizing and critically assessing the epidemiological and physiological research evidence. Prerequisite: C grade or better in BIOL 2782 or BIOL 2792.

KIN 3382 Pediatric Exercise Science (O) 3 ch (3C) [W]

To develop an understanding of the physiological, medical, and physical performance implications associated with changing activity patterns in today's youth. Examines the influence of physical activity on normal growth and development, exercise and fitness related secular trends, issues related to pediatric exercise science, and activity program development. Prerequisite: BIOL 2782 or BIOL 2792.

KIN 3482 Bioenergetics of Exercise 3 ch (3C)

An in-depth integrative and applied study of the conversion of carbohydrates, fats, and proteins into biologically useable forms of energy. Topics include: basic chemistry and biochemistry involved in the process, the biochemical pathways, the metabolic responses to energies and exercise, and the neuroenodocrine regulation of exercise metabolism. Prerequisite: KIN 3081 or equivalent.

KIN 3950 Athletic Therapy Practicum 6 ch (6C/L) [W]

Involves Athletic Therapy internships only. Relates theory to practice through professional career and field experiences. Faculty approval is required prior to any service commitment or registration procedures. Prerequisite: B grade or beter in KIN 2051 and permission of the instructor.

KIN 4041 Movement Disorders (A) 3 ch (3C)

This course involves collaboration with physiotherapists to provide insight into movement disorders and introduce students to state-of-the-art techniques in motion analysis. Topics include: treatment effectiveness, data interpretation, and gait analysis. Prerequisites or Co-requisites: KIN 3061; Only open to students with 57 ch towards their degree.

KIN 4063 Biomechanical Instrumentation and Data Acquisition (A) 3 ch (3C)

Introduces advanced concepts in instrumentation and data acquisition relevant to the area of human motion analysis. The student will be introduced to motion analysis systems, electromyographs, and force platforms through laboratory sessions. Emphasis will be placed on accuracy and reliability of equipment. Students will also be introduced to the Matlab programming language and various data analysis techniques in biomechanics (i.e. filtering, joint angle computation). Prerequisites: KIN 3061; Only open to students with 57 ch towards their degree.

KIN 4072 Neural Control of Human Movement (A) 3 ch (3C)

The aim of this course is to provide the student with a fundamental understanding of the neural processes that underlie the control of voluntary action. The mechanism, structure and function of the human nervous system will be presented at various levels of analysis, from the cellular level to the behavioural level. Specific topics to be addressed include the mechanism of information transmission; the mechanism of skeletal muscle contraction; the use of surface electromyograms; mechanisms of excitatory and inhibitory control, reflexes; pre-programmed reactions; simple brain anatomy, structures and pathways; postural control, locomotive control and single and multi-joint movements. Prerequisite: KIN 2072 and KIN 3081.

KIN 4082 Advanced Exercise Physiology (A) 4 ch (3C 1.5L) [W]

Through lecture and laboratory experiences the acute responses and adaptations of the muscular, nervous, and immune systems to exercise will be studied. The specific topics of neuromuscular fatigue, overtraining, and resistance training programs will be examined. Prerequisite: KIN 3081 or equivalent.

KIN 4093 Seminar on Health Care Ethics 3 ch (3C) [W]

This course will explore the area of health care. Through intensive reading, open dialogue, and critical reflection, students will be challenged to develop knowledge and skills in analyzing the dimensions of health and health care. Prerequisite: KIN 3093 or consent of the instructor.

KIN 4161 Occupational Biomechanics 3 ch (3C) [W]

This course will examine topics in applied ergonomics and occupational biomechanics. Lectures will be used to present ergonomic assessment tools and present current research directives in the area of occupational biomechanics and prevention of workplace musculoskeletal injuries. Development of the skills required to identify occupational ergonomic concerns, perform biomechanical analyses of musculoskeletal demands and modifications of work tasks to reduce musculoskeletal demands will be emphasized through practical experiences.Prerequisite: KIN 2062 and KIN 2161, or consent of the instructor.

KIN 4163 Workplace Ergonomic Design And Analysis 4 ch (2C 3L)

The focus of this course is on the theoretical background and practical knowledge required to create functional ergonomic designs and provide comprehensive ergonomic analyses of industrial or service workplaces using work measurement and task analysis methodologies. Industrial and human factors engineering techniques together with the principles of occupational biomechanics are applied to investigate human / machine interactions, job design, and workstation layout. Work Measurement and Task Analysis methodologies are used to describe and determine work standards, physiological task loads and the elements of manual and mental activities in human /machine work systems. Laboratory exercises provide the opportunity to apply the theory to actual workplace situations. Prerequisite: Completion of 96 ch in Kinesiology / Engineering, KIN 4161, or consent of instructor.

KIN 4165 Occupational Physiology (A) 3 ch (3C)

This course will investigate issues related to the physical requirements, program design, the measurement of physical demands, and factors related to fatigue and injury in the workplace from a physiological perspective. It will also examine issues related to safety and completion of job specific tasks in the workplace. The standards and job requirements for an occupation will be examined using the "Bona Fide Occupational Requirements (BFOR)". Prerequisites: Completion of 96 ch in Kinesiology, KIN 3081, or consent of the instructor.

KIN 4193 Advanced Seminar on Ethics of Sport and Recreation 3 ch (3C) [W]

This course will build on theories of morality and their application in the consideration of perennial and contemporary questions concerning moral values in sport, recreation, and exercise. Focused reading, open dialogue, and critical reflection will challenge students to develop knowledge and skills in evaluating these activities from an ethical perspective. Prerequisite: KIN 3093.

KIN 4281 Measurement and Evaluation in Exercise Science 4 ch (1C 3L)

An advanced course examining the theory and developing practical skills for measuring body composition and cardiovascular, neuromuscular, and metabolic function during exercise. Students will learn about the equipment commonly used in Exercise Science and the principles of using these instruments including the influence of calibration and signal processing amplification, filtering and sampling. They will also learn computer based data acquisition, the pros and cons of various measurement approaches, and gain experience in screening subjects for exercise testing, data analysis and interpretation of test results. Pre-requisite: Minimum grade of C in KIN 3081 and KIN 3001.

KIN 4282 Exercise Prescription for Health, Well-being and Performance 4 ch (2C 2L)

An advanced course to examine the principles of physical fitness, activity, and exercise and the application of these principles for the development and design of exercise programs for the acquisition of health, well-being and performance in children, adults, persons with a disability, and athletes. This course will be applied in a variety of settings to include practical experiences in the design and implementation of exercise programs. Pre-requisite: Minimum grade of C in KIN 3081, highly recommended KIN 4281.

KIN 4481 Exercise and Sport Nutrition (A) 3 ch (3C)

An in-depth examination of the role which nutrition plays (especially ergogenic aids) in exercise and sport performance. Approached from an applied biochemistry and physiology perspective through lecture and seminar. Co- or Prerequisite: KIN 3081 or equivalent.

KIN 4900 Honours Research Project in Kinesiology 6 ch (3C)

Students will work on a research project under the supervision of a faculty member. A minimum of 5 scheduled hours of work per week per term is expected. Project is to be completed over two terms and will involve the following components: 1) Seminar presentation in first term focussing on literature review, 2) Seminar presentation of the completed project at the end of second term, and 3) Written report of the project. Information sheet and application form are available from either the B.Sc.Kin. or BKIN degree coordinator who approves all applications. Students are strongly encouraged to apply prior to the end of their 3rd year. Restricted to B.Sc.Kin. and BKIN honours students. Prerequisites: Students must be accepted into the B.Sc.Kin. or BKIN Honours program, have completed all the required core courses in the B.Sc.Kin or BKIN program, and have completed a minimum of 70 ch in the program.

KIN 4903 Directed Studies in Kinesiology 3 ch

Provides opportunities to explore in detail a number of special areas in Kinesiology. Faculty approval is required prior to registration. Title of the topic will appear on the student's transcript. Open only to students with at least 57 ch completed towards their degree.

KIN 4904 Directed Studies in Kinesiology 3 ch

Provides opportunities to explore in detail a number of special areas in Kinesiology. Faculty approval is required prior to registration. Title of the topic will appear on the student's transcript. Open only to students with at least 57 ch completed towards their degree.

KIN 4950 Advanced Athletic Therapy Practicum 6 ch (6C/L) [W]

Prerequisite: RSS 3950.

KIN 4993 Selected Topics in Kinesiology 3 ch

Selected topics of special interest from the area of kinesiology are examined in detail. Special emphasis will be placed on current issues. Topics will be specified by the Faculty. Title of topic chosen will appear on the student's transcripts. Open only to students who have completed 57 ch or more.

KIN 4994 Selected Topics in Kinesiology 3 ch

Selected topics of special interest from the area of kinesiology are examined in detail. Special emphasis will be placed on current issues. Topics will be specified by the Faculty. Title of topic chosen will appear on the student's transcripts. Open only to students who have completed 57 ch or more.

KIN 5031 Applied Sports Psychology (A) 3 ch (3C) [W]

This course will focus on psychological skills and methods in sport and exercise, and how sport psychologists, coaches, therapists, and athletics use these skills and methods to positively effect sport participation, performance, motivation, and enjoyment. More specifically, the psychology skills and methods which were presented and discussed in KIN 2032, 3031, 3032, and 3131 will be applied in the sport setting. This will involve working with a team, teaching mental skills in group sessions, and being available for individual consultations. Prerequisite: KIN 2032, KIN 3032, KIN 3131, KIN 3031.

KIN 5032 Research in Sport and Exercise Psychology (A) 3 ch (3C) [W]

Designed to permit analysis and discussion of theoretical developments and recent research findings in the areas of sport and exercise psychology. The seminar format will allow students to critically appraise research and permit them to express their own ideas. Recent research articles will provide the basis for discussion and presentations. Prerequisites: KIN 2032 and KIN 3131, KIN 3032 or KIN 3031 or consent of instructor.

KIN 5072 Advanced Motor Control and Learning (A) 4 ch (3C 2L)

The aim of this course is to explore concepts of information processing within motor control. Each week specific attention will be paid to a seminal paper on this topic. Issues that arise for motor control from these papers will be presented and discussed in seminar format. To gain a practical understanding of these issues, the student will undertake and write-up a series of laboratory experiments on these aforementioned papers. Prerequisite: KIN 2072, KIN 3001, STATS 2043 & 3043

LATIN

Note: See beginning of Section H for abbreviations, course numbers and coding.

LAT 1103 Introductory Latin I 3 ch (3C)

LAT 1113 Introductory Latin II 3 ch (3C)

LAT 1123 Introduction to Latin I: Independent Study 3 ch

An introduction to Classical Latin which presupposes no previous knowledge of the language. Students work independently rather than in regularly scheduled classes. This course is intended for motivated students who are not able to attend the regularly scheduled introductory class.

LAT 1133 Introduction to Latin II: Independent Study 3 ch

A second term of Classical Latin, in which students work independently. This course is intended for motivated students who are not able to attend the regularly scheduled introductory class. Prerequisite: LAT 1103 or LAT 1123.

LAT 2103 Intermediate Latin I 3 ch (3C)

Prerequisite: LAT 1113 or 1133.

LAT 2113 Intermediate Latin II 3 ch (3C)

LAT 3103 Advanced Latin I 3 ch (3C)

LAT 3113 Advanced Latin II 3 ch (3C)

LAT 3123 Reading Latin Authors I 3 ch (3C)

LAT 3133 Reading Latin Authors II 3 ch (3C)

LAT 4103 Directed Reading in Latin 3 ch

LAT 4104 Directed Reading in Latin 3 ch

LAT 4113 Latin Prose Composition 3ch (3C)

This term course provides the basic skills for composing Classical Latin prose. Its purpose is to convert passive reading ability into positive control of the language in both grammar and style. Prerequisite: 3 ch course of advanced-level Latin.

LAW

See the Faculty of Law Calendar or the Faculty of Law website(http://www.law.unb.ca) for course descriptions.

LAW IN SOCIETY

LINS 5001 Honours Seminar in Law in Society 3 ch

Directed readings in several disciplines covering theoretical and methodological approaches to examining connections between law and the character or quality of society. Limited to students admitted to the LINS Joint Honours Program.

LINGUISTICS

Note: See beginning of Section H for abbreviations, course numbers and coding.

For **FRENCH LINGUISTIC** courses and descriptions please refer to the Frech Linguistics Courses section immediately following French courses.

LING 2401 Introduction to Language 3 ch (3C) [W]

Basic concepts, language structure and change.

LING 3006 Linguistic Introduction to Canadian English (A) *(Cross Listed: ENGL 3006)* 3 ch (3C) [W]

Introduces various ways of describing the structure, especially syntactic, of language. English, specifically Canadian English, is used as a model. Assumes some acquaintance with linguistic analysis; students will normally have taken either LING 2401 (Introduction to Language) and 3411 (Phonetics and Phonemics) or ENGL 3010 (History of the English Language).

LING 3010 History of the English Language (A) *(Cross Listed: ENGL 3010)* 6 ch (3C) [W]

After a brief consideration of the nature of human language, introduces students to phonetics and the International Phonetic Alphabet. Then traces the history of the English language from its Indo-European origins to its present state. Focuses on the various kinds of linguistic change: those affecting sounds, forms, and vocabulary.

LING 3411 Phonetics and Phonemics 3 ch (3C) [W]

Articulatory phonetics and phonology. Prerequisite: Previous experience in linguistics. May be taken concurrently with LING 2401.

LING 3422 Morphology and Syntax 3 ch (3C) [W]

Structure of meaningful elements; syntax. Prerequisite: LING 3411.

LING 3903 Independent Studies in Linguistics I 3 ch

Studies in linguistics. The topic and the content are to be chosen jointly by the student and the instructor. The course must be approved by the Director of Linguistics.

LING 3904 Independent Studies in Linguistics II 3 ch

Studies in linguistics. The topic and the content are to be chosen jointly by the student and the instructor. The course must be approved by the Director of Linguistics.

MATHEMATICS

See also "Statistics".

Credit for MATH 1003

1. Calculus Challenge Exam

This examination which is held in early June is open to students registered in a calculus course at a high school that has made arrangements with the Department of Mathematics & Statistics. A fee will be charged.

Students who qualify for credit will receive a certificate entitling them to credit for and therefore exemption from MATH 1003 when they register at UNB. Upon the student's acceptance of the credit (3ch), the letter grade of the exam will be recorded on their transcript.

More information can be obtained from www.math.unb.ca or from the Department.

2. Advanced Placement Test

The Science Faculty offers Advanced Placement Tests for some first year science courses, including MATH 1003, during registration week (early September) each year.

More information can be obtained by consulting the Science section of the calendar or by contacting the Science Faculty or the Department of Mathematics & Statistics.

Note: All prerequisite courses must be passed with a grade of C or better. See beginning of Section H for abbreviations, course numbers, and coding.

MATH 1003 Introduction to Calculus I 3 ch (4C)

Functions and graphs, limits, derivatives of polynomial, log, exponential and trigonometric functions. Curve sketching and extrema of functions. NOTE: Credit will not be given for both MATH 1003 and 1823. Prerequisite: A minimum grade of 60% in New Brunswick Advanced Mathematics120 or equivalent, and a passing score on the Department of Mathematics & Statistics placement test.

MATH 1013 Introduction to Calculus II 3 ch (4C)

Definition of the integral, fundamental theorem of Calculus, Techniques of integration, improper integrals. Ordinary differential equations. Taylor polynomials and series. Prerequisite: A grade of C or higher in MATH 1003.

MATH 1053 Enriched Introduction to Calculus 3 ch (4C)

The syllabus is similar to that for MATH 1003, with more emphasis placed both on the theory of Calculus and interesting applications. The course will be of special interest to students with strong Mathematical backgrounds. Any interested student (with or without High School Calculus) is encouraged to consult with the Mathematics Department. Prerequisite: A grade of 85% or higher in a Grade 12 Math course that contains some Calculus, or consent of the Mathematics Department.

MATH 1063 Enriched Introduction to Calculus II 4 ch (4C)

The syllabus for this course is similar to that of MATH 1013. As with MATH 1053, more emphasis is placed on theory, mathematical rigor and interesting applications. Prerequisite: A grade of B or higher in MATH 1053.

MATH 1503 Introduction to Linear Algebra 3 ch (3C)

Lines and Planes, The Geometry and Algebra of vectors, Systems of linear equations, Matrix Algebra, Linear Independance, Linear Transformations, Determinants, Complex numbers, Eigenvalues, Eigenvectors, Diagonalization, Rotation matrices, Quadratic forms, Least squares. Prerequisite: A minimum grade of 60% in New Brunswick Advanced Mathematics 120 or equivalent. Note: Credit will not be given for both Math 1503 and Math 2213.

MATH 1823 Calculus for Management Sciences 3 ch (3C 1T)

Polynomial, logarithmic and exponential functions. Limits and derivatives. Extreme values and related rates. Simple integration. Differential equations. Throughout stresses applications to business and economics. NOTE: Credit will not be given for both MATH 1003 and 1823. Prerequisite: A minimum grade of 60% in New Brunswick Advanced Mathematics (120), or equivalent.

MATH 1833 Finite Mathematics for Management Sciences 3 ch (3C)

Matrices and systems of linear equations. Linear programming concepts; graphical solution of two variable problems. Permutations and combinations. Elementary probability. Mathematics of finance. NOTE: Credit will not be given for both MATH 1833 and either MATH 2213 or MATH 2503. Prerequisite: New Brunswick Mathematics 112 and 122, or equivalent.

MATH 2003 Intermediate Mathematics I 3 ch (3C 1T)

Analytic geometry and vectors. Parametric curves. Polar, cylindrical and spherical coordinates. Functions of several variables, partial derivatives, applications to max-min. Double and triple integrals. Note: Credit will normally be given for courses in only one of the sequences MATH 2003/2013, MATH 2503/2513. Prerequisite: A grade of C or higher in MATH 1013 or MATH 1063.

MATH 2013 Intermediate Mathematics II 3 ch (3C 1T)

Review of first order differential equations. Second order linear O.D.E.'s. Infinite series, including power series solutions to O.D.E.'s. Line and surface integrals. Theorems of Green and Stokes. Divergence Theorem. See Notes following MATH 2003. Prerequisite: A grade of C or higher in MATH 2003.

MATH 2203 Discrete Mathematics 3 ch (3C)

Logic, methods of proof, mathematical induction, elementary set theory, functions and relations. NOTE: This course is designed for students desiring a good grounding in the foundations of mathematics. Theorems and proofs are an important part of the course. Credit will not be given for both MATH 2203 and CS 1303. Students majoring in Mathematics must take MATH 2203. Prerequisite: MATH 1063 or MATH 1013 or permission of instructor. NOTE: It is strongly recommended that students should have at least a grade of B in MATH 1013 to take this course.

MATH 2213 Linear Algebra I 3 ch (3C)

Linear equations, matrix algebra, determinants, vector spaces, basis, row and column spaces, linear transformations and matrix representations, scalar products, orthogonal projection, least squares, eigenvectors and diagonalization, quadratic forms, singular value decomposition. The course will include use of mathematical software. Prerequisite: MATH 1013, or MATH 1053, or both MATH 1823 and 1833. This course may also be taken with the consent of the instructor. Interested first year students are encouraged to enquire.

MATH 2513 Multivariable Calculus for Engineers 4 ch (4C)

Functions of several variables, partial derivatives, multiple integrals, vector functions, Green's and Stokes' Theorems. See the note following MATH 2003. Prerequisite: A grade of C or higher in both MATH 1013 and MATH 1503.

MATH 2633 Fundamental Principles of Elementary School Mathematics 3 ch (3C 1L)

This course is intended for students who anticipate a career as an elementary teacher. The course focuses on the mathematical content with topics taken from the K-6 Atlantic Canada Mathematics Curriculum and extensions beyond the classroom to show the how and why behind school mathematics. The major topics are problem solving, number concepts, number and relationship operations, patterns and relations, shape and space, as well as data management and probability. Intended for students registered in concurrent education or arts programs. Not available for credit to students registered in science or math programs. Prerequisite: Successful completion of at least one year of a university program.

MATH 3003 Applied Analysis 3 ch (3C)

Vector spaces of functions, convergence in normed linear spaces, orthogonal polynomials, Fourier series, Fourier transform, Fast Fourier transform, introduction to wavelets, and selected applications. Prerequisites: MATH 2013 or MATH 3503, and MATH 2213 or MATH 1503 (MATH 3213 recommended).

MATH 3033 Group Theory 3 ch (3C)

Groups are the mathematical objects used to describe symmetries. This course covers the fundamentals of group theory, together with applications selected from chemistry, geometry and advanced algebra. Prerequisites: Either MATH 2203 or CS 2303, and MATH 2213 or MATH 1503 (MATH 3213 recommended).

MATH 3043 Nonlinear Differential Equations, Stability and Chaos 3 ch (3C)

Many of the processes studied in science, engineering and economics are nonlinear. This course covers geometrical, analytical and numerical methods for systems of nonlinear ordinary differential equations as an introduction to nonlinear phenomena: stability, attractors, bifurcation and chaos. Also covered are the basic local existence and uniqueness theorem and its applications, as well as linear systems and nonlinear difference systems to the extent necessary to understand approximations to nonlinear differential equations. An introduction to the use of mathematical software to illustrate regular and chaotic behaviour is included. Prerequisite: MATH 2003, 2013 or equivalent.

MATH 3063 Geometry 3 ch (3C)

Axiomatic systems, non-Euclidian geometry, transformations in geometries, topological properties of figures. Recommended for Education students or prospective Mathematics teachers. Prerequisite: 9 ch in Math and/or Stat.

MATH 3073 Partial Differential Equations 3 ch (3C)

Methods of solution for first order equations. Classification of second order equations. Characteristics. Analytic and numerical methods of solution for hyperbolic, elliptic and parabolic equations. Prerequisite: MATH 2003-2013 or equivalent.

MATH 3093 Elementary Number Theory 3 ch (3C)

Primes, unique factorization, congruences, Diophantine equations, basic number theoretic functions. Recommended for Education students or prospective Mathematics teachers.

MATH 3103 Analysis I 3 ch (3C)

The real number system. Elementary set theory. Metric spaces. Sequences and series. Continuity. Prerequisites: MATH 2013, 2203, and MATH 2213 or 1503.

MATH 3113 Analysis II 3 ch (3C)

Differential calculus, integration, sequences and series of functions, completeness of basis, convergence of Fourier Series, Fourier Transforms, wavelets and wavelet transforms. Prerequisite: MATH 3103.

MATH 3213 Linear Algebra II 3 ch (3C)

Possible topics: Vector spaces and subspaces, independent and spanning sets, dimension, linear operators, determinants, inner product spaces, canonical forms. Prerequisite: MATH 2213 or consent of instructor.

MATH 3243 Complex Analysis 3 ch (3C)

Complex analytic functions, contour integrals and Cauchy's theorems; Taylor's, Laurent's and Liouville's theorems; residue calculus. Prerequisites: MATH 2003, 2013 or equivalent. Note: Credit will be given for only one of MATH 3243, 3513 or 3523.

MATH 3333 Combinatorial Theory 3 ch (3C)

Topics selected from: Principle of inclusion and exclusion, Mobius inversion, generating functions; systems of distinct representatives, Ramsey's Theorem; duality in external problems, duality in programing; dynamic programing; block designs; introduction to matroid theory; signal-flow graphs. (The course is also of interest to students in Computer Science and Engineering.) Prerequisite: MATH 1003, 1823 or 1833.

MATH 3343 Networks and Graphs 3 ch (3C)

Graphs, Euler paths, tournaments, factors, spanning trees, applications; electric networks and Kirchhoff's laws, matroids; kernels, Grundy function and application to game theory; Menger's theorem, flows in networks, flow algorithms. Prerequisite: MATH 1003, 1823 or 1833.

MATH 3363 Finite Mathematics (A) 3 ch (3C)

Applications of algebraic and combinatorial methods to a selection of problems from coding theory, computability, information theory, formal languages, cybernetics and the social and physical sciences. Prerequisite: 12 ch in Math and/or Stat.

MATH 3413 Introduction to Numerical Methods 4 ch (3C)

Error analysis, convergence and stability. Approximation of functions by polynomials. Numerical quadrature and differentiation. The solution of linear and nonlinear equations and the solution of ordinary differential equations. This course will emphasize the development of computer algorithms and stress applications in the applied sciences. Note: This course is also listed as CS 3113. Credit will not be given for both MATH 3413 and CS 3113. Prerequisites: CS 1003 or CS 1073, and MATH 2213 or MATH 1503.

MATH 3473 Mathematical Models (A) 3 ch (3C)

Overview of the field of mathematical biology. Development, simulation and analysis of simple mathematical models describing biological systems. Equal emphasis is placed on developing simple models and case studies of successful models. The principle mathematical tools are differential and difference equations, finite mathematics, probability and statistics. Note: This course is also listed as BIOL 4563. Projects and assignments for MATH 3473 will place more emphasis on model development and analysis. Students cannot receive credit for both BIOL 4563 and MATH 3473. Prerequisite: a statistics course, MATH 2003 and MATH 2013 (or equivalent), or permission of the instructor.

MATH 3503 Differential Equations for Engineers 3 ch (3C 1T)

Nonhomogeneous differential equations, undetermined coefficients, variation of parameters, systems of 1st and 2nd order ordinary differential equations, Laplace transforms, Fourier series, partial differential equations with constant coefficients, boundary value problems. Prerequisite: MATH 1503 or 2213 (C grade minimum). Co-requisite MATH 2513 or MATH 2003. Prerequisite: MATH 1503 or 2213 (C grade minimum). Co-requisite MATH 2513 or MATH 2003.

MATH 3543 Differential Geometry for Geomatics Engineers 4 ch (4L 1T)

Basic analytic geometry, spherical trigonometry, geometry of curves in space, measurements on surfaces, Gaussian surface geometry. Prerequisites: MATH 2503 and MATH 2513, or equivalent.

MATH 3623 History of Mathematics (A) 3 ch (3C) [W]

A non-technical survey of the development of mathematics from primitive peoples through Indian, Oriental, Babylonian, Egyptian and Greek cultures. More emphasis will be placed on Western European and post-Renaissance mathematics, and recent (post-1940) history. An attempt is made to discuss each new mathematical contribution in light of both past mathematics and social scientific forces of the day. Some background in Mathematics necessary. Prerequisite: 12 ch in Math and/or Stat.

MATH 3633 Fundamental Principles of School Mathematics I. 3 ch (3C)

A course for undergraduate students who anticipate a career as teachers. Topics build around the K-12 syllabus, with extensions beyond the classroom, to show the 'how' and 'why' behind school mathematics. Mathematical language; real numbers and other mathematical structures; Euclidean geometry; functions; mathematical connections; problem solving. Intended for students registered in concurrent B.Ed. programs, but may be taken by others with the approval of the student's departmental Chair or Dean. Prerequisite: 6 ch of university mathematics.

MATH 3803 Introduction to the Mathematics of Finance 3 ch (3C)

Measurement of interest, compound interest, annuities, amortization schedules and sinking funds. Bonds. Prerequisite: MATH1013 or a grade of B or better in MATH 1823.

MATH 3813 Mathematics of Finance II (0) 3 ch (3C)

A more advanced study of the topics in MATH3803 including varying and continuous annuities and yield rates. Prerequisite: MATH3803 with a grade of B or better.

MATH 3843 Introduction to Life Contingencies 3 ch (3C)

Survival distributions, general life insurances and life annuities, reserves. Joint annuities and last survivor annuities. Prerequisite: One term of statistics and MATH3803.

MATH 4023 Functional Analysis 3 ch (3C)

Normed spaces, the Hahn-Banach theorem, uniform boundedness theorem. Wavelets. The contraction mapping theorem. Existence and uniqueness for nonlinear differental equations. Prerequisite: Any two of MATH 3003, 3103, 3113, or permission of the instructor.

MATH 4043 Advanced Algebra (A) 3 ch (3C)

Prime fields and characteristic, extension fields, algebraic extensions, theory of finite fields, Galois theory, and topics which may include some of: rings, topological algebra, multilinear and exterior algebra, quadratic forms. Prerequisites: MATH 3033.

MATH 4063 Advanced Geometry (Exotic Spaces) (O) 3 ch (3C)

A deeper investigation of Euclidean and Non-Euclidean spaces of any dimension. Topics selected from: axiom systems, linear and affine transformations, conformal and linear models for Euclidean and hyperbolic spaces and their isometry groups, basic theory of convexity, combinatorial properties of polytopes. Prerequisites: At least one of MATH 2213 or MATH 2003 or MATH 2513 or MATH 3063.

MATH 4123 Advanced Linear Algebra (0) 3 ch (3C)

The theory of vector spaces and linear transformations, dual spaces, multilinear maps (including tensors and determinants); further topics chosen from canonical forms, metric vector spaces, algebras, etc. Prerequisites: MATH 3213.

MATH 4153 Topology (A) 3 ch (3C)

A continuation of the topological concepts introduced in MATH 3103. Basic results in point-set topology. Prerequisites: MATH 3103.

MATH 4413 Fluid Mechanics (A) 3 ch (3C)

Derivation of the Equations of Motion: Euler's equations, rotation and vorticity, Navier-Stokes equations. Potential Flow: complex potentials, harmonic functions, conformal mapping, potential flow in three dimensions. Slightly Viscous Flow: boundary layers and Prandtl boundary layer equations. Gas Flow in one dimension: characteristics and shocks. Prerequisite: MATH 2003-2013 or equivalent.

MATH 4423 Mathematical Theory of Control (A) 3 ch (3C)

Topics selected according to the interests of students and faculty which may include the following: optimal control of linear systems, Pontryagin's maximum principle, controlability, observability, distributed parameter systems, differential games, stochastic systems. Prerequisite: MATH 2003-2013 or equivalent.

MATH 4433 Calculus of Variations (A) 3 ch (3C)

Introduction to functionals and function spaces. Variation of a functional. Euler's equations, necessary condition for an extremum, case of several variables, invariance of Euler's equation, fixed end point problem for unknown functions, variational problems in parametric form, functionals depending on high order derivatives. Prerequisite: MATH 2003-2013 or equivalent.

MATH 4443 Introduction to Quantum Field Theory 3 ch (3C)

Relativistic quantum mechanics. The negative energy problem. Classical field theory, symmetries and Noether's theorem. Free field theory and Fock space quantization. The interacting field: LSZ reduction formula, Wick's theorem, Green's functions, and Feynman diagrams. Introduction to Quantum electrodynamics and renormalization. This course is crosslisted as PHYS 5153. Prerequisites: MATH 3003, PHYS 3051, and one of MATH 3043, 3503, PHYS 3011, 3031, or permission of instructor.

MATH 4453 Special Functions (A) 3 ch (3C)

Covers in depth those functions which commonly occur in Physics and Engineering, namely, the Gamma, Beta, Bessel, Legendre, hypergeometric, Hermite and Laguerre functions. Additional or alternative special functions may be included. Applications to Physics and Engineering will be discussed. Prerequisite: MATH 3043 or 3503 or equivalent.

MATH 4473 Introduction to Differential Geometry (A) 3 ch (3C)

Geometry of embedded curves and surfaces, n-dimensional manifolds, tensors, Riemannian geometry. Prerequisites: MATH 2003-2013 or equivalent.

MATH 4483 Introduction to General Relativity (A) 3 ch (3C)

Special relativity, foundations of general relativity, solutions of Einstein's equations, classical tests, cosmology, additional topics. Prerequisites: MATH 4473 or consent of instructor.

MATH 4503 Numerical Methods for Differential Equations 3 ch (3C)

The numerical solution of ordinary differential equations, and partial differential equations of elliptic, hyperbolic and parabolic type. The course is a basic introduction to finite difference methods, including the associated theory of stability, accuracy and convergence. Students will gain practical experience using state-of-the-art numerical solvers and visualization tools, while solving problems from the physical and biological sciences. Prerequisites: One of: MATH 3043, 3073, 3503, CS 3113, CHE 3418, or ME 3522.

MATH 4633 Calculus Revisited 3 ch (3C)

A course for high school mathematics teachers. The course is built around a set of optimization problems, whose solution requires review of topics in first and second year calculus and linear algebra. Connections are made with topics in the Common Atlantic High School Mathematics Curriculum. Prerequisite: Permission of Instructor. Students should be near completion of requirements for a major or minor in mathematics.

MATH 4643 Formal Languages 3 ch (3C)

Brief history of structural linguistics. Introduction to mathematical methods of linguistics. Finite state automata, regular languages. Computability. Chomsky hierarchy. Phrase-structure grammars. Artificial intelligence problem. Critiques of structural linguistics. Prerequisite: Consent of the instructor. MATH 2203 or CS2303 recommended.

MATH 4853 Mathematics of Financial Derivatives (A) 3 ch (3C)

Basics of options, futures, and other derivative securities. Introduction to Arbitrage. Brief introduction to partial differential equations. Stochastic calculus and Ito's Lemma. Option pricing using the Black-Scholes model. Put-call parity and Hedging. Pricing of European and American call and put options. Numerical methods for the Black-Scholes model: binary trees, moving boundary problems, and linear complementarity. The barrier, and other exotic options. Prerequisites: (MATH 3503 and STAT 2593) or (MATH 2013, 2213 and STAT 3083), and CS1073 or experience with a computer programming language.

MATH 4903 Independent Study in Mathematics 3 ch

Topics to be chosen jointly by student, advisor, and Department Chair. May be taken for credit more than once. Title of topic chosen will appear on transcript. Prerequisite: Permission of Department.

MECHANICAL ENGINEERING

Note: See beginning of Section H for abbreviations, course numbers and coding.

All courses must be passed with a grade of C or better.

L* = Laboratory periods on alternate weeks.
* = Engineering electives. Not all offered every year. Consult Department as to availability of courses from year to year at web site: http://www.me.unb.ca.

ME 1312 Computer Aided Design 4 ch (2C 3L)

Introduces the technology of 3D parametric geometric modeling to design and model mechanical engineering parts, assemblies and devices. Geometric variables and their interrelationships will be covered by projects involving the design of mechanical components, assemblies and machines to meet functional requirements. Manufacturing requirements including Geometric Dimensioning and Tolerancing. The use of the model for analysis, optimization and simulation will be stressed. Presentation of the model through engineering drawings and pictorial renderings. Animation of mechanisms. A comprehensive commercial CAD program will be utilized. Prerequisite: ENGG 1013. Co-requisite: MATH 1503

ME 2121 Strength of Materials 4 ch (3C 2L)

Uniaxial stress and strain, basic concepts, Poisson's ratio, yielding and failure. Torsion in circular and rectangular members. Pure bending. Transverse loads. Stress and strain transformation, Mohr's circle, thin-walled pressure vessels. Beams: strength, deflection. Buckling of columns, instability. Elastic energy. Prerequisite: APSC 1023.

ME 2143 Kinematics and Dynamics of Machines 4 ch (3C 2L)

Fundamental concepts of linkages; displacement, velocity and acceleration analysis using graphical and analytical methods. Static and dynamic force analysis of linkages. Introduction to cams. Gears: involute nomenclature; bevel, helical and worm gears; ordinary and planetary gear trains. Balancing rotating masses. Simple gyroscopic effects. Prerequisite: APSC 1023. Recommended: CS 1003 or other introductory programming course.

ME 2222 Manufacturing Engineering I 4 ch (3C 2L)

Basic concepts of Materials Science are applied to the selection of common engineering materials used in manufacturing. Material properties important to processing design are emphasized. Strengthening due to such microstructural features as dislocations, grain boundaries, transformation products, and precipitates will be introduced. Both ferrous and non-ferrous alloys will be studied in detail. Industrial applications of plastics, composites and ceramics are emphasized. The laboratory exercises are: metallography, heat treating, precipitate strengthening, jominy, and impact toughness testing. Prerequisite: ME 2503 or equivalent.

ME 2332 Design of Machine Elements 4 ch (3C 2L) [W]

Review of strength of materials: stresses, deflections and material properties. Static strength: failure criteria and stress concentration. Fatigue strength. Probabilistic design. Computer assisted design of shafts, mechanical springs, power screws and threaded fasteners. Prerequisites: ME 1312, ME 2121 or CE 2023.

ME 2503 Materials Science 4 ch (3C 3L*)

The principles relating the properties and behaviour of engineering materials to their structure; atomic bonding forces and strength of interatomic and intermolecular bonding forces, atomic arrangements in solids, structural imperfections and atom movements in solids; principles of phase diagrams and their application to multiphase materials, with particular reference to the iron-carbon system; mechanical and electrical properties of engineering materials, metals, semi-conductors, polymers and ceramics and their relation to internal structure. Laboratory experiments are conducted to illustrate behaviour of materials. ME 2503 is equivalent to CHE 2503 and CE 2503. Prerequisite: CHEM 1882.

ME 2613 System Dynamics 4 ch (3C 3L*)

System concept, dynamic elements for mechanical, electrical, thermal and fluid systems. Systems of elements and their differential equations. Analysis of systems of first and second order using theoretical and computer simulation methods. Prerequisites: CS 1003 or other introductory programming course, MATH 1013, APSC 1023. Recommended: EE 1013.

ME 3232 Engineering Economics 3 ch (3C)

Application of engineering economic analysis to mechanical and industrial engineering systems. Major emphasis will be given to decision-making based on the comparison of worth of alternative courses of action with respect to their costs. Topics include: discounted cash flow mechanics, economic analyses, management of money, economic decisions. Restricted to students with at least 60 ch.

ME 3341 Design of Machine Systems 4 ch (3C 2L)

Design of rotating and reciprocating machines. Safety issues. Lubrication: full film lubrication, boundary lubrication and wear. Journal bearing design and optimization. Gear strength in fatigue and wear including spur, helical, worm and bevel gearing. Critical speeds in rotating shafts. Dynamic considerations in machine design. Prerequisite: ME 2332. Recommended: ME 2143, STAT 2593.

ME 3352 Computer Aided Engineering 4 ch (3C 2L)

Computer Aided Engineering is considered as a set of technologies which includes geometric modelling, computer aided design, optimization, simulation, analysis, and artificial intelligence. Design is approached from a systems perspective. Prerequisite: ME 3341. Recommended: STAT 2593.

ME 3413 Thermodynamics I 3 ch (3C)

Properties of a pure substance -- work and heat. First law and applications in non-flow and flow processes. Second law and reversibility: entropy, applications of the second law to non-flow and flow processes. Analysis of thermodynamic cycles. Thermodynamic relationships. Prerequisites: CHEM 1882, MATH1013. Corequisite: Math 2513.

ME 3415 Thermodynamics I Laboratory 1 ch (3L*)[W]

Laboratory experiments and measurements related to Thermodynamics I. Laboratory reports and readings are assigned. Co-requisite: ME 3413.

ME 3423 Thermodynamics II 3 ch (3C)

Air standard cycles; the Otto, Diesel and mixed cycles, and others having the Carnot efficiency. Flow processes; simple gas turbines; open and closed gas turbine cycles with reheat, regenerative heat exchange and pressure drop. Vapour power cycles; Rankine cycle, reheat and regenerative cycles; binary and nuclear plant cycles. Heat pumps and refrigeration cycles; practical gas refrigeration and liquefaction cycles. Properties of mixtures; mixtures of perfect gases, mixtures of real fluids, hygrometry, the psychrometric chart. Combustion: fuels, chemical equations, experimental analysis; reaction processes, data and analysis. Prerequisite: ME 3413, ME 3415.

ME 3425 Thermodynamics II Laboratory 1 ch (3L*)[W]

Laboratory experiments and measurements related to Thermodynamics II. Laboratory reports and readings are assigned. Prerequisite: ME 3413, ME 3415. Co-requisite: ME 3423.

ME 3433 Heat Transfer I 3 ch (3C)

Conduction: One dimensional steady conduction and applications. Thermal properties. The differential equations of conduction; analytic and numerical solutions to two dimensional problems and applications. Unsteady conduction lumped and differential approaches with applications. Convection: Dynamic similarity and dimensional analysis; boundary layer theory and applications to flow over heated/ cooled surfaces; laminar and turbulent flow-free convection. Heat transfer with change of phase. Radiation: the laws of black body radiation; Kirchoff's law and gray body radiation. Combined modes of heat transfer: heat exchanger design; augmentation of heat transfer; fins and thermocouples. Environmental heat exchange. Equivalent to CHE 3304. Prerequisite: ME 3413, ME 3415, ME 3511.

ME 3435 Heat Transfer I Laboratory 1 ch (3L*)[W]

Laboratory experiments and measurements related to Heat Transfer I. Laboratory reports and readings are assigned. Prerequisites: ME 3415 and ME 3515. Corequisite: ME 3433 or CHE 3304.

ME 3511 Fluid Mechanics I 3 ch (3C)

Describes the properties and kinematics of fluids, and some techniques of flow measurement. Extends the basic principles of mechanics (mass, momentum and energy) to describe the fluid motion using a control volume approach. Introduces dimensional analysis and similarity. The flow through pipes is studied in detail. Prerequisites: APSC 1023, MATH 2513. Recommended: ME 3413.

ME 3515 Fluid Mechanics I Laboratory 1 ch (3L*)[W]

Laboratory experiments and measurements related to Fluid Mechanics I. Laboratory reports and readings are assigned. Co-requisite: ME 3511.

ME 3522 Fluid Mechanics II 3 ch (3C)

The differential equations which describe fluid motion are introduced and applied to boundary layers and compressible flow in pipes. The lift and drag on immersed bodies and the operation of fluid machinery are described. Prerequisites: ME 3413, ME 3511, ME 3515.

ME 3525 Fluid Mechanics II Laboratory 1ch (3L*) [W]

Laboratory experiments and measurements related to Fluid Mechanics II. Laboratory reports and readings are assigned. Prerequisites: ME 3511, ME 3515. Co-requisite: ME 3522.

ME 3703 Mechanical Engineering Measurements 4 ch (3C 3L*)

Introduces a variety of measurement techniques used in Mechanical Engineering. Topics include analog and digital measurement systems, frequency response, calibration and assessment of uncertainty. Laboratory exercises include measures of time and rate, displacements, stress and strain, force, pressure, flow, temperature and vibration. Prerequisites: ME 2121 or CE 2023 or CHE 2503 (for EE or CMPE students only); ME 2613 or approved alternate.

ME 4173* Kinematic Design and Analysis of Robots 4 ch (3C 2L)

The motion requirement of a robot is examined, the kinematic arrangement to provide this motion is determined, the hardware designed and the control philosophy specified. This is done by establishing the requirements in two dimensional plane motions and building on this to obtain three dimensional and four dimensional motion in a plane, then in space. Robot rigidity and driving requirements are considered. Note: Credit may be obtained for only one of ME 4173 or EE 4353. Prerequisite: MATH 1503. Corequisite: ME 2143.

ME 4243* Advanced Manufacturing Methods 4 ch (3C 3L*)

An advanced course in methods of manufacturing engineering materials. Technical and theoretical bases of manufacturing methods. Material behaviour during processing. Computer simulation. High speed forming; sheet metal forming; forming limit diagrams. Prerequisites: ME 4283, ME 4343.

ME 4263* Mechanical and Electrical Equipment for Buildings 4 ch (3C 3L*) [W]

A review of the mechanical equipment used in buildings for heating, ventilating and air conditioning (HVAC); water supply and drainage; fire protection and transportation. Energy conserving design is emphasized. Responsibilities of mechanical engineers in the project team are emphasized. Lab work includes field trips, equipment tests and seminars. Restricted to students with at least 120 ch. Prerequisites: ME 3413, ME 3415. Recommended: ME 3423, ME 3511, ME 3515. Note: Credit may be obtained for only one of ME 4263 or ME 4453.

ME 4283 Manufacturing Engineering II 4 ch (3C 3L*)

Principles and physical phenomena of the basic manufacturing processes. A review of the attributes of manufactured products will precede lectures on metal casting, forging, sheet metal working, machining and joining. Material behaviour during manufacturing. Processing of polymers, particulate metals and ceramics. A case study will illustrate the competitive nature of manufacturing processes. The laboratory projects are: introduction to casting processes, cold and hot deformation behaviour of metals, measurement of forces and power requirements in extrusion, wire drawing, machining, and sheet metal working. Prerequisites: ME 2121, ME 2222.

ME 4343 Solid Mechanics 4 ch (3C 3L*)

General state of stress and strain, transformation, equilibrium and compatibility equations, thermal stresses, failure criteria, elastic wave propagation. Energy methods. Analytical methods, Airy stress function. Finite element method. Experimental methods. Stress concentration, contact stresses. Prerequisite: ME 2121 or CE 2023. Recommended: ME 2332.

ME 4453* Air Conditioning 4 ch (3C 3L*) [W]

Principles and practices of design for heating, ventilating and air conditioning systems. Thermal comfort, heat loss and gain, and psychrometrics are reviewed. Major equipment components are studied, including HVAC control systems. Energy conserving design is emphasized. Responsibilities of mechanical engineers in the project team are emphasized. Lab work includes field trips, equipment tests and seminars. Restricted to students with at least 120 ch. Prerequisite: ME 3423. Recommended: ME 3511, ME 3515, ME 3522. Note: Credit may be obtained for only one of ME 4263 or ME 4453.

ME 4553* Flight Mechanics 4 ch (3C 3L*)

Describes the aerodynamic forces, moments and propulsive thrusts which act on fixed wing aircraft. Topics include: aircraft stability, control, flight performance, propeller aircraft, turbofans, turbojets and ramjets. Laboratory experiments include measuring the lift and drag on wings and the performance of a subsonic ramjet. Each student designs and builds a model glider as a term project. Prerequisite: ME 3522.

ME 4623 Automatic Controls I 4 ch (3C 3L*)

Open loop, closed loop control; philosophy of automatic control; components of a control loop; dynamics of control components; differential equations, step response, frequency response, 1st, 2nd, 3rd order systems, P, I, PI, and PID-controllers. Stability criteria: Routh-Hurwitz, Nyquist (polar and Bode diagrams). Lead/lag controller design using Root Locus and Bode diagrams. Prerequisites: : ME 2613, MATH 2513. Corequisite: MATH 3503.

ME 4633* Numerical Control of Machines 4 ch (3C 3L*)

Economics of Numerical Control. Control systems--open loop, closed loop, Direct Numerical Control, Computer Numerical Control, Adaptive Control. Programming systems--manual and computer assisted part programming with APT. The integration of Numerical Control and Computer-Aided Design. computer graphics and Numerical Control. Prerequisite: ME 2222. Corequisite: ME 4283.

ME 4673 Introduction to Mechatronics 4 ch (3C 3L*)

Mechatronics is an integrated approach to mechanical, electronic and computer engineering for the design of smart products and intelligent manufacturing systems. Fundamentals of mechatronics design, with emphasis on product design and fabrication. Examples of mechanical systems utilizing sensors and actuator technologies, including use of signal conditioning circuits such as filters, amplifiers and analog-to-digital converters. Software design and implementation for process monitoring and logic control. Laboratory experiments give hands-on experience with components and equipment used in the design of mechatronic products. Project to design and fabricate a mechatronic system. Prerequisites: EE 3121, EE 3221, ME 3341 and ME 3703.

ME 4683 Mechatronics Applications 4 ch (3C 3L*)

Concepts in automating processes. Programmable logic controller (PLC) architecture, PLC programming with mathematical functions, and PLC interfacing. Microprocessor selection, programming and interfacing for system automation and control. Project involving use of PLC or microprocessor technology in a mechatronics system. Prerequisite: ME 4673.

ME 4843 Senior Design Project Proposal 2 ch [W]

Mechanical Engineering students are required to prepare and present a technical report based on an engineering design topic of relevance to mechanical engineering. Students may work individually or in approved groups. Industrial projects are developed in cooperation with industry and normally require some period of time on site. University-based projects are developed in cooperation with university faculty. ME4843 is the first stage of this process in which a project topic is chosen and a carefully researched written proposal is submitted. Once the proposal has been accepted it is presented orally. Written progress reports are required. Faculty instruction on proposal writing and presentation is provided. Students may register for ME4843 in the Fall or Winter Term. Prerequisite: Restricted to students with 54 ch or less remaining in their program.

ME 4853 Senior Design Project Report 3 ch [W]

ME4853 is the last stage of the senior project. A written report and an oral presentation are required. Students register for ME4853 in the term in which they will present their work. Prerequisite: ME4843.

ME 5163* Machinery Vibration and Noise 4 ch (3C 3L*)

Vibration of SDOF systems, shock excitation, forced vibration isolation. MDOF systems, modal analysis. Signal processing, filters, FFT analysis. Vibration of rotating machinery, balancing, condition monitoring. Acoustic waves, human hearing and exposure limits. Room acoustics and wall transmission. Prerequisite: ME 2613. Recommended: PHYS 2972.

ME 5173* Advanced Kinematics of Manipulators 4 ch (3C 3L*)

Various methods for solving the forward and inverse displacement problems are described. Particular emphasis is made on the use of screw theory for the derivation of the Jacobian matrix. The selection of alternate frames of reference for describing the Jacobian are also discussed. Methods used in the solution of the inverse displacement problem and the inverse and forward velocity problems for kinematically redundant manipulators are discussed. Prerequisite: ME 4173. Recommended corequisite: ME 3352.

ME 5193* Introduction to Flow-Induced Vibrations 4 ch (3C 2S)

Introduces analytical tools for investigating the vibrations of structures exposed to fluid flow. Classification of problems in flow-induced vibrations and mathematical modelling of problems involving fluid structure interaction. Applications to cylindrical structures such as smoke stacks, marine risers, nuclear reactor internals, and heat exchangers. Prerequisites: ME 2613, ME 3511, recommended PHYS 2972.

ME 5233* Principles of Metal Cutting 4 ch (3C 3L*)

Topics to be covered include: fundamentals of cutting forces and temperatures, stress, strain and strain rates, tribological aspects of material removal, tool wear and tool life, machinability of materials, economics/optimization of metal removed. Prerequisites: ME 2121, ME 2222

ME 5283* Advanced Topics in Occupational Health & Safety 4 ch (3C 3L*)

Occupational health & safety as it relates to industrial operations and manufacturing processes. Concepts such as hazard avoidance, health and environmental control, machine guarding, electrical hazards and process safety. Statistics on Canadian and international workplace safety. Management and institutional controls for workplace safety, such as communicating vital information, pre-task briefings and shift turnovers. Lessons learned from numerous industrial and manufacturing industry accidents. Prerequisites: Restricted to students with 120 credit hours.

ME 5293* Manufacturing Systems and Design 4 ch (3C 2S) [W]

Team-taught exploration and in-depth coverage of broad issues of the design and manufacturing cycle. Integration of manufacturing with design and quality management via topics such as: principles of ISO 9000; Statistical Process Control (SPC); advanced CAD concepts; joining processes such as rivet design, interference fits and welding; machining processes; materials selection in design; design for safe-life and fail-safe/redundant applications; industrial sensors and instrumentation, filters, and design of sensors. Pre-requisites: ME 2121, ME 2222, ME 3341, ME 3703.

ME 5363* Systems Engineering 4 ch (3C 3L*)

Productivity and manufacturing management, manufacturing systems design, methods engineering and work measurement, manufacturing control, maintenance engineering, quality control and physical facilities. Prerequisites: ME 2222, ME 3352.

ME 5373* Nuclear Reactor Engineering 3 ch (3C)

Review of reactor systems. Neutronic design of equilibrium core. Fuel management. Reactor thermal hydraulics. Accident analysis and safety systems. (This course will not be offered every year. It will be a technical elective for chemical and mechanical engineering students, and is a designated elective in the Nuclear and Power Plant Engineering Option programs within mechanical and chemical engineering.) Prerequisite: CHE 3804 or equivalent.

ME 5443* Thermal Design and Optimization 4 ch (3C 2S)

Introduction to thermal systems design. Review of first and second laws of thermodynamics. Entropy generation minimization concept. Thermodynamic modeling and design. Exergy analysis. Applications with thermodynamics and heat and fluid flow. Thermoeconomic analysis and evaluation. Thermoeconomic optimization. Prerequisite: ME 3423 or CHE 2012, Co-requisite: ME 3433 or CHE 3304.

ME 5463* Heat Transfer II 4 ch (3C 3L*)

Design of thermal systems: engineering design and economics, system simulation and design optimization. Case studies: application of selected calculation schemes for shell-and-tube heat exchangers, cooling towers and furnaces. Prerequisites: ME 3433 or CHE 3304, ME 3435.

ME 5473* Energy Management 4 ch (3C, 2S)

Energy classification, sources, utilization, economics, and terminology. Principal fuels for energy conversion. Environmental impact analyses. Production of thermal energy, mechanical energy and electrical energy. Advanced and alternate energy systems. Energy storage. Energy audits. Energy management through control and usage strategies. Prerequisite: ME 3433 or equivalent.

ME 5483* Cogeneration and Combined Cycle Power Generation 4 ch (3C 2L)

Conventional energy sources and their utilization in power generation units. Cogeneration and combined cycles. Thermodynamic analysis of combined cycle power plants. Partial and integrated gasification combined cycle power generation. Exergy analysis of combined cycles. Supplementary firing. Thermodynamic analysis of cogeneration systems. Waste heat recovery and applications. Prerequisite: ME 3423 or CHE 2012, Co-requisite: ME 3433 or CHE 3304.

ME 5493* Internal Combustion Engines 4 ch (3C 3L*)

The thermodynamics of internal combustion engines is introduced and applied to reciprocating spark ignition and compression ignition engines. The performance of each engine type is studied experimentally. The mechanical design of reciprocating engines is also examined. Prerequisites: ME 3423, ME 3425.

ME 5503* Application of Computational Fluid Dynamics to Industrial Processes 4 ch (3C 2L)

General CFD topics such as grid topologies, discretization methods and errors, pressure-velocity coupling, solution methods for non-linear equations, and popular solution schemes such as the SIMPLE based methods. Introduction of extensions to core CFD techniques for a wide range of industrial applications, including turbulence models, multiphase flow models for problems in cavitation, boiling/ condensation, and solidification/melting. Role of properties in CFD models, as related to non-Newtonian fluids, real and ideal properties for compressible flows, and combustion applications. Prerequisites: ME 3433, ME 3522.

ME 5643* Automatic Controls II 4 ch (3C 3L*)

The first half of the course is an introduction to digital control. Emphasis is placed on understanding the relationships between analog and digital techniques. The second half concentrates on developing the basic mathematical framework for state space control. Several powerful abstract mathematical tools such as the projection theorem are introduced. Prerequisite: ME 4623 or EE 3323.

ME 5653* Predictive Control and Intelligent Sensors 4 ch (3C 3L*)

Study on the design and practical implementation of model predictive controllers and intelligent sensors for industrial type processes. Topics to be studied include sensor selection and instrumentation, signal processing and conditioning, process modelling and identification, computer interfacing, predictive control, optimization techniques, algorithm design and intelligent sensor modelling. The course is project oriented and includes the use of Matlab and LabWindows CVI software. Prerequisite: : ME 4623 or CHE 4601 or EE 3323.

ME 5663* Hydraulic Power Systems 4 ch (3C 3L*)

The design of hydraulic systems for industrial processes. Topics include hydraulics symbology, hydraulic fluids, industrial hydraulic circuits, hydraulic actuator design and selection, pressure control, speed and flow control, servo-directional valves, reservoir design, contamination control, instrumentation in hydraulics and digital application in hydraulic systems. The course introduces programmable logic control (PLC) of hydraulic systems. Prerequisite: ME 3703 or EE 3313.

ME 5713* Nondestructive Testing 4 ch (3C 3L*)

Principles of nondestructive evaluation, acoustic emission techniques, ultrasonics, microwave methods, electromagnetic probes, penetrating radiation. Prerequisite: A first year course in Physics or APSC 1023. Recommended: ME 3703.

ME 5744* Steam Supply Systems 4 ch (3C 2L)

Historical and descriptive introduction to fossil fuel fired boilers. Coal firing systems. Introduction to different reactor types. Complex Rankine cycles. Steam plant efficiencies. Energy and exergy analysis. Heat transfer in fossil fuel fired boilers. Heat transfer in nuclear reactors. Thermal transport and steam generation. Steam plant heat exchangers. Analysis of real plant data. Laboratory work or special project related to plant systems or operational characteristics. Prerequisites: ME 3413 or CHE 2012, ME 3511. Recommended: ME 3415, ME 3515.

ME 5754* Steam and Gas Turbines 4 ch (3C 3L*)

Development of steam turbines and review of steam cycles. Turbine thermodynamics and energy conversion. Impulse and reaction blading. Mechanical design of turbine components and operational considerations. Efficiency calculations. Review of gas cycles. Gas turbine thermodynamics. Gas path design. Comparison of power turbines and aircraft engines. Turbojets and turbofans. Extensive assignments on steam and gas turbine performance. Heat balance and efficiency determination of laboratory machines and performance analysis of actual power plant turbines. Prerequisite: ME 3413 or CHE 2012, ME 3511. Recommended: ME 3415, ME 3515.

ME 5813* Special Topics in Mechanical Engineering 1 ch

Provides selected students an opportunity to complete an independent project in association with an undergraduate course within the department. Permission of both the instructor of the associated course and the director of undergraduate studies is required. Students may register for this course only once during their degree.

ME 5833* Special Topics in Mechanical Engineering 3 ch (3C)

This course may be used to present special topics as a classroom course.

ME 5913* Biomechanics I 4 ch (3C 2S)

A number of topics in biomechanics are examined. Of particular interest is the mechanics of joints, and relation of the internal mechanics of joints to externally applied loads. Analysis techniques are introduced to facilitate analysis of the problems addressed in the course. Prerequisite: 120 credit hours.

ME 5933 Industrial Ecology 3 ch (3C)

Objective is to develop awareness and knowledge of a new way of thinking about economy-environment interactions. Of interest to those with an industrial or environmental background, or to those who have to interact with specialists in these disciplines. Topics include: humanity and environment; technology and industry; environmental concerns and risk assessment; relevant external factors; an introduction to life-cycle assessment; LCA inventory analysis stage; LCA impact assessment stage; industrial design of processes and products; designing for energy efficiency; choosing materials; design for recycling; and standards. Prerequisite: Available to students in all Faculties who have completed at least 120 credit hours of university level courses.

MULTIMEDIA STUDIES

Note: See beginning of Section H for abbreviations, course numbers and coding.

Introductory and Intermediate Level Courses

MM 1001 Media Culture 3 ch

Provides an introduction to media and their role in supporting communication in society. The nature of constructed communications that are designed to convey and reflect cultural, social, and individual messages are considered. Consideration is given to the creative and technical aspects of how we are using the media. Students will be expected to complete a series of written assignments over the course of the term.

MM 1002 Media Language 3 ch

This course builds upon the material in Media Culture by integrating cultural studies with an introduction to media technologies and creative skills. Lectures will explicate techniques used to construct communications and at the same time consider personal, social and cultural implications embedded in such constructions. In addition to written assignments, students will complete individual projects designed to provide some practical experience in constructing communications. Enrolment limited to 80. Prerequisites: MM1001 or the permission of the instructor.

MM 2001 Media & Creative Communication 3 ch

An introduction to the practical principles supporting creativity in visual communication. Students will engage in workshops exploring creative visual expression through a variety of media. A series of lectures and seminars will expose students to the intellectual context of visual communication. Enrolment limited to 24. Required for Multimedia Majors. Prerequisites: MM1002, requires permission of instructor.

MM 2002 Media Design I 3 ch

Explores strategies for creative visual expression across media, working within the constraints of the design paradigm. Topics will include formal design theory, colour theory, basic typography, image construction, and an introduction to visual communications using lectures, assignments, readings, in-class seminars, group discussion and critique. Enrolment limited to 18. Required for Multimedia Majors. Prerequisite: MM2001 and the permission of the instructor.

MM 2003 Media Tools I 3 ch

Students will acquire functional skills needed to use professional application programs associated with new media technologies. Emphasis will be on production tools used for text, image, and time-based graphics. Will provide an introduction to underlying concepts embodied in the processes of image and sound acquisition, generation of typography and moving image digitization and rendering. Students will demonstrate competence through a series of assignments. Enrolment Limited to 18. Prerequisites: MM2001. Required for Multimedia Majors; requires permission of instructor

Advanced Level Courses

MM 3001 Media Design II 3 ch

Provides an opportunity for students to develop further skills and broaden their understanding of visual communication. Topics will include organizing efficient design systems, producing eloquent moving image typography and developing consistent visual identity programs. The work and design strategies of leading contemporary practitioners will be examined. Enrolment limited to 18. Prerequisites: Required for and limited to Multimedia Majors.

MM 3002 Media Process 3 ch

Designed to integrate the student's design skills and their facility with appropriate new media technology tools in the context of clear communication. The course will consist of two parts. First, students will plan and complete a series of 'live' assignments that will expand their project planning and presentation skills. Second, students will select from a suite of given topics and develop, plan, and complete the project to design concept stage in order to demonstrate their own ability to use traditional media incorporating appropriate new media technologies to communciate effectively. Enrolment limited to 18. Prerequisite(s): Required for and limited to Multimedia Majors

MM 3003 Media Tools II 3 ch

Students will explore a computer-based tool set used to construct human-computer interactive systems. Emphasis will be on application tools used to create interactive structures between the individual and the technology. Investigates issues related to the design of interactive structures and the underlying concepts. Students will demonstrate competence through a series of assignments.Enrolment limited to 18. Prerequisites: Required for and limited to Multimedia Majors

MM 3004 Media Tools III 3 ch (LE)

Examines the software tools used to mediate human-computer interactions. Exercises will require the students to create a presentation space, and then manage still and moving images, as well as audio and textual material. Students will learn to use a directive computer language to manage the order and timing of presentation events and in addition, mediate controlling references from the person using the space. Prerequisites: Open to Multimedia Majors or with the permission of the instructor.

MM 3103 Media Ecology 3 ch

A technology is not just a mechanical aid to human activity, but also a force that plays a significant role in reshaping social mores and values. Explores the ecology of new media-that is, the way in which, once introduced into a culture, media create qualitatively different environments and ways of knowing. Particular attention will be given to the way in which various cultural groups respond to and express themselves via multimedia technologies. Enrolment limited to 18. Prerequisites: Open to Multimedia Majors or with the permission of the instructor.

MM 3212 Lens Media 3 ch

Examines the principles of image construction through a variety of lens media. Covers the general theories of light in natural and artificial environments. Workshop activity will provide students with skills in making still and moving images with chemical and electronic media. Enrolment limited to 18. Prerequisites: Open to Multimedia Majors or with the permission of the instructor.

MM 3213 Applied Aspects of Virtual Reality 3 ch

Practice in constructing interactive visual environments in the laboratory component provides the opportunity to consider underlying problems in communication theory, as well as issues of physical and social "presence" in such environments. Lectures and demonstrations provide a structure for the critical evaluation of the techniques used to build immersive environments. Prerequisites: MM2001, MM2002.

MM 3362 Digital Sound 3 ch

Covers general sound theory and acoustics necessary for the effective recording and use of digital sound. Workshops will explore the practical and aesthetic advantages of digital sound in the creation of soundtracks for multimedia production. Prerequisites: Open to Multimedia Majors or with the permission of the instructor.

MM 3412 The New Publishing 3 ch

Examines approaches to publishing texts and images for the WWW. A project-based course in which students will build their own publishing project. Issues include project analysis and design, imaging for the Web and for archival purposes, text encoding, the use of structured data for search and retrieval, and Web presentation. Uses UNB's E-Text Centre, where it will be taught. Prerequisites: Open to Multimedia Majors or with the permission of the instructor.

MM 3501-9 Individual Studies in Multimedia 3 ch

Courses of independent study in a topic of special interest to the student, to be taken under the supervision of a member of Faculty or of the MMST program. Topics will be specified in a written proposal and approved in advance by the Director of Multimedia.

MM 4112 Visual Communication for Multimedia 3 ch

Using a seminar format supported with lectures, this course seeks to provide students with a forum for deeper exploration of their communication design skills. Focusing on specialized design topics such as: information Design, visual poetry, and conceptual art, students will be challenged to make a personal and critical examination of the relationship between form and function. Assessment is based on individual and group project work as well as class participation. Enrolment limited to 18. Prerequisites: Open to Multimedia Majors or with the permission of the instructor.

MM 4301 Visual Information Design for Instructional Designers 3 ch

Using a seminar format supported with lectures, this survey of issues in visual communication leads students to an appreciation of the role visual language plays in fostering or obfuscating the reception of an instructional message. Emphasis is placed on practical exploration, examination of the work of renowned practitioners and critical discussion of form and function issues in information design. Enrolment limited to 18. Prerequisites: Open to students in M.Ed. Instructional Design.

MM 4401 Animation Concepts 3 ch

An introduction to the technology used in Computer Generated Imagery. In this course context students will explore the fundamentals of animation concepts and story telling. Enrolment limited to 12. Prerequisites: Open to Multimedia Majors or with the permission of the instructor.

MM 4402 Maya-Studio Practice 3ch

Provides practical training with Alias Wavefront's Maya software. Topics will include the principles of 3D Modeling, Animation and Special Effects. Students who fulfill all of the course requirements may be considered for Alias Wavefront certification. Prerequisites: MM 4401. Open to Multimedia Majors and with the permission of the instructor. Enrolment limited to 8.

MM 4980 Senior Project 6 ch

Provides each student with the opportunity to demonstrate a capacity for investigative study, problem solving and clear communication. Students will produce a substantive body of work embracing individual creativity and making appropriate use of new media technologies. Prerequisites: Open to Multimedia Majors and/or with the permission of the Director of Multimedia Studies Programme.

MM 4992 Current and Future Directions in Multimedia 3 ch

Provides a forum for the discussion of the relation between new media technologies and the cultural, social, civic, and mercantile sectors of society, and how these structures may change as a result. Each student will be expected to contribute a substantial paper and a seminar that successfully combines a critical appreciation with an understanding of the practical advantages and constraints evident in new media technologies. Prerequisites: Open to Multimedia Majors or with the permission of the instructor.

Nursing

Nursing courses in the BN, BN ASP, BN/RN programs are not open to students unless they are enrolled in one of these programs. Exceptions to this are NURS 3052 , NURS 3144 , and NURS 3154 .

* courses may be taken by students in either the BN or BN/RN program.

Note: See beginning of Section H for abbreviations, course numbers and coding.

NURS 1011 Nursing as a Profession 3 ch (3C)

Intro to the foundations of nursing as a profession, including its heritage and practices. Examines UNB nursing curriculum and philosophy.

NURS 1032 Caring Relationships 3 ch (3C)

Intro to the theoretical foundations of caring. Examines the relational aspects of caring in nursing practice. Introduces the learner to beginning counseling skills. Pre- or co-requisite NURS 1011.

NURS 1121 Introduction to Nursing and Wellness 3 ch (3C)

Introduction to foundations of nursing as a profession including nursing roles, values, and practices. Explores concepts of wellness, health, and illness within the context of primary health care and the discipline of nursing.

NURS 1135 Enhancing Well-Being in Situations of Chronicity 4 ch (4C)

Explores the experiences of people living with chronic physical and mental/psychiatric conditions and the impact on their capacity to achieve well-being. Examines nursing therapeutics to support and enhance well-being. Pre- or co-requisite NURS 1121.

NURS 1136 Practicum: Wellness and Chronicity 4 ch (4L)

Complements and supplements NURS 1135 and NURS 1142. Application of wellness concepts as they relate to clients living with chronic physical and mental/psychiatric conditions. Involves health assessment and application of relevant nursing therapeutics and roles in institutional and community settings. Pre- or Co-requisite NURS 1121 and NURS 1135.

NURS 1142 ASP Health Assessment 4 ch (3C 1L)

Designed to establish the foundation required for health assessment. Expands the concept of health, health promotion and health lifestyle choices as they apply to health assessment. Includes health, health assessment techniques and interpretive skills. The lab component focuses on the practical application of health assessment. Pre- or Co-requisite NURS 1136.

NURS 1225 Nursing and Wellness 3 ch (3C)

Explores the concepts of wellness, health and illness within the framework of Primary health Care. Pre-requisite NURS 1011 and NURS 1032.

NURS 1232* Cultural Encounters in Nursing 3 ch (3C)

This course prepares students to work at home and abroad with clients from diverse cultures. Emphasis is on developing cultural sensitivity, beginning competence, and insight into cultural beliefs, assumptions, and values and their influence on practice. Pre-requisite to any exchange experience in the Faculty of Nursing.

NURS 1235 Clinical Practicum: Nursing and Wellness 4 ch (4L)

Pre- or Co-requisite: NURS 1225.

NURS 2041 Health Assessment 4 ch (3C 1L)

Addresses physical and psychosocial assessment throughout the lifespan. Includes lab experiences.

NURS 2063 Concentrated Clinical Practice I 5 ch (5L)

An integrative practice experience. Pre-requisites include NURS 2155 and NURS 2187.

NURS 2132 Pharmocotherapeutics 3 ch (3C)

Includes theory and principles of pharmacology as they apply to nursing. Provides requisite knowledge to administer medications, provide patient education, and assess potential for adverse events related to drug and lifestyle issues. Theory will include basic legal and safety issues related to drug administration by the nurse. Pre-requisite NURS1235.

NURS 2133 ASP Pharmacotherapeutics 3 ch (3C)

Includes theory and principles of pharmacology as they apply to nursing. Provides requisite knowledge to administer medications, provide patient education, and assess potential for adverse events related to drug and lifestyle issues. Theory includes basic legal and safety issues related to drug administration by the nurse. Incorporates increased student support for application of the related concepts. Pre-requisites: NURS 1136 or permission of the instructor for BMLS students.

NURS 2135 Chronic Health Challenges 3 ch (3C)

Focuses on the impact/influences of long term health challenges on clients. Examines rehabilitative and supporting nursing practie.

NURS 2145 Mental Health Challenges 3 ch (3C)

Explores the experiences of persons living with psychiatric illness and examines related nursing therapeutics.

NURS 2155 Clinical Practicum I 4 ch (4L)

Pre-or Co-requisites: NURS 2135, NURS 2145, or NURS 2177.

NURS 2171 Young Families: Enhancing their Health 2 ch (2C)

Explores the factors influencing the ability of young families to achieve health as they define it. Covers the processes involved in establishing and maintaining health of young families particularly as they undergo transitions such as childbearing.

NURS 2172 ASP Concentrated Clinical Practice 7 ch (7L)

Using a health promotion framework, explores family processes. In partnership with clients, develops and implements strategies to support health behaviours of young families and clients living with chronic mental health/psychiatric conditions. Pre-requisite NURS 1136, and Pre-or Co-requisite NURS 2171.

NURS 2177 Young Families' Health 3 ch (3C)

Focuses on promoting the health of childbearing families. Encompasses the childbearing experience.

NURS 2187 Clinical Practicum II 4 ch (4L)

Pre- or Co-requisite NURS 2135, NURS 2145, or NURS 2177.

NURS 3031 Helping Relationships 3 ch (2C 2L/T)

Explores the helping relationship within the context of nursing practice. Students will develop more advanced counseling skills. The use of labs and/or tutorials may vary with the teaching sites. Co-requisite: NURS 3073 or with permission of instructor.

NURS 3052* The Canadian Health Care System 3 ch (3C)

Explores the structure of the Canadian health care system. Examines current service delivery issues as they influence nursing and the health of Canadians.

NURS 3065 Community and Population Health Nursing 4 ch (4C)

Focuses on the role of the nurse in community using the population health framework. Addresses principles of community assessment and development, program planning, and other strategies that are supported through a population health perspective, with a particular emphasis on vulnerable populations the determinants of health Co-requisite: NURS 3066.

NURS 3066 Clinical Practicum: Community and Population Health Nursing 4 ch (4L)

Pre- or Co-requisite: NURS 3065.

NURS 3072 Acute Health Challenges 3 ch (3C)

Examines the client's experience of acute health challenges, with the focus on nursing therapeutics.

NURS 3073 Clinical Practicum: Acute Health Challenges 6 ch (6L)

Complements and supplements NURS 3072. Pre- or Co-requisite NURS 3072.

NURS 3082 Theoretical Foundations of Nursing 3 ch (3C) [W]

Explores the theoretical foundations of nursing practice and research, including clinical analysis of theories and concepts related to nursing.

NURS 3092 Nursing Research 3 ch (3C)

Critically examines the purpose, processes, and utilization of nursing research. Explores the interaction between theory and evidence-based practice. Prerequisite: STAT 2263 or equivalent.

NURS 3103 Concentrated Clinical Practice II 5 ch (5L)

An integrative practice experience. Pre-requisites NURS 3072 and NURS 3073.

NURS 3124* Core Concepts and Issues in Cancer Nursing Practice 3ch (3C)

This introductory course presents an overview of core concepts in cancer nursing practice including: prevention and early detection, diagnosis, treatment, rehabilitation, and palliation. The role of the nurse as caregiver, educator, and patient advocate will be emphasized.

NURS 3134 Caring Relationships in Nursing 3 ch (2C 1L)

Includes reflection on the clients lived experience and discussion and inquiry on the communication process with individuals and small groups. Practice within group sessions integrates learning of group functioning.

NURS 3144 Nursing in the Canadian Health Care System 3 ch (3C)

Examines the development, structure and function of the Canadian Health Care System. Macro focused course which examines how health policy is developed. Emphasizes how public policy influences nursing practice and how nurses can influence public policy. Explores political influences on health care and the economics of health care delivery.

NURS 3154* Peer Education for Healthy Behaviours I 3 ch (3C)

Prepares students to become peer educators in relation to health behaviours, considering the risks imposed by HIV, AIDS and other sexually transmitted diseases, contraception and sexual coercion, alcohol and drugs.

NURS 3164 Concepts for Nursing Practice 3 ch (3C) [W]

Study and analysis of concepts related to clinical situations. These are identified and critically examined through conceptual/theoretical frameworks, and ethical/legal dimensions.

NURS 3174 Health Assessment 3 ch (3C)

Designed to develop the nurse's knowledge and skills in the health assessment of adults. Includes health history, review of body systems and physical assessment techniques.

NURS 3194* Mental Health Issues and Professional Practice 3 ch (3C)

This course examines mental health issues encountered by professionals (i.e. nurses and social workers) with an emphasis on practice and policy implications. Students will have an opportunity to explore the context of practice from an historical perspective and to critically examine the current mental health delivery system in New Brunswick. The role of the professional and professional interventions will be examined.

NURS 3211 Family Systems Nursing 3 ch (3C) [W]

Family theories and health promotion theories are explored in nursing the family as a unit of care. Factors influencing nursing interventions that promote the health of the family and its members are examined.

NURS 3212 Frameworks for Nursing Practice 3 ch (3C) [W]

Explores the core concepts of the nursing paradigm within a primary health care framework. Other frameworks for nursing practice are explored including holistic assessments, nursing theories, evidence-based practice, legal, and ethical frameworks.

NURS 3214* Women's Health Issues 3 ch (3C)

Discussion of gender related health concerns associated with such life circumstances as childbirth, child rearing, sexuality, aging, work life.

NURS 3215 Clinical Practicum: Family as Client 3 ch (3L)

Affords opportunities to utilize family theory while working in collaboration with nursing in community agencies and nursing families. Students conduct family assessments and plan, implement, and evaluate care. Familiarity with community nursing roles and community resources is enhanced. Pre or Corequisite: NURS 3211.

NURS 3222 Community and Population Health 3 ch (3C) [W]

Primary health care principles are examined in relation to nursing the community at the aggregate level. The process of assessment, program planning, and evaluation are explored. Epidemiologic principles direct disease prevention, health promotion and activities such as screening.

NURS 3224* Promotion, Support and Protection of Breastfeeding in an Industrialized Society 3 ch (3C)

This course promotes an understanding of the social, economic, political, cultural and developmental health determinants of breastfeeding practices in Canadian Society. Provides the student with the requisite knowledge to understand the importance of coalition building, advocacy, social marketing, healthy public policy in meeting the World Health Organization objectives of Baby Friendly Communities.

NURS 3225 Community and Population Health: Practicum 3 ch (3L)

In small groups, students conduct a community assessment and plan and deliver primary health care nursing services to select aggregates in the community. Additionally, students review aspects of group theory and examine their contributions as group members. Pre- or Co-requisite: NURS 3222.

NURS 3234 Trends and Leadership in Nursing 3 ch (3C)

Explores trends in nursing, leadership, and management theories and roles of nurses and the forces which influence them.

NURS 3244 Research in Nursing 3 ch (3C) [W]

Introduces the purpose, process and utilization of nursing research. Focus is on an examination of the research process, an exploration of the inter-relationship between theory and research, an overview of methods, and the critique of published reports with particular emphasis on clinical significance. Prerequisite: STATS 2263.

NURS 3254* Peer Education for Healthy Behaviours II 3 ch (3C/L)

Principles of presentation, active learning, role playing, helping skills and program development. Students will carry out peer education programs.

NURS 3255 Professional Nursing Practice in a Nursing Home Setting 3 ch

This modularized course is designed to engage practising nurses working in nursing home settings in understanding challenges present in this area, chronic health conditions common with nursing home residents, and leadership/ management issues frequently encountered.

NURS 3834 Reflective Ethical Practise 3 ch

Critical self-reflection by students of their current and desired nursing therapeutic style, values and attitudes, and competencies will provide a foundation for this course. A reflective ethical practice framework will be presented drawing upon these self-reflections. Students will be challenged to operationalize these competencies and practice framework using a case study format. Prerequisite: NURS 3212 (UNBF) or NURS 2011 (UNBSJ).

NURS 4002 Intervention Strategies 3 ch (3C) [W]

Examination of intervention theories related to nursing practice. Discussion of strategies and practice approaches. Pre-requisites: NURS 3134, 3164, 3212, 3222, 3225, & 3234. Pre or Co-requisites: NURS 3211 & 3215 and Co-requisite NURS 4012.

NURS 4012 Intervention Strategies: Practicum 3 ch (3L)

Opportunities for application of intervention theories will be provided in a clinical setting of the students choice. Pre or Co-requisite: NURS 4002.

NURS 4055* Nursing Informatics 3 ch (3C)

Information systems are now widely used in health care for clinical care, research, education and administration This course introduces students to the use of computers in the health sciences, including information systems in health care agencies, and the use of library data bases.

NURS 4095* Operationalizing Advanced Nursing Practice

This elective course provides post-basic nursing students with opportunity to develop understanding of the concept of advanced practice and to explore potential avenues for role operationalization. Utilizing the example of the Nurse Practitioner as the central concept, students in this course will have opportunities to discuss pertinent issues such as contexts of practice; role expectations; educational requirements; influential societal forces; funding sources; and methods of evaluation. Particular emphasis will be focused on the operationalization of advanced nursing practice in New Brunswick.

NURS 4111 Families with Multiple Challenges 3 ch (3C)

Explores the impact of complex health challenges on the family. Examines the implications for nursing practice.

NURS 4118* Professional Ethics 3 ch

Explores the provincial, national, and international codes of ethics for Registered Nurses. Examines the Ethical Research Guidelines for Registered Nurses and the role and structure of health care institutions codes of ethics, and their ethics committees structures and functions.

NURS 4121 Nursing in Complex Situations 3 ch (3C)

Explores the client's experience of complex health challenges. Examines related nursing therapeutics with an emphasis on clinical judgement and decision making.

NURS 4123 Clinical Practicum: Nursing Families in Complex Situations 6 ch (6L)

This course is designed to provide students with the opportunity to care for families who have at least one member experiencing an acute or chronic illness. Students will be expected to care for families in multiple settings, including their home and hospital. Students will integrate and apply the theory examined in NURS 4111 and 4121 in this practice setting. Pre or Co- requisite NURS 4111 and NURS 4121.

NURS 4152 Nursing Practice Elective 7 ch (7L)

A preceptored clinical experience in the area of the student's choice. Prerequisite: All preceding required credits for the BN program.

NURS 4165 Integrated Nursing Care 2 ch (2C)

Further explores the experiences of a population living with complex health challenges from a population health perspective. Focuses on nursing therapeutics with further development of independent clinical judgement and decision making appropriate to primary health care.

NURS 4175 Clinical Practicum: Integrated Nursing Care 3 ch (3L)

Pre- or Co-requisite: NURS 4165.

NURS 4185 Trends and Leadership in Nursing 3 ch (3C)

Explores trends in the Nursing Profession. Examines organizational theory and leadership roles of nurses. Explores the foundations of professional development and practice.

NURS 4234* Independent Study 3 ch (3C/L)

An independent study program under the guidance of a faculty member is pursued on the basis of student interest in any area of nursing. Faculty approval required.

NURS 4242 Nursing Theory for Exchange Students 3 ch (3C)

The content of the course will be determined by the needs of the visiting student. Nursing students who come on exchange have special needs for theory. This course will provide an avenue for these needs to be covered within a single course.

NURS 4244* Healthful Lifestyles 3 ch (3C)

Studies the enhancement of wellness across the lifespan through healthy choices.

NURS 4252 Clinical Nursing Experience for Exchange Students 3 ch (3L)

The content of this course will be determined by the needs of the visiting student. However, it will be developed around a clinical experience in the hospital or community. Nursing students who come on exchange have special needs for clinical experiences. This course will provide an avenue for these needs to be covered with a single course.

NURS 4264* Complementary Healing Approaches 3 ch (3C)

Drawing on the knowledge that the power to heal is within the person, this course explores the reclaimed role of Self as healer in its social, historical and cultural context. Based on a holistic framework, several current therapies will be introduced.

NURS 4274* Iconography of the Nurse 3 ch (3C)

Designed to develop an understanding of nurses and nursing in Canada from the work of Jeanne Mance to present. The history of nursing will be illuminated with images from fact, fiction and film.

NURS 4284* Parent, Child, and Nurse - Partners in Child Health Issues 3 ch (3C)

This course allows students to explore common issues that confront parents and nurses in caring for both well and ill children. Building on the concept of primary health, the students examine concepts such as family centered care, preparation for procedures, response to hospitalization, acute illness, chronic illness, etc. In addition, students would consider the major causes of morbidity and mortality in children in an effort to focus on and plan for meaningful illness prevention and health promotion strategies.

NURS 4294* Nursing Care of Older Adults and Their Families 3 ch (3C)

Building upon gerontological nursing theory introduced in previous nursing courses, this course emphasizes older adults normal aging changes, significant health problems, and common life experiences. Course content is presented in the context of the essential services within primary health care. Therefore, the professional nursing role in providing promotive, preventive, curative, rehabilitative, and supportive nursing services for older adults is examined.

NURS 4335* Nursing and Nurses Images in the Media: Unintended Consequences 3 ch

Nursing in the context of silence is a major factor that influences peoples perception of what nurses do and know. This course will assist students to identify unintended sources and consequences of stereotypes and develop strategies for articulating the actual work and contributions of nurses.

NURS 4601 Introduction to Critical Care Nursing 3 ch

This course introduces concepts basic to the caring for patients and families coping with alterations in health in an intensive care setting. Exploration of concepts including pain, and sleep deprivation, as well as psychosocial concerns. Also looks at ethical, legal and cultural issues. An in-depth study of cardiac rhythm alterations will be conducted.

NURS 4602 Care of Clients With Critical Cardiovascular Alterations 3 ch

This course is an in-depth exploration of the needs of patients and families with cardiovascular alterations in the intensive care setting using the Primary Health Care Educational Model. Common nursing care concepts and competencies such as assessment, therapeutic communication, ethics, collaboration may be examined in this context. Related nursing interventions, anatomy and physiology, hemodynamics, electrical therapy and major health challenges will be examined in depth. Pre-requisite: NURS 4601; Co-requisite: NURS 4606.

NURS 4603 Care of Clients With Critical Pulmonary, Renal, Immunological & Hematological Alterations 3 ch

This course is an in-depth exploration of the needs of patients and families coping with acute pulmonary, renal, immunological and hematological alterations in the intensive care setting. Common nursing care concepts and competencies such as assessment, therapeutic communication, ethics, collaboration, self-concept, hope, empowerment may be examined within this context. Pre-requisites: NURS 4601 & NURS 4602; Co-requisite: NURS 4606.

NURS 4604 Care of Clients With Critical Neurological, Endocrine, and Gastro Intestinal Alterations 3 ch

This course is designed to allow the student to enhance their nursing care of patients and their families who are coping with acute/critical neurological, endocrine and gastrointestinal alterations. In addition to nursing assessments and interventions, patient/family situations will be examined in depth with a focus on related nursing concepts such as self-concept, stress, coping, loss, grief, pain, and suffering. Pre-requisites: NURS 4601, NURS 4602, & NURS 4603; Co-requisite: NURS 4606.

NURS 4605 Care of Clients with Multiple Body System Alterations and Special Populations 3 ch

This course is as exploration of the needs of patients and their families coping with multiple body systems alterations. Exploration of the patient/family experience during unexpected and/or catastrophic illness such as trauma and shock. Special populations in the critical care setting such as children and pregnant women will be considered. Pre-requisites: NURS 4601, NURS 4602, NURS 4603, & NURS 4604; Co-requisite: NURS 4606.

NURS 4606 Clinical Experiences in Critical Care Nursing 3 ch (3L)

In this course, specific laboratory and clinical experiences will be selected to coincide with the theoretical components of NURS4601 through NURS4605 and will be integrated appropriately throughout NURS4601 - NURS4605. Some travel will be required for certain experiences. Co- requisites: NURS 4602, NURS 4603, NURS 4604, & NURS 4605.

NURS 4607 Caring for Critically Ill and Families: Practicum 2 ch (2L)

Provides the opportunity for students to consolidate the 5 Cs of Caring within a critical care setting. Prerequisites: NURS 4601 - 4606.

NURS 4608 Preceptored Experience with the Critically Ill 4 ch (4L)

A four week experience in critical care setting. Pre-requisites: NURS 4601 - 4607.

NURS 4801* Psych/Mental Health Nursing I 3 ch

Core psychiatric/mental health phenomena will be examined from a nursing assessment and therapeutics perspective, using DSMIV as an organizing framework. Material will be organized in modules with case study practice examples. Prerequisite: NURS 3212 (UNBF) or NURS 2011 (UNBSJ).

NURS 4802 Psych/Mental Health Nursing II 3 ch

Core psychiatric/mental health phenomena will be examined from a nursing assessment and therapeutics perspective, using DSMIV as an organizing framework. Material will be organized in modules with case study practice examples. Prerequisite:NURS 3212 (UNBF) or NURS 2011 (UNBSJ).

NURS 4803 Psych/Mental Health Nursing III 3 ch

Core psychiatric/mental health phenomena will be examined from a nursing assessment and therapeutics perspective, using DSMIV as an organizing framework. Material will be organized in modules with case study practice examples. Prerequisite: NURS 3212 (UNBF) or NURS 2011 (UNBSJ).

NURS 4812 Psych/Mental Health Nursing Practicum 3 ch (3L)

A preceptor supervised practicum for Registered Nurse students designed to complement NURS4801/2/3 and enhance the students' psych/mental health practice competencies. Prerequisites: NURS 4801; NURS 4802; NURS 4803 or with permission of instructor.

NURS 4813 Psych/ Mental Health Nursing Practicum 4 ch (4L)

A preceptor supervised practicum for BN graduates designed to complement NURS4801/2/3 and enhance the students' psych/mental health practice competencies. Prerequisites NURS 4801; NURS 4802; NURS 4803 or with permission of instructor.

PHILOSOPHY

Note: See beginning of Section H for abbreviations, course numbers and coding.

Introductory and Intermediate Level Courses

These 1000 and 2000 level courses have no prerequisites, and except where otherwise noted, each may be taken as a first course in Philosophy.

PHIL 1001 Ethics of Life and Death 3 ch (3C) [W]

Introduces various ethical theories and examines moral problems including abortion, euthanasia and capital punishment.

PHIL 1002 The Rights of the Individual 3 ch (3C) [W]

Introduces various ethical theories and examines moral problems including pornography, discrimination and affirmative action.

PHIL 1003 God, Mind and Freedom 3 ch (3C) [W]

Introduces arguments concerning the existence of God, the nature of the mind and the issue of free will and determinism.

PHIL 1004 The State and the Individual 3 ch (3C) [W]

Considers the basis and the limits of the States authority to intervene in the affairs of its citizens.

PHIL 1005 Critical Thinking 3 ch (3C) [W]

Improves the ability to analyse and evaluate arguments and assertions met with in everyday life, and hence sharpens skills of reasoning to sound conclusions from available evidence. Does this by studying the classic fallacies that people often commit and using elementary formal logic to explore differences between deductive and inductive reasoning.

PHIL 2001 Collective Rights 3 ch (3C) [W]

Examines moral problems such as aboriginal rights, poverty and the right to welfare, and environmental ethics.

PHIL 2023 Introduction to 19th Century Existential Thought (A) 3 ch (3C) [W]

Examines some of the major themes of existential philosophy developed in the nineteenth century, such as the self, existence, freedom, and relationships with other people, etc. References are made to selections from some of the important existential thinkers -- e.g. Dostoevsky, Kierkegaard, Nietzsche.

PHIL 2024 Introduction to 20th Century Existential Thought (A) 3 ch (3C) [W]

Examines some of the major themes of existential philosophy developed in the twentieth century, such as the self, existence, freedom, and relationships with other people, etc. References are made to selections from some of the important existential thinkers -- e.g. Sartre, Camus, Buber.

PHIL 2073 Introduction to Issues in Aesthetics (A) 3 ch (3C) [W]

The main problems in the Philosophy of Art. e.g. What is art? Is there an aesthetic attitude? What is aesthetic value? Can aesthetic judgements be verified? Students will be encouraged to relate class discussions to their own interests in the arts. Audio-visual projects may be submitted in partial fulfillment of the requirements of the course.

PHIL 2074 Introduction to Classics in Aesthetics (A) 3 ch (3C) [W]

A study of writings in the Philosophy of Art by authors such as Plato, Aristotle, Hume, Kant, Schopenhauer, Hanslick, Tolstoy, and Bullough.

PHIL 2104 Introduction to Ethical Classics 3 ch (3C) [W]

Happiness, freedom and value. Their treatment in the writings of some of the following philosophers: Plato, Aristotle, Thomas Hobbes, Joseph Butler, David Hume, Jean Jacques Rousseau, Immanuel Kant, Jeremy Bentham, J.S. Mill and Friedrich Nietzsche.

PHIL 2106 Environmental Ethics (O) 3 ch (3C) [W]

This course covers a range of thinking on a variety of issues concerning the environment. Specific issues addressed are: Do species other than human beings have value in themselves, or only because humans value them? Do non-organic entities possess value? What problems beset attempts to formulate an environmental ethic?

PHIL 2113 Introduction to Symbolic Logic 3 ch (3C)

The techniques of natural deduction, including conditional proof, indirect proof and separation of cases. Emphasizes applications in sentence logic and in the logic of quantification up to the logic of relations.

PHIL 2153 Ethical Issues in Business 3 ch (3C) [W]

An introduction to moral problems arising in business. The course is designed to introduce the student to ethical theory and its relevance for business decision making. Prerequisite: Students enrolled in the Faculty of Administration must have completed 30ch, including ECON 1013 and ECON 1023.

PHIL 2701 Classics in the Philosophy of Law 3 ch (3C) [W]

An introduction of central issues in philosophy of law, as treated by some of the following philosophers: Aristotle, Aquinas, Hobbes, Locke, Rousseau, Burke, Hume, Kant, Bentham, Wollstonecraft, Mill. Students cannot get credit for both 2701 and 2704.

PHIL 2702 Introduction to Contemporary Issues in the Philosophy of Law 3 ch (3C) [W]

An introduction to contemporary philosophy of law, as treated by some of the following philosophers: Austin, Holmes, Frank, Hart, Kelsen, Finnis, Raz, Dworkin, Posner, Unger, MacKinnon. Students cannot get credit for both 2702 and 2703.

Advanced Level Courses

PHIL 3033 Early Greek Philosophy 3 ch (3C)

The period of philosophy beginning with Thales and culminating with Plato. Stresses the development of certain key themes and problems in this period and their influence on later philosophical thought. Half the course is devoted to examining philosophical thought prior to Plato; the other half focuses on Plato's thought. Prerequisite: A course in Philosophy or permission of the instructor.

PHIL 3034 Later Greek Philosophy 3 ch (3C) [W]

Focuses on Aristotle and subsequent developments in Greek philosophy. Half the course examines different aspects of Aristotle's thought, the other half considers post-Aristotelian schools of thought. Prerequisite: A course in Philosophy or permission of the instructor.

PHIL 3053 Modern Philosophy I (A) 3 ch (3C) [W]

Introduction to some of the philosophical issues of 17th-century philosophy, such as: philosophical method; the nature, scope and limits of knowledge; the nature of reality; the question of the nature and existence of God. Reference is made to selections from some of the important philosophers of the era--e.g., Descartes, Locke. Prerequisite: A course in Philosophy or permission of the instructor.

PHIL 3054 Modern Philosophy II (A) 3 ch (3C) [W]

Introduction to some of the philosophical issues of 17th- and 18th-century philosophy, such as: philosophical method; the nature, scope and limits of knowledge; the nature of reality; the question of the nature and existence of God. Reference is made to selections from some of the important philosophers of the era--e.g., Leibniz, Hume. Prerequisite: A course in Philosophy or permission of the instructor.

PHIL 3083 Syntax and Semantics of Formal Systems (O) 3 ch (3C) [W]

Axioms for propositional logic and first-order logic are introduced and theorems are proved from the axioms. A semantics is established by defining the notion of truth with respect to a model. The axioms are then proved to be complete with respect to the notion of truth that is defined. Prerequisite: PHIL 2113.

PHIL 3101 Philosophy of Technology 3 ch (3C) [W]

Examines technology and its social impact. Topics include: Does living in a technological society impact the way that we look at ourselves and at the world around us? What are the positive and negative effects of the continuing incorporation of computers into our lives? Does biotechnology offer the promise of better and healtier lives for human beings and other organisms, or is it an ethically suspect means of interfering with natural development? Prerequisite: A course in Philosophy or permission of the instructor.

PHIL 3103 Philosophical Foundations of Feminism (O) 3 ch (3C) [W]

The philosophical foundations of modern feminism, including such topics as human nature, sexual division of labour, gender, sexuality, marriage, reproductive freedom, rationality, equality, justice, violence and care. Familiarity with basic ethical theory is recommended. Prerequisite: A course in Philosophy or permission of the instructor.

PHIL 3105 Contemporary Issues in Bioethics 3 ch (3C) [W]

An examination of the ethical issues raised by problems in Bioethics, such as experimentation with human subjects, euthanasia, assisted suicide and cessation of medical treatment, patients' rights, informed consent, and tissue transplantation.

PHIL 3111-9 Selected Topics in Ethical Theory 3 ch (3C) [W]

Examines in detail a particular ethical theory or tradition and assesses it in light of arguments made by its proponents and critics. The focus of the course will vary from year to year but may cover areas such as utilitarianism and its critics, feminist ethics, virtue ethics, ancient Greek ethics, moral realism, social contract theory and Kant's ethics. May be taken for credit more than once. Title of topic will appear on transcript. Prerequisite: A course in Philosophy or permission of the instructor.

PHIL 3144 Set Theory and Logic (A) 3 ch (3C)

A continuation of the logical system developed in PHIL 2113, up to and including axiomatic set theory. Standard theorems are established with respect to finite unions and intersections, power sets, unordered and ordered pairs, ordered n-tuples, Cartesian products, relations and functions, in Zermelo-Fraenkel set theory. Prerequisite: PHIL 2113.

PHIL 3173 Philosophy of Religion 3 ch (3C) [W]

Explores some of the traditional issues associated with belief in God, including: the arguments for God's existence, the problem of evil, the meaningfulness of religious language, and how the divine attributes are to be understood. Prerequisite: A course in Philosophy or permission of the instructor.

PHIL 3203-9 Selected Topics in Environmental Philosophy 3 ch (3C) [W]
(Cross Listed: POLS 3203-9)

Examines methods and philosophical ideas associated with accounts of how we ought to think of the natural environment and how we should act with regard to the environment. Possible topics include: deep ecology, ecological feminism and social ecology, globalization, modern conceptions of property rights, overpopulation, consumption, and the placing of an economic value on nature. May be taken for credit more than once. Title of topic will appear on transcript. Prerequisite: A course in Philosophy or permission of the instructor.

PHIL 3410 Survey of Political Thought 6 ch (6C) [W]
(Cross Listed: POLS 3410)

A survey of the most important writers and the main currents of political thought from Ancient Greece to the beginning of the 20th century.

PHIL 3483 Hegel and Marx 3 ch (3C) [W]
(Cross Listed: POLS 3483)

Examines the theories of history and the historical process in Hegel and Marx. Pays particular attention to the question of the causes of historical change. Then discusses these theories in their relation to Hegel's and Marx's political thought.

PHIL 3633-9 Selected Topics in Phenomenology and Existential Ontology 3 ch (3C) [W]

This course exposes students to various features of the method of phenomenology as delineated and applied by some of the following philosophers: Husserl, Sartre, Heidegger, Ricoeur, Kockelmans, Fink, Schutz, Gurwitsch, Natanson. May be taken for credit more than once. Title of topic will appear on transcript. Prerequisite: Permission of the instructor.

PHIL 3651-9 Selected Topics in Postmodern Philosophy 3 ch [W]

Introduces students to contemporary criticism of existential philosophy and phenomenology through the works of some of the following philosophers: Foucault, Levinas, Derrida, Lacan, Lyotard. May be taken for credit more than once. Title of topic will appear on transcript. Prerequisite(s): Permission of the instructor.

PHIL 3803-9 Philosophy of Law Seminar 3 ch [W]
(Cross Listed: POLS 3803-9)

Recent work in the philosophy of Law. Topic will vary from year to year. Possible topics include constitutional argument, natural law theory, conceptual problems in criminal and civil law, legal positivism, and legal realism. May be taken for credit more than once. Title of topic will appear on transcript. This course replaces PHIL 3703 and PHIL 3704. Prerequisite: Permission of instructor.

PHIL 4041-9 Topics in Continental Philosophy: Advanced Seminar (O) 3 ch [W]

In this course, students are required to provide well researched seminars dedicated to explicating how the text being investigated by the class articulates features of the history of continental philosophy or anticipates features of postmodern thought. Prerequisite: PHIL 3633-9 or PHIL 3651-9, or permission of the instructor.

PHIL 4053 Introduction to the Philosophy of Kant (O) 3 ch (3S) [W]

Examines the argument of the Transcendental Analytic in Kant's pivotal work, The Critique of Pure Reason. Introduces Kant's philosophical method and his transcendental philosophy. Considers their implications for an understanding of the problems of metaphysics and the theory of knowledge. Prerequisite: 6 ch in Philosophy or permission of the instructor.

PHIL 4174 The Concept of Miracle (O) 3 ch [W]

Philosophical issues surrounding the rationality of belief in miracles will be examined. Special attention will be paid to David Humes classic criticism of belief in miracle on the basis of testimonial evidence. Prerequisite: PHIL 3173 or permission of the instructor.

PHIL 4175 Models of Divine Agency (O) 3 ch [W]

Philosophical issues surrounding the problem of how God might be conceived as acting in the world will be explored. Prerequisite: PHIL 3173 or permission of the instructor.

PHIL 4953-9 Individual Studies in Philosophy 3 ch (T) [W]

Courses of independent study of specified texts or topics in Philosophy under the supervision of a member of the Department. These courses will normally be given only between May and August inclusive and with the agreement of the supervisor. They require the approval of the Chair of the Department and the Dean of the student's Faculty, and are subject to the regulations for individual Studies published in the Intersession/Summer Session Calendar. Prerequisite: 30 ch, including at least 6 in Philosophy.

PHYSICS

Note: See beginning of Section H for abbreviations, course numbers and coding.

Not all courses are offered every year. Consult with the Department concerning availability of courses from year to year.

All prerequisite courses must be passed with a grade of C or better. No more than one of the combinations PHYS 1040, 1045, PHYS 1050, 1055, PHYS 1940/1945 and PHYS 1913, 1918 may be taken for credit.

All of the combinations PHYS 1040, 1045, PHYS 1050, 1055, and PHYS 1940, 1945 are acceptable prerequisites for second year physics courses.

Courses with a 5 for the first digit are advanced courses which may be taken only with the permission of the instructor.

PHYS 1040 Elements of Physics 6 ch (3C)

Covers fundamentals of mechanics, vectors, forces; kinematics; conservation laws; gravitation, wave motion, sound, light, diffraction, interference. Electric fields, potentials; magnetic fields. Modern atomic and nuclear physics. Note: This course is reserved for students registered in the Science Faculty only; space is limited. PHYS 1045 is the lab course which accompanies PHYS 1040. Co-requisite: MATH 1003 or equivalent. The Saint Thomas University course which is equivalent to UNB MATH 1003 is STU MATH 1013. Students cannot receive credit for both PHYS1040 and 1940. Note: Students without high school physics must expect to do extra work at times to keep up with the pace of the course. Students without high school physics and who are weak in mathematics are advised to postpone university physics until they have passed MATH 1003.

PHYS 1045 Physics Laboratory 4 ch (3L) [W]

Laboratory for students in PHYS 1040 and PHYS 1940. Weekly exercises in practical physics, covering topics in mechanics, sound, light, electricity, atomic and nuclear physics. Co-requisite: PHYS 1040 or PHYS 1940.

PHYS 1050 Enriched Introductory Physics 6 ch (3C 1T)

Essentials of atomic and nuclear spectroscopy, nuclear decay, release of nuclear energy. Linear and rotational mechanics, hydromechanics, gravitation, kinetic theory. Oscillations and waves, geometrical and wave optics. Electrical and magnetic fields, electric potential, orbital motion, particle accelerators. Atomic structure, principle of the laser. Corequisites: PHYS 1055, MATH 1003/1013. Note: PHYS 1050 can be substituted for PHYS 1040 as prerequisite or corequisite in any program at UNB. Enrolment may be limited.

PHYS 1055 Enriched Introductory Laboratory 4 ch (3L) [W]

Laboratory exercises in radioactivity, spectroscopy, mechanics and optics with applications of the cathode-ray oscilloscope and semiconductors. Corequisite: PHYS 1050. Note: PHYS 1055 may be substituted for PHYS 1045 as prerequisite or corequisite in any program at UNB. Enrolment may be limited.

PHYS 1913 Fundamentals of Physics (for Engineers) 3 ch (3C 1T)

Vectors, kinematics. Momentum, force, KE and PE. Simple Harmonic Motion. Standing waves. Kinetic theory of gases. Circular orbits. Gravitation. Electrostatics. Charge, electric field and potential. Atomic structure. Prerequisites: At least 70% in two years of high school Physics plus Grade 12 Mathematics. Students with less than 70% in two years of high school Physics plus Grade 12 Mathematics must take PHYS 1940 instead. Students with less than 80% in two years of high school Physics and Grade 12 Mathematics should take PHYS 1913 in second term.

PHYS 1918 Physics Laboratory (for Engineers) 2 ch (3L) [W]

Weekly exercises in practical physics, covering topics in mechanics, electrostatics and atomic physics. Corequisite: PHYS 1913.

PHYS 1940 Elements of Physics 6 ch (3C 1T)

Covers fundamentals of mechanics, vectors, forces; kinematics; conservation laws; gravitation, wave motion, sound, light, diffraction, interference. Electric fields, potentials; magnetic fields. Modern atomic and nuclear physics. Note: This course is equivalent to PHYS 1040 but is available to students registered in faculties other than the Faculty of Science. Students cannot receive credit for both PHYS1040 and 1940. PHYS 1045 is the lab course which accompanies PHYS 1940. Co-requisite: MATH 1003 or equivalent. Students must already have taken MATH 1003 or be taking it in the FALL term in which they register for PHYS 1940.The Saint Thomas University course which is equivalent to UNB MATH 1003 is STU MATH 1013. Note: Students without high school physics must expect to do extra work at times to keep up with the pace of the course. Students without high school physics and who are weak in mathematics are advised to postpone university physics until they have passed MATH 1003.

PHYS 2011 Elementary Mechanics 4 ch (3C 1P)

Scalar and vector quantities, statics, kinematics, dynamics, work, energy, power, rotational motion, impulse and momentum, moments of inertia, basic kinematics and dynamics of rigid bodies, basic fluid mechanics. Prerequisites: MATH 1003/1013, PHYS 1040/1045 (D grades not acceptable). Corequisite: MATH 2003 or equivalent.

PHYS 2021 Electricity and Magnetism 3 ch (3C)

Current, resistance and DC circuit analysis. Transients in LCR circuits. AC circuit analysis, phasors, resonance in series and parallel LCR circuits. Electrostatics: electric fields, Gauss Theorem, potential, capacitance. Magnetic fields, induced e.m.f. Prerequisites: PHYS 1040/1045 (D grades not acceptable). Corequisites: MATH 2003 or equivalent, PHYS 2026

PHYS 2026 Electricity and Magnetism Laboratory 2 ch (3L) [W]

Experiments in AC and DC electricity and magnetism. Corequisites: PHYS 2021.

PHYS 2032 Astromechanics and Relativistic Dynamics. 3 ch (3C)

Central forces, planetary motion, potential, relativistic dynamics, scattering cross sections. Prerequisites: PHYS 2011, MATH 2003 or equivalent. Corequisites: PHYS 2052, MATH 2013 or equivalent.

PHYS 2041 Mechanical and Thermal Properties of Matter 3 ch (3C)

Intermolecular forces, elementary thermodynamics and kinetic theory; applications (gases). Imperfect gases; solid and liquid state; elastic and thermal properties of solids; fluid flow. Prerequisites: PHYS 1040/1045 (D grades not acceptable). Corequisite: MATH 2003 or equivalent.

PHYS 2052 Survey of Modern Physics 3 ch (3C)

Relativity, quantization in nature, photoelectric effect, Compton effect, x-rays, x-ray diffraction, deBroglie waves, phase and group velocities, the uncertainty principle, energy levels and atomic structure, nuclear structure, nuclear reactions, radioactivity, fission, fusion, elementary particles of physics. Prerequisites: PHYS 1040/1045 (D grades not acceptable). Corequisites: MATH 2013 or equivalent, PHYS 2057.

PHYS 2057 Modern Physics Laboratory 2 ch (3L) [W]

Experiments in atomic, molecular and nuclear physics. Corequisite: PHYS 2052.

PHYS 2072 Vibrations and Waves 3 ch (3C)

Periodic motions and their linear superposition, free and forced damped harmonic motion, resonance, normal modes, vibrating strings. Transverse and longitudinal waves in various media, acoustics, reflection and refraction of waves at boundaries. Topics selected from the following list: geometrical optics, interference, diffraction, polarization, wave-particle duality, dispersion, coherence. Prerequisites: PHYS 2011, MATH 2003 or equivalent. Corequisite: MATH 2013 or equivalent, PHYS 2077.

PHYS 2077 Vibrations and Waves Laboratory 2 ch (3L) [W]

Experiments in vibrations, waves, optics and acoustics with an emphasis on physical applications. Corequisite: PHYS 2072.

PHYS 2503 Physics and Society 3 ch (3C) [W]

Explores the concepts of modern physics and their growing influence on our thinking and attitudes in a wide range of human endeavours, including biomedical science, psychology, philosophy, ecology, feminism, engineering, economics, literature and the arts. Topics include: modern views of space, time and matter; the nature of reality; symmetry and symmetry breaking; reductionist and holistic approaches; linearity and non-linearity; predictability, determinism and chaos; limits to understanding the physical universe. Open to students in all faculties. No mathematics beyond basic high school algebra and geometry is needed.

PHYS 2513 Physics for Poets 3 ch (3C)

Not open to students registered in Science, Engineering or Computer Science. This course requires no previous exposure to physics and uses no mathematics beyond high school algebra and geometry. Topics include physics at the sea-shore, in the city, from a mountain top, from an airplane window, physics of music, physics of sport, physics and the environment, energy and transportation, the physics of life, form and function of animals, relativity, cosmology.

PHYS 2543 Environmental Physics 3 ch (3C)

Open to students in all faculties. Physics of transportation, energy and energy transformation, solar power, wind power, tidal power, nuclear power, physics of the atmosphere and oceans, distribution of pollutants by winds and currents, introductory Chaos Theory. Prerequisite: First year physics and MATH 1003, 1013 or permission of instructor.

PHYS 2872 Light and Sound 3 ch (3C)

Oscillations and waves, with emphasis on optics and acoustics. Geometrical optics, optical instruments. Physical optics, diffraction, resolving power, coherence and the laser. Introduction to acoustics. Intended for students in Engineering but also available to others including Science students. Prerequisites: A grade of C(2.0) or higher in each of PHYS 1040, 1045 or PHYS 1940, 1945 or PHYS 1913, 1918, MATH 1003, 1013. Co-requisites: Second year mathematics, PHYS 2877.

PHYS 2877 Light and Sound Laboratory 2 ch (3L) [W]

Experiments in vibrations, waves, optics and acoustics. Corequisite: PHYS 2872.

PHYS 2962 Atomic and Nuclear Physics (for Engineers) 3 ch (3C)

Intended for students in second-year Chemical Engineering and students taking the Nuclear Engineering option. Atomic structure, electron orbitals, principles of spectroscopy, lasers, x-rays, deBroglie waves, essentials of quantum mechanics. Nuclear properties, radioactivity, fission and fusion processes. Interactions of radiation with matter. Prerequisites: A grade of C(2.0) or higher in each of PHYS 1040/1045 or 1913/1918 or 1940/1945, MATH 1003/1013. Corequisites: PHYS 2967, approved 2nd year Mathematics.

PHYS 2967 Modern Physics Laboratory (for Engineers) 2 ch (3L) [W]

Experiments in atomic and nuclear physics for students in Chemical Engineering and students taking the Nuclear Engineering option. Corequisite: PHYS 2962.

PHYS 2972 Fundamentals of Light and Sound (for Engineers) 3 ch (3C)

Periodic motions and their linear superposition, free and forced damped harmonic motion, resonance, normal modes, vibrating strings. Transverse and longitudinal waves in various media, acoustics, reflection and refraction of waves at boundaries. Topics selected from the following list: geometrical optics, interference, diffraction, polarization, wave-particle duality, dispersion, coherence. Prerequisites: A grade of C(2.0) or higher in each of PHYS 1040/1045 or 1913/1918 or 1940/1945, MATH 1003/1013, MATH 2503. Corequisites: PHYS 2977, MATH 2513.

PHYS 2977 Light and Sound Laboratory (for Engineers) 2 ch [W]

Experiments in vibrations, waves, optics and acoustics with an emphasis on engineering applications. Corequisite: PHYS 2972.

PHYS 3011 Intermediate Mechanics 4 ch (3C 1P/ 2 weeks)

Kinematics and dynamics of rigid bodies, moments and products of inertia, principal axis, angular momentum, Lagrangian and Hamiltonian mechanics, accelerated coordinate systems. Prerequisites: PHYS 2011, MATH 2003/ 2013 or equivalent.

PHYS 3023 Electromagnetic Fields 4 ch (3C 1P/ 2 weeks)

Vector calculus, curvilinear coordinates, electrostatics and Gauss theorem, magnetic fields due to currents, electromagnetic induction, vector potentials, displacement current, Maxwells equations in a vacuum, plane-wave solutions. Prerequisites: PHYS 2021, approved 2nd year Mathematics.

PHYS 3031 Methods of Theoretical Physics. 4 ch (3C 1P/ 2 weeks)

Partial differential equations and special functions of theoretical physics; problems in potential theory, diffusion, wave propagation; physical applications of matrices and tensors. Prerequisites: Approved second year Mathematics.

PHYS 3043 Statistical Thermodynamics 3 ch (3C)

Ensemble basis for statistics, equilibrium between interacting systems, microscopic approach to thermodynamics, Laws of Thermodynamics and application to gases, classical and quantum statistical distributions, applications of Maxwell-Boltzmann statistics, kinetic theory of gases, applications of quantum statistics. Prerequisite: Approved second year mathematics and a previous course in thermodynamics.

PHYS 3051 Quantum Mechanics I 4 ch (3C 1P/ 2 weeks)

Origins of quantum theory. Development of wave mechanics, Schrödinger equation, probabilistic interpretation, physical observables. Postulates of quantum mechanics. One-dimensional potential problems, harmonic oscillator. Three-dimensional problems, angular momentum, hydrogen atom. Time-independent perturbations and energy corrections. Time-dependent perturbations, transition probabilities, selection rules. Prerequisite: PHYS 2052 or equivalent, approved second year mathematics.

PHYS 3122 Digital Electronics in Physics 5 ch (3C 3L)

Digital integrated circuits and their uses (counters, registers, digital instruments, etc). Introduction to mini and micro-computers with applications to physics. Usually alternates with PHYS 4122. Prerequisite: PHYS 2021 or equivalent.

PHYS 3152 Atomic and Molecular Physics 3 ch (3C)

Atomic spectra and the elements of atomic theory. Multiplet structure of atomic spectra and electron spin. Building-up principle and the periodic system of the elements. Vibrational and rotational energy levels of the electronic states of diatomic molecules. Linear triatomic molecules. Absorption and emission of radiation. Laser principles. He-Ne laser, CO2 laser. Usually offered only in alternate years. Prerequisite: PHYS 3051.

PHYS 3162 Nuclear and Particle Physics 3 ch (3C)

Particle accelerators and detectors; radioactivity; nuclear properties and structure; nuclear models; introduction to particle physics. Usually given only in alternate years. Prerequisite: PHYS 3051.

PHYS 3183 Introductory Astronomy 3 ch (3C)

A basic astronomy course for students of science, engineering and computer science. Includes history and techniques of astronomy; dynamics of solar system; stellar interiors and evolution; cosmology and galactic structure. Usually offered only in alternate years. Prerequisites: First year math and physics.

PHYS 3193 Biophysics 3 ch (3C)

A survey of topics and methods of biophysics. One third of the course is spent on classical biophysics (circulation, hearing, vision) and the remainder on tracer methodology and radiation biology. Topics are chosen in relation to the particular interests and needs of the class. Usually alternates with PHYS 4193. Prerequisites: PHYS 1040/1045, MATH 1003/1013, BIOL 1001/1012.

PHYS 4002 Research Methods 3 ch (3L)

A sampling of the Department's research activities. Seminars, demonstrations and student projects in areas under active research in the Department. Prerequisite: Registration in a Physics program or permission of the Department.

PHYS 4021 Electromagnetic Theory and Applications I 4 ch (3C 3P/ 2 weeks)

Electrostatic field and dielectrics, magnetic field and magnetic materials. Interaction of charges with the electromagnetic field. Electromagnetic waves in matter, guided waves. Electric and magnetic dipole and quadrupole radiation. Prerequisites: PHYS 3023, approved third year Mathematics.

PHYS 4051 Quantum Mechanics II 4 ch (3C 3P/ 2 weeks)

Wave mechanics and matrix mechanics, Schrödinger and Heisenberg pictures. General formulation of quantum mechanics, linear vector spaces and Hilbert space. Application to standard problems, angular momentum theory, invariance properties and conservation laws. Identical particles, spin and statistics. Approximation methods, stationary-state perturbation theory, time-dependent perturbation theory. Absorption, emission and scattering of radiation. Prerequisite: PHYS 3051.

PHYS 4071 Optics 5 ch (3C 3L)

Reflection and transmission at boundaries, diffraction, Huygens' principle, Bragg reflection. Electromagnetic nature of light, energy flow, polarization, Fresnel's equations. Coherence and interference, Fourier Transform spectroscopy, multiple beam interference. Optical resonators and wave guides, lasers. Prerequisite: PHYS 2072/2077, PHYS 3023 or equivalent.

PHYS 4102 Thesis Project 8 ch [W]

All Honours and Applied Physics must undertake a thesis project under the supervision of a faculty member. The project would be completed, i.e. written report submitted and oral presentation/defence made, in the term in which the student registers but the preparation/research for the project would need to be started well before. In particular, students are required to submit project proposals the previous October. The project may be started during the students third year of study. With departmental permission, Physics Major students may enrol in this course.

PHYS 4113 Advanced Mechanics 3 ch (3C)

Lagranges equations, Hamiltons principle, Hamiltons equations of motion, Lagranges method of undetermined multipliers, canonical transformations, Hamilton-Jacobi equation, generating functions, Poisson brackets. Prerequisite: PHYS 3011.

PHYS 4122 Instrumentation in Physics 5 ch (3C 3L) [W]

Linear integrated circuits and their uses (feedback, operational amplifiers, oscillators, etc.), noise in electronic systems, bandwidths and filters, phase sensitive detectors, electro-optical devices, cryogenic and vacuum techniques, instrument specification, computer control of experimental apparatus, shop techniques (machine, glass-blowing and electronics). Usually alternates with PHYS 3122. Prerequisite: Permission of Department.

PHYS 4142 Solid State Physics 3 ch (3C)

Crystal structure, crystal diffraction and the reciprocal lattice, crystal binding, elastic constants and elastic waves, phonons and lattice vibrations, thermal properties of insulators, free electron Fermi gas, energy bands, semi-conductor crystals, dielectric properties, magnetic properties. Prerequisite: PHYS 3051.

PHYS 4172 Lasers and Photonics 3 ch (3C)

Laser properties and principles, specific laser systems, semiconductor sources, advanced devices. Optical detectors, direct and heterodyne detection. Electromagnetic effects, nonlinear optics, harmonic generation, electro and accousto-optic modulation, mode locking and Q-switching. Faraday, Kerr and Pockels effects. Optical fibre properties, fibre sensors and communications. Prerequisites: Permission of instructor.

PHYS 4193 Biophysical Techniques 3 ch (3C)

Intended for Physics, Chemistry and Biology students with adequate mathematical preparation (at least second-year and preferably third-year level). The physical principles upon which the techniques are based are stressed. Topics may include modern optical microscopy, electron microscopy, centrifugation, chromatography, x-ray crystallography, radiography and tracer techniques, fluorescence, luminescence and various branches of spectroscopy (infrared, ultraviolet, Raman, NMR, ESR and Mössbauer). Usually alternates with PHYS 3193.

PHYS 4283 Space Research and Astrophysics 3 ch (3C)

Why and how we work in space. The terrestrial atmosphere, the Sun and Solar-Terrestrial relationships, and the Solar-Stellar connection. Plasma diagnostic techniques for remote sensing. Optics and sensor technologies for the spectral range from the Near Infrared to the soft X-ray region. Techniques for radiometric calibration. Space flight hardware and environmental considerations. A review of current major flight missions, eg. The Hubble Space Telescope. Prerequisite: approved second year mathematics.

PHYS 4963 Nuclear Physics (for Engineers) 3 ch (3C)

Basic properties of nuclei, nuclear reactions, production and properties of neutrons, nuclear fission and fusion, chain reactions, passage of radiation through matter, radiation detectors. Prerequisites: MATH 1003/1013, PHYS 1913/1918 plus PHYS 2962/2967 or equivalent course.

PHYS 5103 Spectroscopy 3 ch (3C)

Physical principles and applications of spectroscopy. Prerequisites: PHYS 3152, 4051.

PHYS 5123 Electromagnetic Theory and Applications II 4 ch (3C 1P)

Covariant formulation of electrodynamics. Electromagnetic field of a moving charge. Scattering and dispersion of electromagnetic radiation. Prerequisite: PHYS 4021.

PHYS 5133 Advanced Topics in Theoretical Physics 3 ch (3C)

Continuous systems, covariant formulation of special relativity, Lorentz group, classical field theory, Klein Gordon equation, Dirac equation, introduction to general relativity. Prerequisite: PHYS 4113.

PHYS 5143 Magnetic Resonance Imaging 3 ch (3C)

Principles of Magnetic Resonance Imaging, survey of imaging techniques, modern applications of MRI in medicine, biology and materials science.

PHYS 5153 Quantum Mechanics III 4 ch (3C 3P/ 2 weeks)

Theory of scattering, collision cross-sections. Introduction to relativistic quantum mechanics, Klein-Gordon and Dirac equations, Dirac treatment of the hydrogen atom. Introduction to propagator techniques, Feynman diagrams, second quantization. This course is cross-listed as MATH 4443. Prerequisite: PHYS 4051.

PHYS 5173 Fibre Optic Sensors 4 ch (3C 3*L)

Physical principles and applications of fibre optic sensors.

PHYS 5183 Fluid and Plasma Astrophysics 3 ch (3C)

For students interested in space physics, astrophysics, plasma physics, and fluid dynamics in general. Topics will be selected from the following according to student interest: Magnetospheres of rotating magnetized planets, ordinary stars, neutron stars, and black holes. Pulsar models: processes for slowing down, particle acceleration, and radiation emission; accreting plasmas and x-ray stars; stellar winds; heliosphere and solar wind: relevant magnetic field topologies, measured particle distribution in phase space and induced collective modes; stability of the current sheet and collisionless processes for magnetic reconnection; theory of collisionless shocks; solitons; Ferraro-Rosenbluth sheet; solar flare models; heating processes of the solar corona; earth magnetosphere (auroral phenomena and their interpretation, bow shock, magnetotail, trapped particle effects); relationship between gravitational (galactic) plasmas and electromagnetic plasmas.

PHYS 5273 Fibre Optics Communication Systems 4 ch (3C 3*L)

The objective of this course is to provide a comprehensive account of fibre-optic communication systems. The emphasis is on the physics underlying the technology, from basic concepts to the latest innovations. Practical aspects and applications are also discussed throughout. Topics include optical sources and transmitters, optical detectors and receivers, coherent light wave systems, multichannel communications systems, soliton communications systems. Prerequisite: Permission of instructor.

POLITICAL SCIENCE

Note: See beginning of Section H for abbreviations, course number and coding.

INTRODUCTORY LEVEL COURSES

POLS 1000 Introduction to Politics 6 ch (6C) [W]

This course introduces the student to some of the important ideas of politics. It draws special attention to conceptions of the state, democracy and capitalism, and their significance for contemporary life. Available only online.

POLS 1103 North American Politics 3 ch (3C) [W]

Introduces students to the major issues and concepts involved in the study of political science through a comparison of politics in Canada, the United States, and Mexico. The course is built around an exploration of the links between the institutions and processes of government (executives, legislatures, courts and elections) and the political society of each country (its values, cultures, ideologies, and social conflicts).

POLS 1203 Political Issues that Divide Canadians 3 ch (3C) [W]

Examines contemporary and enduring issues within the context of the Canadian political system. Topics may include: Quebec and national unity, aboriginal self-government, cultural and regional diversity, class conflict, and electoral reform.

POLS 1303 Pivotal Political Events 3 ch (3C) [W]

Considers the political origins and long-term political impact, as well as the effect on the field of political science, of crises which have shaped the contemporary world, such as the Russian Revolution, the Holocaust, the dropping of the atomic bomb, the Cold War, the rise of the welfare state, the UN Declaration of Human Rights, and the fall of the Berlin Wall.

POLS 1403 Contemporary Political Ideas and Ideologies 3 ch (3C) [W]

Introduces students to the important political ideas and movements of the past century that shape present day society. Tracing the development and thinking about political life in the twentieth century, it examines such diverse ideologies as: liberalism, social Darwinism, existentialism, feminism, ecologism, and post-modernism.

POLS 1503 Law, Power, and Politics 3 ch (3C) [W]

Introduces students to some of the main concepts of political science, including: constitutionalism, the rule of law, rights, citizenship, obligation, authority, and legitimacy. Students will also study the concrete applications of these principles in specific circumstances by examining selected political problems, public policies, and legal procedures.

POLS 1603 Politics of Globalization 3 ch (3C) [W]

The term 'globalization' has quickly become one of the most popular, yet least understood, words in the contemporary political vocabulary. This course introduces students to the key issues involved in the study of globalization. Topics examined may include: militarization and warfare, the rise of the global neo-liberal order, the end of the Cold War, international ecological politics, transnational corporations, the condition of women in the global economy, changing relations between North and South, and the impact of globalization on the role of the nation-state.

POLS 2200 Canadian Government and Politics 6 ch (6C) [W]

An introductory course in Canadian government and politics, dealing with the following topics: the constitution and civil liberties; federalism, with some focus on Quebec; the legislative, executive and judicial branches of government; political parties and interest groups; representation and electoral behaviour; nationalism in Canada. (Counts under Canadian Government and Politics.) Students cannot hold credit for both POLS 2200 and POLS 3282.

POLS 2203 Issues in Canadian Public Policy 3 ch (3C)

Major issues in Canadian public policy-making and related approaches to policy analysis are examined from the perspective of political science. Topics will include health policy, economic policy, and cultural policy. (Counts under Canadian Government and Politics.)

POLS 2303 An Introduction to Comparative Politics 3 ch (3C) [W]

This course introduces students to similarities and differences in national political ideologies, institutions, and processes, and to the nature and dynamics of interactions among nations. (Counts under Comparative Government, International Politics and Area Studies.)

POLS 2373 An Introduction to the Politics & Society of the Middle East 3 ch (3C) [W]

This course focuses on only two parts of what we call the Middle, or Near, East: the first is the Fertile Crescent or Mashrek, which includes Israel, Palestine, Lebanon, Egypt, Jordan and Syria; the other deals with the states of the Persian Gulf with particular concentration on Iran and Iraq.

POLS 2603 Introduction to European Society and Politics 3ch (3C) [W]

This course deals with the social, political and cultural dynamics of modern Europe. It traces the recent developments in both Eastern and Western European societies and Europe's relationship with the rest of the world. (Counts under Comparative Government, International Politics and Area Studies.)

POLS 2703 Introduction to International Relations 3 ch (3C)

A general introduction to the theory and practice of international relations. Issues examined include: war, the global economy, international organizations, and the environment. (Counts under Comparative Government, International Relations and Area Studies. Students may not earn credit for this course and the former POLS 2600.)

ADVANCED LEVEL COURSES

Canadian Government and Politics

POLS 3201 Canadian Electoral System and Voting Behaviour 3 ch (3C) [W]

A study of the electoral system, representation and voting behaviour in Canada.

POLS 3202 Canadian Political Parties 3 ch (3C) [W]

Directed at a systematic study of the structure and functions of political parties in Canada.

POLS 3211 Canadian Governance in the Global Era 3 ch (3C)

Introduces students to the complex mechanisms through which governance has taken shape, with a particular emphasis on recent policy shifts.

POLS 3212 Topics in Provincial Public Administration 3 ch (3C) [W]

Focuses on the study of selected aspects of the structure and process of provincial public administration.

POLS 3227 Poverty, Governance, and Citizenship in Canada 3 ch (3C) [W]

This course explores the relationships between poverty policy, governmental forms, and conceptions of citizenship. Students will critically evaluate major documents from Confederation to contemporary policy debates. The central objective is to map out shifts, turning points, and transformations in governing practices and sensibilities.

POLS 3231 Government and Politics in Contemporary Atlantic Canada 3 ch (3C) [W]

Explores political culture in the region, compares the political structures in the four provinces, and discusses public policies of each of the Atlantic governments.

POLS 3232 Canadian Municipal Government 3 ch (3C) [W]

Considers the types and forms of Canadian municipal institutions, and deals with municipal political problems and processes.

POLS 3241 Canadian Foreign Policy 3 ch (3C) [W]

An analysis of the foreign policy formulation process and a consideration of sectors other than the Canadian-American relationship.

POLS 3242 Canadian-American Relations 3 ch (3C) [W]

An analysis of the political aspects of sectoral relations between Canada and the United States.

POLS 3251 Canadian Federalism 3 ch (3C) [W]

Considers theories of federalism, the development of the Canadian federal system, and the impact of current issues.

POLS 3253 Canadian Intergovernmental Relations 3 ch (3C) [W]

Considers the development of the relationship between federal, provincial, and municipal governments in Canada and the impact of current issues.

POLS 3257 Law and Politics in Canada 3ch (3C) [W]

Analyzes the relationship between law and politics in Canada, with an emphasis on the impact of judicial decisions on Canadian politics. Topics covered include the Rule of Law in the Canadian Constitution, the judicial process, the Canadian Court system, judicial recruitment and selection, judicial independence, judicial review, and judicial decision-making.

POLS 3261 Political Issues in Atlantic Canada 3ch (3C) [W]

Emphasis of the seminar course will be on contemporary political problems within Atlantic Canada.

POLS 3263 Canadian Provincial Politics 3 ch (3C) [W]

Designed to provide the student with an overall grasp of the nature of government and political processes in the Canadian provinces.

POLS 3267 Quebec Politics and Government 3 ch (3C) [W]

A survey of the political and social evolution of Quebec from the 17th century to the present day. Emphasis is placed on 20th century events and on the nationalist dimension of Quebec politics, particularly its modern incarnation in the period since 1960.

POLS 3271 Community and Culture in Canadian Politics 3 ch (3C) [W]

A consideration of the impact of cultural and regional differences on prospects for political unity and political change in Canada. Topics will include: English-French differences in political culture and their policy implications; Indian and Inuit culture and its relevance for the political process; the growth and political impact of regionalism and provincialism; the politics of Canadian multiculturalism in comparative perspective.

POLS 3281 Class Politics in Canada 3 ch (3C) [W]

Designed to introduce students to the nature of the Canadian class structure and its relationship, actual and potential, to political participation in Canada. Covers such topics as the extent and nature of class awareness in politics, the impact of elite political ideologies on the mobilization of classes, regional variations in the political relevance of class structure and problems and prospects of class-based political action.

POLS 3282 The Canadian Political System 3 ch (3C) [W]

An analysis of the Canadian political system with emphasis on the constitution, federalism, parliamentary government, and the Canadian political culture. Students cannot hold credit for both POLS 2200 and POLS 3282.

POLS 3292 Self-Government and Aboriginal Community 3 ch (3C) [W]

A systematic analysis of the principles, structures and institutions of traditional and contemporary Indian self-government in Canada.

Comparative Government, International Politics and Area Studies

POLS 3101 Government of the United States 3 ch (3C) [W]

A survey of American political institutions.

POLS 3112 The Political Economy of Russia and Ukraine 3 ch (3C) [W]
(Cross Listed: ECON 3112)

Examines the political, economic and social dynamics of government in the two Slavic nations in the post-Gorbachev era.

POLS 3113 The Foreign Policies of East European States 3 ch (3C) [W]

Examines the major characteristics of foreign policy-making in the following countries: Russia, Ukraine, the Baltic states, Poland, Germany, Romania, Serbia, Croatia, Czechoslovakia, and Hungary.

POLS 3321 Politics and Education 3 ch [W]

Examines the relationship between politics and education both in theory and practice. Includes political philosophers such as Plato, Rousseau and Dewey, as well as recent analysts, who have contributed to the study of education.

POLS 3323 Cities in the Urban Century 3 ch (3C) [W]

In the 21st century, half of the worlds population will be urban dwellers. The importance of enhancing our knowledge of cities has never been greater. This course will address cities within the context of globalization, economic change, state reform, citizenship, and social justice. While emphasis will be placed on Canadian examples, comparisons with other countries also will be made.

POLS 3343 The European Union in Transition 3 ch (3C) [W]
(Cross Listed: ECON 3343)

This course examines the economic, political, and legal aspects of the EU and its member states. Topics included are money and finance and government institutions and further political/economic integration with Eastern Europe. This course is an elective in the Law and Society program.

POLS 3361 Eastern Europe in Transition 3 ch (3C) [W]
(Cross Listed: ECON 3361)

This is an introduction to the politics and economics of Eastern Europe. The course examines how the countries of Eastern Europe, Eurasia and the former Yugoslavia emerge into a market system and integrate with Western Europe and the rest of the world. Money, banking, trade, and government policies will be emphasized.

POLS 3363 Contemporary Germany 3 ch (3C) [W]

This course deals with both the internal and external politics of unified Germany. It examines Germany's place in the European Community, studies the wide political spectrum of Germany's multi-party system, and focuses on its cultural and political influence over the rest of Europe.

POLS 3392 Comparative Public Administration 3 ch (3C) [W]

A detailed study of contemporary public administration in selected countries in Europe and North America with the emphasis on a comparative study of selected issues and topics.

POLS 3431 Politics of the Former Soviet Empire 3 ch (3C)

Deals with the aftermath of the breakup of the USSR from the Baltic states to the Muslim and Caucasian periphery of the former Soviet Union.

POLS 3432 Europe: East and West 3 ch (3C) [W]

Examines the relations between East European and West European countries. Also concentrates on the development of European relations with the rest of the world, especially the relations of the European Economic Community.

POLS 3613 Gender and International Relations (O) 3ch (3C) [W]

Examines international relations in terms of gender critique. Issues addressed include the masculinized construction of traditional international relations thought, patriarchy and war, gender construction in the global media, and the role of women in the global economy.

POLS 3615 International Relations Theory (O) 3 ch (3C) [W]

Examines the evolution of international relations theory to the present. Attention is given to the socio-philosophical foundations of the Realist paradigm, and to recent challenges to Realism emanating from modern and post-modern critical schools.

POLS 3623 International Organizations and Law (O) 3 ch (3C) [W]

Examines international organizations and law in the contemporary period with a particular focus upon the UN. Topics addressed include the direction and scope of UN reform, the role of international organizations in the global economy, human rights groups, the World Court, and the European Community.

POLS 3633 International Public Law 3 ch (3C) [W]
(Cross Listed: ECON 3633)

Examines the sources of law such as custom and treaties and addresses specific issues in the international system: the law of armed conflict, human rights, dispute settlement, intergovernmental and supranational organizations, intellectual property rights, the environment, and the relationship between business corporations, sovereign states and private citizens.

POLS 3635 Critical Conflict Studies (O) 3 ch (3C) [W]

Overviews traditional conflict research and then examines the nature of contemporary warfare in terms of class, race, gender and sexual orientation. Particular focus is given to WWI, WWII, the Vietnam War, and the 1991 Gulf War.

POLS 3647 Democratic Disengagement 3 ch (3C) [W]

Examines the sources of democratic discontent and declining political participation in Canada and other established democracies, along with potential remedies. Topics covered include civil society and social cohesion, the changing role of political parties and the merits of institutional changes such as electoral reform and direct democracy.

POLS 3703 Seminar in Contemporary Issues in World Politics 3 ch (3C) [W]

The course deals with current trends and developments on the international scene including the global balance of power, relations between the superpowers, ideological conflicts, the Third World and North-South tensions; war, revolution and coups d'etat as these occur.

POLS 3713 The Global Economy in the New Millennium 3 ch (3C) [W]

Surveys the primarily theoretical and empirical literature on the global political economy. Issues addressed include imperialism, dependency, U.S. hegemony, the internationalization of production, global finance, and the evolution of the Fordist production regime.

POLS 3715 Globalization and the Politics of Work 3 ch (3C) [W]

Examines the evolving condition of global labour in terms of historical and contemporary developments in the global economy. Some of the topics addressed include migrant labour, labour in export processing zones, international labour organizations, alternative models of production, female labour, and child labour.

POLS 3717 The Politics of Nationalism 3 ch (3C) [W]

A general examination of nationalism as an ideology and political force, with some focus on specific nationalist movements in both the developed and developing worlds. Topics include: competing definitions of nations and nationalism, the underlying causes of nationalist unrest and secessionism, and methods of conflict management in ethnically divided societies.

POLS 3723 The Political Economy of Middle Eastern Society (O) 3 ch (3C) [W]

Surveys the social and economic foundations of Middle Eastern politics. Specific issues examined include the dismantling of traditional tribal life, the integration of the region into the global political economy, the nature and function of the state, women in Middle Eastern society, democratization, human rights, working life, and new political movements.

POLS 3725 The Political Economy of Latin American Society (O) 3 ch (3C) [W]

Surveys the social and economic foundations of South and Central American politics. Specific issues examined include the relationship of the region to the global economy, state/ military relations, state repression, U.S. regional hegemony, political reform and revolutionary movements.

POLS 3831 Contemporary China 3 ch (3C) [W]
(Cross Listed: ECON 3831)

The course studies various macro-economic and political aspects of a modern China in transition. China's global position (defence and foreign policies) will also be examined.

Political Theory and Analysis

POLS 3203-9 Selected Topics in Environmental Philosophy 3 ch (3C) [W]
(Cross Listed: PHIL 3203-9)

Examines methods and philosophical ideas associated with accounts of how we ought to think of the natural environment and how we should act with regard to the environment. Possible topics include: deep ecology, ecological feminism and social ecology, globalization, modern conceptions of property rights, overpopulation, consumption, and the placing of an economic value on nature. May be taken for credit more than once. Title of topic will appear on transcript. Prerequisite: A course in Philosophy or permission of the instructor.

POLS 3312 Political Sociology 3 ch (3C)
(Cross Listed:SOCI 3312)

Examines the relations between society and the state by comparing traditional political sociology with the contemporary approach. Issues include the nation state as the center of political activity, how power is exercised through institutions, social groups, class, the production of identity or subjectivity, how globalization and social movements de-center state political activity, the impact of these changes on citizenship and democracy.

POLS 3391 Governance 3 ch (3C)

Investigates shifts that are occurring in the rationales, strategies, and practices of governance, with a particular focus on contemporary transformations. Students will be introduced to traditional tools of public administration analysis as well as new analytical tools that have emerged at the turn of the 21st century. They will also be asked to explore how new governing mechanisms take shape through shifting discourses, programs, and techniques.

POLS 3410 Survey of Political Thought 6 ch (6C) [W]
(Cross Listed: PHIL 3410)

A survey of the most important writers and the main currents of political thought from Ancient Greece to the beginning of the 20th century.

POLS 3413 Modern Theories of the State 3 ch (3C) [W]

Examines the emergence of the modern conception of the state, and discusses some of the important theoretical arguments concerning the scope and justification of the state.

POLS 3415 Liberalism (O) 3 ch (3C) [W]

The historical and textual foundations of the liberal tradition and its contemporary variants. Central concepts and problems in the development of liberal thought to be examined will include: rights, property, liberty, toleration, and political participation.

POLS 3416 Canadian Political Thought (O) 3 ch (3C) [W]

Historical and comparative examination of the various strands of thought that make up the Canadian political tradition: liberalism, conservatism, socialism and nationalism.

POLS 3423 The Politics of Repression 3 ch (3C) [W]

Examines a variety of thinkers and movements that are concerned with the question of repression. Attempts to answer such questions as: what is repression and what causes it? Are some groups in society particularly repressed? What are the varieties of repression?

POLS 3433 Late Modern Political Thought 3 ch (3C) [W]

This course surveys recent political thinkers from the celebrated critic of modernity Friedrich Nietzsche to the post-modernist Jean-François Lyotard. It coheres thematically by focussing on their implicit and explicit responses to the three grand questions of the 20th century: What is wrong with modernity? What happened to the proletarian revolutions of Europe? How can the Holocaust be explained? Other thinkers examined include Lukács, Weber, Gramsci, Cassirer, Horkeimer, Arendt, de Beauvoir, Voegelin and Foucault.

POLS 3443 Feminist Issues in Political Thought 3 ch (3C)

Examines critical issues in feminist theory. Its central focus is on the understanding of women's political and social roles found in the history of political thinking and the response to these arguments presented by contemporary feminist theorists.

POLS 3453 Politics and Technology 3 ch (3C) [W]

Discusses the meaning of technology and its social, political and ideological implications. Focuses on the debate surrounding the effect that technology has had in shaping the modern attitude to nature and to ourselves.

POLS 3461 Public Policy Analysis 3 ch (3C) [W]

A critical examination of the institutions that form public policy, as well as the policy process in relation to a number of selected areas.

POLS 3463 Eros and Leadership: The Philosophy of the Good Ruler Through the Ages 3ch (3C) [W]

This course surveys the intellectual and philosophical criteria for political leadership as they were established by past thinkers. Some of the intellectual material addressed may include the assessment of Pericles by the ancients, Platos notion of philosophical rule, Aristotles conception of class rule, Plutarchs biographies, Marcus Aurelius reflections, Machiavellis counsels, Marxs critique of bourgeois rule, Lenins conception of vanguardism, Webers observations regarding charisma and Gramscis defence of the organic intellectual. Throughout the course the standards set in the past are applied to current political leaders, and the concerns raised by contemporary intellectuals like Christopher Lasch and Neil Postman are broached and assessed.

POLS 3471 When Bards are Bothered: Political Critique in Literature 3 ch (3C) [W]

Examines the nature of political critique found in literature. It surveys different literary genres and forms, including tragedy, comedy, satire, poetry, the essay, the short story, and the novel. Some of the authors discussed may include Aristophanes, Sophocles, Thomas More, Daniel Defoe, Jonathan Swift, and more recent writers such as Aldous Huxley, George Bernard Shaw, George Orwell, Virginia Woolf, and John Steinbeck.

POLS 3473 Dropping Out: Alternative Political Communities 3 ch (3C) [W]

Surveys the organization, political and social rationale, and critiques of alternative political communities. Topics may include the utopian socialist societies and anarchist experiments of the nineteenth century, the Israeli kibbutzim, European co-operative networks, and the North American counter-culture communities of the twentieth century.

POLS 3483 Hegel and Marx 3 ch (3C) [W]
(Cross Listed: PHIL 3483)

Examines the theories of history and the historical process in Hegel and Marx. Pays particular attention to the question of the causes of historical change. Then discusses these theories in their relation to Hegel's and Marx's political thought.

POLS 3494 Theories of Federalism (A) 3ch (3C) [W]

This course will introduce students to theories of federalism. Using the Canadian, American and Haudenosaunee federal systems as examples, the course will examine various analyses of federalism.

POLS 3523 Political Participation 3 ch (3C) [W]

Designed to answer the question "How and why do people get involved in politics?" Major emphasis is given to the manner in which citizens participate in politics at both mass and elite levels.

POLS 3533 Research Methods in Political Science 3 ch (3C) [W]

Intended to familiarize students with processes, methods and techniques of inquiry in political science. Strongly recommended for all Honours and Majors students. Honours Research.

POLS 3803-9 Philosophy of Law Seminar 3 ch [W]
(Cross Listed: PHIL 3803-9)

Recent work in the philosophy of Law. Topic will vary from year to year. Possible topics include constitutional argument, natural law theory, conceptual problems in criminal and civil law, legal positivism, and legal realism. May be taken for credit more than once. Title of topic will appear on transcript. This course replaces PHIL 3703 and PHIL 3704. Prerequisite: Permission of instructor.

Independent Study

POLS 3900 Independent Study in Political Science 6 ch

Upon application through the co-ordinator of honours and majors programs, students pursuing an honours or majors degree in Political Science may undertake independent studies with a member of the department. It is expected that students will have a clear idea of their intended area of study and will submit a written proposal justifying it as an independent studies course. No student will be allowed to take more than 6chs of independent study in completing the requirements for a majors or honours degree in political science. Independent studies courses will NOT count as meeting the honours thesis requirements.

POLS 3903 Independent Study in Political Science 3 ch

Upon application through the co-ordinator of honours and majors programs, students pursuing an honours or majors degree in Political Science may undertake independent studies with a member of the department. It is expected that students will have a clear idea of their intended area of study and will submit a written proposal justifying it as an independent studies course. No student will be allowed to take more than 6chs of independent study in completing the requirements for a majors or honours degree in political science. Independent studies courses will NOT count as meeting the honours thesis requirements.

POLS 3905 Independent Study in Political Science 3 ch

Upon application through the co-ordinator of honours and majors programs, students pursuing an honours or majors degree in Political Science may undertake independent studies with a member of the department. It is expected that students will have a clear idea of their intended area of study and will submit a written proposal justifying it as an independent studies course. No student will be allowed to take more than 6chs of independent study in completing the requirements for a majors or honours degree in political science. Independent studies courses will NOT count as meeting the honours thesis requirements.

Honours Research

POLS 4000 Directed Reading and Research in Political Science 6 ch (6C) [W]

A compulsory reading and research course for fourth year honours students. The student prepares a research program in consultation with a professor in the field concerned and is expected to present a research essay after regular consultations with the professor concerned who will be assigned to the student by the chair of the department.

POLS 4600 Directed Reading and Research in International Relations 6 ch (6C) [W]

Honours students in the International Relations Program work on a research essay pertinent to the specialized area in consultation with a professor assigned to them by the chair of the department.

PSYCHOLOGY

Note: See beginning of Section H for abbreviations, course numbers and coding. Students should consult the Timetable for the latest listing of courses to be offered in each term.

PSYC 1013 Introduction to Psychology - I 3 ch (3C)

A general survey of perspectives and methods in selected areas of psychology including learning, memory, cognitive and biological psychology. Students will be asked to participate in various learning and research activities. Some course credit may be earned by participation in these activities. Credit cannot be obtained for both Psyc 1013 and 1014.

PSYC 1014 Introductory Psychology on the WEB - I 3 ch (3C)

A general survey of perspectives and methods in selected areas of psychology including learning, memory, cognitive and biological psychology. Students will be asked to participate in various learning and research activities. Some course credit will be earned by participation in these activities. This course is intended for students who are not resident of the Fredericton campus. Access to a computer and high-speed modem (or internet connection) will be required. Credit cannot be obtained for both Psyc 1013 and 1014.

PSYC 1023 Introduction to Psychology - II 3ch (3C)

A general survey of perspectives and methods in selected areas of psychology including personality, developmental, clinical and social psychology. Students will be asked to participate in various learning and research activities. Some course credit may be earned by participation in these activities. Credit cannot be obtained for both Psyc 1023 and 1024.

PSYC 1024 Introductory Psychology on the WEB - II 3 ch (3C)

A general survey of perspectives and methods in selected areas of psychology including personality, developmental, clinical and social psychology. Students will be asked to participate in learning and research activities. Some course credit will be earned by participation in these activities. This course is intended for students who are not resident on the Fredericton campus. Access to a computer and high-speed modem (or internet connection) will be required. Credit cannot be obtained for both Psyc 1023 and 1024.

PSYC 2113 Introduction to Research and Statistical Methods in Psychology 3 ch (3C)

An introduction to research methodology and statistical analysis for psychologists. Topics include correlational, observational and experimental research designs, relevant statistical theory and hypothesis testing. Required for students planning to Minor, Major or Honour in Psychology. Students planning to Major or Honour in Psychology must concurrently register in PSYC 2123 and take this course in the second year of their program. Prerequisite(s): Introductory Psychology (6 ch).

PSYC 2123 General Psychology Laboratory 3 ch (3L) (LE)

An introduction to psychology as an empirical science. Students will design, conduct, analyse and formally report on several research projects. Students will meet in a classroom for one hour and participate in a 3 hour laboratory session each week. Students will be involved in research projects as participants and as researchers. Required for students planning to Major or Honour in Psychology. Prerequisite(s): Introductory Psychology (6ch) and PSYC 2113 which may be taken concurrently.

PSYC 2203 Foundations of Developmental Psychology 3 ch (3C)

Covers physical, cognitive, language, and social/emotional development from a variety of theoretical perspectives. The interrelatedness of these domains also will be discussed. Several themes which underlie the study of development (e.g., nature/nurture; continuity/discontinuity) will be reviewed and students will explore how these themes permeate developmental research. Prerequisite: Introductory Psychology (6ch)

PSYC 2313 Foundations of Clinical Psychology 3 ch (3C)

An introduction to the main theories, research approaches, and intervention perspectives of clinical psychology. Topics dealt with include professional issues in clinical psychology, concepts and history of abnormality, theories of psychopathology, assessment and diagnosis of psychological disorders, research perspectives in clinical psychology, and modes of psychotherapy. The course is intended to expose the student to the basic concepts, theories and issues in psychopathology and psychotherapy for more advanced courses in the clinical domain. Prerequisite(s): Introductory Psychology (6 ch).

PSYC 2403 Foundations of Social Psychology 3 ch (3C)

Examines individual personality and behaviour in relation to other individuals, society and culture. Topics include social perception, attitudes and values, conformity and obedience, prejudice and discrimination, aggression and violence, etc. Prerequisite(s): Introductory to Psychology (6ch).

PSYC 2603 Foundations of Learning, Memory and Cognition 3 ch (3C)

Introduction to the fundamental principles of human and animal learning, memory and cognition in the laboratory and everyday world. Prerequisite(s): Introductory Psychology (6 ch).

PSYC 2703 Foundations of Biological Psychology 3 ch (3C)

An introduction to basic neurophysiology, neurochemistry and neuroanatomy for humans and other animals. The course will cover the methods used to discover the fundamental processes underlying neural function and provide basic knowledge for an understanding of how the nervous system is able to produce and control behaviour. Prerequisite: Introductory Psychology (6 ch) or permission of instructor.

PSYC 3023 Drugs and Behaviour 3 ch (3C)

Examines sedatives, hypnotics, stimulants, anaesthetics, analgesics, paralytics, psychotogenics and psychotherapeutics. Includes history of use, presumed mechanisms of action, and effects on human and animal behaviour. Emphasis on how drugs affect the quality of human experience through relief of pain, addiction, treatment of mental illness, etc. Prerequisite(s): Introductory Psychology (6ch).

PSYC 3033 Health Psychology 3 ch (3C)

An aggregate of the scientific and professional contributions of the discipline of psychology towards promotion of a holistic approach for (a) the maintenance of health, (b) the prevention and treatment of illness including etiologic and diagnostic correlates of health and illness. Prerequisite(s): Introductory Psychology (6ch).

PSYC 3043 Human Sexuality 3 ch (3C)

Provides a broad introduction to the psychology of human sexuality, including examination of such specific topics as sexual anatomy, sexual behaviour throughout the lifespan, sexual response, sexual dysfunction and therapy, sexual variation, and pregnancy and child birth. Emphasis on placing empirical findings within physiological, personal, interpersonal and social frameworks. Prerequisite(s): Introductory Psychology (6 ch).

PSYC 3113 Introduction to Statistical Inference in Experimental Psychology 3 ch (3C 1L) (LE)

Introduces experimental design and statistical inference in psychological research. Design decision-making and computational procedures up to analysis of variance are presented. Labs involve collection and analysis of psychological data. PSYC 3113 is required of Honours students in Psychology. Prerequisite: PSYC 2113 and PSYC 2123 or PSYC 2103 and PSYC 2903.

PSYC 3123 Introduction to Measurement Theory 3 ch (2C 2L) (LE)

Introduces traditional problems in the measurement of psychological concepts. Labs will involve the development and evaluation of student designed tests and measures. Prerequisite: PSYC 2113 and PSYC 2123.

PSYC 3151 Basic Research Seminar I 3 ch (3S) (LE)

Involves active participation in several of the activities related to an empirical research project including planning and development of research, conducting a study, and collection and analysis of data. Students will be required to prepare a formal research paper. The actual program will be determined by the student and a faculty supervisor. Normally restricted to students in their third year whose academic performance would allow them to enter the Honours program during their fourth year. Prerequisite: PSYC 2113 and PSYC 2123 and two Psychology foundation courses, permission of a faculty supervisor and Basic Research Coordinator, and a cumulative grade point average of at least 3.3 in Psychology courses.

PSYC 3152 Basic Research Seminar II 3 ch (3S) (LE)

Involves active participation in several of the activities related to an empirical research project including planning and development of research, conducting a study, and collection and analysis of data. Students will be required to prepare a formal research paper. The actual program will be determined by the student and a faculty supervisor. Normally restricted to students in their third year whose academic performance would allow them to enter the Honours program during their fourth year. Prerequisite: PSYC 2113 and PSYC 2123 and two Psychology foundation courses, permission of a faculty supervisor and Basic Research Coordinator, and a cumulative grade point average of at least 3.3 in Psychology courses.

PSYC 3213 Language Development 3 ch (3C 1T)

Examines current views on language development and discusses the interaction between cognitive, social, and linguistic development. Possible topics include critical period for language, preverbal communication, gestural communication, and vocabulary and grammar development. Prerequisite: PSYC 2203

PSYC 3233 Social Development 3 ch (3C)

A review of theories and research examining how various social contexts contribute to individual development. The role of family, peers, and individuals involvement in school, paid or unpaid work , and community settings will be explored. Content may focus on social development in children and adolescents, adults, the elderly, or across the lifespan, depending on the expertise of the instructor. Prerequisite: PSYC 2203

PSYC 3243 Cognitive Development 3 ch (3C)

Examines cognitive development from a variety of theoretical perspectives. Topics covered include mental representation, attention, memory, and perception. Content may focus on cognitive development in children, adults, the elderly, or across the lifespan, depending on instructor availability. Prerequisite: PSYC 2203

PSYC 3263 Psychology of Women 3 ch (3C)

A lifespan approach to the lives of girls and women, examined in the context of traditional and alternative roles, life events, and status in society. Provides an overview of theories and research on female development, behaviour, and personality. Prerequisite: PSYC 2203 or permission of instructor.

PSYC 3273 Adolescent Development 3 ch (3C)

A review of theories and research examining physical and psychological development during adolescence. Specific topics include puberty, identity, sexuality, and health. Emphasis is placed on normative behaviour and how adolescents characteristics interact with their contexts (e.g., family, school, peers) to shape development. Prerequisite: PSYC 2203

PSYC 3313 Psychological Testing 3 ch (2C 1T)

The creation of tests that measure psychological phenomena is a major endeavour within the discipline of psychology. The administration, scoring and interpretation of psychological tests is a significant aspect of the work of researchers and practicing clinical psychologists. This course examines existing tests that measure phenomena such as cognition and personality. The course introduces principles of psychological testing, relevant statistical concepts, and the methods by which tests are developed. Prerequisite: PSYC 2313

PSYC 3353 Applications of Clinical Psychology with Adults 3 ch (3C)

This is an advanced course which adopts a scientist-practitioner perspective on the understanding, assessment, and treatment of adult psychological disorders. Topics can include psychological theories and treatment of depression, anxiety disorders, schizophrenia, eating disorders, substance use disorders, stress and physical health, dissociative disorders and personality disorders. The course will take an integrative, problem-oriented approach by simultaneously examining the theory, research and treatment literature that is pertinent to each disorder. Prerequisite: PSYC 2313

PSYC 3373 Applications of Clinical Psychology with Children and Adolescents 3 ch (3C)

Survey of major categories of behavioural and emotional problems of childhood and adolescence. Topics may include depression, anxiety, attention deficit-hyperactivity disorder, learning disabilities, and eating disorders. Prerequisite: PSYC 2203 and 2313

PSYC 3383 Women and Mental Health 3 ch (3C)

Explores and critically evaluates theory and research on mental health problems in girls and women from a feminist perspective. Topics addressed include premenstrual syndrome (PMS) and the role of hormones in girls and womens mental health problems; depression; eating disorders; dissociative disorders and other sequelae of abuse; and feminist approaches to therapy. Prerequisite: PSYC 2313 or permission of instructor.

PSYC 3403 Applied Social Psychology 3 ch (3C)

Examines theoretical and empirical problems related to social psychology. Discusses research models and techniques and applies them to problems of current interest in social psychology. Includes field methods and survey research. Prerequisite: PSYC 2403

PSYC 3415 Community Psychology 3 ch (3C)

Survey of psychological evidence and theory on relations of community structures and functions to mental health. Gives particular attention to contributions and interventions of psychology in the community, in mental health, educational, and criminal justice systems. Prerequisite: PSYC 2403 and permission of instructor.

PSYC 3423 Human Interaction Systems 3 ch (1C 2L)

Explores the major aspects of group processes. Includes perception and communications, membership, norms and group pressures, standards, goals, leadership, problem-solving and decision-making. Emphasizes theoretical and experiential understanding of relevant concepts and empirical evaluation of small group interaction. Prerequisite: PSYC 2403

PSYC 3463 Advanced Personality 3 ch (3C)

Conceptions of human identity and individuality in modern personality theory. Prerequisite: PSYC 2313 or PSYC 2403.

PSYC 3615 Behaviour Modification 3 ch (3C)

Empirically based, emphasizing behavioural analysis and control of anxiety, maladaptive interpersonal relations, addictions, health-related problems, etc. A self-control project is required. Prerequisite: PSYC 2313 or PSYC 2603.

PSYC 3623 Cognition 3 ch (3C)

Covers the basic cognitive processes of memory, problem solving and reasoning, concept formation, and decision making. Prerequisite: PSYC 2603

PSYC 3633 Motivation 3 ch (3C)

Critical examination of the concept of motivation in terms of its power to explain experimental findings and capacity to generate research. Topics include history of motivation, drive, incentive, frustration, curiosity, anxiety, etc. An empirically based paper is required. Prerequisite: PSYC 2603

PSYC 3713 Physiological Psychology 3 ch (3C)

Examines the physiological bases of behaviour as determined by genetic, neurophysiological, neurochemical and neuroanatomical experimentation. Prerequisite: PSYC 2703

PSYC 3723 Physiological Psychology Laboratory 3 ch (3L)

Use of common instrumentation and techniques (e.g., brain recording, stimulation, behavioural observation) in the study of the physiological bases of behaviour in humans and other animals. Prerequisite: PSYC 3713

PSYC 3733 Neuropsychopharmacology 3 ch (3L)

Basic principles of the study of drugs that influence neural systems and induce changes in behaviour. The course will address psychotropic drug assessment, from molecular and biochemical characterization, to behavioural effects in animal test paradigms and finally to clinical applications. Prerequisite: PSYC 2703

PSYC 3745 Principles of Perception 3 ch (3C)

Provides a broad introduction to the field of perception and the necessary background for PSYC 3753 or PSYC 4743. Emphasizes issues relevant to psychophysical measurement, visual processes, and hearing. Discussion is in the context of the central traditions of perceptual research such as empiricism and Gestalt. Prerequisite: PSYC 2703

PSYC 3753 Laboratory in Vision and Hearing 3 ch (3C)

Individual laboratory exercises in visual and auditory processes. To familiarize the student with the experimental methodology of sensory psychology, and the introductory assessment of sensory deficits (visual defects, hearing loss, etc.). Prerequisite: PSYC 3745

PSYC 3773 Experimental Human Neuropsychology 3 ch (3C)

Emphasis will be on studies that help us to understand the relationship between behaviourally observable phenomena and corresponding brain function. The course will examine what has been revealed about human brain function through the use of specialized types of psychological tests and measures, through biophysical imaging techniques that give us a view of human brain function, and finally through damage to the human nervous system and research on its effects. Prerequisite: PSYC 2703

PSYC 3783 Experimental Neuropsychology Laboratory 3 ch (3L)

Current issues in research in neuropsychology will be examined. Prerequisite: PSYC 3773

PSYC 4003 Topical Seminar in Psychology (O) 3 ch (3S)

An advanced seminar on a topic not represented by one of the Teaching Areas in Psychology. Open to Upper Level students Majoring or Honouring in Psychology. Prerequisite: permission of instructor.

PSYC 4053 History of Psychology 3 ch (3C)

Critically examines the content, concepts, techniques and issues of the historical antecedents of modern psychology. Primary as well as various secondary sources are consulted.

PSYC 4103 Special Topics in Quantitative Psychology (O) 3ch (3C 1L)

An advanced course on a topic in Quantitative Psychology. Open to Upper Level students in the Majors or Honours programs in Psychology. Prerequisite: PSYC 2113 and PSYC 2123 or permission of instructor.

PSYC 4110 Honours Thesis Research Seminar 6 ch (3S 3S) (LE)

Organization and discussion of Honours Thesis research projects. Normally available only to students who have been admitted to a Psychology Honours Program and who are in their final year. Required of Honours students in Psychology during their fourth year. Prerequisite: PSYC 3151 or PSYC 3152, permission of a faculty supervisor and Honours Research Coordinator, and a cumulative grade point average of at least 3.6 in Psychology courses.

PSYC 4203 Topical Seminar in Developmental Psychology (O) 3 ch (3S)

Discussion of current issues in Developmental Psychology. Open to Upper Level students Majoring or Honouring in Psychology. Prerequisite: PSYC 2203 and permission of instructor.

PSYC 4215 Development of Individuals with Disabilities 3 ch (3C)

A discussion of issues that may arise for individuals with various disabilities at different points in the lifespan. Topics may include prenatal testing, academic/vocational placement, independent living, and parenting. The causes, characteristics, and challenges of specific cognitive, language, sensory, and physical disabilities may be reviewed. Prerequisite: PSYC 2203 and one of PSYC 3213, 3233, 3243, 3273

PSYC 4223 Sex and Gender: Differences and Similarities 3 ch (3C)

Provides a critical appraisal of the theories and research methods in the area of sex and gender differences and similarities. Specific topics include morality, stereotypes, feminist perspectives, role of the media, scientific method, and epistemological tendencies. Examines the construction of knowledge, and the development of positions, with regards to sex and gender. Prerequisite: 2203 or 3263 or permission of instructor.

PSYC 4303 Topical Seminar in Clinical Psychology (O) 3 ch (3S)

Discussion of current issues in Clinical Psychology. Open to Upper Level students Majoring or Honouring in Psychology. Prerequisite: PSYC 2313 and permission of instructor.

PSYC 4313 Advanced Topics in Psychotherapy (O) 3 ch (3C)

Surveys the major methods of psychotherapy, including psychoanalysis, client-centred therapy, Gestalt therapy, reality therapy, play therapy, group therapy, marital counselling, assertion training, etc. Emphasis is on the techniques used in psychotherapy; various techniques are contrasted. Each method is evaluated in terms of research examining therapeutic process and outcome. Open to Upper Level students Majoring or Honouring in Psychology. Prerequisite: PSYC 2313 and permission of instructor.

PSYC 4403 Topical Seminar in Social Psychology (O) 3 ch (3S)

Discussion of current issues in Social Psychology. Open to Upper Level students Majoring or Honouring in Psychology. Prerequisite: PSYC 2403 and permission of instructor.

PSYC 4603 Topical Seminar in Learning, Memory and Cognition (O) 3 ch (3S)

Discussion of current issues in Learning, Memory and Cognition. Open to Upper Level students Majoring or Honouring in Psychology. Prerequisite: PSYC 2603 and permission of instructor

PSYC 4613 Laboratory in Learning, Memory and Cognition (O) 3 ch (3L)

Empirical investigation of current issues in Learning and Memory. Open to Upper Level students Majoring or Honouring in Psychology. Prerequisite: PSYC 2603 and permission of instructor.

PSYC 4713 Topical Seminar in Physiological Psychology (O) 3 ch (3S)

An in-depth exploration of current issues in Physiological Psychology. Open to Upper Level students Majoring or Honouring in Psychology. Prerequisite: one of PSYC 3713, PSYC 3743, PSYC 3773 or permission of instructor.

PSYC 4743 Topical Seminar in Sensation-Perception (O) 3 ch (3S)

Coverage of various issues in Sensation and Perception in a seminar format. Emphasis is on visual and auditory processes, with some coverage of taste, smell, and touch. Laboratory work is included. Open to Upper Level students Majoring or Honouring in Psychology. Prerequisite: PSYC 2703 and permission of instructor.

PSYC 4773 Topical Seminar in Neuropsychology (O) 3 ch (3S)

Current issues in research in Neuropsychology will be examined. Open to Upper Level students Majoring or Honouring in Psychology. Prerequisite: PSYC 2703 and permission of instructor.

RECREATION AND SPORTS STUDIES

Note: See beginning of Section H for abbreviations, course numbers and coding.

RSS 1001 Introduction to Kinesiology 3 ch (3C 1T)
(Cross Listed: KIN 1001) **[W]**

This course is designed as a thematic introduction to the academic discipline of Kinesiology. The course surveys the basic concepts, theories and analytical methods of Kinesiology and their application to the study of human movement in recreation, sport, exercise and physical activity. Weekly sessions include three lectures and one tutorial. KIN 1001 is restricted to students registered in the Faculty of Kinesiology.

RSS 2011 Introduction to Management of Sport and Recreation Organizations 3 ch (3C) [W]

Introduces the students to the concepts and skills required to successfully manage current and future sport and recreation organizations in a variety of settings in the public, private, and not-for-profit sectors. Includes both theoretical and practical perspectives to help the students understand not only the WHAT and HOW of management, but also the WHY.

RSS 2021 Sociology of Leisure 3 ch (3C) [W]

Examines sociological variables affecting leisure needs and interests, and program development and success.

RSS 2023 Introduction to Sociology of Sport 3 ch (2C 1T) [W]

Considers "sport" as a social institution and studies various topics which have occupied sport sociologists.

RSS 2032 Recreation and Sport Programming 3 ch (3C) [W]

Provides students with an understanding of some theoretical concepts related to programming and the techniques and procedures used to develop and implement programs and events in the recreation and sport context. Deals with the underlying principles of planning recreation programs and events and the techniques and procedures used to develop and implement these, and relates these principles to a variety of recreation settings to meet the needs of different interest levels.

RSS 2042 History of Sport and Recreation 3 ch (3C) [W]

This course is designed as an introductory examination of the historical roots of sport, recreation and human movement in western civilization. Significant events and personalities will be highlighted to provide an overview of the sub-discipline of the history of human movement phenomena.Prerequisite: KIN 1001 or consent of the instructor.

RSS 2052 Foundations of Tourism (A) 3 ch (3C)

Presents both the conceptual and the operational aspects of the tourism industry from a number of points of view including motivations for travel, economic impact, product development, market analysis and future trends.

RSS 2062 Psycho-Social Aspects of Leisure 3 ch (3C)

This course will examine current social psychological theory about leisure behaviour and experience. In other words, how do people's personalities and social situations that they encounter during their daily lives shape their perceptions, experiences, and responses to leisure, and how does leisure influence personality and behaviour in other life domains. This will examine the influence of psychological and sociological impact of leisure on the individual. Specifically, this course will examine, with regard to leisure, the following areas: gender, race, violence, disability, mass media, politics, attitudes, crowd effects, youth sport, coaching leadership, and student athletes. Prerequisite: KIN 1001 or consent of the instructor.

RSS 2081 Introduction to Wellness and Active Living 3 ch (3C)

Designed to provide exposure to the concepts and behaviours associated with well-being. These concepts include social, physical, emotional, intellectual, spiritual and environmental aspects of wellness. The course is designed for students from all faculties interested in improving quality of life.

RSS 2101 Dance Appreciation(A) 3 ch (3C 1L)

This course is a cultural survey of dance which explores the principles and techniques of expressive movements. The class work is supplemented with studio experience.

RSS 2113 The Use of Computers in Sport and Recreation Management 3 ch (C)

Designed to provide students with conceptual knowledge and technical competence to comprehend the role of computers in the administration of sport and recreation organizations. The content deals mainly with microcomputer applications with some mention of sport-specific software that operate only on mainframe computers.

RSS 2302 Outdoor Recreation 3 ch (3C) [W]

A survey of some of the principles, practices and issues of outdoor recreation in Canada and abroad. Discusses a brief history of outdoor recreation, delivery systems, carrying capacity, economic impact, wilderness recreation, users with special needs, use patterns, user conflict, nonconsumptive vs. consumptive activity, and consideration of the forces that have shaped and continue to shape outdoor recreation.

RSS 3001 Introduction to Research Methods in Kinesiology 3 ch (3C)
(Cross Listed: KIN 3001)

Introduces basic concepts in research methods and experimental design relevant to the area of kinesiology including recreation and leisure studies. It is also designed to create a better understanding of the principles, concepts, terminology, and instruments used in measurement and analysis in the various sub-domains of kinesiology. The course will focus on the scientific method, with both quantitative and qualitative research being discussed. Topics include: different methods of knowledge, strategies of discovery, ethical issues, observation (systematic and self-report observational methods), measurement (reliability, validity, objectivity), experimental design (randomized and non-randomized designs, survey design and subject selection), and data analysis (descriptive and inferential statistics). Finally, research reporting and the A.P.A. format will also be examined. Prerequisites: STATS 2043 and STATS 3043 or equivalent (STATS 3043 may be a co-requisite).

RSS 3002 Sport History in Canada (A) 3 ch (3C) [W]

An analysis of the historical development of Canada's involvement in sport since Confederation. Canada's participation in international competition such as the Olympic Games and the Commonwealth Games will be studied in depth. In addition, the development of physical education and sport programs in the education system will also be included. Prerequisites: RSS 2042 or consent of the instructor.

RSS 3011 Comparative Programs in Physical Education, Recreation and Sport (A) 3ch (3C)

Examines the evolution, significant influences, current practice, trends and issues that are shaping sports, recreation and physical education in a variety of selected countries around the world compared to Canada. Students will gain an understanding of sports, recreation and physical education systems in Canada and selected countries in the world. Students develop techniques that permit a logical, systematic investigation and comparison of sports, recreation and physical education. Prerequisite: RSS 2023 RSS 2042 or RSS 3021.

RSS 3022 Power and Ideology in Recreation and Sport Institutions (A) 3 ch (3C) [W]

A critical theory perspective which examines the role which power relations play in determining the structure of sport and recreation institutions and the opportunities that are available within them. Focuses on the hegemonic role which ideologies play in the justification of the structure and consequences of these power relations. Prerequisite: RSS 2023 or RSS 3021.

RSS 3042 History of Parks and Recreation in Canada (A) 3 ch (3C) [W]

The course explores the historical development of the playground movement, national and provincial park development, and the recreation delivery system in Canada since Confederation.Pre-requisite: RSS 2042 or consent of the instructor.

RSS 3051 Advanced Management of Sport and Recreation (A) 3 ch (3C) [W]

An examination of current management concepts and issues facing sport and recreation organizations. Topics include: Risk Management, Contracting of Services, Retrenchment Management, Resource Generation, Advanced Budget Systems, Quality Management, and Managing in a Political Environment. Prerequisite: RSS 2011.

RSS 3052 Recreation, Sport and the Law (A) 3 ch (3C)

This course provides an introduction to the law of negligence with emphasis on professional liability and risk management, as well the course includes an introduction to criminal law and contracts. Studied through lecture, case law and selected readings all related to recreation and sport. Prerequisite: RSS 2011.

RSS 3061 Recreation and Sport Delivery Systems 3 ch (3C) [W]

This course will examine the structures, process, and issues that are associated with delivery of recreation, leisure, and sport services in the public, not-for-profit, and commercial sectors. Particular attention will be paid to identifying similarities and differences among the sectors and to the relationships that exist among them.

RSS 3062 Psychological Aspects of Leisure (A) 3 ch (3C) [W]

The course will examine the psychological aspects of leisure. It will focus on the internal or mental experience of individuals who engage in leisure. It will examine underlying attitudes, values, motives, and perceptions which influence the leisure experience. Prerequisites: RSS 2062 or consent of instructor.

RSS 3072 Planning Principles and Processes 3 ch (3C) [W]

Examines the planning process with particular reference to the roles of recreation and sport administrators, politicians and citizens.

RSS 3100 Professional Internship 12 ch [W]

A full-term, full-time placement in a professional position in a recreation, sport or related agency. An opportunity for the student to relate theory to practice through professional career and field experiences. Prerequisites: Minumum of 87 ch including ADM 2313, RSS 2011, RSS 2032, RSS 3061, RSS 3072 and 12 ch of Minor (if applicable), and successful participation in all prepatory activities held in the winter term preceding the internship.

RSS 3110 Professional Internship I 6 ch [W]

Use of RSS 3110 and 3120 is for Intersession and Summer Session ONLY. Both courses must be taken. These two courses are equivalent to RSS 3100.

RSS 3120 Professional Internship II 6 ch [W]

Use of RSS 3110 and 3120 is for Intersession and Summer Session ONLY. Both courses must be taken. These two courses are equivalent to RSS 3100.

RSS 3123 Careers of Elite Athletes: Sociological Analysis (A) 3 ch (3C) [W]

This course will take a sociological perspective, primarily "Interactionist" and "career"-oriented, on the involvement of individuals in sports practices. An attempt will be made to provide an overview of such involvements, from the initial exposure and introduction to sport practice, through the deepening commitments and obligations to the ultimate withdrawal. Such an overview will be examined in the context of the variety of contingencies which influence each phase of the athletic career. While the focus will be upon those individuals who have "made it" through the sports system to some sort of elite status, the analysis by its very nature will not ignore the experiences of those who disengage from involvements in sports practices at earlier stages. Material will be drawn from both the theoretical and empirical literature, and will be critiqued in terms of its usefulness for understanding the phenomenon of the individual's involvement in athletic career. Prerequisite: RSS 2023 with a grade of C or better.

RSS 3141 Wellness in Aging: An Holistic Approach 3 ch (3C) [W]

Commonly, courses in aging identify deficits, decrements and problems of aging. In contrast, this course looks at the many components of wellness. This outlook results in a combination of strategies, and actions which are under the individual control and can foster greater well being in the older adult.

RSS 3213 Leisure Education and Facilitation Techniques (A) 3ch (3C)

This course is designed to introduce students to leisure education concepts, theories, and related facilitation techniques. Various leisure education models, assessment tools, and intervention strategies will be explored. Consideration will be given to different settings in which leisure education can be implemented. Prerequisites: RSS 2032 or permission of instructor.

RSS 3223 Sport and Religion: A Sociological Perspective (A) 3 ch (3C)

This course will attempt to present an overview of the various ways in which religion and sport interact in the European-North American context. The investigation will take a predominantly sociological perspective on these issues. The focus will mostly be on the "religion(s)" of the western capitalist states in which modern sport practices have historically emerged and subsequently have prospered - i.e., the Judeo-Christian religion and the "civic" religions. Some consideration will also be given to a discussion of issues of morality and ethics in sport, as well as the idea of sport itself as a transcendent, "religious" experience. Prerequisite: RSS 2023 with a grade of C or better.

RSS 3242 Physical Activity and the Older Adult 3 ch (3C) [W]

Examines the lifestyle of the older adult from a holistic perspective as it relates to physical activity and recreation.

RSS 3303 Parks and Protected Spaces: Planning and Management (A) 3 ch (3C) [W]

A comprehensive examination of the theoretical and methodological issues associated with terrestrial and marine protected spaces in Canada and abroad. Particular attention is given to the integration of resource use and protection in the context of management structures, functions, processes and perspectives. Prerequisite: RSS 2302 or consent of the instructor.

RSS 3913 Practicum I 3 ch (3 C/L)

Relates theory to practice through professional career and field experiences. Faculty approval is required prior to any service commitment or registration procedures.

RSS 3914 Practicum II 3 ch (3 C/L)

Relates theory to practice through professional career and field experiences. Faculty approval is required prior to any service commitment or registration procedures.

RSS 4011 Facility Planning and Design for Physical Education and Recreation 3 ch (3C) [W]

Provides the senior student with the most up-to-date data on sport facility design, construction and renovation. Students participate in practical projects. Field trips are required.

RSS 4053 Financial Management of Recreation and Sport Organizations 3 ch (3C)

This course will provide students with an in-depth examination of the financial issues and challenges facing public and not-for-profit recreation and sport organizations. The course will examine traditional revenue sources such as property taxes, and bonds but will also explore newer concepts of resource generation such as exactions, less-than-fee simple acquisitions, private-public partnerships, contracting out of services, sponsorship, donations and foundations. Various budgeting and financial control systems will also be examined. The course will utilize a variety of delivery methods including lecture, class discussion, guest speakers, individual and small-group work. Prerequisite: RSS 3051 with a C or better.

RSS 4081 Marketing of Recreation and Sport Services 3 ch (3C) [W]

Deals with the application of marketing theory to issues in recreation and sport services. Recommended prerequisite: ADM 2313.

RSS 4092 Senior Seminar in Recreation and Sport Studies 3 ch (3C) [W]

This seminar based course is intended as an integrating and culminating experience for senior students in Recreation and Sport Studies. It will involve class discussions on current issues and challenges in the field of recreation and sport studies. Students will be responsible for helping identify issues to be discussed and for preparing and presenting seminars. Pre-requisite: Students must have completed 87 ch.

RSS 4093 Directed Studies in Recreation and Sport Studies I 3 ch

Provides opportunities to explore a number of special topics in recreation and sport. Faculty approval is required prior to registration. Title of the topic will appear on the students transcript. Prerequisite: completion of 57 ch towards BRSS degree.

RSS 4094 Directed Studies in Recreation and Sport Studies II 3 ch

Provides opportunities to explore a number of special topics in recreation and sport. Faculty approval is required prior to registration. Title of the topic will appear on the students transcript. Prerequisite: completion of 57 ch towards BRSS degree.

RSS 4096 Selected Topics in Recreation and Sport Studies 3 ch

Selected topics of special interest in the areas of recreation and sport are examined in detail. Special emphasis will be placed on current issues. Topics will be specified by the Faculty. Title of the topic chosen will appear on the student's transcript. Faculty approval is required prior to registration. Open only to students in third year and above.

RSS 4097 Selected Topics in Recreation and Sport Studies 3 ch

Selected topics of special interest in the areas of recreation and sport are examined in detail. Special emphasis will be placed on current issues. Topics will be specified by the Faculty. Title of the topic chosen will appear on the student's transcript. Faculty approval is required prior to registration. Open only to students in third year and above.

RSS 4201 Entrepreneurship and Small Business in Recreation and Sport (A) 3 ch (3C) [W]

Examines components, trends and management techniques in the development of small business in Recreation and Sport. Prerequisite: RSS 2011, or permission of instructor.

RSS 4213 Coaching Seminar 3 ch (3C)

This is a seminar course which examines coaching issues with a view to integrating coaching theory and practice. Students will be eligible for NCCP Level II theory certification upon successful completion of the course. Prerequisites: KIN 2051, KIN 2062, KIN 2032, KIN 2072, KIN 3081, NCCP Level I Certificate.

RSS 4242 Gender, Sport and Physical Activity 3 ch (3C)

This course will focus on recent theoretical and empirical research on, and the relationship among gender, sport, and leisure. Topics to be covered include an analysis of mens and womens experiences, attitudes, constraints, challenges and behaviours related to leisure and sport. Emphasis will be placed on understanding ways in which gender relations and gender role expectations affect and are affected by sport and leisure. Prerequisite: must have completed 57 ch.

RSS 4311 Outdoor Recreation: Facility Planning and Design (A) 3 ch (3C) [W]

Emphasis on conceptual planning of both active and passive areas ranging from urban parks and playgrounds to provincial and national parks. Topics include: ecological impact, unique or fragile areas, visitor management, safety and liability, special populations and public education. Students participate in practical projects and field trips are required. Prerequisite: RSS 2302 or permission of instructor.

RSS 4331 Outdoor Recreation: Interpreting the Environment (A) 3 ch (3C) [W]

Examines the development and implementation of interpretation programs, nature trails, visitor centres and other environmental education programs. Emphasis on wildland settings, but includes some discussion of urban environments and municipal programs. Students given practical experience through projects, presentations and field trips. Prerequisite: RSS 2302 or permission of instructor.

RSS 4412 Leadership Principles and Practices 3 ch (3C) [W]

Provides students with an understanding of the theoretical concepts related to the phenomenon of leadership and an appreciation of the practical application of leadership within a variety of sport, recreation and physical activity settings. Pre-requisite: Student must have completed 57 ch toward their degree.

RSS 4900 Honours Research Project 6 ch [W]

Recreation and Sport Studies honours students must complete a research (thesis) project that is approved by the faculty and supervised by a Recreation and Sport Studies faculty member. A detailed project report is submitted upon completion of the project. An public oral presentation is also required. Students should consult with a BRSS advisor prior to the end of third year to discuss project requirements and potential topics. Required of, and restricted to BRSS honours students.

RSS 4910 Advanced Practicum 6 ch (6C/L)

Continuation of RSS 3913/3914. Prerequisite: RSS 3913/3914.

RSS 5062 Research Seminar in Leisure Psychology (A) 3 ch (3C) [W]

This course is designed to communicate, analyze, and stimulate research and research theory in all areas of leisure psychology. Areas of interest will include leisure as it relates to social, clinical, developmental, and experimental psychology. The course will be directed towards the study and understanding of leisure situations and will provide a forum for the presentation and discussion of recent findings and theoretical developments in leisure psychology. Prerequisites: RSS 2062, RSS 3062, STATS 2043, STATS 3043.

RENAISSANCE COLLEGE

Note: See beginning of Section H for abbreviations, course numbers and coding.

Codes for Renaissance College Courses are as follows:

M	Module
P	Problem Solving Session
S	Seminar
S/L	Seminar/Lab
L	Lab
C/S	Class/Seminar
LE	Limited Enrollment
W	Writing Component

RCLP 1010 Formative Learning Portfolio I 1 ch (M/S 2T)

Portfolio Module I introduces students to the role and purpose of learning portfolios, the concept and development of meta-analysis and its application to the notion of growth and competency within each of the Renaissance College Learning Outcomes. Students create formative portfolios that contain at least two RC Learning Outcomes in preparation for their Local Internship Placement. RC faculty members assess Portfolios and a mark of CR/NCR is awarded in the second term of the first year.

RCLP 1011 Worldviews, Religions and Cultures 3 ch (M/P S)

This course will explore various worldviews and religions, and their formative influence on cultures, communities, individuals and particularly people in positions of leadership.

RCLP 1021 Concepts of Enhancing Personal Well-Being 3 ch (M/P S/L)

Introduces the learner to theories and practices of developing a person's well-being. Readings, discussions and experiential learning activities focus on the physical, emotional, intellectual, social, and spiritual aspects of wellness.

RCLP 1031 Images and Insight 3 ch M/P S/L)

Questions surrounding how images educate, how they make visible emotional and intellectual content, the effects of the visual on human beings, and the visual as interdisciplinary provide a philosophical basis from which the relationship of visual literacy to leadership is explored and developed.

RCLP 1042 Natural Science, Technology and Society 3 ch (M/P C/S)

Introduces the learner to the great ideas of natural science and explores their impact on our thinking, attitudes, models, technologies and society. Topics will include: the scientific method and ways of knowing about our world; philosophical implications of science; important technical innovations, their scientific basis, and their impact on society.

RCLP 1052 Mathematical and Economic Approaches to Problem-Solving 3 ch (M/P S)

Knowledge of the languages of mathematics and economics is important for public policy problem-solving. This module will provide an initial exposure to mathematical and economic reasoning, primarily through a problems-based approach using finite mathematics and basic economic principles.

RCLP 1062 Citizenship and Community Issues 3 ch (M/P S)

Citizenship requires an awareness of civics and community issues from an interdisciplinary perspective. This module will introduce the area with reference to a topical community issue.

RCLP 1111 Renaissance College Integrative Forum 1 6 ch (M/P S) (LE)

This forum provides an opportunity for integrative dialogue and study about contemporary issues and their complex relationships from an interdisciplinary perspective. Students will learn strategies to assess the congruence of a person's ideas and actions as well as to evaluate and debate the ethical implications of both. Co-requisite: RCLP 1011, RCLP 1021, RCLP 1031; or permission of the instructor.

RCLP 1112 Renaissance College Integrative Forum II 6 ch (M/P S) (LE)

This forum provides an opportunity for integrative dialogue and study about contemporary issues and their complex relationships from an interdisciplinary perspective. Special emphasis is placed on the contributions of science, technology, economics and mathematics. Prerequisite: RCLP 1111. Co-requisite: RCLP 1042, RCLP 1052, RCLP 1062; or permission of the instructor.

RCLP 2013 Introduction to Leadership Theories and Concepts 3 ch (M/P S/L)

Major theories and concepts of leadership will be discussed to assist the student in recognizing and interpreting the multiple perspectives involved in the process of leadership in various environments.

RCLP 2014 Public Policy Special Topics Forum I 3 ch (M/P S)

This forum addresses significant contemporary public issues in social, political or cultural life from an interdisciplinary perspective. Participants will demonstrate leadership by discerning the key issues and their complex relationships; bringing to bear their knowledge, problem solving ability and values to engage in dialogue and study and to formulate viable solutions with the stakeholders.

RCLP 2020 Formative Learning Portfolio Module II 2 ch (C/M/S 1T, C/M/S 2T)

In Portfolio Module II students continue to develop learning portfolios as they refine their understanding of meta-analysis and its application to the Renaissance College Learning Outcomes. In preparation for their International Internship placement, RC faculty members assess Formative portfolio drafts of at least four RC Learning Outcomes and feedback is given. A mark of CR/NCR is awarded in the second term of the second year.

RCLP 2023 Canadian Internship 12 ch (M/P) (LE)

A full-time limited term placement in an agency provides an opportunity for the student to relate theory to practice through a field experience. The internship includes a mentor at UNB and a mentor in the agency, a reflective log, and a presentation during the subsequent fall term. Location: variable and for a period of time that may be between 12 to 16 weeks. Prerequisites: RCLP 1011, 1021, 1031, 1111, 1042, 1052, 1062, 1112; or permission of the instructor.

RCLP 2024 Leadership in Theory and Practice I 3 ch (M/P C/S L)

Employs readings, seminars and experiential learning sessions to study and simulate various leadership styles in a variety of contexts.

RCLP 3015 Public Policy Special Topics Forum II 3 ch (M/P S)

This forum, a continuation of RCLP 2014, addresses significant public issues in social, political or cultural life from an interdisciplinary perspective. Participants will demonstrate leadership by discerning the key issues and their complex relationships; bringing to bear their knowledge, problem solving ability and values to engage in dialogue and study and to formulate viable solutions with the stakeholders.

RCLP 3030 Integrated Learning Portfolio 3 ch (3C 2T)

Students graduating from the Bachelor of Integrated Studies are required to construct personal learning portfolios to demonstrate achievement in each of the program's articulated learning outcomes. This course will introduce the learning outcomes, the theory and practice of experiential learning, and reflective writing, as they work toward constructing their understanding of the role and purpose of a personal learning portfolio. May be taken only by students registered in the BIS program

RCLP 3035 Leadership in Theory and Practice II 3 ch (M/P C/S L)

A continuation of RCLP 2024. Employs readings, seminars and experiential learning sessions to study and simulate various leadership styles in a variety of contexts. Prerequisite: RCLP 2024.

RCLP 3036 Global Cross-Cultural Perspectives of Leadership 3 ch (M/P S)

Students analyze and compare how the leadership process functions in other cultures and in societies at various stages of development.

RCLP 3046 International Internship 12 ch (M/P) (LE)

Small teams of students embark on international placements with cooperating agencies in order to: contribute as a team member to a community effort; appreciate multiple perspectives on issues; understand how others who have different circumstances, values and visions of life would experience situations and decisions; learn a basic level of fluency in another language; and to evaluate how leadership functions in other cultures and societies. Prerequsite: RCLP 2023; RCLP 3066; or permission of the instructor.

RCLP 3775 Science & Religion - Understanding Through Dialogue 3 ch (C/S) [W]

The purpose of this course is to seek understanding through dialogue. Students will develop a deeper understanding and appreciation of the relationship between science and religion by examining certain major paradigm shifts in both disciplines. Philosophical beliefs and assumptions held by both serve to enhance, but sometimes also restrict, the interaction between the two. Historical and philosophical backgrounds in science and religion will be discussed, to set the stage for examining two important contemporary issues Beginnings and Endings of Life and Human Genetics. Significant light can be shed on these issues through the mutually enriching dialogue between science and religion. The course will focus largely but not exclusively on Western science and religion in the modern period.

RCLP 4017 Renaissance Leadership and Public Policy Seminar 3 ch (M/P S)

The seminar focuses on interdisciplinary leadership concepts and their application to systemic problems in our global society. Seminar discussions will focus on the complex leadership themes and search for "truth" or "meaning" embedded in selected current world events. Globalization issues such as political, economic, historical, social, racial, scientific, technological, environmental, religious, ethical, legal, and aesthetic, will be examined for their roles in shaping processes and outcomes for individuals and societies.

RCLP 4028 Community Problem-Solving and Research Project 6 ch (M/P S L) (LE)

In this module, students and faculty will partner with community-based resource people to identify a complex community issue that will serve as the focus for an action research project. The results of the project are presented in a public forum.

RCLP 4040 Summative Learning Portfolio Module III 3 ch (C/S M 1T, C/S M 2T)

The Summative Learning Portfolio is required for graduation from the RC BPhil degree in Interdisciplinary Studies and Leadership. During a public forum of outside assessors students in Portfolio Module III present examples from their Summative Portfolio that demonstrate their growth and competency in the RC Learning Outcomes. Presentations can include textual and visual components, examples from all levels of course work and learning experiences, as well as representation from both the national and international internship programs. RC faculty members assess the Final Summative Portfolios and a mark of CR/NCR is awarded in the second term of the third year.

RCLP 4997 Directed Studies in Interdisciplinary Leadership 3 ch (M/P) [W]

An individualized study of a topic of interest to the student, in consultation with a faculty mentor and approval of the Dean.

RUSSIAN

Note: See beginning of Section H for abbreviations, course numbers and coding.

For a description of an interdisciplinary major/minor program in Russian and Eurasian Studies see the "Russian and Eurasian Studies" section found in the Faculty of Arts program information contained in Section G of this calendar.

RUSS 1013 Introductory Russian I 3 ch

Sound system of Russian and elementary structures. Emphasis on the four basic skills of listening, speaking, reading, and writing. No prerequisite.

RUSS 1023 Introductory Russian II 3 ch

Continuation of RUSS 1013. Prerequisite: RUSS 1013.

RUSS 1043 Russian Culture I 3 ch (3C) [W]
(Cross Listed: WLCS 1043)

Significant aspects of Russian culture from the 10th to the end of the 19th century. Topics include Russian Icon Painting and Architecture, Russian culture between Europe and Asia; Ivan the Terrible as cultural type; women in Russian culture; serfdom and slavery; Russia's contribution to the development of terrorism and revolution; the reforms of Peter the Great; Russian Orthodoxy, etc. Conducted in English. Open to students of all years.

RUSS 1053 Russian Culture II 3 ch (3C) [W]
(Cross Listed: WLCS 1053)

Significant aspects of Russian and Soviet culture in the 20th century. Topics include Russian avant garde painting; the Bolshevik Revolution and apocalyptism; class and corruption; Socialist Realism; Stalin and Stalinism; women's roles under the Soviets; Eisenstein and Soviet cinema; the artificial famine and the Gulag; literature and censorship; Soviet sport and society; Glasnost and culture; etc. Conducted in English. Open to students of all years. No prerequisites.

RUSS 2013 Intermediate Russian I 3 ch

More complex grammatical structures and more advanced texts. Prerequisite: RUSS 1023.

RUSS 2023 Intermediate Russian II 3 ch

Continuation of RUSS 2013. Prerequisite: RUSS 2013.

RUSS 3013 Advanced Russian I 3 ch

Through the study of advanced grammar, oral discussion of contemporary topics and written assignments, the students' competence in Russian is improved and their skills in idiomatic and written usage are developed. Prerequisite: RUSS 2023 or equivalent. Offered in alternate years.

RUSS 3023 Advanced Russian II 3 ch

Continuation of RUSS 3013. Prerequisite: RUSS 3013 or equivalent. Offered in alternate years.

RUSS 3051 Introduction to 19th-Century Russian Literature in Translation 3 ch (3C) [W]

Includes the Golden Age of Russian Literature (Pushkin, Lermontov); the great realists (Dostoevsky, Tolstoy, Turgenev); and the emergence of Russian Drama (Chekhov). Themes followed include the superfluous man; nihilism and politics in literature; the Russian female protagonist from Karamzin's Poor Liza to Dostoevsky's prostitute Sonya; etc. Conducted in English. Open to students who have completed at least 30 ch of university courses or by permission of instructor.

RUSS 3052 Introduction to 20th Century Russian Literature in Translation 3 ch (3C) [W]

Includes Futurism, Symbolism, Acmeism and Russia's Silver Age; literature and Revolution; housing and homelessness in Soviet literature; women's writing; Socialist realism (boy meets girl, boy gets tractor); censorship and oppression; experimental prose of the 20s; aspects of Soviet cinema; Russia's New Wave' meets America's Beatniks; Bulgakov's magical fable; etc. Conducted in English. Open to students who have completed at least 30 ch of university courses or by permission of instructor.

RUSS 3083 Seminar I: Genre 3 ch [W]

The development of a particular genre in Russian literature and an examination of various works in that area. Prerequisite: Departmental approval.

RUSS 4043 Literature and Religion in 19th and 20th Century Russia and Spain *(Cross Listed: SPAN/ WLCS 4043)* 3ch (3C)

Studies religious works of Spanish and Russian writers such as Unamuno and Tolstoy. Examines their religious thought and their criticism of the established Spanish Roman Catholic Church and Russian Orthodox Church respectively. Outlines the situation of the Eastern Orthodox Church in Russia as well as the situation of the Catholic Church in Spain in the 19th and the 20th Centuries. Analyzes the position of these writers towards their respective Churches and the creation of their own moral codes through the texual analysis of some of their most relevant works.

RUSS 4053 Seminar II: Author 3 ch [W]

An intensive study of the life and work of a particular author or a number of authors. Prerequisite: Departmental approval.

RUSSIAN AND EURASIAN STUDIES PROGRAM

RSST 4003 Topics in Russian and Eurasian Studies 3 ch

Allows students to pursue special questions in an area of Russian and Eurasian Studies of particular interest to them. Normally a directed reading course, but may also be crosslisted with another department of program.

SCIENCE

Note: See beginning of Section H for abbreviations, course numbers and coding.

SCI 2611 Life Science For Educators (Grades K-6) 3ch (3C 3L)

This course is designed for undergraduates preparing for entrance to an elementary teacher education program. It is an introductory level course for students having a limited science background. The topics selected are based on the Atlantic Provinces Science Curriculum, 1995. Included are: properties of living things, life processes and organization of living things, populations, energy flow and cycles within systems, the earth and its atmosphere. This course is not open to science majors.

SCI 2622 Physical Science For Educators (Grades K-6) 3ch (3C 3L)

This course is designed for undergraduates preparing for entrance to an elementary teacher education program. It is an introductory level course for students having a limited science background. The topics selected are based on the Atlantic Provinces Science Curriculum, 1995. Included are: matter and its properties, the structure of matter, the nature of chemical change, energy and energy transfer, forces and their effects, electricity and magnetism, light and sound. This course is not open to science majors.

SOCIOLOGY

Note: See beginning of Section H for abbreviations, course numbers and coding.

SOCI 1503 Sociological Perspectives 3 ch

Introduces the basic concepts, theories, perspectives and approaches of sociology and their application to the study of society and the relationship between the individual and society. Specific topics used to illustrate these sociological perspectives will include some combination of issues concerning socialization, sex and gender, family, community, population and aging, urban life, religion, race and ethnicity, work and occupations, inequality, education, environment, globalization, politics and social movements, technology and social change.

SOCI 1513 Picturing Society: Image, Meaning, and Memory in the Photographic Era 3 ch

How do photographs affect the way we think of ourselves (e.g., our body image) and of others (e.g., the "primitives" pictured in National Geographic)? How do photographs create desire (e.g., in advertising and pornography)? Why do people take photographs of friends and family but rarely photograph complete strangers? These questions explore the nature of a "picturing society," one where individuals are surrounded by photographic images and, as a result, the ability to capture realistic representations of the world around us influences image, meaning, and memory. The term "picturing society" also refers to the process of using visual information to understand the characteristics of society social class and gender divisions, social structure, the process of social change, etc. Photographs from a wide variety of contexts personal, commercial, scientific, artistic, and others will be used to explore both aspects of picturing society.

SOCI 1523 Youth Culture and Society 3 ch

This course provides an introduction to the sociological imagination by allowing you to make the sociological connections between your personal world and the social world. Sociological perspectives and approaches are introduced through examination of such aspects of youth in contemporary Western societies as identity and sub-cultures, sexual behaviour, music, consumerism, religion, in schools, employment, crime and violence and other issues affecting youth and their transitions to adulthood.

SOCI 1533 Wired: Internet and Society 3 ch

Explores the emergence of the Internet and its related networks and how they are transforming contemporary society. The course focusses on the connections between the rise of the Internet and its impact on new issues concerning cultural transmission, forms of human association, political and economic organizations, information technology and social change, inequality, the state, regulation and surveillance, and the management of risk and uncertainty.

SOCI 1543 Men and Women Then and Now 3 ch

Life is gendered from the moment of birth. Throughout the various developmental stages, girls and boys are exposed to a variety of messages that in some ways are represented by the fairytales read in childhood. Adolescents learn the price of deviating too far from the roles or expectations placed upon young men and women in our culture through formal and informal sanctions upon their behaviour. The choices, opportunities and obstacles that we face as adults, are in large measure built upon the gender messages of childhood. Strategies for identifying the gendered nature of work, leisure, advertising, parenting and aging will be amongst the topics discussed.

SOCI 1563 Violence and Society 3 ch

Introduces a broad range of crimes of violence from sociological perspectives. Includes a survey of political violence such as genocide, holocaust, state and anti-state terrorism; analysis of hate crimes and different types of homicide such as serial murder, mass murder and thrill killings; examination of various manifestations of violence against women such as mass and date rape; exploration of kinds of assault such as physical assault, spousal battery, and child abuse; and robbery.

SOCI 1573 Map Worlds: The Social Context of Cartography 3 ch

Develops the sociological eye by exploring the social context of cartography, both historical and contemporary. Brings into focus such sociological concepts as socialization, identity, social structure, culture, gender, the sociology of work, and social organization. The course also discusses several techniques of sociological research, including participant observation, interviewing and content analysis.

SOCI 1583 Current Social Issues 3 ch

Focuses on selected social issues in such areas as Aboriginal/ non-aboriginal relations, the environment, and gender; inequality and poverty; the media; racism, ethnic relations, and language; schooling and jobs; cities; urbanization; deviance and crime; as well as globalization.

SOCI 2203 Interpersonal Relations 3 ch

An introduction to a variety of perspectives designed to provide insight into social interaction on the interpersonal level. Attention is also given to some of the methodological problems involved in achieving a better understanding of this area of social life. Prerequisite: with permission of the instructor.

SOCI 2223 Introduction to Mass Communications 3 ch

A critical overview of mass communications within Canadian society: media institutions and audiences; processes and the impact of the media; media control and policy; social problems and the media; and social issues in an information society.

SOCI 2303 Sociology of the Family 3 ch

Examines sociological perspectives on marriage and family life: changing forms and functions of the family in the context of the growth of capitalism and industrialism in Western society, women, liberation and the family, patterns and ideologies of family formation and dissolution, changes in family law, and future prospects and alternatives.

SOCI 2313 Sociology of Women I 3 ch

Focuses on the role of women within an historical and contemporary context, including womens position in the family, and in educational, political and economic institutions. The nature, perpetuation, consequences and the ideology of sexism in capitalist and non-capitalist societies will also be examined.

SOCI 2323 Sociology of Work 3 ch

Examines the place of work in modern society. Considers the technical and social organization of work and work settings and the meaning of work in the lives of individuals.

SOCI 2345 Sociology of Aging 3 ch

An introduction to the basic physical, psychological and demographic changes which occur in aging. Emphasis is given to understanding the everyday world of the young old, their participation in family life, personal life style and community activities after retirement and with the restrictions created by limited financial resources.

SOCI 2355 Social Gerontology 3 ch

An introduction to the world of the frail elderly, this course looks at the challenges of more advanced age, declining health, the loss of spouse and friends, and the need for either informal or formal care in the community.

SOCI 2365 Sociology of Dying and Death 3 ch

Examines the process of dying and death through a consideration of the cultural and institutional expectations and interpretations which surround this final stage in the human experience. The focus is on the North American context although other social and historical contexts will provide insights and background to the course work.

SOCI 2375 Sociology of Health, Illness and Medicine 3 ch

Examines the social nature and consequences of health and illness and looks at medicine as an institution and a form of social control. Areas to be covered include the delivery of health care, the social construction of medical knowledge, social inequality and its impact on health and disease, the medical profession, the medical industrial complex and sexism and patriarchy in the medical system.

SOCI 2403 Contemporary Canadian Issues 3 ch

An introduction to current social issues in Canada such as social inequality, regionalism, unemployment, media concentration, the role of multinationals and the state of the Canadian economy. The impact of these in shaping our everyday actions and beliefs will be examined.

SOCI 2503 Social Movements and Social Revolutions 3 ch

An analysis of twentieth century social movements and revolutions from a sociological perspective. Emphasis is on a critical understanding of why they arise, why some fail, and why others succeed.

SOCI 2513 Routes to Community 3 ch

Explores the concept of community and belonging today, and introduces some of the important sociological studies of community, including many variants that are not commonly recognized. Considers ideas about the perceived loss of, and the attempts to reclaim, community in society.

SOCI 2523 Social Organization 3 ch

Introduction to the study of general patterns and processes of social life. Attention is given to the basic forms of organization at the individual, group and institutional levels.

SOCI 2534 Technology and Social Change 3 ch

Examines the relationship between technology and social change, such as the sources and effects of technical change, the control of technology, and the origin and nature of controversies involving modern technologies.

SOCI 2603 Sociology of Deviance 3 ch

Examines the elements and patterns of deviance, basic principles of both normative and deviant behaviour, and the institutionalization of each. Examples of specific areas and types of deviance are studied in some detail.

SOCI 2613 Delinquency 3 ch

An examination of the history of juvenile delinquency, its incidence, its causes and the methods of investigation. Also deals with agencies involved in the adjudication and treatment of the juvenile and youthful offender.

SOCI 2703 Population Studies 3 ch

An examination of world and Canadian population variation and change through consideration of underlying fertility, mortality, and migration patterns. Also explores the rise and development of modern population theories, models and policies.

SOCI 3004 Theoretical Foundations of Sociology 3 ch

A critical review of the first and second generations of sociology in Europe and the United States, with special emphasis upon the ideas of thinkers such as Comte, Spencer, Marx, Weber, Durkheim, Mead, Cooley, Merton and Parsons.

SOCI 3014 Major Developments in Contemporary Sociological Theory 3 ch

An overview of major developments in late 20th century sociological theory: the critique of functionalism and the rise of conflict theory; feminism and the critique of male-stream sociology; the revitalization of interpretive sociology; the emergence of neo-functionalism; the debate over post-modernism. Prerequisite: SOCI 3004.

SOCI 3023 Theories of Human Nature 3 ch

Examines the basic assumptions of different social theorists conceptions of human nature and the implications of these models for the social sciences.

SOCI 3100 Research Strategies 6 ch

Introduction to the logic and forms of social research and statistical analysis. Examines the basic concepts and procedures required to understand and participate in the research process.

SOCI 3103 Understanding Sociological Research 3 ch

Introduction to the nature and forms of social research with emphasis on reading, interpretation and evaluation.

SOCI 3123 Statistics in Sociology 3 ch

Introduction to the statistical analysis of sociological data, emphasizing the selection, application, and interpretation of statistical techniques.

SOCI 3223 Ethnic Relations in Canada 3 ch

Examines the interactional and institutional processes involved in ethnic and intercultural relations. Focuses on group experience, status and identity, communication and language, and the historical and contemporary conditions of social change, tension and conflict.

SOCI 3243 Sociology of Culture 3 ch

Studies cultures as idea and value systems. Examines how cultural meanings are interpreted and used by individuals and groups in the course of everyday living. Prerequisite: with permission of the instructor.

SOCI 3252 International Media, Culture and Communications 3 ch (3C)

An investigation of the issues, institutions and actors related to international media, communications and culture. Emphasis is placed on conflicting views surrounding the new world information and communication order (NWICO), flows of information, internationalization, globalization, sovereignty and democracy. SOCI 1000 or 1503 or permission of the instructor.

SOCI 3253 Sociology of the Media 3 ch

Examines the place of media (such as film, television, and newspapers) in contemporary social life. Analyzes how media have emerged and developed, the organizational forms they have taken, and how they reflect and influence shared social experience.

SOCI 3303 Religion in Western Society 3 ch

Explores the role of religion in the Western World. Examines sociological theories about the nature of religion, the debate concerning secularization in modern society, and the contemporary relationship between religion and the state. Considers the impact of new religious movements.

SOCI 3312 Political Sociology 3 ch (3C)
(Cross Listed: POLS 3312)

Examines the relations between society and the state by comparing traditional political sociology with the contemporary approach. Issues include the nation state as the center of political activity, how power is exercised through institutions, social groups, class, the production of identity or subjectivity, how globalization and social movements decenter state political activity, the impact of these changes on citizenship and democracy.

SOCI 3333 Sociology of Eastern Religion 3 ch

Examines Eastern religions at both societal and interpersonal levels. Emphasis is on the development of selected Eastern religions in the context of changing socio-cultural conditions.

SOCI 3335 Religion, Gender & Society 3 ch

An examination of the relationship between religion and gender in various interpersonal and societal contexts. Emphasis is placed upon understanding how modern religion both contributes to and challenges traditional notions of masculinity and femininity.

SOCI 3370 Formal Care of the Elderly 6 ch

This two term course offers to the student a placement with an organization which provides service to seniors. The student will explore, as well, critical issues in the social organization and culture of formal care in Canada through research and monthly seminar participation. Enrolment is limited.

SOCI 3371 The Institution of Health Care 3 ch

Examines the institution of health care with particular emphasis on the Canadian health care system. Topics to be covered include: theoretical approaches to the sociological study of health care; the history and development of Canada's Medicare system; the pharmaceutical industry; alternative/ complementary health care; the socialization and legitimation of health care professionals; and the patient/practitioner relationship.

SOCI 3373 Sociology of Science 3 ch

A comparative analysis of the changing social role and significance of science in the East and West. Emphasis on the conditions of scientific work and development, on science as an institution, form of interaction, and world-view.

SOCI 3383 Military Sociology 3 ch

A comparative analysis of the nature and purpose of military institutions in different kinds of societies. Studies the military as a calling and an occupation, the role of the military in the rise of the state and the industrialization of society, and the social causes and consequences of the use of military means will be studied.

SOCI 3403 Social Interaction 3 ch

Examines social interaction and communication in society as it occurs in social encounters and gatherings. Explores the presentation and projection of self in everyday life.

SOCI 3472 Sociology of Music 3 ch

Examines the wider socio-cultural context in which music is produced, distributed and listened to (macro perspective), and how performers create and make music together (micro perspective). Also explores music as a social text. Prerequisite: with permission of the instructors.

SOCI 3513 International Minority and Ethnic Relations 3 ch

Examines the processes and consequences of minority and ethnic relations in different countries. Includes topics such as colonialism, slavery, independence movements, and race in international relations.

SOCI 3523 Sociology of International Development 3 ch

Examines the process of social transformation in the third world. Includes discussion of ties between developed and under-developed countries, patterns of industrialization, urbanization, changing class structure including its relation to the state.

SOCI 3533 Social Stratification 3 ch

Examines the nature of social stratification from both an historical and comparative perspective. Attention is given to current controversies in this area.

SOCI 3543 Sociology of Gender Relations 3 ch

Examines the social construction of masculinity, femininity, and changes in gender relations over time and in different societal contexts.

SOCI 3553 Sociology and the Environment 3 ch

A sociological examination of the way humans perceive and relate to their physical environment. Potential topics include: environmentalism as a social movement, the social dynamics of environmental controversies, public policy toward the environment.

SOCI 3603 Criminology 3 ch

This course explores the subject matter of criminology and its relationship to other academic disciplines. Examines different concepts and terms commonly used in criminology, the specificity of criminology, relationship between theory and practice, the history and evolution of criminological thought, and the methods of investigation into criminal behaviour. The practical applications of criminology and the foundations of a modern criminal justice policy will also be discussed. Students who have completed SOCI 3610 or its equivalent may not receive credit for SOCI 3603.

SOCI 3613 Theories and Perspectives in Criminology 3 ch

An examination of the historical development of criminological theory and the causes of crime. Deals with criminal causation theories and with an evaluation of the theories and purposes of punishment. Prerequisite: Sociology 3603 or with permission of the Department. Students who have completed SOCI 3610 or its equivalent may not receive credit for SOCI 3613.

SOCI 3623 White Collar Crime 3 ch

Emphasizes that organizations, not just individuals, act and therefore can commit deviant acts. An analysis of the organized abuses of institutionalized power, particularly on the part of corporations and governments. The problem of controlling corporate and governmental deviance will also be discussed, as organizations pose prevention and control problems different from individual deviants.

SOCI 3634 Violence Against Women 3 ch

Examines issues pertaining to violence against women in Western society, including gender socialization, gender dynamics in dating and family relationships, private versus public, the contributions of social institutions (e.g., sports; the media; schools; the workplace; the military; the medical, legal and criminal justice systems) and the special vulnerability of women in marginalized groups.

SOCI 3635 Conflict Resolution 3ch

The course explores the nature of social and professional responses to conflict and conflict resolution. It critically assesses, contrasts and compares theoretical literature and research studies on processes such as adjudication and arbitration, negotiation, restorative justice, circle sentencing, and mediation in the context of gender, culture and social-economic power. Students will have an opportunity to explore how conflict resolution processes, and the skills and techniques associated with them, affect how conflict is perceived and resolved.

SOCI 3636 Restorative Justice 3 ch

This course examines the paradigms of both restorative and transformative justice. Reviews criminal justice systems in post-industrial societies with a focus on punishment as the principal response to crime. Contrasts restorative justice with the current paradigm of retributive justice. Discusses victims, offenders, and the community within the context of the failure of the retributive system in meeting its responsibilities towards them. Critically analyzes prisons, limitations of restorative justice models and programs, and aboriginal traditions in community justice.

SOCI 3703 Social Demography 3 ch

An examination in both historical and contemporary settings of the demographic correlates of urbanization and industrialization. Attention will be given to how patterns of fertility, mortality, and migration both reflect and influence social change.

SOCI 4005 Feminist Theory 3 ch

An examination of feminist theories, including critiques of traditional sociological theory and contributions to contemporary theoretical debates.

SOCI 4106 Qualitative Research Approaches 3 ch

A hands-on approach to qualitative research methods. The course also considers the classical and contemporary sources of and trends in qualitative methodology.

SOCI 4113 Sociological Research 3 ch

Discussion and evaluation of issues in contemporary sociological methods with exercises to develop skills in selected research procedures. Directed to the needs of individual students. Prerequisite: At least 3 ch in methodology or approval of the Department.

SOCI 4115 Strategies in Program Evaluation Research 3 ch

Approaches to the formative, process and outcome evaluation of programs, initiatives and legislative and procedural changes. Emphasis is on the development, design, practical and ethical problems and politics of evaluation research. Prerequisite: At least 3 ch in methodology or approval of the Department.

SOCI 4116 Feminist Social Research Methods 3 ch

Focuses on feminist critiques of traditional social research and explores feminist methodologies and the plurality of feminist research practices. Prerequisite: At least 3 ch in methodology or approval of the Department.

SOCI 4223 Media Policy for an Information Society 3 ch

Examines theoretical perspectives on the role of the state in the production and legitimation of media and cultural policies, particularly in the context of an information society. Prerequisite: SOCI 2223 or 3253 or department approval.

SOCI 4225 Language and Society 3 ch

Explores aspects of language, thinking, social interaction and social structure by examining how various theoretical perspectives in sociology and descriptive linguistics highlight (or obscure) probable and important relationships among these four basic components of group life.

SOCI 4253 The Sociology of Cyberspace 3 ch

Examines the social and cultural implications of communication via computer network, with particular emphasis upon the similarities to and differences from other forms of electronic communication (e.g., television, telephone, radio). Prerequisite: SOCI 3253.

SOCI 4263 Sociology of the Body 3 ch

An examination of the socio-cultural forces which shape societal and individual attitudes toward self-body relations. Special emphasis on issues related to health, illness and well-being.

SOCI 4264 Health Care in International Context 3 ch

Explores the nature and delivery of health care in a variety of international settings. Emphasis will be placed on comparative analysis of health care systems in relation to prevailing patterns of health and disease as well as the broader socio-cultural contexts in which they are delivered.

SOCI 4313 Violence and Power 3 ch

The sociological analysis of violence from a macro and/or a micro perspective. Potential topics include: war, family violence, crimes such as assault and murder.

SOCI 4323 Religion and Culture 3 ch

The sociological study of varied world religions at both societal and interpersonal levels. Topics may include new religious movements, conversion, gender issues, and the relations between Eastern and Western belief systems.

SOCI 4334 Education and Society 3 ch

Studies critical social and educational processes and structures, and the rapport of educational institutions with other social institutions, using comparative concepts and theories of sociology.

SOCI 4336 Families, Law and Social Policy 3 ch

A critical examination for advanced students of theoretical, legal and policy issues related to selected aspects of changing patterns of families and familial relationships in Canadian and other Western societies.

SOCI 4345 Sociology of Women II: Selected Topics 3 ch

An in-depth look at Canadian feminist scholarship in sociology, examining both classical works and new developments in the field. Prerequisite: SOCI 2313.

SOCI 4355 Sociology of Law 3 ch

A sociological analysis of law in modern society, including discussion of: legal theory, sociological and feminist criticisms of law, law as a means of social control and change, socio-legal research into the processes used by the legal system and its alternatives (such as mediation, Native justice models, victim-offender reconciliation programs) to resolve disputes, and the abilities of the legal system and its alternatives to offer justice to the disadvantaged.

SOCI 4413 Individual and Society 3 ch

Examines interrelationships between the individual and society, emphasizing issues and approaches within the interpretive traditions of the social sciences.

SOCI 4513 Inequality and Social Justice 3 ch

A sociological examination of current perspectives, responses and debates about the meaning of equality and the just society. Possible topics include the shift from individual rights to collective rights; competition and cooperation at a macro and a micro level; within society and global poverty.

SOCI 4523 Work and Leisure in the 21st Century 3 ch

Examines some of the central problems and prospects for workers and work and leisure now and in the immediate future. Potential topics include the continuing impact of technology, new modes of work organization, and the fate of occupations and professions.

SOCI 4555 Gender and Organization 3 ch

An advanced level focus on how organizations are viewed and explained as gendered, sexualized entities. Examines feminist critiques of traditional approaches to organization; feminist conceptualizations of gender and organization; empirical studies of men and women in particular organizations; organizations, gender and violence; and gender and military organization.

SOCI 4610 Crime and Social Control 6 ch

A systematic examination of a variety of contemporary issues related to the criminal justice and correctional systems.

SOCI 4623 Human Rights: Comparative Perspectives 3 ch

Explores the concept of human rights from a non-Western perspective by examining how the Western concept of human rights shapes and is shaped by its conceptualization and application in other cultures. Discusses the controversies and human rights implications of cultural practices such as female genital mutilation, child slavery, and servile marital arrangements. The focus will be on the eradication or transformation of these practices within the context of international human rights norms while at the same time making change acceptable to the practitioners. The course highlights the links between culture, religion, gender, and human rights.

SOCI 4713 Population and Society 3 ch

A seminar examining sociological aspects of processes and states of human population: fertility, modality, migration, urbanization, size, growth and composition. Prerequisite: 3 ch in population studies/demography, or departmental approval.

SOCI 5000 Seminar: Sociological Theory 6 ch

A systematic analysis focusing upon the nature and development of sociological theory and methodology in terms of major contributors and problems.

SOCI 5200 Honours Paper 6 ch

SOFTWARE ENGINEERING

Note: See beginning of Section H for abbreviations, course numbers and coding.

All core, prerequisite, and technical elective courses must be passed with a grade of C or better.

L* - Laboratory periods on alternate weeks.
* - Engineering electives. Not all offered every year. Consult Department as to availability of courses from year to year.

SWE 4000 Software Engineering Design 6 ch (6L) [W]

A software design and implementation experience involving a medium to large group. Students prepare requirements, specification, analysis and design documents as a team toward development of a useful software product and use the documentation to implement and test the product. Students manage their projects professionally, present their design work orally, and demonstrate formally that the product meets its requirements. Prerequisite: 130 ch in the software engineering program or permission from the instructor.

SWE 4103 Software Quality and Project Management 4 ch (3C 3*L)

Software Quality: Requirements gathering techniques. Formal specification languages. Verification and validation techniques. Statistical software reliability engineering. Software metrics. Software process maturity models (CMM and ISO 9001). Software Project Management: Software project tracking, planning and scheduling. Organizing and managing software teams. Monitoring and controlling software development. Factors influencing productivity and success. Risk analysis. Planning for change. Prerequisite: CS3013 or CMPE 3213.

SWE 4203 Software Evolution and Maintenance 4 ch (3C 3*L)

Maintainability and reusability analysis. Approaches to maintenance and long-term software development. Change management and impact analysis. Release and configuration management. Reengineering and reverse engineering. Regression testing. Prerequisite: CS3013 or CMPE 3213.

SWE 4303 Performance Analysis of Computer Systems 4 ch (3C 3*L)

Computer systems performance analysis and benchmarking. Metrics for the performance of the processor, the memory system, the communication system and the I/O system. Theoretical tools, and industrial benchmark suites like the SPEC benchmarks. Prerequisite: EE3232.

SWE 4403 Software Architecture 4 ch (3C 3*L)

An analysis of architectural styles, including data flow, procedure-based, object-oriented, software frameworks, event-driven architectures, shared information systems, and distributed architectures. The role of software architecture in the software lifecycle. Prerequisites: CS3013 or CMPE 3213.

SPANISH AND LATIN AMERICAN CULTURES

Note: See beginning of Section H for abbreviations, course numbers and coding.

SPAN 1003 Business Spanish I 3 ch

An introduction course for students of the Faculty of Administration. Provides a basic knowledge of Spanish at the elementary level with emphasis on the commercial and business vocabulary needed in the business environment.

SPAN 1013 The Culture of Spain and Latin America I 3 ch [W]
(Cross Listed: WLCS 1013)

Spain and Latin America before 1500: Art, Literature, Music and Society. A multimedia approach will be used. Conducted in English. Open to students of all years. No prerequisites.

SPAN 1014 The Culture of Spain and Latin America II 3 ch (3C) [W]
(Cross Listed: WLCS 1014)

Spain and Latin America after 1500 : Art, Literature, Music and Society. A multimedia approach will be used. Conducted in English. Open to students of all years. No prerequisites.

SPAN 1201 Intensive Spanish I 3ch (3C)

Students will acquire and develop listening, oral and writing skills in an intensive cultural immersion setting. Videos, music, dance, cooking and other cultural activities will facilitate the learning process. This course will normally be offered in, either the Spring or Summer session, and follows a two-week total immersion format.

SPAN 1203 Introductory Spanish I 3 ch (3C)

Intended for students with no knowledge of Spanish. Gives students solid background in the fundamentals of the Spanish language by engaging them in both classroom and computer laboratory settings in communicative use of the four language skills: listening, speaking, reading and writing. Multimedia materials will be used to provide a background in Hispanic culture. No prerequisite.

SPAN 1204 Introductory Spanish II 3 ch

Continuation of SPAN 1203. Prerequisite: SPAN 1203.

SPAN 1304 Introductory Spanish II (Business) 3 ch

Intended for business students who have successfully completed SPAN 1003 or 1203. Enhances students grounding in the basics of Spanish. Presents realistic situations and specialized vocabulary that administration and business professionals need to communicate in the course of their daily work in the Hispanic environment. Students also develop cultural and historical understanding of social etiquette in the Hispanic world. Multimedia materials will be used to provide background in Hispanic culture. Prerequisite: SPAN 1203. Credit will not be given for both SPAN 1204 and 1304.

SPAN 2203 Intermediate Spanish I 3 ch (3C)

Intended for students who have successfully completed Spanish Introductory courses. Enhances students' linguistic proficiency, allowing them to handle a variety of social situations. Students also develop cultural and historical understanding of the Hispanic world. By the end of SPAN 2203 students have insight into grammatical structures of the language, are able to sustain a conversation in real life situations and are able to discuss aspects of the Hispanic world. Multimedia materials will be used to provide a background on Hispanic culture. Prerequisite: SPAN 1204 or SPAN 1304.

SPAN 2204 Intermediate Spanish II 3 ch

Continuation of SPAN 2203. (See note on prerequisites.)

SPAN 2303 Intermediate Business Spanish 3 ch (3C)

The main course objective is to continue introducing students to the main requirements for successfully conducting business in Spanish: 1. the cultural and practical aspects of business in Spain and Latin America, and 2. the vocabulary and structures needed to communicate in a business setting. In addition to a basic text, role-playing and case studies, the study of authentic documents will be used to advance both knowledge and skills in areas such as preparing a resume, communicating by phone, fax, letter, matters concerning banking, advertising, marketing and other topics of interest to business institutions as well as the household budget. Prerequisite: SPAN 1204 or SPAN 1304

SPAN 3014 Latin America Before 1500 3 ch [W]

A survey of pre-Hispanic civilizations of Latin America. Films and other audiovisual materials will be used. Given in English. This course is also listed under International Development Studies (IDS). Open to students of all years. No prerequisites.

SPAN 3015 Contemporary Latin America 3 ch [W]

Latin America after independence, placing an emphasis on the 20th Century. Films and other audiovisual materials will be used. Given in English. This course is also listed under International Development Studies (IDS). Open to students of all years. No prerequisites.

SPAN 3062 Love and Religion: Latin American and Caribbean Women's Narrative from the Golden Age to the Beginning of the 20th Century 3 ch (3C)

A survey of selected readings of Latin American women writers from the Golden Age to the present. We examine works of Sor Juana Inés de la Cruz, Gertrudis Gómez de la Avellaneda, Alfonsina Storni, Gabriela Mistral, Luisa Valenzuela, Isabel Allende, among others, from a socio-historical perspective. The course will explore the social conditions of the women in Latin America, issues of women's identity and gender construction. A multimedia approach will be used. The course will be offered in English and is open to students who have completed at least 30 credit hours of university work.

SPAN 3113 Social Symbols in Latin American Literature 3 ch [W]

Examines literary characters as social symbols that reflect socio-political realities in selected translated works. Social and historical documents as well as videos and films will be used for purposes of comparison. Students who take this course to fulfill Majors/Honours requirements, will be required to write their papers in Spanish This course is also listed under International Development Studies(IDS). No prerequisite.

SPAN 3203 Advanced Spanish I: Advanced Grammar 3 ch (3C)

Intended for students who have successfully completed Intermediate Spanish. The main objective of the course is to improve linguistic competency (acquired by speaking and writing) through the exploration of issues in the contemporary Hispanic world. A variety of language models, including newspapers, magazine articles, interviews and classroom discussions will set the stage for the assimilation of the conversational function of the language. Audio-visual materials will also be used.(See note on prerequisites.)

SPAN 3204 Advanced Spanish II: Conversation and Composition 3 ch

Normally taken (as with SPAN 3203) with the first literature courses, thus complementing each other in improving the student's written and oral fluency through different types of class participation and assignments. (See note on prerequisites.)

SPAN 3205 Advanced Translation 3 ch

Intensive translation from and into colloquial and more formal language for the acquisition of written and translating fluency. Besides the translation of a play from English into Spanish, it includes selections in both languages from the press and other sources, and practice of interpretation.

SPAN 3413 Survey of Spanish Peninsular Literature I 3 ch

A review with selected readings of the literature of Spain from its earliest periods to the end of the Golden Age. Prerequisite: SPAN 2204.

SPAN 3414 Survey of Spanish Peninsular Literature II 3 ch

Examines Spanish Peninsular literature through representative works by major literary figures from Romanticism to the present such as: José de Larra, Pérez Galdós, Unamuno, García Lorca, Laforet, Matute, Benet among others. Literary movements of the period under study will be examined through readings that exemplify the various genres of narrative, drama and poetry. The course will be supported by the use of videos. Prerequisite: SPAN 2204.

SPAN 3423 Survey of Spanish American Literature I 3 ch

Studies the development of Spanish American Literature from Columbus to Naturalismo. Prerequisite: SPAN 2204.

SPAN 3424 Survey of Spanish American Literature II 3 ch

Studies the development of contemporary Spanish American Literature. Prerequisite: SPAN 2204.

SPAN 3563 Directed Study Major 3 ch

A reading and research course for Spanish Honours students in order to meet special needs and interests in one of the areas of study offered in the Department. By arrangement. Prerequisite: Departmental approval.

SPAN 3564 Directed Study Major 3 ch

A reading and research course for Spanish Honours students in order to meet special needs and interests in one of the areas of study offered in the Department. By arrangement. Prerequisite: Departmental approval.

SPAN 3673 Cervantes and His Time 3 ch

Cervantes' Don Quixote and other major works of the Golden Age. Prerequisite: SPAN 2204.

SPAN 3774 Spanish Literature of the 20th Century 3 ch

A discussion of major Spanish contemporary authors. Prerequisite: SPAN 2204.

SPAN 3903 Background of Spanish Culture 3ch (3C)

A chronological examination of the forces that have shaped Spanish culture. Studies the major historical periods and their characteristics from prehistoric caves of Altamira, through medieval Arab Spain, the voyages of discovery from 1492, Golden Age, Generation of 1898 to the present. The cultural components include: every day experiences and value systems that shaped national identity, history of the family, perceptions of race and gender and divorce in Catholic Spain. A wide variety of sources will be used: the Internet, videos, music and magazine articles. This course is offered in Spanish. Prerequisite: SPAN 1204 or SPAN 1304

SPAN 3904 Background of Latin American Cultures 3ch (3C)

A chronological examination of the forces that have shaped the diverse Latin American cultures. This course studies major historical periods and their characteristics, from Pre-Hispanic Cultures, through the Conquest and the Colonization, the Independence movement, the formative period of the new nations to the present. The cultural aspects to be analyzed and discussed include: Catholicism and religious syncretism, the cultural legacy of colonial life, the struggles for independence, literary expression and the role of women. The use of videos, music, the Internet and literary texts, will provide a multimedia approach to Latin American cultures. This course is offered in Spanish. Prerequisite: SPAN 1204 or SPAN 1304.

SPAN 3954 Spanish American Poetry 3 ch [W]

Studies selected works of some major Spanish American poets. Prerequisite: SPAN 2204.

SPAN 3973 Latin American Narrative at the Movies 3 ch

Many Latin American novels and short stories have been adapted by movie-makers around the world. In addition to studying these works as literature, this course will analyse their cinematic interpretations. Students who take this course to fulfill Majors/Honours requirements will write their papers in Spanish.

SPAN 3974 Contemporary Spanish American Narrative 3 ch

Studies selected works of some major Spanish American writers. Prerequisite: SPAN 2204.

SPAN 3975 The Nobel Laureates of Latin American Literature 3 ch

Examines the literary works of some of Latin Americas Nobel laureates including García Márquez, Asturias, Neruda. Students who take this course to fulfill their Majors/Honours requirements, will write their papers in Spanish.

SPAN 3983 Afro-Latin American Literature 3 ch [W]

Explores the literary representation and contribution of Afro-Latin American elements in Literature. Given in English. This course may be taken as part of the International Development Program. No prerequisites.

SPAN 3984 The Native American in Latin American Literature 3 ch [W]

Explores the literary representation and contribution of the Native American element in Latin American literature. This course may be taken as part of the International Development Program. Given in English. No prerequisite.

SPAN 4043 Literature and Religion in 19th and 20th Century Russia and Spain *(Cross Listed: RUSS/ WLCS 4043)* 3 ch (3C)

Studies religious works of Spanish and Russian writers such as Unamuno and Tolstoy. Examines their religious thought and their criticism of the established Spanish Roman Catholic Church and Russian Orthodox Church respectively. Outlines the situation of the Eastern Orthodox Church in Russia as well as the situation of the Catholic Church in Spain in the 19th and the 20th Centuries. Analyzes the position of these writers towards their respective Churches and the creation of their own moral codes through the texual analysis of some of their most relevant works.

SPAN 4203 Colloquial Spanish: Grammar and Conversation 3 ch

An advanced and intensive study and practice of the specific elements that distinguish the style of the colloquial language as used in everyday situations by native speakers, including a careful analysis of the subjunctive and idiomatic structures.

SPAN 4204 Spanish Language of the Americas 3 ch

A contrastive study of the significant lexical and morphological characteristics of colloquial Spanish in Latin America and the United States. Prerequisite: SPAN 3204.

STATISTICS

See also "Mathematics".

Note: All prerequisite courses must be passed with a grade if C or better. See beginning of Section H for abbreviations, course numbers and coding.

STAT 2043 Statistics for Social Scientists I. 3 ch (3C)

Topics from survey statistics: simple random sampling; systematic sampling; question composition; scaling techniques. Topics from basic statistics: descriptive statistics; estimating/testing means, standard deviations, proportions; paired data versus two independent samples; chi-square tests. Prerequisite: Successful completion of at least one year of program. NOTES: Credit can be obtained in only one of STAT 2043, 2253, 2263, 2264, 2593. Not to be taken for credit by CS, MATH or STAT majors.

STAT 2253 Introductory Statistics For Forestry Students 3 ch (2C 2L)

Emphasis on applications to forestry and biology, using a statistical package. Graphical and numerical summaries of data; Populations, samples, sampling techniques; Normal distribution; Estimation and tests for means, medians, proportions; Individual versus mean behaviour; Matched pairs, independent samples, analysis of variance; Regression; Chi-squared tests for categorical data. NOTE: Credit can be obtained for only one of STAT 2043, 2253, 2263, 2264, 2593.

STAT 2263 Statistics for Students of Biological Sciences 3 ch (3C)

An introductory course in statistics. Probability, application of Bayes' Theorem. Binomial and Normal random variables. Confidence intervals for means and proportions. Prediction intervals. Tests of hypotheses. Paired data versus two independent samples. Brief introduction to analysis of variance. Regression, correlation. Contingency tables. Examples drawn from medicine and kinesiology. Use of a statistical computer package. Prerequisite: New Brunswick Mathematics 112 and 122, or equivalent. NOTE: Credit can be obtained in only one of STAT 2043, 2253, 2263, 2264, 2593.

STAT 2264 Statistics for Biology 3 ch (3C)

An introductory course in statistics. Probability, Bayes' Theorem, applications of probability to genetics. Random variable, expectation. Binomial and Normal random variables. Confidence intervals for means and proportions. Prediction intervals. Tests of hypotheses. Paired data versus two independent samples. Brief introduction to analysis of variance. Regression, correlation. Contingency tables. Examples drawn from medicine and biology. Use of a statistical computer package. Prerequisite: A minimum grade of 60% in New Brunswick Advanced Mathematics (120), or equivalent. Note: Credit can be obtained in only one of STAT 2043, 2253, 2263, 2264, 2593.

STAT 2283 Elementary Sampling Theory and Nonparametric Methods 3 ch (3C)

A non-theory course intended for non-Statistics students. Topics include: introduction to sampling theory, i.e. simple random sampling, stratified sampling, systematic sampling, multistage or cluster sampling and questionnaires; introduction to nonparametric statistics, i.e. sign test, Wilcoxon (or Mann-Whitney) rank sum test, runs test and Kolmogorov-Smirnov test. Prerequisite: An introductory course in Statistics.

STAT 2293 Elementary Statistical Computing 3 ch (3C)

A non-theory course intended for non-statistics students. Introduction to the use of statistical computer packages as a tool for analyzing data. Formulation of data. Descriptive statistics. One-way frequency distributions. Cross-tabulations. Tests of means. Regression. Analysis of variance. Other topics. The course will concentrate on the use of one of SAS, SPSS and BMDP with reference to the other packages. Prerequisite: An introductory course in Statistics. Note: This course may not be taken for credit by students in Computer Science.

STAT 2593 Probability and Statistics for Engineers 3 ch (3C)

Probability: Elementary Notions, Discrete and Continuous Distributions, Characteristics of Distributions. Statistics: Sampling, Estimation and Hypothesis Testing, Curve Fitting, Quality Control. Prerequisite: MATH 1013. Note: Credit can be obtained in only one of STAT 2043, 2253, 2263, 2264, 2593.

STAT 3043 Statistics for Social Scientists II 3 ch (3C)

Topics from survey statistics: stratified sampling; cluster sampling. Questionnaires: construction, administration, interpretation and reporting. Topics from basic statistics: regression; one way and two way analysis of variance. Prerequisite: STAT 2043. Not to be taken for credit by CS, MATH or STAT majors. Note: Credit can be obtained for only one of STAT 3043, 2253, 2263, 2264, 2593.

STAT 3083 Probability and Mathematical Statistics I 3 ch (3C)

The first half of a two-part sequence covering various topics in probability and statistics. This course provides an introduction to probability theory and the theory of random variables and their distributions. Probability laws. Discrete and continuous random variables. Means, variances, and moment generating functions. Sums of random variables. Joint discrete distributions. Central Limit Theorem. Examples drawn from engineering, science, computing science and business. Prerequisite: MATH 1013.

STAT 3093 Probability and Mathematical Statistics II 3 ch (3C)

The second half of a two-part sequence covering various topics in probability and statistics. This course provides an introduction to essential techniques of statistical inference. Samples and statistics versus populations and parameters. Brief introduction to method of moments and maximum likelihood. Tests and intervals for means, variances and proportions (one and two-sample). Multiple regression, residual plots. Analysis of variance, brief introduction to experimental design. Chi-squared tests. Examples drawn from engineering, science, computing science and business. Use of a statistical computer package. Prerequisite: STAT 3083.

STAT 3303 Methods of Operations Research I 3 ch (3C)

Linear programming, the simplex method, post optimal analysis, derivation of dual theorem, game theory, network analysis. Various applications will be discussed. Prerequisite: MATH 2003 or equivalent and 2213.

STAT 3313 Methods of Operations Research II 3 ch (3C)

A continuation of STAT 3303. The topics include: dynamic programming, integer programming, nonlinear programming, inventory theory, and forecasting. Prerequisite: STAT 3303.

STAT 3353 Game Theory (A) 3 ch (3C)

Finite games, min-max theorems, game theory and linear programming, cooperative games, zero-sum and non-zero sum games, games with infinitely many strategies, continuous games with separable, convex kernels, games of timing, introduction to multi-stage and differential games, utility theory. Aimed at Mathematics students interested in applications and at students in other areas who wish to be able to solve problems containing conflicting situations by means of game theory. Applications of the result of game theory to problems in applied mathematics, military, social and management sciences. Prerequisite: One of MATH 2013, MATH 2503, or MATH 2213.

STAT 3373 Elementary Experimental Design 3 ch (3C)

Randomization, one and two way classifications. Latin squares, factorial experiments, nesting, incomplete blocks, linear regression. Emphasis on applications. Extensive use of a statistical computer package. Prerequisite: STAT 2263, 2264, 2593, or 3093; and MATH 2003, 2213, or 2503.

STAT 3383 Introduction to Stochastic Processes (A) 3 ch (3C)

Exact contents may vary from year to year, e.g.: counting processes and Poisson processes; renewal processes (discrete); finite state Markov chains; stationary covariance processes. Prerequisite: STAT 3083 and one of MATH 2013 or MATH 2213.

STAT 4043 Sample Survey Theory 3 ch (3C)

Simple random sampling; stratified sampling; systematic sampling; multi-stage sampling; double sampling; ratio and regression estimates; sources of error in surveys. Prerequisites: STAT 3093.

STAT 4053 Regression Analysis 3 ch (3C)

Likelihood ratio tests; distribution of quadratic forms, noncentral chi square, noncentral F; independence of quadratic forms; linear models, model classification; general linear hypothesis of full rank, Gauss-Markov theorem, normal equations, tests of hypotheses; polynomial models; orthogonal polynomials; regression models; experimental design models; estimable functions. Prerequisite: STAT 3093, MATH 2213.

STAT 4073 Nonparametric Statistics 3 ch (3C)

Sign test; Mann-Whitney test; Wilcoxon's Signed Rank test; Rank correlation, Goodness-of-fit tests; 1 x 2, 1 x k, 2 x 2, r x c Contingency Tables, m Rankings, Friedman Index, Order Statistics. Prerequisite: STAT 3093 or the permission of the instructor.

STAT 4083 Introduction to Multivariate Statistics 3 ch (3C)

Multivariate normal distribution; estimation of the mean vector and covariance matrix; partial and multiple correlation coefficients; multiple regression; the T2 statistics; tests of hypotheses; discriminant analysis; principal components; factor analysis. Prerequisites: 6 ch of Calculus, 3 ch of Linear Algebra and STAT 3093.

STAT 4303 Stochastic Models In Operations Research 3 ch (3C)

Discusses various models involving decision making under uncertainties. Topics include: queueing theory, Markovian decision process, reliability and quality control, simulation. Prerequisites: STAT 3083 and 3303 (may be taken concurrently).

STAT 4333 Queuing Theory (A) 3 ch (3C)

Introduction, queueing models. Single and multiserver queueing models. Analysis of queueing models using differential difference equation, generating functions, distribution of busy periods. Transient behaviour, introduction to bulk queuing and other queueing models. Prerequisite: STAT 3083.

STAT 4443 Time Series Analysis and Applications (A) 3 ch (3C)

Discrete time series and stochastic processes; autocorrelation and partial correlation functions; white noise; moving averages; autoregressive, mixed and integrated processes; stochastic models, fitting, estimation and diagnostic checkup; forecasting; forecasting in seasonal time series; applications would include problems from Economics, Engineering, Physics. Prerequisite: STAT 3093. Ability to use computer and library computer programs preferable.

STAT 4903 Independent Study in Statistics 3 ch

Advanced topic in Statistics to be chosen jointly by student, advisor, and Department Chair. May be taken for credit more than once. Title of topic chosen will appear on transcript. Prerequisite: Permission of Department.

DIPLOMA IN TECHNOLOGY MANAGEMENT AND ENTREPRENEURSHIP

Note: See beginning of Section H for abbreviations, course numbers and coding.

TME 3013 Entrepreneurial Finance 3 ch

An introduction to fundamentals of finance in new ventures and/or high growth technology-driven businesses. Students will learn how to interpret and analyze financial statements and develop proforma financial statements. The course will enable students to enhance their knowledge of sound principles of finance and alternative sources of finance. Students will learn about venture capital financing and initial public offerings (IPO) and the role they play in financing high growth, high tech businesses. Students will also develop skills in financing negotiations. Prerequisite(s): 80 credit hours of approved courses.

TME 3113 Business Planning and Strategy in an Entrepreneurial Environment 3 ch

An introduction to business planning and strategy concepts in start-up and early stage technology-driven businesses. The course addresses all functional activities in a typical business enterprise including finance, marketing, production, and human resource management. Business analysis and planning skills are developed and students are introduced to new business paradigms in the global, digital economy. Prerequisites: 80 credit hours of approved courses.

TME 3213 Quality Management 3 ch

TME 3213 is designed to prepare participants for the management practices which they might expect to encounter in a progressive organization. Many of these practices involve the standardization and continuous improvement of business processes. The course explores implementation and maintenance techniques for ISO 9000, the international standard on quality management. It also focuses on the use of continuous improvement and Statistical Process Control (SPC) concepts, which lead to fundamentally new ways of thinking about innovation and problem solving. TME 3213 is one of the core courses in the Technology Management and Entrepreneurship Diploma. Prerequisite: 80 credit hours of approved courses.

TME 3313 Managing Engineering & Information Technology Projects 3 ch

The future of most organizations depends on successful projects. The participants will gain an understanding of the principles of project management including organizing, planning, scheduling and controlling projects to achieve a set of objectives. The course will enhance knowledge and skills of project managers in such topics as concurrent engineering, problem solving, people managements skills, managing project risks, controlling project changes and systems thinking. Emphasis is placed on technology-intensive projects which tend to have a high degree of specialized human resources skills/knowledge requirements. Prerequisite(s): 80 credit hours of approved courses.

TME 3346 (BA 3346) Marketing of Technological Goods and Services 3 ch

Provides an introduction to the marketing of technology focussed on industrial goods and services. Includes essentials of marketing, such as product development, promotional design, distribution, pricing/budgeting determination, strategic analysis, communication skills, client/customer relations, and considerations for the small business environment. Prerequisites: 80 credit hours of approved courses.

TME 3413 Technological Creativity and Innovation 3 ch

An introduction to technological entrepreneurship from two perspectives, i.e. creativity - the production of new technology-based business ideas/opportunities by entrepreneurs, and, innovation - the implementation of those ideas. Students will be exposed to entrepreneurship as a career alternative, the entrepreneurial process, creativity and its components, management of creativity and innovation in organizations, evaluation of entrepreneurial opportunities and the linkages between entrepreneurship, creativity and innovation. Students generate venture ideas, evaluate the feasibility, pitch the merits, and create a business plan that they defend in a contest. The course is particularly aimed at students who aspire to launch their own startup, those who would like to investigate startup as a career option, or those who merely wish to familiarize themselves with the concepts, issues, and techniques of new venture creation and entrepreneurship. Prerequisite: 80 credit hours of approved courses.

TME 3423 Technological Risk and Opportunity 3 ch

An introduction to mature and emerging technologies and the entrepreneurial opportunities arising from these technologies. Students will be exposed to the evolution of technology-intensive industry sectors, assessment of technological risk from an entrepreneurial perspective and the economic and social impacts of technology on society. Prerequisite: 80 credit hours of approved courses.

TME 3913 Experiential Learning - Technology Management and Entrepreneurship 3 ch

An opportunity for experiential learning related to the management of technology and/or technological entrepreneurship. Students must propose, design, develop and implement a project in collaboration with an external organization. The project must be jointly supervised by a representative of the external organization and a designated faculty member. Prerequisites: 80 credit hours of approved courses, normally 6 credit hours of TME courses and approval by the Dr. J. Herbert Smith Chair of the project proposal to be submitted by the student prior to registration in the course.

WOMEN'S STUDIES

Note: See the beginning of Section H for abbreviations, course numbers and coding.

REQUIRED COURSES

WS 2003 Introduction to Women's Studies 3 ch

Provides an introduction to Women's Studies with an emphasis on perspectives from the humanities and social sciences. Examines various aspects of women's experiences and the status of women in Canada and elsewhere.

WS 4004 Seminar in Women's Studies 3 ch

Critically examines the assumptions underlying existing disciplines as they relate to the study of women and men, and explores new theoretical and methodological perspectives for studying the gender-based aspects of society. Prerequisite: WS 2003.

WS 4900 Honours Thesis in Women's Studies 6 ch

Involves directed reading and research leading to an Honours thesis on a topic in Women's Studies. Women's Studies students will consult with the Coordinator in finding a suitable topic and thesis supervisor. Prerequisites: WS 2003 and WS 4004.

WORLD LITERATURE AND CULTURE STUDIES

Note: See the beginning of Section H for abbreviations, course numbers and coding.

WLCS 1001 Sex, God and War: An Introduction to Pre-Modern World Literature 3 ch (3C) [W]

A study of major texts (in English translation) of world literature written before 1900. Authors, texts and literatures studied will vary but may include, e.g. The Bible, Dante, Omar Khayam, Lope de Vega, Goethe, Strindberg, Mickiewicz, Dostoevsky, etc. Conducted in English. Open to students of all years. No prerequisites.

WLCS 1002 Modernity, Eternity, and Cultures in Collision: An Introduction to 20th-Century World Literature 3 ch (3C) [W]

A study of major modernist and contemporary texts of world literature (in English translation). Authors, texts and literatures studied will vary but may include, e.g. Milosz, Brecht, Ionesco, Camus, Marquez, Kafka and Pasternak. Conducted in English. Open to students of all years. No prerequisites.

WLCS 1013 The Culture of Spain and Latin America I 3 ch [W]
(Cross Listed: SPAN 1013)

Spain and Latin America before 1500: Art, Literature, Music and Society. A multimedia approach will be used. Conducted in English. Open to students of all years. No prerequisites.

WLCS 1014 The Culture of Spain and Latin America II 3 ch (3C) [W]
(Cross Listed: SPAN 1014)

Spain and Latin America after 1500 : Art, Literature, Music and Society. A multimedia approach will be used. Conducted in English. Open to students of all years. No prerequisites.

WLCS 1043 Russian Culture I 3 ch (3C) [W]
(Cross Listed: RUSS 1043)

Significant aspects of Russian culture from the 10th to the end of the 19th century. Topics include Russian Icon Painting and Architecture, Russian culture between Europe and Asia; Ivan the Terrible as cultural type; women in Russian culture; serfdom and slavery; Russia's contribution to the development of terrorism and revolution; the reforms of Peter the Great; Russian Orthodoxy, etc. Conducted in English. Open to students of all years.

WLCS 1053 Russian Culture II 3 ch (3C) [W]
(Cross Listed: RUSS 1053)

Significant aspects of Russian and Soviet culture in the 20th century. Topics include Russian avant garde painting; the Bolshevik Revolution and apocalyptism; class and corruption; Socialist Realism; Stalin and Stalinism; women's roles under the Soviets; Eisenstein and Soviet cinema; the artificial famine and the Gulag; literature and censorship; Soviet sport and society; Glasnost and culture; etc. Conducted in English. Open to students of all years. No prerequisites.

WLCS 1061 German Culture I 3 ch (3C) [W]
(Cross Listed: GER/GS 1061)

A survey of German civilization from the time of early European tribal migrations to the rise of nationalism in the nineteenth century. Taking a sociohistorical perspective, students will be acquainted with a selection of key developments within the German-speaking cultures, including aspects of history, literature, music, architecture, and painting. Assigned readings, lectures, and slide shows aim at raising an awareness of the interrelationship between cultural heritage, historical and political developments, and artistic expression. Conducted in English. Open to students of all years. No prerequisites.

WLCS 1071 German Culture II 3 ch (3C) [W]
(Cross Listed: GER/GS 1071)

Significant aspects of German culture from the beginning of the industrial revolution to the end of the 20th century. Topics will vary, but may include: German Impressionism and Expressionism, Early German Film, the Women's Movement, Early German Homosexual Rights Movement, Weimar Culture, Nazi Art, Literature after 1945, Divided and Re-unified Germany, New German Film, and others. Conducted in English. Open to students of all years. No prerequisites.

WLCS 3003 Contemporary Issues in World Literature and Culture 3 ch (3S) [W]

A seminar with varying content addressing literary and cultural periods, genres or themes as expressed across cultural borders. Conducted in English. Open to students who have completed at least 30 ch of university courses or by permission of instructor.

WLCS 3011 Romanticism 3 ch (3C) [W]

Romanticism is the first literary movement that crosses all European borders--from Russia to England--and filters into the New World. This course studies the major concepts and themes of Romanticism, including Napoleonism, idealism, individualism, nationalism, irony, the poet as genius, etc., in the works of German, Russian, Polish, Spanish, Latin American, and other writers. Conducted in English. Open to students who have completed at least 30 ch of university courses or by permission of instructor.

WLCS 3063 Literature of the Holocaust 3 ch
(Cross Listed: GER/GS 3063)

Addresses questions on a selection of literary and film responses to the Holocaust in various cultures and genres. Includes the perspectives of Jewish and non-Jewish survivors, children of survivors and others more removed. Particular attention is paid to the ethical and aesthetic challenges the Holocaust poses. Topics include: victims and oppressors, and the role of stereotypes in their depictions; the possibilities and limitations of language to express unimaginable horrors; and the role and appropriateness of literature as medium to respond to the historical, cultural, and psychological complexities of the Holocaust. Texts are read in English translation. No prerequisites.

WLCS 3066 Early German Cinema (O) 3 ch [W]
(Cross Listed: GER 3066)

Beginning with the earliest silent movies and concluding with National Socialist propaganda films, this course offers an introduction to a prolific and important era in German film history: the Weimar Republic and pre-WWII period, 1918-1939. Our discussions will situate the films within larger political and cultural discourses. Emphasis will be placed on such topics as the cinematic response to the trauma of WWI; German national identity; expressionism and modernity; the politics of gender and sexuality; the impact of sound on film aesthetics; the relationship between cinema and other media; the ethics of film production. Films to be studied include features by directors such as Lang, Lubitsch, Murnau, Pabst, Riefenstahl, Sagan, von Sternberg and Wiene. In English.

WLCS 3072 Studies in Contemporary German Cinema 3 ch
(Cross Listed: GER/GS 3072)

Studies the major accomplishments of East and West German cinema of the postwar period, as well as cinematic trends since German unification. We will consider questions of narrative, genre, and authorship, examine film's relationship to other media, and focus on the dynamic interaction between film history and social history. Films to be studied include features by prominent directors such as Wolf, Fassbinder, Wenders, von Trotta, Carow, Dörrie, and Tykwer.

WLCS 3877 Modern Drama (A) 3 ch (3C) [W]

A survey of major developments in 20th-century theatre. Plays will be studied with attention to their often controversial engagements with social and political issues, moral debates, and theatrical conventions, as well as their connections to movements such as realism, modernism, expressionism, and absurdism.

WLCS 4043 Literature and Religion in 19th and 20th Century Russia and Spain *(Cross Listed: SPAN/ RUSS 4043)* 3 ch (3C)

Studies religious works of Spanish and Russian writers such as Unamuno and Tolstoy. Examines their religious thought and their criticism of the established Spanish Roman Catholic Church and Russian Orthodox Church respectively. Outlines the situation of the Eastern Orthodox Church in Russia as well as the situation of the Catholic Church in Spain in the 19th and the 20th Centuries. Analyzes the position of these writers towards their respective Churches and the creation of their own moral codes through the texual analysis of some of their most relevant works.

WLCS 4053 Culture and Film: The Cinema of Transitional Democracies 3 ch (3C) [W]

Examines a selection of important films from Germany, Latin America and the Caribbean, Poland, Russia, and Spain. The selection will be tied to questions arising from the recent movement of these cultures from various forms of autocracy to new and emerging forms of democracy. Seeing film both as a medium of artistic expression and as a carrier of social values, the course seeks to develop an understanding of the moving image not only in its aesthetic and narrative modes, but also in socio-cultural, political, and historical contexts. Screenings are in the evening. Conducted in English. Open to students who have completed at least 30 ch of university courses or by permission of instructor.

WLCS 4063 20th Century Women Writers 3 ch (3C) [W]

A study of selected texts by European (primarily German, Russian, Polish, and Spanish), Caribbean and Latin American women writers of the twentieth century. Through textual analysis, the course examines the conditions of women in diverse cultures as well as aspects of the cultural construction of female identity. Conducted in English. Open to students who have completed at least 30 ch of university courses or by permission of instructor.

WLCS 4071 Aspects of the 20th-Century Literary Avant-Garde 3 ch (3C) [W]

An intercultural and interlingual examination of major literary avant-garde movements from a variety of cultures and their relations to other cultural and artistic avant-gardes. Topics covered will vary but may include Expressionism (Benn and Hauptmann); Futurism and Tyranny (Russian, Polish and Italian); Magic Realism; Theatre of the Absurd (Ionesco, Becket, the Polish "Dead School"); Existentialism; etc. Conducted in English. Open to students who have completed at least 30 ch of university courses or by permission of instructor.

WLCS 4083 Interdisciplinary Seminar 3 ch (3S) [w]

An interdisciplinary seminar examining some aspect of the interactions of literature--whether a single text or a body of texts by one or more authors--with other cultural texts. Conducted in English. Open to students who have completed at least 30 ch of university courses or by permission of instructor.

WLCS 5000 Honours Thesis 6 ch [W]

A reading and research course open to students qualifying for Honours in World Literature and Cultural Studies. To enroll in this course students must first identify two professors from different specializations to supervise their project, and then have the project and supervisors approved by the Department. The project will lead to the writing of an Honours Thesis, normally 40-60 pages in length. .