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 the World Wide Web at:
http://www.hil.unb.ca/Texts/calendar

Inquiries regarding academic matters should be directed to one of the Offices of the Registrar

Fredericton Campus
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University of New Brunswick
Fredericton, New Brunswick, E3B 5A3
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The editor, Alison Webb, acknowledges the production assistance of Sandy Bird and James MacGregor of the UNB Electronic Text Centre and all those who have helped with proof- reading this edition of the Undergraduate Calendar.
Errors and omissions are the responsiblity of the editor.

Calendar of Academic Dates 2002-2003

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.

FALL TERM 2002

July		
Tuesday	**2**	Summer Term begins.
August		
Monday	**5**	New Brunswick Day. No classes.
Saturday	**10**	Summer Term ends.
September		
Monday	**2**	Labour Day.
Tuesday-Friday	**3-6**	Academic Programming and Orientation week. Details to be announced.
Monday	**9**	Start of classes. Both Campuses.
Monday	**9**	Last day for payment of fees.
Sunday	**22**	Last day for adding Fall term and full-year courses. Fall term and full year courses dropped up to and including this date not shown on transcript of record.
Friday	**27**	Last Day to opt-out of Health and Dental Plan.
October		
Monday	**14**	Thanksgiving Day. No classes.
Thursday	**24**	Fall Convocation - Fredericton Campus.
Friday	**25**	Fall Convocation - Saint John Campus.
Sunday	**27**	Last day to withdraw from Fall term course with refund (see University Refund Policy, pg. C.3).
November		
Monday	**11**	Remembrance Day. No classes.
Wednesday	**13**	Last day to withdraw from Fall term courses without academic penalty (no refund).
Wednesday	**20**	Last day in Fall term to hold class tests (see Examination, Standing and Promotion, A. General, Item 7).
December		
Wednesday	**4**	Last day of classes.
Thursday-Friday	**5-6**	Reading period.
Saturday	**7**	First day of Examinations.
Thursday	**19**	Last day of Examinations.

WINTER TERM 2003

January		
Monday	**6**	Start of classes - Winter term.
Friday	**10**	Last day for payment of Winter term fees.
Sunday	**19**	Winter term courses dropped up to and including this date not shown on transcript of record. Last day to withdraw from full-year courses without academic penalty with refund (see University Refund Policy, pg C.3).
Friday	**24**	Last Day to opt-out of Health and Dental Plan for those students who enrolled in January 2003.
Friday	**31**	Last day for payment of University fees for full-time students paying by installments.
February		
Sunday	**23**	Last day to withdraw from Winter term courses with refund (see University Refund Policy, pg C.3).
March		
Monday-Friday	**3-7**	Mid-term break. No classes.
Monday	**10**	Advising and Registration for continuing students begins. Details to be announced by Faculties.
Wednesday	**19**	Last day to withdraw from Winter term courses without academic penalty (no refund).
Wednesday	**26**	Last day in Winter term to hold class tests (see Examination, Standing and Promotions, A. General, Item 7).
April		
Wednesday	**9**	Last day of classes.
Thursday-Friday	**10-11**	Reading Days.
Saturday	**12**	First day of Examinations.
Friday - Monday	**18-21**	Easter Weekend
Monday	**28**	Last day of Examinations.
May-July		Spring Session. Details to be announced.
May		
Thursday	**1**	Intersession begins.
Monday	**19**	Victoria Day - No Classes.
Wednesday-Thursday	**28-29**	The One Hundred and Seventy-Third Encaenia - Fredericton Campus.
Friday	**30**	Twenty-Eighth Convocation - Saint John Campus.
June		
Friday	**20**	Intersession ends.

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FREDERICTON COURSE DESCRIPTIONS

THE BOARD OF GOVERNORS
2001-2002

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Vice-President (Research): Gregory S. Kealey, BA, MA, PhD, FRSC, FRHistS
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Director of Alumni Affairs: Mark Hazlett, BPE, MPE

Appointed by the Lieutenant-Governor-In-Council

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David Stevenson, BBA, CA, Moncton, N.B. (Sept. 2004)
Edward J. Doherty, M.D., Saint John, N.B. (Sept. 2002)
Georges Roy, BScEng, PEng, Edmundston, NB (Sept 2004)
Gerry Pond, BA, Saint John, N.B. (June 2003)
Kathryn McCain, BA, Florenceville, N.B. (Sept. 2001)
Robert Boudreau, LLB, Petit Rocher, N.B. (Sept. 2002)
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Sandra Irving, BA, MA, Saint John, N.B. (Sept. 2003)

Appointed by the Board of Governors

Anne-Marie McGrath, BA, BEd, MEd, Saint John, N.B. (June 2004)
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G. Wayne Squibb, BA, Toronto, ON (June 2002)
Nancy McFadyen, BA, Toronto, ON (June 2002)
S. Freeman Dunnett, FCA, Moncton, N.B. (June 2004)

Elected by Alumni and Alumnae

Earl Brewer, BA, LLB(UNB), Fredericton, NB(June 2003)
Jane McGinn-Giberson, BScEng, MEng , PEng, Fredericton, N.B. (June 2002)
Kevin Ratcliff, BA, LLB, B.C.L., Montreal, PQ (June 2004)
Marti-Lou Neill, BA, Fredericton, N.B. (June 2003)
Sally McAllister, BA, BEd, Fredericton, N.B. (June 2002)

Elected by the New Brunswick Teachers' Association

Mary Wilson, BA, BEd, MEd (June 2004)

Elected by the Faculty

Fred Donnelly, BA, MA, PLD, Saint John Campus (June 2002)
Gillian Thompson, BA, MA, PhD, Fredericton Campus (June 2002)
Gordon Mason, BSc, MSc, PhD, Fredericton Campus (June 2002)
Jane Fritz, BSc, MScCS, DPhil, Fredericton Campus (June 2002)
John Johnson, BSc, MSc, PhD Saint John Campus (June 2003)
Tryphonopoulos, Demetres BA, MA, PhD, Fredericton Campus (June 2004)

Elected by the Student Body

Fredericton Campus	*Saint John Campus*
Brian Crothers (June 2002)	Sasha Patino (June 2002)
Scott Duguay (June 2002)	

Governors Emeriti

M. Louise Lynch, QC, BCL, LLD, DCL
M. Patrick Gillin, BSc, BScE, DSc, Ottawa, Ont.
Reginald E. Tweeddale, BEng, DSc, PEng
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Secretary

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FREDERICTON SENATE
2001-2002

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Vice-President (Academic): John D. McLaughlin, BScE, MScE, PhD, PEng
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Registrar (Fredericton): David J. Hinton, BSc, MSc

FACULTY REPRESENTATIVES

Faculty of Administration
Judy A. Roy, BPR, MBA (2004)
Muhammed Rashid, MA, PhD (2003)

Faculty of Arts
Evelyn Plaice, BA, MA, PhD (2004)
James S. Murray BA, MA, PhD (2002)
Peter Kent, BA, BEd, MScEcon, PhD (2004)
W. Robbins, BA, MA, PhD (2002)
Will van den Hoonaard, BA, MA, PhD (2004)

Faculty of Computer Science
Gerhard Dueck, BSc, MSc, PhD (2004)

Faculty of Education
Helmut W. Ott, BA, MA, PhD (2004)
Lawrence Bezeau, BSc, MEd, MA, PhD (2004)

Faculty of Engineering
Edmund Biden, BScE, DPhil (2002)
Michael C. Ircha, BSc, MPI, MPA,NDC, PhD, PEng (2004)
Michel Couturier, BSc, MSc, PhD, PEng (2003)

Faculty of Forestry & Environmental Management
John A. Kershaw, BS, MS, PhD (2003)

Faculty of Kinesiology
Phillip H. Wright, BA, BPE, MS, EdD (2003)

Faculty of Law
Randy Graham, LLB, D Jur (2004)

Faculty of Nursing
M.L. Ouellet, BSN, MSN (2004)

Renaissance College
Jennifer Pazienza, BA, MEd, PhD (2004)

Faculty of Science
Bruce Broster, BSc, PhD (2004)
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Janet Moss, BA, MLS (2004)

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Brain Lowry, BASc, MASc, PhD (2003)
David Coleman, BSc, MScE, PhD, PEng (2003)
Julia Noel, BA, MN (2003)
Richard Tervo, BSc, MSc, Phd (2004)
Robert McKellar, BMath, MMath, PhD (2002)
Vacant

ALUMNI REPRESENTATIVE
G. Keilty, BPE, BA (2004)

THE ELECTED FREDERICTON FACULTY MEMBERS OF THE BOARD OF GOVERNORS
Demetres Tryphonopoulos, BA, MA, PhD (2004)
Gillian Thompson, BA, MA, PhD (2002)
Gordon Mason, BSc, MSc, PhD (2002)
Jane Fritz, BSc, MScCS, DPhil (2002)

MEMBERS APPOINTED BY THE BOARD FROM THE MEMBERS OF THE BOARD EXCLUSIVE OF THE ELECTED FACULTY MEMBERS OF THE BOARD
Sally McAllister, BA, BEd (2004)
Scott Duguay (2002)

STUDENT REPRESENTATIVES ELECTED AT LARGE
Craig Murray (2002)
Maria Barrett-Morris (2002)
Michelle Sarchfield (2003)
Trina Simms (2002)
Vacant
Vacant

PART-TIME STUDENT REPRESENTATIVE
Penny Decker (2002)

GRADUATE STUDENT REPRESENTATIVE
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SECRETARY
Stephen Strople, BA, MA

SAINT JOHN SENATE
2001-2002

EX OFFICIO
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**Subject to revision of the University of New Brunswick Act*

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Faculty of Arts
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Faculty of Business
Jsun Wong, BS, MA, MBA, PhD (2003)
Ebrahim Roumi, BSc, MBA, PhD (2003)

Faculty of Science, Applied Science and Engineering
Lawrence Garey, BSc, MA,PhD(2003)
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FACULTY MEMBERS ELECTED AT LARGE
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Christopher Doran, BA, MA, PhD (2002)
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Katherine Frego, BSc, MSc, PhD (2002)
Rameshwar Gupta, BSc, MSc, MA, PhD (2004)
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MEMBER APPOINTED BY AND FROM THE MEMBERS
OF THE BOARD EXCLUSIVE OF THE ELECTED FACULTY MEMBERS OF THE BOARD
Carey Ryan, BA, BEd, MEd (2002)

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Philip Keyser (June 2002)

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PEOPLE AT UNB
2001-2002

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Art Centre:
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Bookstore
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Stephen Rosenfeld, Asst Director ITS & Director Admin. Information Svcs
Oakes, Terry, Director of Imaging Services

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Exececutive Assistant to the President: Louise Boldon, BEd, MPE
Exec.Secretary/Assistant to President: Trudy Abernethy

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Kathy Waugh, BBA, Assistant Registrar - Undergraduate Awards
Shirley Carroll, BEd, MEd, Associate Registrar - Admissions and Enrolment

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TBA, Director

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Michel Ouellette, BA, MA, PhD, Director

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Security and Traffic
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Student Affairs and Services
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Student Recruitment and Integrated Marketing
Susan Mesheau, Director

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University Secretariat
Stephen Strople, BA, MA, University Secretary
Alison Webb, BBA, Assistant University Secretary

Wu Conference Centre
Margot Young, BEd, Director

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Advancement, Communication & Recognition
David Emerson, BAA, EcD, Director

Alumni
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Athletics
Robert A. Bonnell, BPE, BA, MA, Director

Bookstore
Pat Joas, Manager

Community Relations
Gina Wilkins, BA, Director

Electronic Commerce Centre
Shelley Rinehart, BA, MBA, PhD, Director

Faculty of Education Co-ordinator
Neil H. Scott, BA, BEd, MEd, PhD

Financial and Administrative Services
Christopher Callbeck, BBA, CA, Assistant Vice-President

Health Sciences Coordinator
Brenda Schyf, BN, BA, MEd

Information Services & Systems
Susan Collins, BA, MLS, Director

Integrated Technology Services
Osborne, Steven, BScCS, MScCS (UNB) Director, Computing Services 1991

International Liaison Office
Barry Beckett, BSc, DipEd, PhD, Director, BBA Program in Beijing
Debra McLathcy, BSc, PhD, Director

International Recruitment Centre
Robb Parker, BA, BEd, Manager

Math Help Centre
Thanaa Anis Kamel, BSc, Director

Modern Languages Centre
Paul-Émile Chiasson, BA, B.Ed, MA, PhD, Director

Operations
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Registrar's Office
John A. Johnson, BSc, MSc, PhD, Registrar (Saint John)
Margaret V. Murphy, BBA, Assistant Registrar (Saint John)
Susan Ellis-Loparco, BScPE, MBA, Manager of Admissions

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Shirley Gardiner, Manager

Safety and Security
Joanne Croft, Manager

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Stephen Strople, BA, MA, Senate Secretary

Student Services
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Kevin Bonner, BA, MEd, Assistant Director

Vice President's Office
Nancy Waugh, Secretary to the Vice-President

Ward Chipman Library
Susan Collins, BA, MLS, Chief Librarian

Web Services
John Webster, BA, Director
Isil Flynn, BA, Web Manager

ALLAN P. STUART EXCELLENCE IN TEACHING AWARD RECIPIENTS

Fall Convocation 1972
Leonard P. Edwards (Mathematics, F)
Barbara J. Pepperdene (Sociology, F)

Encaenia 1973
Allan P. Stuart (Chemistry, F)
R. Wayne Jollinau (Administration,SJ)

Encaenia 1974
William Y. Smith (Economics, F)
Zdenek Valenta (Chemistry, F)

Encaenia 1975
Lawrence E. Garey (Mathematics, SJ)
Leonard C. Smith (Classics, F)

Encaenia 1976
Sidney I. Pobihushchy (Political Science, F)
Joanne E. Harris (Mathematics, SJ)

Encaenia 1977
Gilbert Allardyce (History, F)
Wilfred B.W. Martin (Sociology, F)

Encaenia 1978
Ronald M. Lees (Physics, F)
Verne M. Ireton (Mechanical Engineering, F)

Encaenia 1979
Thomas A. Austin (Computer Science, F)
Daniel M. Keppie (Biology & Forestry, F)

Encaenia 1980
Clayton R. Lewis (Mathematics, F)
C. Shirley MacLeod (Nursing, F)

Encaenia 1981
Kevin Halcrow (Biology, SJ)
Howard McFarlane (Civil Engineering, F)

Encaenia 1982
Daniel M. Hurley (Law, F)
Linda A. Parker (Psychology, SJ)

Encaenia 1983
G. Charles Kuun (Political Science, F)
Reavley Gair (English, F)

Encaenia 1984
Beverley G. Smith (Law, F)
David Rehorick (Sociology, F)

Encaenia 1985
Arun J. Valsangkar (Civil Engineering, F)
Wiktor Askanas (Administration, F)

Encaenia 1986
Jillian Sullivan (Mathematics & Statistics, F)

Spring Convocation 1986
Peter McGahan (Dean of Faculty, SJ)

Encaenia 1987
Barbara MacKinnon (Biology, F)
Donald F. Rowan (English, F)

Encaenia 1988
James M. Tolliver (Administration, F)
Teresa Killoran (Education, F)

Encaenia 1989
Jane M. Fritz (Computer Science, F)
Friedrich Grein (Chemistry, F)

Encaenia 1990
Byron Walton (Engineering, SJ)
William Chernoff (Mathematics & Statistics, F)

Encaenia 1991
Roger Ploude (English, F)
William Mullin (Biology, F)

Encaenia 1992
Barbara Trenholm (Administration, F)

Fall Convocation 1992
Phillip Wright (Administration, F)

Encaenia 1993
David Townsend (Law, F)
Spring Convocation 1993
Robert Chanteloup (Sociology, SJ)

Encaenia 1994
Lesley Fleming (Biology, F)
Spring Convocation 1994
Mohammad Hamdan (Mathematics, Statistics

Encaenia 1995
Gracie Getty (Nursing, F)
Steven Turner, (History, F)

Fall Convocation 1996
James Murray (Classics & Ancient History, F)
Judy Buchanan (Nursing, SJ)

Fall Convocation 1997
Katherine Frego (Biology, SJ)
Wendy Robbins (Women's Studies, F)

Fall Convocation 1998
Ruth Shaw (Mathematics, Statistics & Computer Science)
Stephen Ross (Physics, F)

Fall Convocation 1999
Lilly Both (Psychology, SJ)
Paul McDonnell (Psychology, F)

Fall Convocation 2000
Diana Austin(English, F)
Thom Erdle (Forestry & Environmental Management, F)

Fall Convocation 2001
Barry G. Bisson (Engineering, F)
Edward W. Robak (Forestry & Environmental Management F)

THE FACULTY
2001-2002

Professors and Deans Emeriti

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
Beattie, Ira M., BScE, MS - Civil Engineering
Boone, Allan E., BSc, MA - Physics
Bottomley, Frank, BSc, MSc, PhD, DSc, FCIC-Chemistry
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
Easterbrook, James A., BA, MA, PhD - Psychology
El Khadem, Saad E. A., Dr Phil - German and Russian
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
Gujar, Uday, BE, MTech, MScE - Computer Science
Hamilton, Angus C., BASc, MASc - Surveying Engineering
Hamilton, Willis D., BA, MA, BEd - Education
Hawkes, Robert E., BA, BEd, MA - Education
Kaiser, Reinhold, BSc, MSc, PhD - Physics
Kelly, Ronald B., BSc, MSc, PhD - Chemistry, Saint John
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
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
Paim, Uno, BA, PhD - Biology
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
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
Stirling, Mary Lou, BA, MEd, EdD - Education
Taylor, A. Ronald A., BA, PhD - Biology
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 - Geodesy & Geomatics Engineering
Venart, James, BASc, PhD - Mechanical Engineering
Verma, Ram D., BSc, MSc, PhD- Physics
Wells, David E., BSc, BASc, MASc, PhD - Geodesy and Geomatics Eng
Young, D. MacMurray, BA, PhD - History

Librarian Emerita

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

FREDERICTON FACULTY 2001-2002

FACULTY OF ADMINISTRATION

Abekah, Joseph Y., BScAdmin (Ghana), MSc (Boston), MAc (BGSU), PhD (UNL), Assoc Prof - 1991
Arcelus, Francisco J., BA (Cal State Univ, Northridge), MS, PhD (Carnegie-Mellon), Prof - 1976
Askanas, Wiktor, BA (Poznan), MBA, PhD (Warsaw), Prof - 1983
Audas, Richard, BBA (UNB), MBA, MA (Dal), PhD (Wales), Asst Prof, Joint Faculty of Education (CRISP) - 2000
Betts, Norman, BBA (UNB), CA, PhD (Qu), Assoc Prof - 1992
Boothman, Barry E.C., BA (Brock), MBA, PhD (York), Assoc Prof - 1986
Chareka, Patrick, BSc, MSc (Zimbabwe), PhD (UNB), Lecturer - 2001
Coleman, Daniel, BA, PhD (SUNY-Buffalo), Prof and Dean - 1986
Doran, Patrick, BBA (UNB), PhD (Georgia), Asst Prof - 2000
Dunnet, Jane, BSc, MBA (UNB), 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 (McMaster), MASc (Waterloo), PhD (Toronto), Asst Prof - 2001
Grant, E. Stephen, BBA (UNB), MBA (Maine at Orono), PhD (Memphis), Prof and Assoc Dean (Research & Outreach) - 1993
Hinton, Joanne, BSc (Guelph), CMA, Lecturer - 1999
Kabadi, Santosh N., BS (Bom), MTech (IIT/B), PhD (Texas), Prof - 1985
Laughland, Alan R., BSc, MSc (Guelph), MBA (McM), CMA, Assoc Prof - 1971

Lim, William, BComm (Alta), MS (Econ), PhD (Carnegie-Mellon), Asst Prof - 1999
Lin, Edward Y.H., BSc (Tunghai), MS, PhD (Iowa), Prof - 1984
Maher, Elin, BBA (UWO), MBA (Maine at Orono), CA, Assoc Prof - 1988
Maher, Robert, BSc (UNB), MBA (McG), CA, Prof - 1988
Mighty, E. Joy, BA, Dip Ed, MA, Dip Management Studies (West Indies), MBA (Howard), PhD (York), Assoc Prof and Coordinator, Teaching & Learning Centre - 1992
Mitra, Devashis, BA (Delhi), CA, PhD (Mass-Amherst), Prof - 1991
Nasierowski, Wojciech, BAEngME, MScEng (Warsaw Univ. of Tech), PhD (Warsaw - Mgmt. Inst. for Organization Develop), Prof - 1991
Nevers, Richard, BA (STU), MBA (UNB), Lecturer - 2000
Otuteye, Eben, BA (Ghana), MA (UNB), PhD (Qu), Assoc Prof - 1987
Ouyang, Ming, BEng (Tsinghua), MA (UBC), PhD (Manitoba), Asst Prof -2001
Post, Patricia, BA, MEd (UNB), Lecturer - 2002
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 and External Programs Manager - 1989
Roy, Judy Ann, BPR (Mt. St. Vin), MBA (UNB), Sr.Teaching Assoc - 1993
Schaefer, Norbert V., BComm (UBC), PhD (Calif-Berkeley), Prof - 1976
Sharma, Basu D., BA, MA (Tribhuvan) AM, PhD (Ill), Prof - 1985
Sheppard, Reginald, BEd, BSc, BA (Mem), MEd (UNB), Lecturer - 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 (Tor), Asst Prof - 1999
Tolliver, James M., BS, PhD (Ohio), Prof - 1981
Trenholm, Barbara A., BComm (Mt A), MBA (Maine at Orono), FCA, CA, Prof - 1980
Whalen, Hugh, BSc, BBA (UNB), PhD (U. of Minnesota), CA, Sr. Teaching Assoc and Assoc Dean (Programs) - 1992

FACULTY OF ARTS

Department of Anthropology

Black, David W., BA (Simon Fraser), MA, PhD (McM), Prof - 1991
Lovell, Peter R., BA (Wat), MA, PhD (McM), Assoc Prof - 1980
Mitra, Koumari, BSc, MSc, PhD (Delhi), Asst Prof - 2000
Paponnet-Cantat, Christiane, BA (UBC), MA, PhD (SFU), Prof and Chair - 1988
Plaice, Evelyn, BA (Oxford), MA (Nfld), PhD (Manc), Assoc Prof (Joint Education) - 1999
Pool, Gail R., AB (Calif), MA (McM), PhD (McG), Prof - 1976
Wiber, Melanie, BA (Leth), MA, PhD (Alta), Prof - 1987

Department of Classics and Ancient History

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 (Pitts), Prof and Chair - 1984

Department of Culture and Language Studies

Dueck, Cheryl, BA, MA (Sask), PhD (McG), Asst Prof - 2000
Hamling, Anna, BA, BEd (Cardiff), MA (Qu), ABD (UBC), Inst - 1999
Linton, Murray, BA, MA (UNB), Sr. Inst and Dir Multimedia Studies - 1999
Lorey, Christoph, Industriekaufmann (Germany), BA, MA, PhD (Alta), Assoc Prof - 1994
Noel, Dexter J., BA (McG), MA (Tor), CPF (UNB), CIS (UBC), Assoc Prof - 1969
Reid, Allan, BA (Sask), MA, PhD (Alta), Prof and Chair - 1991

Department of Economics

Brander, John R.G., BA (UNB), MA (Qu), Hon Res Prof - 1998
Cook, Beverly A., BA, MA (UNB), PhD (SFU), Prof and Chair - 1980
Dickson, Vaughan, BA (UNB), MA, PhD (UWO), Prof - 1974
Lantz, Van, BA (Carlton), MA (Dal), PhD (SFU), Asst Prof (Joint For & Enviro Mgmt) - 2000
Law, Stephen, Adjunct Prof - 2001
Law, Stephen, PhD (Toronto), Adjunct Prof. - 2001
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
Passaris, Constantine E., BA (American U, Cairo), MA (Nfld), PhD (Leicester), Prof - 1972
Rezun, Miron, BA (York), MA (Tor), MA, PhD (Geneva), Prof (Joint Political Science) - 1987
Rowcroft, John E., BSc, MSc (Manc), PhD (SFU), Prof and Dean - 1973
Ruggeri, Giuseppe, MA (Mich), PhD (State Univ of New York), Prof and Vaughan Chair - 2000
Yevdokimov, Yuri, BSc (Sumy), MA (Academy of Science), MSc (Ill), PhD (Manitoba), Asst Prof. (Joint Civil Eng.) - 1999
Yu, Weiqiu, BSc (Shandong), MA (UNB), PhD (SFU), Assoc Prof - 1993

Department of English

Andrews, Jennifer, BA (McG), MA (Tor), PhD (Tor), Asst. Prof. - 1999
Austin, Diana, BA (UNB), MA (Qu), DPhil (Oxon), Prof - 1983
Ball, John C., BA, MA, PhD (Tor), Assoc Prof - 1995
Cameron, A. Barry, BA, MA (Windsor), PhD (Rutgers), Prof - 1976
Canitz, A. E. Christa, BA, MA (Birmingham), PhD (UBC), Assoc Prof - 1993
Cockburn, Robert H., BA, MA (UNB), Prof - 1967
Davies, Gwendolyn, BA (Dal), MA (Tor), PhD (York), Prof & Dean of Graduate Studies - 2000
Doerksen, Daniel, BA (Winn), Bed (Manit), MA, PhD (Wis), Hon Res Prof - 1998
Falkenstein, Len, BA, MA (Sask), PhD (Alta), Asst Prof - 1999
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 (Concordia), PhD (Tor), Assoc Prof - 1997
Martin, Randall, BA (Tor), MA(Birmingham), D.Phil (Oxon), Prof - 1994
Mullaly, Edward J., BA (Windsor), MA, PhD (UNB), Hon Res Prof - 1999
Ploude, Roger J., BA (STU), MA (Dal), PhD (Qu), Prof and Chair - 1972
Rimmer, Mary P., BA (Concordia), AM, PhD (Harv), Prof - 1991
Robbins, Wendy J., BA (Bishops), MA, PhD (Qu), Prof - 1984
Snook, Edith, BA, MA (Alta), PhD (UWO), Asst Prof - 2001
Tryphonopoulos, Demetres, BA, MA, PhD (UWO), Prof and Asst Dean, Sch of Grad Studies - 1990

Department of French

Brown, Anne, BA (UNB), MA (McM), PhD (McG), Prof - 1988
Carrière, Marie, BA (Ottawa), MA (Qu), PhD (Tor), Asst Prof - 2001
Charron, Danielle, BA (Ottawa), MA (Ottawa) Lecturer - 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 and Chair - 1973
Sauvé, Rachel, BA (Laval), MA (McM), PhD (Tor), Assoc Prof - 1997
Viau, Robert, BA, MA, PhD (Ott), Prof - 1989
Villiard, Pierre, BA, MA (Sher), PhD (Toulouse-Le Mirail), Assoc Prof - 1988

Department of History

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
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), Prof - 2002
Kennedy, Sean, BA (Nfld), MA, PhD (York), Asst Prof - 1999
Kent, Peter C., BA, BEd (UNB), MScEcon, PhD (Lond), Prof - 1965
Lemire, Beverly J., BA, MA (Guelph), DPhil (Oxf), Prof and Univ Res Prof-1987

McTavish, Lianne, BA (Western), 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), Asst Prof. - 2000
Patterson, Stephen E., BA (UNB), MA, PhD (Wis), Prof - 1964
Thompson, D. Gillian, BA (UBC), MA (Stan), PhD (UBC), Prof and - 1972
Turner, R. Steven, BA (N Carolina), PhD (Prin), Prof - 1971
Waite, Gary K., BTh (Ont. Bible Col), BA, MA, PhD (Wat), Prof - 1987

International Development Studies Program

D. Noel (Spanish), Director, C. Paponnet-Cantat (Anthropology), A. Brown (French), J. McFarland (Economics, STU), G. Pool (Anthropology), M. Rezun (Economics), T. Workman (Political Science), T. Myatt (Economics), J. Ball (English), G. Whiteford (Education), T. Good (STU).

Law in Society Program

L. Neilson (Sociology), W. Kerr (Classics and Ancient History), K. Culver (Philosophy) Director , D. Bedford (Pol. Science), C. Poulin (Psychology), R. Sigurdson (Political Science), L. Wisniewski (Sociology), D. Duplessis (Administration).

Linguistics Program

P. Villiard (French), W. Cichocki (French)- Director, A. Klinck (English), R. Leavitt (Education), V. Hill (UNBSJ).

Department of Philosophy

Ahern, Daniel, BA (STU), MA (UNB), PhD (McM), Asst Prof - 1999
Culver, Keith, BA (Vic.B.C.), 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, BA (Carleton), MA (McG), PhD (Georgia), Asst Prof - 2000

Department of Political Science

Allen, J. Garfield, BA (Alta), Assoc Prof - 1969
Bedford, David W., CEGEP Dip (Sir G Wms), BA (C'dia), MA, PhD (York), Prof - 1989
Grondin, Conde R., BEd, MEd, PhD (Alta), Hon Res Prof - 1999
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, BA (York), MA (Tor), MA, PhD (Geneva), Prof (Joint Economics) - 1987
Sigurdson, Richard, BA, MA (Manit), PhD (Tor), Assoc Prof and Chair- 1999
Workman, W. Thom, BA(Car), MA, PhD (York), Assoc Prof - 1994

Department of Psychology

Byers, E. Sandra, BA (Roch), MA, PhD (W Virginia), Prof - 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), Asst Prof - 2000
Donaldson, A. Wayne, BSc, MA (Alta), PhD (Tor), Prof and Assoc Dean - 1971
Fields, Donald L., BA (Alta), MEd (Calg), PhD (York), Prof - 1974
Hiew, Chok Choong, BA, MA, PhD (Colorado), Prof - 1974
LaChapelle, Diane, BSC (McM), MA, PhD (Regina) - Asst Prof - 2002
MacLaren, Vance, BA, MA (UNB), Lecturer, 2001
Nicki, Richard M., BA, MA (Conn), MA, PhD (Tor), Prof and Chair - 1967
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 (Acadia), 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), Assoc Prof - 1975
Voyer, Daniel, BSc, MSc (Montreal), PhD (Waterloo), Asoc Prof - 2000

Russian Studies Program

A. Reid (German & Russian) Director, M. Rezun (Econ), T. Rhinelander(STU).

Department of Sociology

Ameh, Robert, BA (Ghana), BA (Oslo), MPhil (Oslo), MA (SFU), PhD (SFU), Asst Prof - 2001
Bowden, Gary, BA (W. Wash), MA, PhD (Calg), Assoc Prof - 1990
Harrison, Deborah, BA (Qu), MA, PhD (York), Prof - 1995
Hornosty, Jennie M., BA (Cal Berkeley), MA (Dal), PhD (York), Prof - 1980
Kufeldt, Kathleen, BSW, MSW, PhD (Calgary), Adjunct Prof - 1997
Lautard, E. Hugh, BA, MA (UNB), PhD (UBC), Prof - 1975
Low, Jacqueline, BA, MA (Conc.), DPhil (McMaster), Asst Prof - 2001
Macdonell, Allan, BA (StFX), PhD (Boston Coll), Prof - 1971
Miedema, Baukje, BA, MA, PhD (UNB), Adjunct Prof - 1996
Nason-Clark, Nancy BSc (Houghton Col. NY), MA (Wat), PhD (Lond), Prof - 1994
Neilson, Linda, BA, LL.B (UNB), PhD (Lond), Assoc Prof - 1993
Rehorick, David A., BA, MA, PhD (Alta), Prof (Cross Appt- Renaissance College) - 1974
Richardson, C. James, BComm (Alta), MA (Tor), PhD (Lond), Prof and Chair - 1975
Rideout, Vanda, BA (Qu), MA, PhD (Car), Asst Prof - 1998
van den Hoonaard, Willy C., BA (UNB), MA (Nfld), PhD (Manc), Prof - 1979
Wisniewski, Lawrence J., BA (St John's), MA (N Dakota), PhD (McM), Assoc Prof - 1979

Women's Studies Program

D. Bedford (Political Science), A. Brown (French), B. Lemire (History), J. Hornosty (Sociology), J. Murray (Classics and Ancient History), N. Nason-Clark (Sociology), C. Poulin (Psychology),A/Coordinator, W. Robbins (English), J. Stoppard (Psychology), G. Thompson (History), M. Wiber (Anthropology), Thom Workman (Political Science), J. Richardson (Sociology).

FACULTY OF COMPUTER SCIENCE

Aubanel, Eric, BSc (Trent), PhD (Queen's), Asst Prof - 2002
Bhavsar, Virendrakumar C., BEng (Poona), MTech, PhD (IIT/B), Prof - 1983
Bremner, David, BSc (Calg), MSc (S Fraser), PhD (McG), Asst Prof - 1999
Cooper, Rodney H., BMath, MMath (Wat), Prof (Cross Appt-Chemistry)- 1975
DeDourek, John M., BS, MS (Case), Prof - 1970
Deslongchamps, Ghislain, BSc (Sher), PhD (UNB), Assoc Prof (Cross Appt-Chemistry) - 1992
Du, Weichang, Bsc (Beijing), MSc, PhD (Vic.BC), Assoc Prof - 1991
Dueck, Gerhard, BSc, MSc, PhD (Manit), Prof - 1999
Evans, Patricia, BscCS(Alta), MscCS, PhD (Vic.B.C.), Asst Prof - 1997
Fleming, Michael, BSc (MtA), MMath, PhD (Waterloo), Asst Prof - 2003
Fritz, Jane M., BSc (McG), MScCS (UNB) DPhil (York, Britain), Prof and Dean - 1982
Ghorbani, Ali Akbar, BS (Tehran), MS (GWU), PhD (UNB), Assoc Prof - 1999
Goldfarb, Lev, Dipl Math & CS (USSR), PhD (Wat), Assoc Prof - 1982
Golubitsky, Oleg, Dipl Math (Moscow State), Asst Prof - 2002
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, BMath (UNAM), MS(CS) (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 and Asst Dean- 1979
Lopez-Ortiz, Alejandro, BMath (Natl Univ Mexico), MMath, PhD (Wat), Adjunct Prof - 1998

MacIsaac, Dawn, BPE (McMaster), BEd (Queen's), BEng (McMaster), MScE (UNB), PhD candidate (UNB), Asst Prof (Joint Electrical and Computer Engeering) - 2002
Macneil, David G., BEng, MEng (NSTC), Prof - 1971
McAllister, Andrew, BA, MSc(CS)(UNB), PhD (Sask), Assoc Prof - 1994
McAnany, Debbie, BSc (McG), Sr. Inst - 1998
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 and Asst Dean - 1970
Spencer, Bruce, BSc (Dal), MMath, PhD (Wat), Adjunct Prof - 1990
Stockie, John, BMath (Wat), PhD (UBC), Asst Prof (Cross Appt - Math & Stats)- 2001
Stratton, Anne, BSc (MtA), BSc, MSc (UNB), Sr Inst - 2001
Ward, Kirby, BSc (UPEI), MScCS (UNB), Research Assoc - 2000
Ware, Colin, BSc (Durham), MA (Dal), MMath CS (Wat), PhD (Tor), Adjunct Ptrof - 2000
Webber, Natalie, BSC, MCS candidate (UNB), Instructor - 2001
Wightman, Richard, BScF, MScF (UNB), Sr Instr - 2001
Zhang, Huajie, BSc (China), MSc (China), PhD (UWO), Asst Prof - 2002

FACULTY OF EDUCATION

Allen, Paul H., BBA, BBE (StFX), MEd (Maine), Assoc Prof - 1985
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
Clarke, Gerald M., BA (Kenyon), MAT (Fordham), DA (Carnegie-Mellon), Prof (Cross Appt- Renaissance College) - 1975
Cooper, Timothy G., BMus, MMus (Tor), DMA (UGA), Prof - 1978
Dicks, Joseph, BA, BEd (Nfld), MEd, PhD (Ott), Prof - 1998
Doige, Lynda, BA, BEd, MEd (UNB), DPhil (Nottingham), Asst Prof, Micmac-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
Goodnough, Karen, BSc, BEd, MEd (Memorial), PhD (Toronto), Asst Prof - 2001
Haley, George T., BA (St.FX), MA (UNB), MScEd (Indiana), Hon Res Prof - 1999
Hughes, Andrew, BA, MA (Dub), BEd, MEd (Acad), PhD (Alta), Prof - 1983
Latchford, Sandra, BA (Guelph), MEd (UNB), Assoc Prof - 1986
Leavitt, Robert, BA, MAT (Harv), Prof and Dir., Micmac-Maliseet - 1981
McFadden Charles F., BSc (UBC), BEd (SMU), MSc (UBC), PhD (UWO), Adjunct Prof - 2001
McKenna, Mary, BSc (Fd Sci) (McG), MSc (Nutn)(Cornell), DPhil (Nottingham), Assoc Prof - 1993
Myers, Sharon, Bed, BA (UPEI), MEd (Ott), MEd, EdD (Harvard), Assoc Prof - 1996
Nason, Pamela N., MA (Stan), Cert of Ed (Birm), Prof - 1974
Ott, Helmut Walter, BA, MA, PhD (Tor), Prof - 1976
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 (Oxford), MA (Nfld), PhD (Manc), Assoc Prof (Joint 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), Asst Prof - 2000
Rehorick, Sally, BA, MA (Alta), DA (Grenoble), CAS (Harv), Prof - 1987
Rose, Ellen, BA, BEd (Victoria), MEd, DPhil (UNB), Asst Prof (Joint Arts) - 2001
Sears, Alan, BEd, MEd (UNB), PhD (UBC), Prof - 1988
Sloat, Elizabeth, BEd (UNB), MEd, PhD (McG), Asst Prof - 1999
Small, Marian S., BA (Adelphi), MA, EdD (UBC), Prof and Dean - 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
Varma-Joshi, Manju, BA (STU), MA (Dal), BEd (STU), MA (Moncton), PhD (OISE/UT), Asst Prof - 2002
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 (StFX), MS (N. Dakota), PhD (Minn), Assoc Prof - 1987

FACULTY OF ENGINEERING

Department of Chemical Engineering

Bendrich, Guida, Dipl. Ing. (T.F.H. Berlin), PhD (McM), PEng Prof - 1995
Chaplin, Robin A., BSc, MSc (Cape T), MSc, DIC (Lond), PhD (Qu), PEng, Prof, NBEPC Chair, Power Plant Eng.- 1986
Couturier, Michel F., BSc (UNB), MSc (MIT), PhD (Qu), PEng, Prof and Assoc Dean- 1983
Eic, Mladen, Dipl. Ing. (Sarajevo), MSc (Zagreb), MSc (Worcester Poly. Inst), PhD (UNB), PEng, Prof - 1990
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 Chair in Pulping Technology - 1993
Sain, Mohini, BSc (Calcutta), MSc (Indian Inst of Tech), PhD (Tech Univ of Czech), Adjunct Prof - 2001
Singh, Kripa, BE (Birla Inst), ME (Asian Inst), PhD (Regina), Asst Prof - 2000
Steward, Frank R., SB, SM, ScD (MIT), PEng, Hon Res Prof - 1995
Xiao, Huining, BEng, MEng (Nanjing), PhD (McMaster), Assoc Prof - 2001
Zhang, Zisheng (Jason), BESc (Hebei), MESc (Tianjin), MSc (Sask.), PhD (Waterloo), Asst Prof - 2001
Zheng, Ying, BESc, MESc (Northwest), PhD (UWO), Asst Prof - 1999

Department of Civil Engineering

Bischoff, Peter H., BASc (UBC), MEng (McG), PhD, DIC (Imperial Col, Univ. of London), PEng, Assoc 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 and Dean - 1987
Cooke, Arthur 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), Asst Prof - 2001
Gordon, Martin, BscEng (CE), MscEng (UNB), 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
Innes, J. David, BScE, MEng (UNB), PEng, Prof (seconded) - 1976

Ircha, Michael C., BSc, MPI, MPA (Qu), NDC (Nat'l Defence College), PhD (Cardiff -Wales), PEng, Prof and Assoc V.P. (Academic/Students) - 1979
Kan, Kwok-Tai, BSc (H.K.), PhD (UNB), PEng, Sr Teaching Assoc - 1971
MacQuarrie, Kerry, BScE (UNB), Msc, PhD (Wat), PEng, Assoc Prof - 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, BScE, MScE (UNB), PhD (UBC), Adjunct Prof - 1999
Schriver, Allison, B., BScE, MScE (UNB), PhD (McM), PEng, Assoc Prof - 1986
Singh, Kripa, BE (Birla Inst), ME (Asian Inst), PhD (Regina), Asst Prof - 2000
thomas, Michael D.A., PGCE (Nottingham), PhD (Aston), Prof - 2002
Valsangkar, Arun J., BE (Marathwada), ME, PhD (IIS Bangalore), PEng, Prof - 1981
Waugh, Lloyd, BScE (UNB), MS, Engr, PhD (Stan), PEng, Prof and Chair- 1984
Wilson, Bruce, BASc, MASc (Toronto), PhD (McM), Asst Prof - 2001
Wilson, Frank R., BScE, MScE (UNB), PhD (Birm), FCAE, FCSCE, PEng, Hon Res Prof - 1967
Yevdokimov, Yuri, BSc (Sumy), MA (Academy of Sciences), MSc (Ill), PhD (Manit), Asst Prof (Joint Economics) - 1999

Department of Electrical and Computer Engineering

Boutot, Tobie, BSCENG (UNB), PhD candidate (UNB), Research Assoc - 2001
Briggs, William, BSc (Mt. A), MScE (UNB), Sr Instructor - 2001
Brown, Anthony, BSc (UNB), PhD(UNB), Asst. Prof - 2001
Chang, Liuchen, BSc (N.Jiatong), MSc (China Acad of Railway Sciences), PhD (Queens), P.Eng., NSERC Chair in Environmental Design Engineering, Prof - 1992
Colpitts, Bruce, BScE, MScE, PhD (UNB), PEng, Prof - 1988
Diduch, Christopher Peter, BScE, MScE, PhD (UNB), Prof - 1981
Doraiswami, Rajamani, BEE (VJI, Bombay), MEE (IIS, Bangalore), PhD (Johns H), PEng, Prof - 1981
Englehart, Kevin, BScE, MScE, PhD (UNB), Asst Prof and Assoc Dir Inst of Biomedical Eng -1998
Hill, Eugene F., BScE, MScE (UNB), PhD (NC State), PEng, Prof - 1966
Hudgins, Bernard, BScE (UNB), MScE (UNB), PhD (UNB), Assoc Prof, Director Inst. of Bio. Eng. - 2001
Kaye, Mary E., BScE (UNB), MEng (Car), PEng, Assoc Prof - 1979
Lewis, J. Eugene, BScE (UNB), PhD (UBC), PEng., Director CADMI Microelectronics, Prof and Chair - 1969
Lovely, Dennis, BSc (Southampton), PhD (Strathclyde), Prof - 1982
Luke, David McG., BScEng, MScEng (Natal), Prof - 1969
MacIsaac, Dawn, BPE (McMaster), BEd (Queen's), BEng (McMaster), MScE (UNB), PhD candidate (UNB), Asst Prof (Joint Computer Science) - 2001
Narraway, John J., MSc, PhD (Cran ITP), 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 (Acadia), PEng, Professor Emeritus
Sharaf, Adel M.M., BSc (Cairo), MSc, PhD (Manit), PEng, Prof - 1981
Stevenson, Maryhelen, BEE (Gatech), MSEE, PhD (Stan), PEng, Assoc Prof - 1990
Taylor, James Hugh, BSEE, MSEE (Rochester), PhD (Yale), NSERC/Monenco Agra Chair - Instrumentation and Control, P.Eng., Prof - 1994
Tervo, Richard, BSc, MSc (McM), PhD (Laval), PEng, Prof - 1986
Thorne, David, Instructor - 2001
Veach, Ian, BA, BScE, MScE (UNB), Sr Teaching Assoc - 1985

Department of Geodesy and Geomatics Engineering

Bedard, Yvan, BSc, MSc (Laval), PhD (Maine at Orono), Adjunct Prof - 1999
Chrzanowski, Anna, MSc (Warsaw), MEng (UNB), PhD (Krakow), PEng, Adjunct Prof - 2000
Coleman, David, BScE, MScE (UNB), PhD (Tasmania), PEng, Prof and Chair- 1993
Dare, Peter, BSc (East London), MASc (Erindale College), PhD (East London), Assoc Prof - 2000
Featherstone, William, BSc (Newcastle-Upon-Tyne), D Phil (Oxford), Adjunct Prof - 2000
Hughes Clarke, John E., BA (Oxf), MSc (S'ton), PhD (Dal), Assoc Prof and Chair in Ocean Mapping- 1991
Langley, Richard B., BSc (Wat), PhD (York), Prof - 1981
Lee, Yuk-Cheung, BSc (SFU), MSc, PhD (UNB), PEng, Prof - 1986
Mayer, Larry, BSc (Rhode Island), PhD (Scripps), Adjunct Prof - 2001
McLaughlin, John D., BScE, MScE (UNB), PhD (Wis), PEng, Prof and President - 1972
Melvin, Gary, BSc (Dal), MSc (Acadia), PhD (UNB), Adjunct Prof - 1999
Nichols, Susan, BSc (Acadia), MEng, PhD (UNB), PEng, Prof - 1992
Pagiatakis, Spiros, Dipl. Ing. (Nat'l Tech Univ of Athens), MScE, PhD (UNB), PEng, Adjunct Prof - 2000
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
Woolnough, David, BSc (Glasgow), MScE, PhD (UNB), Adjunct Prof - 2000
Zhang, Yun, BSc (Wuhan), MSc (East China), PhD (Free University Berlin), Asst Prof - 2000
Zwart, Peter, BSc (Delft), MScE (UNB), PhD (Tasmania), Adjunct Prof - 2000

Department of Mechanical Engineering

Biden, Edmund N., BScE (UNB), DPhil (Oxf), Prof and Assoc Dean of Gradute Studies - 1987
Bonham, David J., BSc (Qu), MEng, PhD (McM), PEng, Prof - 1974
Carretero, Juan A., BEng (UNAM), MASc, PhD (Victoria), Asst Prof - 2002
Davies, Huw G., BSc, PhD (Imperial), PEng. Hon Res Prof - 2001
Dubay, Rickey, BSc Mech, MSc Mech (UWI), PhD (DalTech), PEng, Assoc Prof and Assoc Chair in Instrumentation and Controls - 1998
Gerber, Andrew, BScE (UNB), BA (Ambassador), PhD (UNB), PEng, Asst Prof - 2000
Hassan, Marwan, BSc (Helwan), MSc (Tuskegee), PhD (McMaster), Asst Prof - 2001
Holloway, Gordon, BSc (UNB), MASc, PhD (Ott), PEng, Prof - 1989
Hussein, Esam, BSc, MSc (Alexandria), PhD (McM), PEng, Prof and Chair - 1984
Johnston, Andrew, BSc (UNB), PhD (UBC), PEng, Adjunct Prof - 2001
Kishawy, Hossam, BSc (Helwan), MSc (Tuskegee), PhD (McM), PEng, Asst Prof - 2000
Lyon, Donald E., BS, MS, PhD (Purdue), PEng, Assoc 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, Pearl L., BEng, MASc (TUNS), PhD (UBC), PEng, CEng, Prof - 1994
Venart, James E.S., BASc (Tor), PhD (Glas), PEng, Prof Emeritus, Hon Res Prof - 1998
Waller, Edward, BSc, MScE (UNB), PhD (Rensselaer), PEng, Adjunct Prof (Joint Physics) - 1998

FACULTY OF FORESTRY AND ENVIRONMENTAL MANAGEMENT

Afzal, Muhammad, BScEng (UAF, Pak), MEng (AIT, BKK), PhD (Ehime), Asst Prof - 2000
Arp, Paul A., BSc (Car), PhD (McG), Prof - 1978
Beckley, Thomas, AB (Boudoin), MS, PhD (Wisconsin-Madison), Assoc Prof - 2000
Boer, Arnold, BSc (Agr), MSc (Guelph), PhD (UNB), Adjunct Prof 1989
Bourque, Charles, BSc (Dal), BSc (Alta), MScF, PhD (UNB), Assoc Prof - 1994
Chui, Ying Hei, BSc (S'ton), PhD (Brighton Poly), PEng, Prof and Dir, WSTC - 1993
Clair, Tom, BSc (MtA), MSc (Ottawa), PhD (McM), Adjunct Prof - 2000
Cooper, Paul, BSc (Tor), MSc (Oregon), BEd, PhD (Tor), 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), Asst Prof , Recreational Fisheries, (Joint Biology) - 1997
Daugharty, David A., BScF, MScF (UNB), Sr Teaching Assoc and Asst Dean - 1972
Diamond, Antony W., BA (Cantab), MSc, PhD (Aberdeen), Prof and Sr Chair/ Dir Atlantic Coop Wildlife Ecology Res Network (Joint Biology) - 1994
Erdle, Thom, BScF (UNB), MF (UBC), PhD (UNB), Prof - 1995
Eveleigh, Eldon, BSc, MSc (Mem), PhD (Toronto), 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), Prof - 1974
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 (Carleton), MA (Dal), PhD (Simon 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
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 (SFU), 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
Short, C. Antony, BScE, MScE (UNB), PEng, Hon Res Prof - 1998
Smith, Ian, BScCE (Sunderland Poly), MSc (Durh), PhD (Poly S Bank), PEng, 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
Zundel, Pierre, BScF, MScF (Tor), PhD (Laval), Prof and Univ Teach Prof (Cross Appt-Renaissance College) - 1991

FACULTY OF KINESIOLOGY

Albert, Wayne, BSc (Ott), MA (UWO), PhD (Qu), Asst Prof - 1999
Barclay, Katherine, BSc (UNB), MSc (Waterloo), PhD (Guelph), Instr - 2001
Cleave, Shirley, BA, MA (UWO), PhD (Ill), Assoc Prof - 1979
Hagerty, Terry, BA, BPHE (Qu), Die Educ, MA, (UWO), PhD (SUNY-Buffalo), Prof & Dean REnaissance College - 1991
McGarry, Timothy, BSc (Liv), MSc (Brad), MPE, PhD (UBC) Asst Prof - 2000
Neary, J. Patrick, BEd, MA (Vic), PhD (Alta), Assoc Prof - 2002
Potvin, Diane, BPE, BEd, MPE (Ott), Assoc Prof - 1976
Reid, Ian, BPE (Manit), MPE (UBC), PhD (Texas A & M), Assoc Prof and Asst Dean- 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
Sleivert, Gordon, BSc, MA, PhD (Vic), Assoc Prof - 2000
Stacey, Cynthia, BSc (Acadia), 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), Asst Prof - 1999
Wright, Phillip H., BA (Acadia), BPE (McM), MS, EdD (Tenn), Assoc Prof - 1974

FACULTY OF LAW

Bell, David G., BA, MA (Qu), LLB (UNB), LLM (Harv), Prof - 1985
Bird, Richard W., BBA, BCL (UNB), LLM (Col), Prof - 1968
Bladon, Geoffrey, BA (Manit), LLB (Qu), Prof - 1987
Bruce, Brian D., BA (Mt A), LLB (Dal), LLM (Lond), Prof and Acting Dean (2001-2002) - 1976
Dore, Karl, QC, BBA, BCL (UNB), LLM (Yale), Prof - 1984
Fleming, Donald J., BA (Mt A), LLB (UNB), LLB (Cantab), Prof - 1977
Gochnauer, Myron, BA (Roch), MA, PhD (UWO), LLM (Osgoode), LLB (Tor Law Sch), Assoc Prof - 1980
Graham, Randy, LLB (York), D Jur (Osgoode), Asst Prof - 2000
Kuttner, Thomas S., BA, MA, LLB, LLM (Tor), Prof - 1979
La Forest, Anne, BA (Ott), LLB (UNB), LLM (Cambridge- Emmanuel Col), Prof and Dean - 1996
McCallum, Margaret, LLB, BA, MA, PhD (Tor), Prof - 1990
McEvoy, John P., BA (STU), LLB (UNB), LLM (Osgoode), Prof - 1980
Pearlston, Karen, LLB (York), LLM (UBC), DJur candidate (York), Asst Prof - 2001
Penney, Steven, BA, LLB(Alta), LLM (Harvard), Asst Prof - 1998
Siebrasse, Norman V., BSc, LLB (Qu), LLM (Chicago), University Research Prof - 1993
Townsend, David A., BA (StM), LLB (Dal), LLM (Osgoode), Prof - 1979
Veitch, Edward, MA, LLB (Edin), Prof - 1979
Williamson, John R., BBA, LLB (UNB), LLM (Harv), Prof and Associate Dean - 1974

FACULTY OF NURSING

Amirault, Debra, BN, MN (UNB), Inst - 1999
Barclay, Katherine, BSc (UNB), MSc (Waterloo), PhD (Guelph), Inst (Joint Biology and Kinesiology) - 2001
Connell, Mary, Inst - 2001
Cruttenden, Kathleen, BScN (Tor), MHSc (McMaster), PhD (Waterloo), Asst Prof - 2001
Davidson, Patricia, BN (UNB), MN (Dal), Assoc Prof - 1991
Didyk, Andy, BA, PhD (UNB) Asst Prof Moncton/Bathurst Campuses (Joint Biology) - 1999
Dioron Maillet, Nancy, BN (UNB), MN (Dal), Sr Inst - 1991
Doucet-Clark, Celia, BN (UNB), Inst (Bathurst) - 2001
Dykeman, Margaret, BNRN (UNB), MS (ILL), PhD (UIC), Assoc Prof - 1998
Ellingsen, Roberta, BN (UNB), MN (Dal), MSA (Michigan), Inst - 1995
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, Instructor - 2001
Haller, Lorraine, BScN (Ott), MScN (UWO), Assoc Prof - 1987
Hodgins, Marilyn, BSN (UWO), MN, PhD (Alta), Asst Prof - 1998
Kenyon, Elaine, BN (McG), MN (UNB), Senior Inst - 1991
Lewis, Kathryn E., BN, BEd, MEd (UNB), Prof and Asst Dean BN/RN Program - 1976
MacDonald, Heather, BN (UNB), MScN (Tor), Assoc Prof - 1990
MacIntosh, Judith, BN (Dal), MScN (McG), Prof - 1990
MacKay, Emma, RN, BScN (M'ton), MEd (UNB), Inst - 1995
Mallet-Boucher, Monique, BScN, BEd, MEd (M'ton), MN (UNB), Sr Inst, Moncton Campus - 1995
Mazerall, Lorraine, BN (UNB), MN in progress, Instructor - 2001
McDermid, Anne, BSc (Victoria), MSc (McGill), Asst Prof - 2001
McKay, Aileen, BN (UNB), BEd (Mt. Allison), MN (UNB), Senior Inst, Moncton Campus - 1997
Merritt-Gray, Marilyn, BN (UNB), MSN (Wash), Assoc Prof - 1987
Noel, Julia, BA (UNB), MN (Dal), Sr Inst - 1988
Ouellet, Louiselle L., BSN (M'ton), MSN (UBC), Prof - 1986
Pelletier-Hibbert, Maryse, BN (UNB), MN (Dal), Prof - 1985
Robinson, Pamela, BN (UNB), Inst - 1991
Rogers, Ada, BN, MN (UNB), Senior Inst - 1999
Sangster-Gormley, Esther, BSN (N. Florida), MSN (S. Florida), Senior Inst - 2001
Savoie, Daniel, BScN (M'ton), MSc(A) (McGill), Inst, Moncton campus - 1997
Seaman, Patricia, BN (UNB), MN (Dal), Senior Inst. - 2001
Storr, Gail, BN, MEd (UNB), MN (Dal), Prof - 1982
Tamlyn, Karen, BN (UNB), MN (Dal), CON (c), Prof and Asst Dean - 1987
Trail, Marcia, BN (UNB), BEd (M'ton), MN (UNB), Inst - 1999
Vickers, Martha, BN (UNB), Inst, Bathurst Campus - 1999
Weaver, Kathy, BN (Dal), MN (UNB), Inst - 1991

Williamson, Joan, BN, BA, MN (UNB), Inst, Bathurst Campus - 1999
Wilson, Kathryn, BN (UNB), MN (Dal), Asst Prof - 1991
Winans, Patricia, BScN, BEd (M'ton), MN (UNB), Senior Inst, Moncton Campus - 1995
Woodside, Reida, BN (McG), MScN (UWO), Assoc Prof - 1985
Wuest, Judith, BScN (Tor), MN (Dal), PhD (Wayne State), Prof - 1987

RENAISSANCE COLLEGE

Aubanel, Eric, BSc (trent), PhD (Queens), Asst Prof (Joint Computer Science)- 2002
Clarke, Gerald M., BA (Kenyon), MAT (Fordham), DA (Carnegie-Mellon), Prof (Cross Appt- Education) - 1975
Furlong, Dolores, BN (Mem), MScN (UWO), PhD (Tor), Assoc Prof and Asst Dean - 1996
Haggerty, Terry, BA, BPHE (Qu), Dip Educ, MA (UWO), PhD (SUNY-Buffalo), Prof and Dean, Renaissance College - 1991
Pazienza, Jennifer, BA (Wm Patterson), MEd, PhD (Penn State), Prof (Cross Appt-Education) - 1989
Rehorick, David A., BA, MA, PhD (Alta), Prof (Cross Appt Sociology) - 1974
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 (Cross Appt- Forestry) - 1991

FACULTY OF SCIENCE

Department of Biology

Barbeau, Myriam, BSc (McG), PhD (Dal), Assoc Prof - 1999
Barclay, Katherine, BSc (UNB), MSc (Waterloo), PhD (Guelph), Instructor (Joint Kinesiology and Nursing) - 2001
Benfey, Tillmann, BSc (McG), MSc (Nfld), PhD (UBC), Prof - 1989
Campell, Douglas A., BSc (Acadia), PhD (UWO), Adjunct Prof - 2001
Cashion, Peter J., BSc (Boston Coll), PhD (Tufts), Prof - 1972
Castell, John, Adjunct Prof - 2001
Chardine, John, BSc (Guelph), MSc (Brock), PhD (Durham), Adjunct Prof - 1998
Clark, Denise V., BSc (UBC), PhD (S. Fraser), Assoc Prof - 1994
Coombs, David H., BA (Dartmouth), PhD (UCLA), Prof - 1980
Crowe, David G., BA, PhD (UNB), Sr Teaching Assoc and Dir, Animal Care - 1973
Cunjak, Richard, BSc (Guelph), MSc (Nfld), PhD (Wat), - Prof, Canada Research Chair and Can. Res. 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 (Aberdeen), Prof and Sr Chair/ Dir. Atlantic Coop. Wildlife Ecology Res. Network (Joint Forestry)- 1994
Didyk, Andy, BA PhD (UNB), Asst Prof, Moncton/Bathurst Campuses (Joint Nursing) - 1999
Dilworth, Timothy G., BSc (Ohio State), MSc (UNB), Prof and Chair - 1969
Durnford, Dion, BSc (Dal), PhD (UBC), Assoc Prof - 1997
Fleming, Lesley C., BA (Mt A), PhD (UNB), Sr Teaching Assoc - 1980
Forbes, Graham, BA (York), MA, PhD(Wat), Assoc Prof - 1997
Gloss, Angelique, BSc (UNB), Sr Teaching Assoc - 1973
Gordon, Karen J., BSc (UNB), Sr Teaching Assoc - 1980
Hamilton, Diana, BSc (McGill), MSc (Western), PhD (Guelph), Research Assoc - 2001
Heard, Stephen, BSc (Waterloo), PhD (Pennyslvania), Assoc Prof - 2002
Keppie, Daniel M., BS (Wis), MS (Ore), PhD (Alta), Prof (Joint Forestry) - 1974
Little, Charles, BScF (UNB), MF, PhD (Yale), Adjunct Prof (Joint Biology & Forestry) - 1989
Lynch, William H.W., BSc, PhD (UBC), Prof - 1975
Maxwell, Denis, BSc, PhD (UWO), Asst Prof - 2000
Mayes, Charlene, BSc, MS (S Fraser), BCIDP (Vancouver Community College), Sr Inst - 1997
Mullin, William J., BSc (McG), MEd (UNB), Sr Teaching Assoc - 1974
Munkittrick, Kelly, BSc, MSc (Guelph), PhD (Wat), Adjunct Prof - 1999
Nedelcu, Aurora, BSc (Romania), PhD (Dal), 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 (Acadia), PhD (S. Fraser), Prof & Canada Research Chair - 1995
Sharp, Lisa, Instructor - 2001
Sivasubramanian, Pakkirisamy, BSc, MSc (Annamalai), MS, PhD (Ill), Prof - 1975
Whoriskey, Fred, BSc (Ariz), PhD (Laval), Adjunct Prof - 1998

Department of Chemistry

Adam, Allan G., BSc, MSc (UWO), PhD (Wat), Prof (Cross Appt - Physics)- 1991
Balcom, Bruce, BSc (MtA), PhD (UWO), Prof (Cross Appt - Physics) - 1993
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), Research Assoc - 1995
Deslongchamps, Ghislain, BSc (Sher), PhD (UNB), Prof (Cross Appt- Computer Science) - 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), 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
Munro, Paul, BSc, BEd, MSc (UNB), Sr Teaching Assoc and Asst Dean - 1990
Neville, John, BSc (UNB), PhD (UBC), Asst 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
Xiang, Yan, BSc (Peking), PhD (UNB), Instructor - 2001

Department of Geology

Al, Tom, BSc, MSc (Mem), PhD (Wat), Assoc Prof - 1996
Broster, Bruce, BSc (Wat), PhD (UWO), Prof - 1987
Burke, Kenneth, BS, BSc, PhD (Leeds), Hon Res Prof - 1999
Butler, Karl, BSc (Ou's), MSc, PhD (UBC), Asst Prof - 1999
Donovan, Stephen, BSc (Manchester), PhD, DSc (Liverpool), Adjunct prof - 2000
Gingras, Murray, BSc, PhD (Albt), Asst Prof - 2000
Grieve, Richard, BSc (Aberdeen), MSc, PhD (Tor), MA (Brown), Dsc (Aberdeen), Adjunct Prof - 1995
Lentz, David Richard, BSc, MSc (UNB), PhD (Ott), Asst Prof - 2000
McCutcheon, Steven, Adjunct Prof - 2001
Park, Adrian, Asst Prof - 2001
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

Department of Mathematics & Statistics

Banerjee, P.K., BSc (Agra), MSc (ITT/K), PhD (Tor), Prof - 1971
Barclay, David W., BSc (Car), MMath (Wat), PhD (UWO), Prof - 1975
Chernoff, William W., BA (Sask), MSc (Tor), PhD (UNB), Prof - 1969
Gegenberg, Jack D., BA (Colorado), MSc (UBC), PhD (SFU), Prof - 1985
Husain, Viqar, BSc (Manchester), PhD (Yale), Assoc Prof - 1999
Ingalls, Colin, BSc (Dal), PhD (MIT), Asst Prof - 2000
Jones, Caroline, BA, MSc, BEd (UNB), Inst - 2001
Kucerovsky, Dan, BSc (UWO), Dphil (Oxford), Assoc Prof - 1999
Ma, Renjun, BS, MSc (Wuhan), PhD (UBC), Asst Prof (Joint CRISP) - 2000
Marchand, Eric, BSc, MSc, PhD (Montreal), Assoc Prof - 1999
Mason, Gordon R., BSc (Bishops), MSc, PhD (McG), Prof - 1969
McKellar, Robert J., BMath, MMath (Wat), PhD (Ariz), Assoc Prof - 1984
Menz, Petra, BEd, MSc (UBC), BSc (Scarborough), Lecturer - 2001
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), Assoc Prof - 1973
Small, R. Donald, BASc (Tor), MS, PhD (Cal Tech), Prof - 1973
Stockie, John, BMath (Wat), PhD (UBC), Asst Prof (Cross Appt-Computer Science) - 2000
Tasic, Vladimir, BSc (Novi Sad, Yugoslavia), PhD (Manit), Assoc Prof - 1995
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), MA, MSc (Mich Stat), PhD (Dal), Prof - 1986
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), Asst Prof - 2000

Department of Physics

Adam, Allan G., BSc, MSc (UWO), PhD (Wat), Prof (Cross Appt - Chemistry)
Armstrong, Robin L., BA, MSc, PhD (Tor), Hon Res Prof - 1996
Balcom, Bruce, BSc (Mt A), PhD (UWO), Assoc Prof (Cross Appt - Chemistry) - 1993
Benton, J. Bruce, BSc, MSc (UNB), Sr Teaching Assoc - 1983
Ghosh, S.N., BSc (Calc), MSc (Calc & Nfld), PhD (UNB), Sr Teaching Assoc - 1978
Hamza, Abdelhaq, BSc (Algiers), MSc, PhD (MIT), Prof - 1995
Lee, Ker-Ping, BSc (HK), MSc (UBC), PhD (McG), Sr Teaching Assoc - 1973
Lees, Georgina, BSc (UBC), Sr Teaching Assoc and Asst Dean - 1982
Lees, Ronald M., Bsc, Msc (UBC), PhD (Brist), Hon Res Prof - 1999
Linton, Colan, BSc, PhD, DIC (Lond), Prof - 1968
MacMillan, Bryce, BSc (UNB), MSc (Waterloo), PhD (UNB), Research Assoc - 2001
Newling, Benedict, BA, PhD (Emmanuel), Asst Prof - 2002
Ross, Stephen, BSc (Tor), MSc, PhD (Car), Prof - 1988
Sastry, K.V.L.N., BSc (And), MSc (BAN), PhD (Alig), Hon Res Prof - 1999
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 and Chair - 1973
Waller, Edward, Bsc, MscE (UNB), PhD (Rensselaer), (Joint Mechanical Eng) Adjunct Prof - 1999
Ward, William, BSc (UWO), PhD (York) - Assoc Prof - 2001
Yan, Zong-Chao, BSc (Shanghai), MSc (Tongji), MSc (Nfld), PhD (Windsor), Assoc Prof - 1999
Zhao, Saibei, BSc, MSc, PhD (UNB) Sr Inst - 2000

LIBRARIANS - Fredericton

Allan, Erma P., BA (UNB), BLS (Tor), Head, Cataloguing, HIL - 1967
Balcolm, Lesley, BA (MtA), MLIS (UWO), HIL - 2001
Beatty, Lindsay-Erin, BA (Ottawa), MLS (Western), HIL - 2001
Belier, Patricia, BA, MA, MLS (Tor), Collections Dev, HIL - 1982
Bragdon, Marc, BA (STU), MLIS (Dal), HIL - 1999
Burk, Alan C., BA (Hanover), MA, PhD (Brown), MLS (UWO), Assoc Dir, HIL and Dir Electronic Text Centre - 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 (Queen's), MLIS (Alberta), HIL - 2001
Hamilton, Elizabeth C., BA (UNB), MLS (UWO), MA (UNB), Head, Govt Doc, HIL - 1978
Holyoke, Francesca, BA (UNB), MLS (Dal), A/Head, Science and Forestry Lib - 1979
Johnston, Patricia E., BA, BEd (UNB), MLS (McG), MA (York), A/Head, Reference - 1980
Moss, Janet, BA (UNB), MLS (UWO), Law Library - 1991
Neilson, John, BA, MA (Acadia), MLS (McG), Documents, HIL - 1989
Pope, Andrew T., BA (New Sch NY), BEd (UNB), MLS (Tor), HIL - 1974
Rauch, Doris, BA, MSEd (Brooklyn), MLS (Pitts), 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
Wheeler, Barbara, BA (Mt St Vin), MSL (Dal), Cataloguing, HIL - 1985

ARTISTS-IN-RESIDENCE - Fredericton

Bobak, Bruno, LLD (St Thomas), DLitt (UNB), Honorary Painter-in-Residence
Steffler, John, BA (Tor), MA (Guelph), Writer-in-Residence
TBA, Musician-in-Residence

RESEARCH INSTITUTES AND CENTRES
Fredericton

Atlantic Cooperative Wildlife Ecology Research Network
Dimond, Antony BA (Cantab), MSc, PhD (Aberdeen), Prof and Senior Chair / Director

Avenor-Noranda Forest Centre for Watershed Conservation & Mgmt
Arp, Paul A., BSC (Car), PhD (McGill), Director

Biomedical Engineering, Institute of
Bush, Greg, BA, Dip O/P (Clin) CP(C), Prosthetist
Caldwell, Robert R., Manager
Englehart, Kevin, BScE, MScE, PhD (UNB), Asst Prof and Assoc Dir
Hudgins, Bernard S., BScE, MScE (UNB), PEng, Sr. Research Assoc and Director
Paasche, Per E., BSc (Dal), MEng (TUNS), PEng, Project Engineer
Stocker, Dinah, BSc (Qu), Res Occupational Therapist

Canadian Centre for Geodetic Engineering
Adam Chrzanowski, Director

Canadian Research Institute for Social Policy
Audas, Rick, BBA (UNB), MBA (MA (Dal), PdD (Wales), Asst Prof (Joint Administration)
Ma, Renjun, BS, MSc (Wuhan), PhD (UBC), Asst Prof (Joint Math) - 2000
Sloat, Elizabeth, BEd, MEd, PhD (McG), Asst Prof
Willms, Jon Douglas, Beng (RMC), MA (UBC), MSc, PhD (Stanford), Prof and Director

Canadian Rivers Institute
Cunjak, Richard, BSc (Guelph), MSc (Nfld), PhD (Wat), Director
Munkittrick, Kelly, BSc, MSc (Guelph), PhD (Wat), Assoc Director

CADMI - Microelectronics Centre
Lewis, Eugene, BScE (UNB), PhD (UBC), PEng - Electrical Eng, Director

Centre for Conflict Studies
Charters, David, BA, MA (UNB), PhD (Lond), Director

Centre for Criminal Justice Studies
Paul Gendreau, Director

Centre for Entrepreneurial Leadership
Armstrong, Larry, BA (UNB), Director

Centre for International Business Studies
Armstrong, Larry, BA (UNB), Director

Centre for Nuclear Energy Research
Steward, Frank R., SB, SM, ScD (MIT), Director

Centre for Property Studies
Methven, Ian, BScF (UNB), PhD (Duke), Director

Centre for Social Innovation Research
Keith Culver, Director

Centre for Watershed Management and Conversation Research
Meng, Fan-Rui, BS, MS (Northeast Forestry Univ.), PhD (UNB), Asst Prof and Director

Cooperative Fish and Wildlife Research Unit
Forbes, Graham J., BA (York), MA, PhD (Wat), Assoc Prof and Dir, Joint Forestry and Science

Early Childhood Centre
Pam Whitty, Director

Enterprise UNB
Fowler, Jerrie, Manager

Environment and Sustainable Development Research Centre
Davies, Jessie, Director

Information Technology Centre
Nickerson, Bradford G., BScE, MScE (UNB), PhD (Rensselaer Polyt Inst), Director

Jack McKenzie Chair in Pulp & Paper Research
Ni, Yonghao, BEng (Northwest Inst of Light Industry), MEng, PhD (McG), Director

Meighen-Molson Professorship in Atlantic Salmon Research
Cunjak, Rick, BSc (Guelph), MSc (Nfld), PhD (Wat), Prof and Chair

Mi'kmaq-Maliseet Institute
Leavitt, Robert, BA, MAT (Harv), Director

Muriel McQueen Ferguson Centre for Family Violence Research
Arsenault, Rina, BA, MSW (Moncton), Associate Director
Stirling, Mary Lou. BA (UNB), MEd (Tor), EdD (Penn), Acting Director

New Brunswick Centre for Educational Administration
Steve Pierce, Executive Director

Planetary & Space Science Centre
John Spray, Director

Second Language Education Centre
Rehorick, Sally, Ba, MA (Alta), DA (Grenoble), CAS (Harv), Director

Sir James Dunn Wildlife Research Centre
Forbes, Graham J., BA (York), MA, PhD(Wat), Prof and Dir, Joint Forestry and Science

Teaching and Learning Centre
Mighty, Joy E., BA, DipEd, MA, Dip Mgmt. Studies (West Indies), MBA (Howard), PhD (York), Assoc. Prof., Coordinator - 1992

Wood Science and Technology Centre
Chui, Ying Hei, Bsc (S'ton), PhD (Brighton Poly), PEng, Prof and A/Director
Cooper, Paul, BScF (Tor), MSc (Oregon State), BEd, PhD (Tor), Hon Res Prof

SAINT JOHN FACULTY 2001-2002

FACULTY OF ARTS

Department of History and Politics

Cavaliere, Patrick, BA, MA (York), D.Phil. (Oxford), Asst Prof - 1999
Desserud, Donald A., BA, MA (Dal), PhD (UWO), Prof 1989
Donnelly, Frederick, BA (Car) MA, PhD (Sheff), Prof & Chair 1979
Everitt, Joanna, BA (Carleton), MA, PhD (Toronto), Assoc Prof - 1997
Goud, Thomas, BA (Calg), MA, PhD (Tor), Asst Prof - 1994
Jeffrey, Leslie, BA (Acadia), MA (Carleton), PhD (York), Asst Prof - 1998
Lindsay, Debra, BA (Sask), MA, PhD (Man), Assoc Prof- 1997
Marquis, Greg, BA (SFX), MA (UNB), PhD (Queens), Asst Prof - 1999
Toner, Peter M., BA (STU), MA (UNB), PhD (NUI), Prof 1971
Whitney, Robert, BA, MA (Alberta), PhD (Queen's), Asst Prof - 2000

Department of Humanities and Languages

Belanger, Louis, BA (Montreal), MA (Quebec), PhD (Sherbrooke), Assoc Prof - 1990
Bell, Sandra, BA, MA (McMaster), PhD (Queen's), Asst Prof - 2000
Creelman, David, BA (Acadia), MA (UNB), PhD (York), Asst Prof - 1998
Flagel, David, BA (UNB), MA, PhD (Qu), Assoc Prof and Chair 1989
Hill, Virginia, MA (Bucharest), MA, PhD (Geneva), Assoc Prof - 1990
Jones, Miriam, BA (Tor), Ma, PhD (York), Asst Prof - 1999
Langham, Paul, BA, MA (Wales), PhD (Alta), Assoc Prof 1972
Maier, Sarah, BA, MA, PhD (McMaster), Assoc Prof - 1998
Makmillen, Shurli, BA, MA (SFU), Inst - 2001
Moore, Robert, BA, MA, PhD (McMaster), Prof 1990
Nkunzimana, Obed, Lic(Tanzania), MA, PhD(Sherbrooke), Asst Prof - 2000
Noble, James E., BA (Bishops), DipEd, MA, PhD (UWO), Prof - 1989
Serrano, Pedro, BA (El Salvador), MA (ITCA), Instructor - 1999
StewartRobertson, J. Charles, BA (Tor), MA (UWO), PhD (Edin), Prof 1971

Department of Psychology

Both, Lilly E., BA (Manit), MA, PhD (Waterloo), Asst Prof - 1996
Bradley, Michael T., BSc (Vic BC), MA, PhD (Manit), Prof 1980
DiTommaso, Enrico, BA (McGill), MA, PhD (UNB), Asst Prof - 1997
Gendreau, Paul, BA, MA (OH), PhD (Queens), Prof 1990
Goddard, Murray J., BA (Calg), PhD (McM), Prof 1987
Laforce, Robert Jr., BA, MPS, PhD (Laval), Asst Prof - 1998
MacKewn, Angelina, BA (Laur), MA (C. Oklahoma), Lecturer - 2001
Taukulis, Harald, BA (N Ill), MSc, PhD (Nfld), Prof 1986
Wilson, Alexander, BA (MtA), MA, PhD (Manit), Prof and Chair 1981

Department of Social Science

Bonnell, Robert A., BPE, BA (UNB), MA (UWO), Assoc Prof and Director of Athletics 1970
Burns, Janet, M. C. , BA (Alta) MA (Victoria), PhD (Simon Fraser), Assoc Prof & Chair 1988
Chalmers, D. Lee V., BA, MA (Regina), PhD (Essex), Assoc Prof - 1995
David, Paul-Emile, BBA (Ecole des Hautes Etudes Commerciales), MA (UdeM), Lecturer - 2001
Doran, Christopher, J., BA (York), MA, PhD (Calg), Assoc Prof 1989
Downes, Daniel, BA (Ottawa), MA (Carleton), PhD (McGill), Asst Prof - 2001
Duchesne, Ricardo, BA, MA (Concordia), PhD (York), Assoc Prof - 1995
Galbo, Joseph, BA (CUNY), MA, PhD (York), Asst Prof - 1997
Hill, Roderick, BA (Tor), Diploma (Stockholm), MA, PhD (UWO), Assoc Prof 1990
Islam, Kazi, BSc, MSc (Jahangirnagar), MA (W. Illinois), Lecturer - 2001
Kabir, Muhammed, BA, MA (Dacca), MA, PhD (McM), Prof and Associate Vice-President (Saint John) 1983
MacKinnon, Robert, BA (Mt A), MA (Memorial), PhD (UBC), Prof and Dean of Arts - 2001
McLaughlin, Darrell, BA (STU), MA, PhD (UNB), Asst Prof - 2001
Moir, Robert, BA (McM), MA (Queens), PhD (McM), Assoc. Prof - 1996
Rao, Badrinath, BA (Bangalore), MA (Queen's), PhD (Alberta), Asst Prof - 2000
Ridler, Neil B., BA (Oxon), MA, PhD (SFU), Prof 1973
Scott, Neil, BA (Mt Allison), BEd (Dal), MEd (UNB), PhD (Alberta), Assoc Prof and Education Coordinator - 1993
Selim, Mohammed, BSc, MSc (Jahangirnagar), PhD (Dal), Asst Prof - 2001
Worrell, Gary L., BPE (UNB), MSc (Penn State), PhD (Florida State), Assoc Prof 1977
Xu, Xiaoping, Adjunct Prof - 2001

FACULTY OF BUSINESS

Amatucci, Frances, BS (Mass), MBA, PhD (Pittsburg), Assoc Prof - 2001
Davis, Charles, BA, MA, PhD (Montreal), Prof - 1997
Davis, M. Gary, BA (UNB), MBA (UWO), PhD (Bath), Prof - 1977
Dunstan, Judith E., BBA (Acadia), LLB (UofT), CA, Sr Instr - 1998
Farnsworth, Regena BBA (Chapman), MBA (UTA), PhD (Texas A), Assoc. Prof. - 1999
Fleet, Gregory, BA, MA, PhD(UNO), Assoc Prof - 2000
Fleisher, Craig, BS (Florida), MBA (Vanderbilt), PhD (Pittsburg), Prof and Dean - 2000
Frooman, Jeff, BS, Ba(Ilinois - urban) MA (Pittsburg) MBA(Ann Arbor Michigan) 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), Sr Teaching Assoc - 2001
Jolliffe, Lee, BA (W. Laur), MA (Tor), PhD (Leicester), Asst Prof - 2001
Lan, Ping, BS (Perking), MSc (Zhongshan), PhD (Strathelyde), Asst Prof -2001
Mendelson, Morris, BA (Concordia), MSc (St Mary's), Asst Prof - 2001
Mihai, Carmen, BBA, PhD (Iasi, Romania), MDE (Dal), Asst Prof - 2001
Moro, Francisco, BS (Rio Grande do Sul), MEng (Santa Catarina), DrEng (Santa Catarina), PhD (Wisconsin), Asst Prof - 1999
Pike, Eileen, BBA (UNB), MBA (Dal), CMA, Prof 1979
Rinehart, Shelley, BA, MBA (UNB), ABD (U of Oklahoma), Director - Electronic Commerce Centre, Asst Prof and Dean, Business -1988
Roumi, Ebrahim, BSc (Arya-Mehr), MSc, PhD (Waterloo), Prof 1988
Sterniczuk, Henryk, MB, PhD (Warsaw), Prof 1987
Wong, Jsun Yui, BS (SGW), MBA (Detroit), PhD (Wis), Prof 1972

FACULTY OF SCIENCE, APPLIED SCIENCE, AND ENGINEERING

Department of Applied Statistics & Computer Science

Garey, Lawrence E., BSc (St FX), MA, PhD (Dal), Prof - 1971
Gupta, R. Dayal, BSc, MSc (Meerut), MA, PhD (Dal), Prof - 1980
Kaser, Owen, BCSS (Acadia), MS, PhD (SUNT, Stony Brook), Assoc Prof - 1993
Light, Janet, BEng (College of Tech., Madras), MEng (College of Tech., Bharathian), Asst Prof - 2002
Mahanti, Prabhat, BSc (Calcutta), MSc, PhD (Indian Inst. of Technology), Prof - 2001
Shaw, Ruth, BScDA, MScCS, PhD (UNB), Prof and Chair - 1986
Tasse, Josee, BScCS (Montreal), PhD (McGill), Asst Prof - 1997
Thompson, Caryn, BSc, MSc (Guelph), PhD (Oregon State), Asoc Prof - 2001

Department of Biology
Chopin, Thierry B. R., BSc (Lyon), MSc (Brest), DEA (Paris), PhD (Brest), Prof 1989
Dowding, Barbara, BSc, MSc (Memorial), Instructor - 2001
Frego, Katherine, BSc (Winnipeg), MSc (Manitoba), PhD (Toronto) Univ. Teaching Prof - 1993
Halcrow, Kevin, BSc (Manchester), MSc, PhD (Dal), Honorary Research Prof - 1999
Johnson, John, BSc, MSc, PhD (UNB), Assoc Prof and Registrar (Saint John) - 1989
Kieffer, James, BSc (Ottawa), MSc, PhD (Queens), Assoc Prof - 1996
Klassen, Gregory, BSc, MSc (Guelph), PhD (Tor), Adjunct Prof - 2002
Litvak, Matthew K., BSc (York), MSc, PhD (Tor), Assoc. Prof - 1995
MacDonald, Bruce A., BSc (Acadia), MSc (UNB), PhD (Nfld) Prof and Chair 1992
MacLatchy, Deborah L., BSc (Acadia), PhD (Manitoba), Assoc Prof - 1994
Miron, Gilles, Adjunct Prof - 1999
Munkittrick, Kelly, BSc, MSc(Guelph), PhD(Wat), Prof & Canadian Research Chair and Associate Director of Canadian Rivers Institute - 2001
Pohle, Gerhard, Adjunct Prof - 1996
Robinson, Shawn, Adjunct Prof - 2002
Rochette, Rémy, BSc, PhD(Laval), Asst Prof -2001
Terhune, John M., BScAgr, MSc (Guelph), Lic Scient (Aarhus), Prof 1975
Trippel, Edward, Adjunct Prof - 2001
Turnbull, Stephen D., BSc (Manitoba), BEd, MSc, PhD (UNB), Sr Instructor - 1994

Department of Engineering
Christie, James S., BScE, MScE, PhD (UNB), PEng, Assoc 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 & Acting Chair, Dept. of Physical Sciences - 1982
Riley, Peregrine, BScE (Qu), PhD (UNB), Sr Teaching Assoc 1986
Roach, Dale, BScEng, PhD (UNB), Instructor - 2001
Sollows, Kenneth F., BScE, MScE, PhD (UNB), PEng, Assoc Prof & Chair 1985
Walton, Byron A., Eng Cert (Mt A), BScE (NSTC), MScE (UNB), PEng, Asst Prof 1975

Department of Mathematical Sciences
Alderson, Timothy, BSc, Msc, PhD(UWO), Asst Prof - 2000
DeBell, Keith, BSc (Kings), MSc, PhD (Westfield), Prof & Dean - 1999
Hamdan, Mohammad, BSc, MSc, PhD (Windsor), Prof 1991
Kamel, Merzik T., BSc (Assiut), MSc, PhD (Windsor), Prof & Chair- 1981
Punnen, Abraham P., BSc (Kerala), MSc (Kanpur), PhD (IIT), Prof - 1994
Stoica, Gheorghe, Dip., MSc(Bucharest), PhD(Paris), Asst Prof-2000

Department of Nursing
Buchanan, Judith, RN Dip (StJosSN), MHSc (McMaster), Sr Instructor - 2002
Carr, Tracy, BN (UNB), MSc (Tor), Asst 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
Gallant, Shelley, BN (UNB) Instructor - 1999
Hicks, Sandee, BN (Dal), MN (UNB), Asst Prof - 2001
Larsen, Trudean, RN Dip (SJGH), BN, MN (Dal), Asst Prof - 1995
Logue, Nancy, BN (UNB), MN (Dal), Sr Instructor - 1995
Mallory, Patricia, RN Dip (StJosSN), BN, MN (Dal), Instructor 1999
McCloskey, Rose, BSc (Acadia), RN Dip (Hfx.Inf.SN), BN, MN (UNB), Asst Prof 2000
McCormack, Dianne, BN (MUN), MSc (McGill), Prof 1998
Nugent, Linda, RN Dip (VG Hosp), BN (Dal), MScN (Tor), Prof 1980
Perry, Anne, BN (Dal), MSc (McGill), Sr Instructor - 1996

Department of Physical Sciences
Feicht, Anton, BSc, PhD (UNB), Asst Prof - 2001
Fullerton, Frances, BSc (UNB), Sr Teaching Assoc 1986
Hsu, Chimei J., BSc (Prov Taiwan), MSc (Nat Taiwan), MSc, PhD (Nfld), 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
Scott, Richard, Adjunct Prof 2000
Xiao, Shaorong, Cert. In IT, Phd, MSc (Central Lancashire), Instructor 2001
Xu, Li-Hong, BSc (Suzhou), PhD (UNB), Assoc Prof - 1994

LIBRARIANS - Saint John

Collins, Susan, BA (Qu), MLS (Pitts), Chief Librarian & Director, Information Services & Systems 1979
Flanagan, Daphne, BBA (UN), MLIS (UW), Librarian II - 1998
Hansen, Linda S., BA (UNB), MLS (SUNY), Electronic & Technical Services Librarian - 1996
Kerr, William A.L., BA (UNB), ALA, Lib IV 1969
Richl, Patricia, BA (Winnipeg), MST (Tor), Librarian I - 2001

RESEARCH CENTRES AND INSTITUTES – Saint John

Canadian Rivers Institute
Munkittrick, Kelly, BSc, MSc (Guelph), PhD (Waterloo) - Canadian Research Chair & Assoc Director

Centre for Coastal Studies and Aquaculture
Terhune, John M., BSc AGR, MSC (Guelph), Lic Scient (Aarhus) , Director

Electronic Commerce Centre
Rinehart, Shelley, BA, MBA (UNB), PhD (U of Oklahoma), Director

Modern Languages Centre
Paul-Emile Chaisson, Director

ASSOCIATED ALUMNAE COUNCIL 2000-2002

President: Marti Lou Neill, BA '69
1st Vice-President: Margie Gregg, BA '92
Secretary: Heather Baird-Perritt, BPE '69
Treasurer: Patti L. Blakney, BA '99
Past President: Jane McGinn-Giberson, BScEng '88, MEng '99

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
Jane McGinn-Giberson, BScCE, MCE
Marti-Lou Neill, BA

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 ALUMNI COUNCIL - 2001-2002

EXECUTIVE

Executive Director
Mark A. Hazlett, BPE '87, MPE '89

President: Richard J. Scott, BBA '74, LLB '76
1st Vice-President: Carey Ryan, BA '70, MEd '79
2nd Vice-President: Richard R. Tingley, BScCE '67, DSc '99
Treasurer: Marti-Lou Neill (November 15, 2001-June 30, 2002
Secretary: Kathie Brien , BBA '67
Saint John Rep: Gerald (Gary) M. Lawson, BBA '76, LLB '79
Past-President: Robert Chambers, BBA '58

REPRESENTATIVES TO THE BOARD OF GOVERNORS

Sally McAllister, BA '72, BEd '73 (June 2002)
Earl Brewer, BA '70, LLB '74 (June 2003)
Kevin Ratcliff, BBA '82 (June 2004)

ELECTED COUNCILLORS

With Terms Expiring June 2002	*With Terms Expiring June 2003*
David F. Erb, BBA '95	J. Blair Drummie, BBA '85, LLB '89
David T. LeBlanc, BBA '82	Jane Kilburn-Boyle, MA '95
Lynn A. Hruczkowski, BA '82	Jeffrey E. Bujold, BA '93
Michael H. Ross, BA '71, BEd '72	Kim Langille, BEd '88

APPOINTED COUNCILLORS

With Terms Expiring June 2002	*With Terms Expiring June 2003*
Gerald M. Lawson, BBA '76, LLB '79	Allison W. MacPhail, BScEng '61
Gerald (Pete) Keilty, BPE '64, BA '67	Judith Weeks, BBA '77
Warren D. McKenzie, BScCS '76	Yves J. Goudreau, BBA '86

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.

STUDENT ORGANIZATIONS

FREDERICTON CAMPUS

Student Union
The UNB Student Union is the official student organization of the University of New Brunswick (Fredericton) undergraduates. The Student Union acts as both a service organization and a political body to promote and enhance student issues for the benefit of all students at UNB. Membership is paid automatically by full-time students whereas the option of paying the fee is given to part-time students.

The Student Union fee is used to support student activities, services and entertainment, both social and academic. The Student Union Council consists of five (5) elected executive members: President, Vice-President (University Affairs), Vice-President (Finance and Administration), Vice-President (Student Services) and Vice-President (External); representatives from the various faculties; representatives elected at large; and student members of the Board of Governors and Senate. These elected students are empowered to represent students at UNB in an effective and accountable manner. Council meets regularly during the academic year to discuss issues and to hear reports on matters of finance, services, constitution, and general administration.

The objectives of the Union are:

1. to promote artistic, literary, educational, social, recreational and charitable activities for the advancement of its membership and others;
2. to provide for the material, intellectual, cultural and professional needs of the members and promote a sense of responsibility and co-operation and to establish good relations with other national and international student associations; and
3. to promote and maintain communications between the student body and various areas of the University.

The Union achieves these objectives in various areas of campus life. It operates many valuable services for students, including the Employment Opportunities Centre, the Student Resource Centre, the Student Advocacy Centre, a Campus Safety Program, a photocopying/merchandise centre, and a Student Health Plan. Campus programming has also greatly expanded over the years, through the Student Union's efforts, and includes such events as the Festival of Cultural Diversity, the annual Red and Black Revue variety show, a movie series, a comedy act, and an energetic concert program.

In addition, the Union supports over 70 clubs, societies, and committees which are active both on and off campus. These clubs and societies range from international associations, general interest groups, to many faculty societies. Its support also reaches to the campus radio station CHSR-Fm (97.9), the student published newspaper "The Brunswickan" Canada's oldest student newspaper, the internationally recognized Orientation program for incoming students, the nationally acclaimed peer alcohol education program entitled SMART PACC, a published yearbook, and the student owned pub, "The Cellar".

Please come and visit us in room 126 of the Student Union Building (SUB), or give us a call at (506) 453-4955 for more information on our programs and our volunteer positions.

Adult Learners and Part-time Students (ALPS)
This organization is an information and support network for mature and part-time undergraduate students. It responds to the unique concerns and issues of these learners, to help create an enriched university environment and to act as an advocate. ALPS not only organizes social events for part-time and mature students, but also provides a support system for students in its constituency, offering peer support, subsidized tutoring, and financial support in the form of scholarships and bursaries. The ALPS offices are located on the ground level of MacLaggan Hall in Room 3A, 453-3596 (alps@unb.ca).|

SAINT JOHN CAMPUS

Students' Representative Council
The Students' Representative Council (SRC) of UNB Saint John is a non-profit, apolitical organization run by students for students. The SRC has ensured representation of the needs of UNB Saint John's full-time students since 1967.

The main function of the SRC is to co-ordinate and promote student activities on campus and within the community. The Student Council runs its own campus radio station, CRSJ-FM, and newspaper, The Baron. It also finances a great number of on-campus clubs and societies, from those organized for academic association to those for social interests. The SRC also holds a yearly winter carnival, orientation week, and many other social events.

A less perceptible side of the SRC's work is that of non-party political representation. This takes place on three major levels:

University - the SRC works with OPTAMUS (Organization of Part-time and Mature University Students) to enhance the quality of student life at UNB Saint John, from acting as an ombudsperson to student complaints to ensuring a certain standard of academic and social alternatives for the students;

Provincial - through the New Brunswick Student Alliance, the SRC works for the improvement of student aid programs and student representation in the provincial decision making process; and

Federal - through involvement with several national student organizations, the SRC strives for the resolution of student needs and the establishment of a strong nationwide student presence.

The SRC offices are located in the Thomas J. Condon Student Centre in Room 213, and are open Monday through Friday, 9:00 a. m. to 5:00 p. m. Telephone: (506)648-5864; e-mail: src@unbsj. ca

Organization of Part-Time and Mature University Student (OPTAMUS)
The Organization of Part-Time and Mature University Students, more commonly known by the acronym O.P.T.A.M.U.S., has been in existence at UNBSJ since 1978. In 1986, it became formally recognized by the university administration as the body that acts as a student union for UNBSJ's part-time and mature students. OPTAMUS not only organizes social events for part-time and mature students, but also provides a support system for students in its constituency, offering academic and financial counselling, peer support, and financial support in the form of scholarships and bursaries. The OPTAMUS offices are located on the second level of the Thomas J. Condon Student Centre in Room 221, 648-5694 (optamus@unbsj. ca).

SECTION A
HISTORICAL SKETCH

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.

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

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

HISTORIC BUILDINGS - Fredericton Campus

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.

The Maggie Jean Chestnut House

Officially opened as the University of New Brunswick's first women's residence on October 20, 1949, the Maggie Jean Chestnut House, a Victorian mansion located in Fredericton's historic district, was the culmination of a dream long held by the Associated Alumnae. Named for a graduate of the Class of 1927, whose family had built the house and who also owned the world famous Chestnut Canoe Company, the building served as the home for the local manager of the Bank of Montreal until it was purchased by Lord Beaverbrook in April 1949. He challenged the Associated Alumnae, led by Muriel Farris Baird ('27), to raise the money needed to equip and furnish it for the students. They responded with enthusiasm, raising $28, 000 and, with additional assistance from the University and Lord Beaverbrook himself, opened the 21-bed facility in time for the fall term.

Closed in February 1999 because of concerns over the outmoded electrical wiring, the Maggie Jean Chestnut House was identified as the site for the Renaissance College in December 1999. Extensive renovations have transformed it into a state-of-the-art living and learning facility. Maggie Jean Chestnut House is an important and continuing part of UNB's heritage." In October 2000, almost 51 years to the day of its first opening, Maggie Jean Chestnut House was opened as Renaissance College. (Photos are available on the RC web site http://www.unb.ca/Renaissance).

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 Placement 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

The University of New Brunswick in Saint John (UNBSJ) was established in September 1964 on the recommendation of the Royal Commission on Higher Education, chaired by the late Dr. John J. Deutsch, Vice Principal (Administration) and subsequently Principal of Queen's University. The 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 held 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. 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 that a portion of this land be used for the new campus.

Construction of the Tucker Park campus began after the then Governor General and Madame Vanier turned the first sod on the site. Originally consisting of three buildings - Sir Douglas Hazen Hall, William Ganong Hall and the Ward Chipman Library Building - the new campus opened officially in 1969. In 1975 the G. Forbes Elliot Athletics Centre was added to the physical plant. This versatile, well-equipped building serves the recreational needs not only of the students, faculty and staff of UNBSJ, but also of the wider Saint John community. In 1985 the Jeux Canada Games Stadium was constructed on the UNBSJ campus, and in 1986 the Thomas J. Condon Student Centre was opened. UNBSJ'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. The campuses newest building, K.C. Irving Hall, opened in January 1999.

A special feature of UNBSJ 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.

Operating initially as a feeder institution offering only the first year or first two years of certain programs, UNB Saint John now offers full four-year degree programs in Arts, Business, Data Analysis, Science, Health Sciences and Hospitality & Tourism. In addition to the full-time enrollment, large numbers of part-time students are now pursuing their studies at the 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 campus's Faculty of Business, its Nursing program and most of its administrative offices, including the Registrar's Office, the Business Office, the President's Office, the Vice-President's Office, the International Liaison Office, Community Relations, the Alumni Office, Student Services, and the Office of the Associate Dean of Graduate Studies. Five classrooms, an audio-visual theatre, a business case room with four break-out labs, a micro-computer lab and health labs for the nursing program 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, the language laboratory, 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 UNBSJ's newest academic building, to be opened in fall, 1998. 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. Like all buildings at UNBSJ, Irving Hall is accessible for disabled persons and is part of the campus's inside walkway connection.

The building is named for Kenneth Colin Irving, founder of the renowned Irving empire of companies, in recognition of his and his family's significant contribution to the economy of New Brunswick and to the lives, culture and education of New Brunswickers. The Irvings have not only provided generous support to the university, but have also continually supported innumerable community groups and initiatives.

Thomas J. Condon Student Centre

UNBSJ'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, Student Representative Council offices, OPTAMUS (The Organization for Part-Time and Mature Students), a social club and lounge. The building was named in honour of former Vice-President (Saint John) Thomas J. Condon.

G. Forbes Elliot Athletics Centre

UNBSJ'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 Campus's athletic teams, the Seawolves, from the 900 bleacher seats overlooking the main court surface. The ground floor also includes locker and shower rooms, equipment storage rooms, a trainer's room, and an officials' room. Upstairs, in addition to a suite of offices and a reception area, there is also a classroom, a lounge, a games room, and a conditioning room that includes fitness and strength-training equipment.

The Athletics Centre serves the recreational and physical education needs of UNBSJ students, faculty and staff, as well as several community groups who are encouraged to make use of the building's excellent facilities which have added significantly to the recreational opportunities of citizens of the greater Saint John area. The Centre bears the name of the founding principal of the Saint John campus. It was the dynamic leadership of G. Forbes Elliot and his awareness of the needs of both the young undergraduate and the part-time mature student which launched the campus on a successful start and set the pattern for the future.

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 Residence

UNBSJ offers co-educational residence facilities for about 71 students in the modern Sir James Dunn Residence which opened in September, 1993. Comprised of 57 single rooms, 7 double rooms and 3 two-bedroom apartments, the residence is located adjacent to the Thomas J. Condon Student Centre. Two of the single rooms are specially equipped to accommodate physically challenged occupants.

Construction of the residence 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.

The residence also includes various lounge/meeting/study areas, two laundry rooms, a mailroom and a vending machine area. Dining facilities for residents are provided in the Baird Dining Room in the Student Centre.

In keeping with UNBSJ's site development philosophy of having all campus buildings interconnected, the residence complex is attached to the Student Centre by a tunnel and a pedway, thus allowing residents easy indoor access to the Athletics Centre, the library and the campus's academic buildings.

The Sir James Dunn Residence is administered by a Don, three residence assistants, and an academic resource person, with a residence managerFor more information on residence accommodation at UNB Saint John, call or write the Registrar's Office, UNB Saint John, P.O. Box 5050, Saint John, N.B., E2L 4L5, 506-648-5674.

Annexes

Located on campus, tmporary buildings called annexes house facilities for the engineering program, for part-time faculty and for graduate students.

SECTION B
REGULATIONS

Contents

Program	NB	PEI	NS	NF	QC (High School Leaving Examination)
Bachelor of Arts and Sciences, Bachelor of Arts / Bachelor of Science	English 122 (minimum grade of 60%), Math 112, Adv. Math 120, Physics 122, Chemistry 122, 1 unit of Social Studies, Minimum admission average 75%	Engl 621 (minimum grade of 60%), Math 521, Math 621, Phys 621, Chem 621, 1 unit of Social Studies, Minimum admission average 75%	English 12 (minimum grade of 60%), Pre-Calc 11, Pre-Calc 12, Physics 12, Chemistry 12, 1 unit of Social Studies, Minimum admission average 75%	Two of English 3101, 3201, 3202 (minimum grade of 60%), Math 2200, Math 3200, Physics 3204, Chemistry 3202, 1 unit of Social Studies, Minimum admission average 75%	English 516 (minimum grade of 60%), Math 436, Math 536, Phys 534, Chem 534, 1 unit of Social Studies, Minimum admission average 75%
Bachelor of Arts, Bachelor of Applied Arts (Craft and Design)	English 122 (min. grade of 60%), French 122 or Math 112, 1 unit Soc. 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 521, 1 unit Soc. 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 Math 11 or Pre-Calc 11, 1 unit Soc. Studies , 2 electives - Group 1, 1 elective - Group 1 or 2 or 3, Minimum admission average 65%	Two of English 3101, 3201, 3202 (min. grade of 60%), French 3200 or Math 2200, 1 unit Soc. 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 Soc. Studies, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3, Minimum admission average 65%
Bachelor of Arts / Bachelor of Computer Science	English 122 (minimum grade of 60%), Math 112 (minimum grade of 65%), Adv. Math 120 (minimum grade of 65%), Physics 122 or Chem 122 (minimum grade of 65%), 1 unit Social Studies (minimum grade of 60%), 1 elective - Group 1 or 2 or 3 (minimum grade of 60%), Minimum admission average 75%	Engl 621 (minimum grade of 60%), Math 521 (minimum grade of 65%), Math 621 (minimum grade of 65%), Phys 621 or Chem 621 (minimum grade of 65%), 1 unit Social Studies (minimum grade of 60%), 1 elective - Group 1 or 2 or 3 (minimum grade of 60%), Minimum admission average 75%	English 12 (minimum grade of 60%), Pre-Calc 11 (minimum grade of 65%), Pre-Calc 12 (minimum grade of 65%), Physics 12 or Chemistry 12 (minimum grade of 65%), 1 unit Social Studies (minimum grade of 60%), 1 elective - Group 1 or 2 or 3 (minimum grade of 60%), Minimum admission average 75%	Two of English 3101, 3201, 3202 (minimum grade of 60%), Math 2200 (minimum grade of 65%), Math 3200 (minimum grade of 65%), Physics 3204 or Chemistry 3202 (minimum grade of 65%), 1 unit Social Studies (minimum grade of 60%), 1 elective - Group 1 or 2 or 3 (minimum grade of 60%), Minimum admission average 75%	English 516 (minimum grade of 60%), Math 436 (minimum grade of 65%), Math 536 (minimum grade of 65%), Phys 534 or Chem 534 (minimum grade of 65%), 1 unit Social Studies (minimum grade of 60%), 1 elective - Group 1 or 2 or 3 (minimum grade of 60%), Minimum admission average 75%
Bachelor of Business Administration, Bachelor of Hospitality and Tourism (Saint John)	English 122 (min. grade of 60%), Math 112, Adv. Math 120 (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3, Minimum admission average 65%	Engl 621 (min. grade of 60%), Math 521, Math 621 (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3, Minimum admission average 65%	English 12 (min. grade of 60%), Math 11, Math 12 or Pre-Calc 12 (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3, Minimum admission average 65%	Two of English 3101, 3201, 3202 (min. grade of 60%), Math 2200, Math 3200 (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3, Minimum admission average 65%	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 65%
Bachelor of Computer Science, Bachelor of Science in Data Analysis (Saint John), Bachelor of Science in Computer Science (Saint John)	English 122 (minimum grade of 60%), Math 112 (minimum grade of 65%), Adv. Math 120 (minimum grade of 65%), Phys 122 or Chem 122 (minimum 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%	Engl 621 (minimum grade of 60%), Math 521 (minimum grade of 65%), Math 621 (minimum grade of 65%), Phys 621 or Chem 621 (minimum 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 (minimum grade of 60%), Pre-Calc 11 (minimum grade of 65%), Pre-Calc 12 (minimum grade of 65%), Phys 12 or Chem 12 (minimum 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%	Two of English 3101, 3201, 3202 (minimum grade of 60%), Math 2200 (minimum grade of 65%), Math 3200 (minimum grade of 65%), Physics 3204 or Chemistry 3202 (minimum 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 (minimum grade of 60%), Math 436 (minimum grade of 65%), Math 536 (minimum grade of 65%), Phys 534 or Chem 534 (minimum 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	English 122, Math 112, Adv. Math 120 (min. grade of 60%), Physics 122, Chemistry 122, 1 elective - Group 1 or 2, Minimum admission average 75%	Engl 621, Math 521, Math 621 (min. grade of 60%), Phys 621, Chem 621, 1 elective - Group 1 or 2, Minimum admission average 75%	English 12, Pre-Calc 11, Pre-Calc 12 (min. grade of 60%), Physics 12, Chemistry 12, 1 elective - Group 1 or 2, Minimum admission average 75%	Two of English 3101, 3201, 3202, Math 2200, Math 3200 (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%
Bachelor of Computer Science / Bachelor of Science in Engineering (Geodesy & Geomatics)	English 122 (min. grade of 60%), Math 112 (min. grade of 65%), Adv. Math 120 (min. grade of 65%), Physics 122 (min. grade of 65%), Chem 122 (min. grade of 65%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 75%	Engl 621 (min. grade of 60%), Math 521 (min. grade of 65%), Math 621 (min. grade of 65%), Phys 621 (min. grade of 65%), Chem 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%), Pre-Calc 11 (min. grade of 65%), Pre-Calc 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%	Two of English 3101, 3201, 3202 (min. grade of 60%), Math 2200 (min. grade of 65%), Math 3200 (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%), Phys 534 (min. grade of 65%), Chem 534 (min. grade of 65%), 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 4A (minimum grade of 60%), Math 3A, Math 4A, Phys 4A, Chem 3A, 1 unit of Social Studies, Minimum admission average 75%	English (minimum grade of 60%), 2 Maths, Physics, Chemistry, 1 unit of Social Studies, Minimum admission average 75%.	English (minimum grade of 60%), 2 Maths, Physics, Chemistry, 1 unit of Social Studies, See box below	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. 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 # 13.
English 4A (min. grade of 60%), OAC French or Math 3A, 1 unit Soc. 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 Soc. 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 Soc. Studies, 2 electives - Group 1, 1 elective- Group 1 or 2 or 3, See box below	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.
English 4A (minimum grade of 60%), Math 3A (minimum grade of 65%), Math 4A (minimum grade of 65%), Phys 4A or Chem 3A (minimum grade of 65%), 1 unit Social Studies (minimum grade of 60%), 1 elective - Group 1 or 2 or 3 (minimum grade of 60%), Minimum admission average 75%	English (minimum grade of 60%), 2 Maths (minimum grade of 65%), Physics or Chemistry (minimum grade of 65%), 1 unit Social Studies (minimum grade of 60%), 1 elective - Group 1 or 2 or 3 (minimum grade of 60%), Minimum admission average 75%	English (minimum grade of 60%), 2 Maths (minimum grade of 65%), Physics or Chemistry (minimum grade of 65%), 1 unit Social Studies (minimum grade of 60%), 1 elective - Group 1 or 2 or 3 (minimum grade of 60%), See box below	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 # 13.
English 4A (min. grade of 60%), Math 3A, Math 4A (min. grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3, Minimum admission average 65%	English (minimum grade of 60%), Math 11, Math 12 (minimum grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3, Minimum admission average 65%	English (minimum grade of 60%), Math 11, Math 12 (minimum grade of 60%), 2 electives - Group 1, 1 elective - Group 1 or 2 or 3, See box below	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
English 4A (minimum grade of 60%), Math 3A (minimum grade of 65%), Math 4A (minimum grade of 65%), Phys 4A or Chem 3A (minimum 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 (minimum grade of 60%), 2 Maths (minimum grade of 65%), Physics or Chemistry (minimum 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 (minimum grade of 60%), 2 Maths (minimum grade of 65%), Physics or Chemistry (minimum grade of 65%), 1 elective - Group 1 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%), See box below	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 # 13.
English 4A, Math 3A, Math 4A (min. grade of 60%), Physics 4A, Chemistry 3A, 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 box below	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 # 13.
English 4A (min. grade of 60%), Math 3A (min. grade of 65%), Math 4A (min. grade of 65%), Phys 4A (min. grade of 65%), Chem 3A (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%), 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 box below	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 # 13.

Program	NB	PEI	NS	NF	QC (High School Leaving Examination)
Bachelor of Nursing	English 122 (min. grade of 60%), Math 112 or Adv. Math 120 (min. grade of 60%), Chemistry 122 (min. grade of 60%), Biology 120 (min. grade of 60%), 2 electives - Group 1, Minimum admission average 70%	Engl 621 (min. grade of 60%), Math 521 or Math 621 (min. grade of 60%), Chem 621 (min. grade of 60%), Biol 621 (min. grade of 60%), 2 electives - Group 1, Minimum admission average 70%	English 12 (min. grade of 60%), Math 11 or Pre-Calc 11 or Math 12 (min. grade of 60%), Chemistry 12 (min. grade of 60%), Biol 12 (min. grade of 60%), 2 electives - Group 1, Minimum admission average 70%	Two of English 3101, 3201, 3202 (min. grade of 60%), Math 2200 or Math 3200 (min. grade of 60%), Chemistry 3202 (min. grade of 60%), Biol 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)	English 122, Math 112, 3 electives - Group 1, 1 elective - Group 1 or 2 or 3, Minimum admission average 75%	Engl 621, Math 521, 3 electives - Group 1, 1 elective - Group 1 or 2 or 3, Minimum admission average 75%	English 12, Math 11 or Pre-Calc 11, 3 electives - Group 1, 1 elective - Group 1 or 2 or 3, Minimum admission average 75%	Two of English 3101, 3201, 3202, Math 2200, 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 **(beginning September 2002, direct entry to this program)**	English 122 (min. grade of 60%), Advanced Math 120, 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%	Engl 621 (min. grade of 60%), Math 621, One of: Biol 621, Chem 621, or Phys 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%), Math 12 or Pre-Calc 12, One of: Biol 12, Chemistry 12, or Physics 12, 2 electives - Group 1, 1 elective - Group 1 or 2 or 3 or 5, Minimum admission Average: 65%	Two of English 3101, 3201, 3202 (min. grade of 60%), Math 3200, One of: Biol 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: Biol 534, Chem 534, or Phys 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 60%), Math 112 (min. grade of 60%), Adv. Math 120 (min. grade of 60%), Physics 122 (min. grade of 60%), Chemistry 122 (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%	Engl 621 (min. grade of 60%), Math 521 (min. grade of 60%), Math 621 (min. grade of 60%), Phys 621 (min. grade of 60%), Chem 621 (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%	English 12 (min. grade of 60%), Pre-Calc 11 (min. grade of 60%), Pre-Calc 12 (min. grade of 60%), Physics 12 (min. grade of 60%), Chemistry 12 (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%	Two of English 3101, 3201, 3202 (min. grade of 60%), Math 2200 (min. grade of 60%), Math 3200 (min. grade of 60%), Physics 3204 (min. grade of 60%), Chemistry 3202 (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%,	English 516 (min. grade of 60%), Math 436 (min. grade of 60%), Math 536 (min. grade of 60%), Phys 534 (min. grade of 60%), Chem 534 (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%
Bachelor of Science in Forest Engineering	English 122 (min. grade of 60%), Math 112, Adv. Math 120 (min. grade of 60%), Physics 122 (min. grade of 60%), Chemistry 122 (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%	Engl 621 (min. grade of 60%), Math 521, Math 621 (min. grade of 60%), Phys 621 (min. grade of 60%), Chem 621 (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%	English 12 (min. grade of 60%), Pre-Calc 11, Pre-Calc 12 (min. grade of 60%), Physics 12 (min. grade of 60%), Chemistry 12 (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%	Two of English 3101, 3201, 3202 (min. grade of 60%), Math 2200, Math 3200 (min. grade of 60%), Physics 3204 (min. grade of 60%), Chemistry 3202 (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%	English 516 (min. grade of 60%), Math 436, Math 536 (min. grade of 60%), Phys 534 (min. grade of 60%), Chem 534 (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%
Bachelor of Science in Forestry	English 122 (min. grade of 60%), Math 112, Adv. Math 120 (min. grade of 60%), Chemistry 122 (min. grade of 60%), Biology 120 or Physics 122 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%) , Minimum admission average 70%	Engl 621 (min. grade of 60%), Math 521, Math 621 (min. grade of 60%), Chem 621 (min. grade of 60%), Biol 621 or Phys 621 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%), Minimum admission average 70%	English 12 (min. grade of 60%), Math 11, Math 12 (min. grade of 60%), Chemistry 12 (min. grade of 60%), Biol 12 or Physics 12 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%), Minimum admission average 70%	Two of English 3101, 3201, 3202 (min. grade of 60%), Math 2200, Math 3200 (min. grade of 60%), Chemistry 3202 (min. grade of 60%), Biol 3201 or Physics 3204 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%), Minimum admission average 70%	English 516 (min. grade of 60%), Math 436, Math 536 (min. grade of 60%), Chem 534 (min. grade of 60%), Biol 534 or Phys 534 (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%), Minimum admission average 70%
Bachelor of Science in Kinesiology **(beginning September 2002, direct entry to this program)**	English 122 (min. grade of 60%), Advanced Math 120, 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%	Engl 621 (min. grade of 60%), Math 621, Chem 621, Biol 621 or Phys 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%), Pre-Calc 12, Chemistry 12, Biol 12 or Physics 12, 1 elective - Group 1, 1 elective - Group 1 or 2 or 3 or 5, Minimum admission Average: 65%	Two of English 3101, 3201, 3202 (min. grade of 60%), Math 3200, Chemistry 3202, Biol 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 436, Chem 534, Biol 534 or Phys 534, 1 elective - Group 1, 1 elective - Group 1 or 2 or 3 or 5, Minimum admission Average: 65%

ON	MB,SK,AB,BC, NT,NU,YT	US	INFO
English 4A (min. grade of 60%), Math 3A or Math 4A (min. grade of 60%), Chemistry 3A (min. grade of 60%), Biology 3A (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 box below	Senior-year Chemistry and Biology are required. A minimum overall average of 70% is required on English, Math, Biology and Chemistry. Other forms in addition to the normal application are required for this program; these forms are available from your guidance office and from the Admissions Office. All admissions are on a competitive basis; satisfaction of the minimum requirements does not guarantee admission.
English 4A, Math 3A, 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, Minimum admission average 75%	English, Math, 3 electives - Group 1, 1 elective - Group 1 or 2 or 3, See box below	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 4A (min. grade of 60%), Math 4A, One of: Biol 3A, Chem 3A, or Phys 4A, 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, 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 box below	All admissions are on a competitive basis; satisfaction of the minimum requirements does not guarantee admission.
English 4A (min. grade of 60%), Math 3A (min. grade of 60%), Math 4A (min. grade of 60%), Phys 4A (min. grade of 60%), Chem 3A (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%	English (min. grade of 60%), 2 Maths (min. grade of 60%), Physics (min. grade of 60%), Chemistry (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%	English (min. grade of 60%), 2 Maths (min. grade of 60%), Physics (min. grade of 60%), Chemistry (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), See box below	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) will be given conditional admission to the appropriate faculty in an entrance program. See note # 13.
English 4A (min. grade of 60%), Math 3A, Math 4A (min. grade of 60%), Chem 3A (min. grade of 60%), Biol 3A or Phys 4A (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%), Minimum admission average 70%	English (min. grade of 60%), Math 11, Math 12 (min. grade of 60%), Physics (min. grade of 60%), Chemistry (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), Minimum admission average 70%	English (min. grade of 60%), Math 11, Math 12 (min. grade of 60%), Physics (min. grade of 60%), Chemistry (min. grade of 60%), 1 elective - Group 1 or 2 or 4 (min. grade of 60%), See box below	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) will be given conditional admission to the appropriate faculty in an entrance program 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 # 13.
English 4A (min. grade of 60%), Math 3A, Math 4A (min. grade of 60%), Chem 3A (min. grade of 60%), Biol 3A or Phys 4A (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%), Minimum admission average 70%	English (min. grade of 60%), Math 11, Math 12 (min. grade of 60%), Chemistry (min. grade of 60%), Biology or Physics (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%), Minimum admission average 70%	English (min. grade of 60%), Math 11, Math 12 (min. grade of 60%), Chemistry (min. grade of 60%), Biology or Physics (min. grade of 60%), 1 elective - Group 1 or 2 (min. grade of 60%), See box below	BScF applicants who have a mark less than 70% in Chem 122 must take Chem 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 # 13.
English 4A (min. grade of 60%), Math 4A, Chem 3A, Biol 3A or Phys 4A, 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, 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 box below	All admissions are on a competitive basis; satisfaction of the minimum requirements does not guarantee admission.

Bachelor of Science in Software Engineering	English 122 (minimum grade of 60%), Math 112 (minimum grade of 60%), Adv. Math 120 (minimum grade of 60%), Physics 122 (minimum grade of 60%), Chem 122 (minimum grade of 60%), 1 elective - Group 1 or 2 or 4 (minimum grade of 60%), Minimum admission average 75%	Engl 621 (minimum grade of 60%), Math 521 (minimum grade of 60%), Math 621 (minimum grade of 60%), Phys 621 (minimum grade of 60%), Chem 621 (minimum grade of 60%), 1 elective - Group 1 or 2 or 4 (minimum grade of 60%), Minimum admission average 75%	English 12 (minimum grade of 60%), Pre-Calc 11 (minimum grade of 60%), Pre-Calc 12 (minimum grade of 60%), Physics 12 (minimum grade of 60%), Chemistry 12 (minimum grade of 60%), 1 elective - Group 1 or 2 or 4 (minimum grade of 60%), Minimum admission average 75%	Two of English 3101, 3201, 3202 (minimum grade of 60%), Math 2200 (minimum grade of 60%), Math 3200 (minimum grade of 60%), Physics 3204 (minimum grade of 60%), Chemistry 3202 (minimum grade of 60%), 1 elective - Group 1 or 2 or 4 (minimum grade of 60%), Minimum admission average 75%	English 516 (minimum grade of 60%), Math 436 (minimum grade of 60%), Math 536 (minimum grade of 60%), Phys 534 (minimum grade of 60%), Chem 534 (minimum grade of 60%), 1 elective - Group 1 or 2 or 4 (minimum grade of 60%), Minimum admission average 75%
Bachelor of Science, **Bachelor of Medical Laboratory Science**	English 122, Math 112, Adv. Math 120, Physics 122, Chemistry 122, 1 elective - Group 1 or 2, Minimum admission average 75%	Engl 621 Math 521, Math 621, Phys 621, Chem 621, 1 elective - Group 1 or 2, Minimum admission average 75%	English 12, Pre-Calc 11, Pre-Calc 12, Physics 12, Chemistry 12, 1 elective - Group 1 or 2, Minimum admission average 75%	Two of English 3101, 3201, 3202, Math 2200, Math 3200, 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%

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 "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" level will not be accepted for admission purposes.
3. Revisions to the exisiting requirements, although not available for this calendar, will be published in the 2002-2003 Admission Handbook, and will be availalbe at the Admission Offices on both campuses.
4. 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.
5. 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.
6. Meeting the minimum requirements does not guarantee admission to any program.
7. 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.
8. The Faculty of Arts 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.
9. 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.
10. 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.
11. 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.
12. 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.
13. 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.

English 4A (minimum grade of 60%), Math 3A (minimum grade of 60%), Math 4A (minimum grade of 60%), Phys 4A (minimum grade of 60%), Chem 3A (minimum grade of 60%), 1 elective - Group 1 or 2 or 4 (minimum grade of 60%), Minimum admission average 75%	English (minimum grade of 60%), 2 Maths (minimum grade of 60%), Physics (minimum grade of 60%), Chemistry (minimum grade of 60%), 1 elective - Group 1 or 2 or 4 (minimum grade of 60%), Minimum admission average 75%	English (minimum grade of 60%), 2 Maths (minimum grade of 60%), Physics (minimum grade of 60%), Chemistry (minimum grade of 60%), 1 elective - Group 1 or 2 or 4 (minimum grade of 60%), See box below	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. 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 # 13.
English 4A, Math 3A, Math 4A, Physics 4A, Chemistry 3A, 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 box below	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 Faculty of Science) will be given conditional admission to the Science entrance program See note # 13.

TABLE OF ELECTIVES

Group 1	Group 2	Group 3	Group 4	Group 5
Adv. Math 120, Biology 120, Cdn. Literature 120, Computer Ed. 110 or 120, Economics 120, French 122, Geography 120, Geometry 120, History 122, Physics 122, Sociology 120, Atlantic Lit. 120, Calculus 120, Chemistry 122, Co-op Educ 120, Envir Studies 112 or 122, Geography 110, Geology 120, History 112, Latin 120, Political Science 120, World Issues 120	Intro. to Accounting 120, Law 120, Native Studies 120, Business Organization & Management 120	Theatre Arts 120 (Drama 122), Comm. 120 (Media Studies 120), Fl Techniques in Comm. 120, Art 110, Art 122, Fine Arts 110, Jazz Improvization 110, Music 110 or Music 120	Computer Assisted Manufacturing 110, Computer Assisted Drafting 110, Intro. Electronics 110, Micro Electronics 120,	Health & Physical Educ. 120

I. ADMISSION FOR THE ACADEMIC YEAR 2002-2003

A. General Information

1. 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) 648-5528).

   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.

2. 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 tuition deposit of $75 is required from all applicants after they have been accepted.

3. The final date for application, including required supporting documentation, for the 2002-2003 session is 31 March 2002 (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 Engineering, Bachelor of Science Forestry, Bachelor of Science Forest Engineering and Kinesiology programs be submitted early.

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

5. 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.

6. 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 Forestry, Bachelor of Science Engineering, Bachelor of Science Forest Engineering and Kinesiology programs.

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

B. 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 pecifically 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.

C. 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.

D. 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.

E. 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'.

F. Applicants from Great Britain and Other Countries with GCE Equivalent Examinations

1. For examinations written up to and including January 1975, GCE 'O' level at 'C' or grade-three level in English, Mathematics, and four academic options is required. For examinations written since January 1975, grade level 'B' or better is required.
2. Students whose native language is not English must write one of the tests from the following institutions:
   a. The University of Michigan English Language Institute, Ann Arbor, Michigan, USA. (minimum score 85)
   b. IELTS offered by the University of Cambridge, Local Examinations Syndicate, Syndicate Building, Cambridge, England. (minimum overall band 6.5)
   c. TOEFL offered by the Educational Testing Services, Princeton, New Jersey, 08540, USA. (minimum score 550 on paper based test; minimum score of 213 on computer based test).

G. 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 920. Significantly higher standards may be required of those requesting admission to restricted enrollment programs.

H. 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.

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.

To be admitted to the Consecutive BEd Early Years Program, effective Fall Term 2004, 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, effective Fall Term 2004, 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.

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 form, 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.

I. 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.

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

J. 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 communciated 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.

K. 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.

L. 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.

M. 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 successrul as well as a satisfactory letter of recommendation from employers and/or others. The adminting 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 re-admission to the program will not be considered.

N. 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 under the following regulations:

1. The general regulations of the University and the regulations of the degree program concerned must be satisfied.
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 different degree may not normally choose the same major, honours, option or concentration as in the first undergraduate degree.
7. Students must make specific application to the Associate Registrar/Admissions for entry to the second different degree program.
8. Only in special circumstances will students be admitted to a third different 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.

O. Transfer Students

University of New Brunswick Students

University of New Brunswick students wishing to transfer to another degree program must apply in writing to the Registrar for permission to do so, 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 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.

P. 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.

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.

Q. 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.

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.

R. 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 "credit" (CR) 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 and defined on the transcript key.

Course waivers as a result of prior learning assessment will be shown as a notation on the student transcript of record.

Unassigned credit to be applied to a student's program will be shown as a notation on the student transcript of 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.

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 being first obtained.

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 that instructors course. The Deans, the Director of the College of Extended Learning, Directors of Student Services, the Director and Associate Director of Residential Life, and the Universitys Department of Security will also have access to such images. Students who object to such use of 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)

i. 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.

ii. 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.

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

iv. Access is provided during the period the student is registered or formally seeking registration in the faculty members course and for 30 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. 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.

C. Dropping Courses

To avoid academic penalty students are advised to pay particular attention to the following information concerning the meaning of symbols, based on the date of withdrawal from a course, which will appear on the official transcript. Exact dates in effect for the current year are noted in the academic calendar at the front of this publication.

Students are encouraged strongly to consult with their advisor before withdrawing from a course.

Full Year Courses

- Courses dropped up to two weeks following the commencement of classes are deleted from the record. Courses dropped up to the end of the second week of classes in January carry no academic penalty and are shown as a "W" on the transcript.

- Courses dropped after the above-described no-penalty period but within at least two weeks prior to the end of scheduled classes are recorded on the transcript as "WF" and a grade of zero (0) is carried into the GPA.
- Courses dropped within the last two weeks of classes are recorded as an "F" on the transcript.

Term Courses

- Courses dropped up to two weeks after the commencement of classes are deleted from the record.
- Courses dropped between the above-described deletion period and the final fifteen days of the term are recorded on the transcript as a "W" and carry no academic penalty.
- Courses dropped after the no-penalty period are recorded on the transcript as "WF" and a grade of zero (0) is carried into the GPA.

D. 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 in writing by the instructor to the Registrar. An explanation of the reason/s for the change must be included at the time of the submission.

E. 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. Students may specify that a course is an "extra" and should not be included in their grade point average. Such a notation must be requested by the last date on which that course might have been dropped without academic penalty.
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.

F. 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 institution 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. (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 date to withdraw from the course without academic penalty.

13. 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% 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 in the Faculty of Computer Science or the Faculty of Business 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

- 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.
- F credit hours 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. Such a notation must be requested by the last date on which that course may be dropped without academic penalty.

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. **WF** (Withdraw and equated to a grade of "F")

9. **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.

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 take, and complete, a course a maximum of three times (excluding courses which are 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 appear, 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

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

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

D. 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 withold notification of an academic decision if a student has not satisifed 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 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 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 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

1. 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.
2. 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

X. 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.

XI. LISTING OF GRADUATES

A. **APPLICATION TO GRADUATE**

1. Students must make application to graduate by completing an "Application to Graduate" card, available from the Registrar's Office, by 1 March, for May graduation and 1 September for October graduation.
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.

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

XII. 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-HT	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.
MBA	Black silk lined with white silk bordered with light brown.
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.

SECTION C
FINANCIAL INFORMATION

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. The rates listed below were in effect for the 2001-2002 academic year. (Academic Year-1st September to 30th April-consists of two terms.) 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.

TUITITION FEES	
Full-time undergraduate	$3,945.00
Part-time undergraduate - per term course	$ 394.50
FEE DIFFERENTIAL (NON-CANADIAN)	
Full-time	$3,110.00
Part-time - per term course	$ 311.00
WORK TERM FEES	
Professional Experience Program Engineering	$686.00
Co-op Computer Science	$ 686.00
Co-op Business (UNBSJ)	$ 686.00
OTHER ACADEMIC FEES	
Application Fee (all faculties) - non-refundable	$ 35.00
Admission deposit (See Note 1) (by certified cheque or money order)	$ 75.00
Incomplete registration fee	$ 25.00
Challenge for credit examinations	25% of normal course fees
Special Examination- per paper (by certified cheque or money order)	$ 15.00
Rre-read per paper (by certified cheque or money order)	$ 15.00
Transcript Fee (See Note 2)	$ 3.00
Graduation Fee (See Note 3)	$ 35.00
HEALTH AND ACCIDENT INSURANCE	
Full-time undergraduate (Fredericton/Saitn John)	$ 97.00
Optional Dental Plan Coverage (Fredericton)	$ 79.00
International Students (single)	
Option 1:	$ 400.00 (plus above)
Option 2:	$ 840.00 (plus above)
STUDENT ORGANIZATION FEES	
Full-time	
Student Union - Fredericton (See Note 4)	$ 81.00**
SUB Expansion Fee - Fredericton	$ 25.00
Media Fees - Fredericton	$ 22.00
EUS Fee (Engineering) -Fredericton	$ 50.00
Students' Representative Council - Saint John	$ 125.00
Part-time	
ALPS - Fredericton - per term course (Max. $24/term)	$ 8.00
OPTAMUS - Saint John - per term course (max. $24/ term)	$ 12.50

RESIDENCE AND DINING HALL FEES

Room Deposit (by certified cheque or money order)	$ 300.00	
Fredericton	**Double Term**	**Single Term**
Residence with 19 meals/week*		
Double Room	$5,219.00	$2,910.00
Single Room	$6,184.00	$3,469.00
Single Room with Bath	$6,577.00	$3,682.00

***Note:** The above rates for 14 meals/week are less $148 (Double Term) and $80 (Single Term). Some Residence subject to ResNet or Lab Fee. September payment includes $50.00 House Dues and $100 Damage Deposit.

Residence (Room Only - No Meals)		
Double Room (No Meals)	$3,722.00	$2,090.00
Single Room (No Meals)	$4,507.00	$2,520.00
Saint John	**Double Term**	**Single Term**
Plan 1 - (value $1,900)		
Double Room	$4,533.00	$2,266.50
Single Room	$5,305.00	$2,652.50
Large Single Room	$5,605.00	$2,802.50
Plan 2 - (value $2,100)		
Double Room	$4,733.00	$2,366.50
Single Room	$5,505.00	$2,752.50
Large Single Room	$5,805.00	$2,902.50
Plan 3 - (value $2,300)		
Double Room	$4,933.00	$2,466.50
Single Room	$5,705.00	$2,852.50
Large Single Room	$6,005.00	$3,002.50

NOTES TO TABLE:

1. Admission Deposit of $75.00 applies against full-time undergraduate tuition.
2. For the first transcript, $1.00 for each additional ordered at the same time.
3. A deposit of $60 is required for the use of gradution regaliz. Upon return of the regalia, 25 is refunded.
4. Nursing student enrolled in Bathurst and Moncton are to pay a Student Activity Fee of $40.50 (not $81) and be exempted from the $25 SUB Expansiion Fee and $22 Media Fees..

Tuition fees cover all the normal charges 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 course 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 $3,110. Part-time non-Canadian or non-resident students must pay a fee of $311 per term course payable in full at registration. (CIDA, Commonwealth and some other Federal Government agency sponsored scholars are exempt.)

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
An admission deposit in the form of a certified cheque, money order, visa or master card 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. A refund of $60 is available if notice for cancellation is received by August 1.

The **incomplete registration fee** of $25 will apply to any student who fails to negotiate his/her student loan within the required time period, or makes a cheque or credit card payment which is returned by the bank, for any reason. (Registration may be cancelled.)

Health and Accident Insurance
Students should refer to "Section D - Facilities 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 2001-2002, in the amounts of $103 and $125, respectively. Part-time students in Fredericton will be represented by ALPS (Adult Learners and Part-time Students). On the Saint John campus OPTAMUS will be the association for part-time students (Organization of Part-time and Mature University Students). The compulsory fee for all Fredericton part-time students will be $8 per term course (Max. $24 per term). The compulsory fee for all Saint John part-time students will be $12.50 per term course (Max. $37.50 per term).

Room Deposit
A deposit of $300 will be required to confirm a room reservation. This advance deposit, in the form of a certified cheque, money order, master card or visa will be requested when an offer of a room is extended and a provisional reservation is made.

Students who send ***written*** notice of cancellation to the Dean of Residence ***before August 1***, may apply for a refund of $150 from their deposit. The balance of $150 is NOT REFUNDABLE under any circumstances.

Residence fees include 14 or 19 meals per week and cover a period from the day before registration until the day after the student's last examination in December, and the day before classes start in January until the day after the student's last regularly scheduled examination in the spring. Meals are not served during Thanksgiving weekend in the first term or during the mid-term 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 Off-Campus Housing Office, UNB, P.O. Box 4400, Fredericton, N.B., E3B 5A3.

REGULATIONS FOR PAYMENT OF UNIVERSITY FEES

Tuition, Health Insurance, Student Organization fees and Residence fees are payable on or before the first day of classes. They are payable in full by that date, but full-time students may pay in two installments, as indicated below. Where such option is exercised a $30 installment fee will be charged. Full-time undergraduate students on both Fredericton and Saint John campuses must pay a minimum of $2,700 plus any applicable differential fees and Health and Accident Comprehensive Insurance on or before the first day of classes. The balance will be payable by January 31, 2003.

Registration is not complete until all fees have been paid, or satisfactory arrangements made with Financial Services. Any student who fails to pay the required fee or to make satisfactory arrangements by the specified dates will have his/her course selections cancelled; such students will be required to register again once fees have been paid.

Interest will be added to overdue accounts at the rate of 0.75% per month, until paid.

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.

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 amount greater than the compulsory fees will be refunded.

Canada Student Loan Certificates will be processed by Financial Services on or after August 16, 2002; Quebec Student Loan Certificates on or after September 1, 2002. Students must appear in person with identification at Financial Services to sign the loan certificate.

Outstanding fees must be paid from the proceeds of the loan. Students will authorize the negotiating bank to remit directly to the University the amount required to cover applicable fees. Students must deliver their completed loan certificates to their bank immediately after signing to avoid late charges. Students who receive the full disbursement of a loan in September should pay the year's fees in full to avoid the $30 installment fee.

If government student loan certificates have not been received by the date fees are due, applicable fees must be paid from your own resources. It is not possible to defer due payments without the approval of Financial Services.

For tax purposes, Revenue Canada Tuition and Education Credit Certificates (T2202A) will be mailed by the Registrar, to all students, before the end of February.

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.

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.

The refund will be:

a. For courses dropped on or before September 14th, the tuition paid less the minimum administrative charge as outlined above, or
b. For courses dropped after September 14th, the tuition fee paid less a pro-rated charge.

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

- 27 October for Fall (first) term courses
- 19 January for full-year courses
- 23 February 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

1. To reserve a room, all students will be required to pay a deposit of $300, by certified cheque, money order, master card 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 accomodation 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 55% of the applicable residence rate, plus $300 advance deposit. The balance will be payable by January 31, 2003. Interest will be added to overdue accounts at the rate of 0.75% 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 9, 2002, less the appropriate per diem from the 8th 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 appropriate per diem rate up to 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 9, 2002, plus the appropriate per diem rate from 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 September 9, 2002. Students wanting such permission should apply in writing no later than December 1, 2002. 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.
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

(Listed fees are mandatory)

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 "miscellaneous" listed below is an estimated minimum cost for clothing, laundry, transportation, and personal expenses.

Tuition Fees	$3,945
Student Association Fees	$304 (Fredericton)
	$301 (Saint John)
Books and Supplies	$700 to $1000
Room and Meals	$5,219 (Double Room, 19 meal plan, Fredericton)
Travel Home	$600 to $1,000
Local Travel	$350
Total	$10,879 to $11,579

GOVERNMENTAL STUDENT LOANS 2002 / 2003

Applications, for the current academic year, are available through most Provincial Student Loan Departments anytime after March/April. To obtain an application for the 2002/2003 year of study, please contact the Minister of Education listed in the Blue Pages of your local telephone book. New Brunswick Student Services Branch, Department of Advanced Education and Labour address is: P.O. Box 6000, 548 York Street, Fredericton, New Brunswick, E3B 5H1, Tel (506) 453-2577/Fax (506) 444-4333.

New Brunswick Student Aid full-time equivalency -- You must be registered in at least three courses each semester. ***The only exceptions to this rule*** are Single Parents and Students with Disabilities who must be registered in at least two courses each semester.

Applications for **all other Provincial Student Loan Departments** can be obtained through UNB's Financial Aid (FA) Office located in Room 3, Alumni Memorial Building ***OR*** by contacting the Minister of Education listed in the Blue Pages of your local telephone book. *Please contact the FA office at (506) 453-4796 to verify availability of Provincial Loan applications.*

Canada Student Loan full-time equivalency -- You must be registered in at least three courses each semester. **Exceptions to this rule** are Single Parents and Students with Disabilities who must be registered in at least two courses each semester.

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.

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.

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 term at UNB and has given satisfactory evidence of merit.

Scholarships are awarded to UNB students during a study term. The award 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 award's annual value is credited to the student's UNB fees for each study term, to a maximum of two study terms per year. In the event that the award exceeds the compulsory fees for the study term, a refund cheque will be issued. Unless otherwise stated, renewable scholarships are awarded for a maximum of eight study terms.

Students holding renewable awards are expected to maintain the academic standing specified in the recipient's 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.

Each recipient will be notified by letter 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.

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

ENTRANCE SCHOLARSHIPS

Entrance Scholarship Program

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

The entrance scholarship application form is attached to the general application for admission to the University. 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 with Scholarship Averages of 80% or higher will receive an entrance scholarship 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.

The Scholarship Average is the average of Grade 11 and first term Grade 12 marks. Only courses recognized by the University are used in the calculation. Bonus points for enriched courses are added to the Scholarship Average as follows, as long as a mark of 75% is achieved in the enriched 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. Normally, the Scholarship Average is not recalculated using Grade 12 final marks. International students are considered on an individual basis.

ARTS

Blake-Kirkpatrick Undergraduate Scholarship in History
field: Arts - History. **value:** $3,000 per year for first and second year and $2,000 for year 3 & 4**number:** 1 **duration:** 4 years. **conditions:** Awarded to a student who is a Canadian citizen, with preference given to a graduate of a New Brunswick high school, and who has shown a potential for leadership. The recipient must pursue the History majors program in the Faculty of Arts. Academic performance and financial need are considerations in the making of the award. **donor:** Anonymous.

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.

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.

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.

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.

BUSINESS ADMINISTRATION

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.

KPMG Entrance Scholarship
field: Business Administration. **value:** $2,000. **number:** 1 **duration:** 1 year. **conditions:** Awarded on the basis of scholastic attainment to a student entering the Business Administration degree program. **donor:** KPMG Peat Marwick Thorne Chartered Accountants

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.

W. K. Webb & Associates Scholarship
field: Business Administration. **value:** $1,000. **number:** 1. **duration:** 1 year. **conditions:** Awarded to a student entering the Business Administration degree program on the Fredericton campus. Selections are made on the basis of scholastic attainment and financial need. **donor:** W. K. Webb and Associates.

COMPUTER SCIENCE

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.

ENGINEERING

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.

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 in Chemical or Mechanical Engineering
field: Chemical Engineering or Mechanical Engineering. **value:** $3,000 per year for first and second year and $2,000 for year 3 & 4 **number:** 1. **duration:** 4 years. **conditions:** Awarded to a student who is a Canadian citizen, with preference given to a graduate of a New Brunswick high school, and who has shown a potential for leadership. Academic performance and financial need are considerations in the making of the award. **donor:** Anonymous.

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.

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.

M. Patrick Gillin Ottawa Engineering Scholarships
field: Engineering **value:** $4,000 **number:** 5. **duration:** 1 year. **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

Hamilton-Roberts Entrance Scholarship in Geomatics Engineering
field: Geomatics Engineering **value:** $2000. **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.

A.W. McLaughlin Entrance Scholarship in Geomatics Engineering
field: Surveying Engineering. **value:** Up to $1,000. **number:** 1. **duration:** 1 year. **conditions:** Open to a Fredericton campus student entering the Surveying 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.

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.

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.

FORESTRY

75th Anniversary Scholarship in Forestry
field: Forestry or Forest Engineering. **value:** $2,000 **number:** 1 **duration:** 1 year**. conditions:** Awarded to a student beginning an undergraduate degree program in Forestry of 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.

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.

Hon C.D. Richards Scholarship
field: Forestry or Forest Engineering. **value:** $1,975. **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.

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.

NURSING

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.

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.

SCIENCE

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.

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.

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.

MULTIPLE PROGRAMS

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.

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.

Fletcher Peacock Memorial Scholarship
field: Preference to those enrolling or enrolled in Business Administration, Engineering or Forestry. **value:** $250. **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.

UNRESTRICTED

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. Selections are made on the basis of scholastic attainment and financial need. **donor:** Associated Alumni.

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.

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.

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.

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.

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.

H. S. Bridges Memorial Scholarship
field: Unrestricted. **value:** $1,000. **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.

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:** $950. **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.

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 beginning an undergraduate degree program at the University of New Brunswick. Selections are made primarily on the basis of scholastic attainment. **donor:** The Crown Life Insurance Company

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.

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 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:** Recipient must be a resident of the City of Fredericton for a period of six months prior to the commencement of the UNB academic year. 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 Foundation.

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.

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 who will attend UNB on a basis. selections are made on the basis of scholastic attainment and financial need.
The late Mr. John Robertson.

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.

Colin B. MacKay Scholarship
field: Unrestricted. **value:** $500. **number:** 1.
duration: 1 year (may be renewed).
conditions: Awarded to an entering student on the basis of high academic standing. **donor:** Associated Alumni.

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.

Andrew H. McCain Scholarship
field: Unrestricted. **value:** $3,000 for first year, $2,500 for second year, $2,000 for third year, and $1,500 for fourth year. **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.

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.

Edith G. McLeod Memorial Scholarship
field: Unrestricted. **value:** $775. **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. McMenaman 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. McMenaman.

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:** $125. **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 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 elects to attend UNB. Selection made by the Dean of Science, based on recommendations by the N.B. Provincial Science Fair Committee.

Philip W. Oland Scholarship
field: Unrestricted. **value:** $2,500. **number:** 2 **duration:** 1 year. **conditions:** Awarded to students from the greater Saint John area entering first year UNB Saint John on the basis of academic performance and financial need, with consideration given to participation in extra-curricular activities. **donor:** The Saint John Foundation.

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.

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.

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:** $500 discount on Residence Fees. **number:** 15. **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.

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.

Etta L. Ross Memorial Scholarship
field: Unrestricted. **value:** $1,380. **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 three 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.

Sceptre Investment Council Limited 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, one to the Saint John campus and one to the Fredericton campus. **donor:** Sceptre Investment Counsel Limited.

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. 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.

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.

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.

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.

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.

University Special 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. **donor:** The University.

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.

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.

ENTRANCE / UNDERGRADUATE SCHOLARSHIPS

A number of scholarships are open to students at both the entrance level or the undergraduate levels. **The entrance scholarship application or the undergraduate scholarship application covers these scholarships as well.**

ARTS

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

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.

BUSINESS ADMINISTRATION

Business Administration 25th Anniversary Scholarship
field: Business Administration. **value:** Up to $1,000. **number:** 10 or more **duration:** 1 year. **conditions:** Awarded on the basis of scholastic attainment and financial need to 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.

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.

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.

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.

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.

Welsford R. Jenkins Bursary for Business Administration
field: Business Administration. **value:** $760. **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.

Karnes Scholarship in Business Administration
field: Business Administration. **value:** $800. **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.

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.

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

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.

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.

COMPUTER SCIENCE

MacLauchlan McKenzie Scholarship in Computer Science
field: Computer Science. **value:** $1,000. **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.

EDUCATION

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.

ENGINEERING

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)

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.

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.

FORESTRY

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.

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.

NURSING

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.

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.

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.

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.

SCIENCE

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.

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.

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.

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 or École Secondaire Nepisiguit 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 for the two schools. **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.

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.

MULTIPLE PROGRAMS

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.

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.

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.

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.

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

William MacIntosh Memorial Scholarship
field: Preference to those enrolling or enrolled in Mathematics or Natural Science. **value:** $250. **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

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.

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.

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.

Laura Tilley Memorial Bursary
field: Education and Nursing. **value:** $350. **number:** 2 **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.

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.

UNRESTRICTED

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

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.

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.

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 Atletics.
donor: The Buckingham Family.

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

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.

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.

Class of 1953 Scholarship
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.

Robert Maynard Coburn Memorial Scholarship
field: Unrestricted. **value:** $1,250. **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.

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.

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.

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 2.0 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 CIAU. **Awarding Agency:** The University on the recommendation of the Director of Athletics.

Friends of the Varsity Reds-Women's Soccer
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 2.0 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 CIAU. **Awarding Agency:** The University on the recommendation of the Director of Athletics.

Gale Memorial Scholarship
field: Unrestricted. **value:** $2,000. **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.

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:** $550. **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.

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.

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.

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.

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 acheivement (3.0 assessment year GPA for returning students, and 80% average for entering students), special athletic ability in the sport of women`s 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.

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.

H. Harrison McCain Bursary
field: Unrestricted **value: $**5000, $3500, $2500, $2500 **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 $5,000 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.
donor: H. Harrison McCain Foundation.

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.

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:** $500 **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.

Anne Murray Alumni Scholarship
field: Unrestricted. **value:** $500. **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:** $700. **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.

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.

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 2.0 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 CIAU. **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.

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 conside **donor:** The late Mr. James E. Porter.

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:** $250. **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:** Renaaissance College.

Hazen M. & Margaret A. Smith Scholarship
field: Unrestricted. **value:** Variable. **number:** Variable. **duration:** 1 year. **conditions:** Open to students who have graduated from a Charlotte County high school. Selections are made primarily on the basis of academic performance. **donor:** Margaret A. Smith.

Dr. Jed B. Sutherland Memorial Scholarship
field: Unrestricted. **value:** $2,000 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.

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.

Clarence and Dorothy Tingley Leadership Award
field: Unrestricted. **value:** $1000 **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.

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:** Up to $1,500 **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 CIAU 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 "Punch" Walker.

UNDERGRADUATE SCHOLARSHIPS

Undergraduate Scholarship Program

Students currently enrolled at UNB are encouraged to apply each year for Undergraduate Scholarships between January 15th and April 15th, using the application form found on the UNB website, through My UNB E-Services, under the Academic tab.

All undergraduate students are encouraged to apply for scholarship support, as long as they have demonstrated successful academic performance and have completed at least 24 credit hours at UNB. Priority is given to students who are on the Dean's List, or who have achieved a Scholarship GPA of 3.7 or higher, and are completing their first undergraduate degree. (See Section F for the definition of the Scholarship GPA.)

Unless otherwise specified, **the undergraduate scholarship application covers all undergraduate scholarships awarded by the University.** Successful recipients are notified during the summer.

ARTS

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.

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.

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 Spanish and Latin American Cultures.
donor: Julia MacLauchlan and Warren McKenzie.

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.

Form and Format Scholarship

field: Arts. **value:** $1,000. **number:** 1. **duration:** 1 year. **conditions:** Awarded to a Fredericton campus student who has completed at least the normal requirements for the first year of the Bachelor of Arts degree program, and has demonstrated excellence in at least 6 ch of English at UNB. **Awarding Agency:** The University on the recommendation of the Department of English. **donor:** The Department of English through proceeds from the sale of Form and Format.

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.

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 with consideration given to a student who has shown leadership qualities and community skills.
Awarding Agency: The University on the recommendation of the Chair, Dept. Of Political Science. **donor:** The Fredericton South 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.

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 30 ch, preferably majoring in Political Science, for one academic term of study at another university, including those outside Canada. (If a suitable candidate is not available in Political Science, students in other areas will be considered.) Selection is on the basis of academic attainment, career aspirations, and general interests. **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.

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.

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.

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.

Peter McGahan Memorial Scholarship
field: Arts. **value:** $500. **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.

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 dougle 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 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. 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.

Mosaic Technologies Scholarship
field: BA (Multimedia) **value:** $1500. **number:** 1. **duration:** 1 year. **conditions:** Awarded to a Fredericton campus student who has completed at least the normal requirements for the first year of the Bachelor of Arts (Multimedia Studies) degree program. Selection will be based on scholastic attainment and an essay on the technology industry in New Brunswick. Preference will be given to a graduate of a New Brunswick high school. **apply:** The Faculty of Arts, UNB Fredericton. **Awarding Agency:** The University on the recommendation of the Faculty of Arts. **donor:** Mosaic Technologies Inc.

Jack Murray Memorial Scholarship
field: Arts. **value:** $1,000. **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.

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.

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.

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.

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.

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.

BUSINESS ADMINISTRATION

Lorna Jenkins Alaffe Memorial Bursary
field: Business Administration. **value:** $650. **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.

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.

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.

Canadian Council for Public Affairs Advancement (CCPAA) Scholarship
field: Business **value:** $400 **number:** 2 **duration:** 1 year
conditions: Awarded to UNB Saint John students who are enrolled in the third year of the Business Administration degree program. Selections are made on scholastic attainment and participation in community service organizations or campus politics, such as student government. **Awarding Agency:** The University, on the recommendation of the Faculty of Business. **donor:** Dr. Craig S. Fleisher, on behalf of the Canadian Council for Public Affairs Advancement (CCPAA).

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.

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.

Delta Hotels Scholarship
field: Bachelor of Applied Management in Hospitality and Tourism. **value:** $500. **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:** Delta Hotels.

Electronic Commerce Centre Awards
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. Students will be required to apply directly to the Dean of Business, UNB Saint John. The awards are funded by the Electronic Commerce Centre.

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.

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.

FMI Fredericton Chapter Bursary
field: Business Administration (Commerce). Preference to Finance and/or Accounting. **value:** $500. **number:** 1. **duration:** 1 year. **conditions:** Awarded on the basis of financial need to students in the BBA or MBA program, who have completed at least the normal requirements for the first year of the program in which they are registered at the University, and have demonstrated successful academic performance. Open to Fredericton and Saint John campuses, and part-time students, preference given to Fredericton campus students. Applicants must have completed or be enrolled in an intermediate accounting, advanced accounting or public sector finance course. Bursary can be split if there are two qualified candidates (one in the BBA program and one in the MBA program). Successful candidates will receive a complimentary (honorary) membership in FMI Fredericton for year of award. **Awarding Agency:** The University on the recommendation of the Faculty of Administration and the Faculty of Business. **donor:** FMI - Fredericton Chapter. (Financial Management Institute.)

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.

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.

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.

Sany Leckie Memorial Bursary
field: Business Administration. **value:** $1,465. **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 in the second year of the Business Administration program (BBA) on the Fredericton campus, who has demonstrated successful academic performance. **donor:** The Leckie family.

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.

M5 Scholarship
field: BAMHT **value:** $1000 **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.

E.D. Maher Scholarship
field: Business Administration. **value:** Up to $1,000. **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.

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.

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.

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.

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 Admininstration.

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 scholastics achievement. **Awarding Agency:** The University on the recommendation of the Director of the BAMHT degree program.
donor: Tourism Synergy Ltd.

H. D. Woods Memorial Bursary
field: Business Administration. **value:** $500. **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. "Bus" Woods.

COMPUTER SCIENCE

DMR Consulting Group Inc. Co-op Scholarship
field: Computer Science Co-op Program. **value:** $2,000. **number:** 1. **duration:** 1 year. **conditions:** UNB students who are entering their final year of the Computer Science Co-op degree program, and who have successfully completed at least one Co-op work term. Selection is made on the basis of scholastic attainment at UNB (CGPA), as well as other qualities such as communication skills and team work. Candidates will be screened by the Faculty of Computer Science to ensure the recipient demonstrates the background to work effectively at DMR in their final two Co-op work terms (not consecutive).
apply: Co-op Coordinator, Faculty of Computer Science and Assistant Registrar/Undergraduate Awards, University of New Brunswick.
Awarding Agency: The University on the recommendation of the Faculty of Computer Science. **donor:** DMR Consulting Group Inc. - Website www.dmr.com

MacLauchlan McKenzie Scholarship: Women in Technology
field: Computer Science. **value:** $1,000. **number:** 1 **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.

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.

EDUCATION

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.

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.

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) or Bachelor of Office Management degree programs at 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.

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.

Dietz-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.

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.

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.

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.

Eleanor Haines Memorial Scholarship
field: Education. **value:** $1,500. **number:** 1 **duration:** 1 year. **conditions:** A student of promise studying towards a degree in Education. **donor:** The late Hazel L. Haines.

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.

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. **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.

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.

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.

Sheri Lynne McCordick Memorial Bursary
field: DAUS Program. **value:** Variable. **number:** 1. **duration:** 1 year. **conditions:** Awarded on the basis of financial need to a deserving student in the counseling or special education area of the DAUS program. **Awarding Agency:** The University on the recommendation of the Faculty of Education. **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.

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.

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.

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.

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).

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.

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. Selections 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.

ENGINEERING

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.

Nels Anderson II Award
field: Civil Engineering. **value:** $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.

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.

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.

Dr. R. Balasubramanian Memorial Scholarship
field: Electrical Engineering. **value:** $1,000-$1,500. **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.

William L. Barrett Engineering Undergraduate Scholarship
field: Engineering. **value:** $1000. **number:** 1 **duration:** 1 year. **conditions:** To be awarded annually to a student enrolled 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

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.

Joseph Braithwaite Memorial Scholarship
field: Surveying Engineering. **value:** Variable. **number:** 1 **duration:** 1 year. **conditions:** Awarded on the basis of scholastic attainment and financial need to a student in the Surveying Engineering degree program. **donor:** The Surveying Engineering Class of 1989, and friends of the late Joseph Braithwaite.

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.

Canadian Process Control Association Scholarship
field: Engineering - Instrumentation and Control. **value:** Up to $3,000.per year **number:** 1, (awarded annually). **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).

Stanley B. Cassidy Memorial Engineering Undergraduate Scholarship
field: Engineering. **value:** $1000. **number:** 1. **duration:** 1 year. **conditions:** To be awarded annually to a student enrolled 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:** APENB Fredericton Branch (formerly EIC- APENB Fredericton Branch).

Colter/CGU 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:** CGU Group Canada Inc., in honour of their 50-year business relationship with Diamond Construction.

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.

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 fourth 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).

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.

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.

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.

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.

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.

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.

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.

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.

Woodrow P. London Scholarship
field: Civil, Electrical and Mechanical Engineering. **value:** $1,170. **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.

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.

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.

Maritimes & Northeast Pipeline Legacy Scholarship
field: Engineering (including Forest Engineering) **value:** $1,000. **number:** 1. **duration:** 1 year. **conditions:** Awarded to a Fredericton campus student who has completed the normal requirements for the first year of the degree program and is entering the second year. The recipient must be a graduate of a high school located in the Atlantic Provinces and must show a demonstrated interest in environmental engineering. Selection will be made on the basis of scholastic attainment. **Awarding Agency:** The University on the recommendation of the Faculty of Engineering. **donor:** Maritimes & Northeast Pipeline .

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.

Monenco-Agra Scholarship in Memory of Dr. J.K.C. Mulherin
field: Engineering. **value:** $2,000. **number:** 1. **duration:** 1 year. **conditions:** To be awarded to a married student who is entering the third or higher year in an undergraduate degree program in Engineering at the University of New Brunswick, Fredericton campus (minimum 90 cr.hrs. completed). A satisfactory academic standing and demonstrated financial need are criteria for the award. **donor:** Monenco-AGRA Inc.

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.

Sutton-Wilkinson Memorial Bursary
field: Engineering (preference to Civil Engineering). **value:** Variable. **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.

Paul C.C. Ting Memorial Scholarship
field: Electrical Engineering. **value:** $1,000. **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.

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.

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.

Westcoast 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:** Westcoast Energy Inc.

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.

FORESTRY

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.

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 fo British Columbia Professional Foresters.

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.

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.

Forestry Special Award
field: Forestry. **value:** $1,100. **number:** 1 **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.

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:** $800. **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.

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.

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.

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.

H. Douglas Long Memorial Scholarship
field: Forestry. **value:** Up to $500. **number:** 1. **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.

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.

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.

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.

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.

Stora Enso Port Hawkesbury Limited Scholarship
field: Forestry or Forest Engineering. **value:** Minimum $800 per year. **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.

KINESIOLOGY

Annual Eastern Canada Student Recreation Conference Award
field: Phys. Ed & Recreation **value:** Variable **number:** 1 **duration:** 1 year **conditions:** Awarded to a Recreation & Leisure Studies student who has completed a minimum of 65 credit hours and all required first and second year courses in the Recreation & Leisure 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.

Dax Brown Memorial Scholarship
field: Physical Education and Recreation. **value:** $1,000. **number:** 1. **duration:** 1 year. **conditions:** To be awarded to a student who has successfully completed three years of the Bachelor of Physical Education 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.

Christina Estey Memorial Award
field: Physical Education. **value:** Approximately $100. **number:** 1 **duration:** 1 year. **conditions:** Awarded to a continuing student who has completed the first year in Physical Education on the Saint John campus, and demonstrated successful academic performance. **donor:** Family and friends of the late Christena Estey, former manager of the Bookstore and avid supporter of athletics on the Saint John campus.

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.

NURSING

Bessie Handleman Began Memorial Scholarship
field: Nursing. **value:** $250. **number:** 1 **duration:** 1 year. **conditions:** Awarded on the recommendation of the Nursing Faculty to a student in the Bachelor of Nursing degree program at any of the four University of New Brunswick sites, who has demonstrated excellence in Nursing, has completed a minimum of all of the required year one courses, and is in need of financial assistance. **Awarding Agency:** The University on the recommendation of the Nursing Faculty. **donor:** The late Bessie Handleman Began.

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.

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.

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.

Nancy M. Fraser & Clara R. Stone Fraser Scholarship
field: Nursing. **value:** $500. **number:** 1. **duration:** 1 year. **conditions:** Deserving student having a high scholastic standing who requires financial assistance. **donor:** The late Norman S. Fraser.

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.

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 Nursing Bursary
field: Nursing. **value:** $200. **number:** 5 **duration:** 1 year. **conditions:** Four bursaries awarded on the recommendation of the Nursing Faculty to students who have completed at least the normal requirements for the first year of the Nursing degree program at any 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.

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

Irene Leckie Scholarship in Nursing
field: Nursing. **value:** $1,000. **number:** 3. **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:** $1,480. **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.

Julianna K. MacLeod Scholarship
field: Nursing. **value:** $300. **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.

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.

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.

Dr. Robert M. Pendrigh Scholarship
field: Nursing. **value:** $1,430. **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.

Saint John Chapter Nurses Association of New Brunswick Bursary
field: Nursing. **value:** $425. **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.

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.

Sr. Darrah/St. Josephs Hospital Alumni Scholarship
field: Nursing. **value:** $500. **number:** 1. **duration:** 1 yea **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. 0**donor:** The New Brunswick Nurses Foundation.

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

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 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. 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.

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.

SCIENCE

Sharon L. W. Bachinski Memorial Scholarship
field: Geology. **value:** $500. **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.

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.

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. 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.

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.

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.

Geological Association of Canada - Mineralogical Association of Canada Federicton 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.

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.

Fred Klidaras - A. L. McAllister Scholarship
field: Geology or Geological Engineering. **value:** $2,000 **number:** 1. **duration:** 1 year. **conditions:** Awarded annually on the basis of academic standing, extracurricular activities and need, to an undergraduate student on the Fredericton campus, preferably to one enrolled in or who has been enrolled in applied geochemistry. Students in economic geology or other courses related to the mineral industry are also eligible. **Awarding Agency:** The University on the recommendation of the Department of Geology. **donor:** Mr. Fred Klidaras, Chemical Analyst in the Department of Geology, in honour of Dr. A.L. McAllister, former Head of the Department.

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.

A.L. McAllister Scholarship
field: Applied Geology. **value:** $2,000. **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.

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.

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.

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.

Dr. G.F.M. Smith Memorial Scholarship
field: Biological Sciences. **value:** One year's tuition. **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.

MULTIPLE PROGRAMS

Alan David Bell Memorial Scholarship
field: Chemical Engineering or Science. **value:** Variable. **number:** 1 **duration:** 1 year. **conditions:** Open to full-time 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.

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.

Lt. Governor Wallace S. Bird Memorial Scholarship
field: Business Administration, Engineering or Forestry. **value:** $500. per annum. **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.

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.

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.

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.

Lorraine Dee Memorial Scholarship
field: Radiography. **value:** Up to $500 per year. **number:** 2. **duration:** 2 years. **conditions:** Open to students admitted to a New Brunswick School of Radiography. Candidates must be graduates of a New Brunswick High School and have completed at the University of New Brunswick at least the normal requirements for the first year of the Bachelor of Arts or Bachelor of Science degree program. Preference will be given to students with science courses. Awarded on the basis of scholastic attainment and financial need with consideration given to participation in extracurricular activities. **donor:** Anonymous.

EDC International Studies Scholarship
field: Business or Economics **value:** $3,000 **number:** 1 **duration:** 1 year **conditions:** Awarded to a second or third-year student enrolled in the Bachelor of Business Administration degree program or pursuing a major in Economics in the Bachelor of Arts degree program. The recipient must have a demonstrated interest in international business, international relations or finance. Candidates are required to complete an essay. Included with this award is an opportunity for a remunerated 4-month work term at EDC to be used during the year the award is held. **Awarding Agency:** The University, on the recommendation of the EDC Awards Committee. **donor:** Export Development Canada (EDC).

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), BSc(DA), 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 Applied Statistics and Computer Science. **donor:** J.A. Flemming, former Professor of Mathematics and Statistics at UNB Saint John.

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.

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.

New Brunswick School Trustees Association Award
field: Education, Nursing, Kinesiology. **value:** Variable. **number:** Variable. **duration:** 1 year. **conditions:** Awarded on the recommendation of a committee with representation from the faculties of Education, Nursing and Kinesiology to a student who is a graduate of a New Brunswick high school, and is entering the final year of an undergraduate degree program or pursuing graduate studies as indicated under "Field". Recipients must seek employment in their field in the Province of New Brunswick. In addition to scholastic attainment, consideration of the candidate's previous involvement with children in a paid or volunteer capacity will form part of the selection process. **Awarding Agency:** The University on the recommendation of the designated awarding committee. **donor:** The New Brunswick School Trustees Association.

Lewis Gregory Sears Memorial Scholarship
field: Mathematics. **value:** Variable. **number:** l 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.

Lorenzo N. Wadlin Scholarship
field: One in Mechanical Engineering and one unrestricted. **value:** $460. **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. Theodrore Weiner, Professor Emeritus of Physics, who taught at UNB from 1947-1975.

UNRESTRICTED

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.

John Aubrey Allan Memorial Scholarship
field: Unrestricted. **value:** $500. **number:** 2 **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. **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. Selections are made on the basis of scholastic attainment and financial need. **donor:** Associated Alumni.

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 first year of the program in which she is registered. Tenable at Fredericton campus only. **donor:** Canadian Federation of University Women-Fredericton.

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. **donor:** R.H. McLaughlin (CE'43)

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.

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.

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.

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.

Canadian Federation of University Women - Fredericton Scholarship
field: Unrestricted. **value:** $1,500. **number:** 1. **duration:** 1 year. **conditions:** Awarded to a mature 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. Financial need is an important consideration. **donor:** Canadian Federation of University Women-Fredericton.

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 men`s 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.

Chartwells 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 Chartwells, a division of the Compass Group.

Alden R. Clark Scholarship (IODE)
field: Unrestricted. **value:** Variable. **number:** Variable **duration:** yes **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.

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 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.

Thomas J. Condon International Scholarship
field: Unrestricted. **value:** Approximately $350. **number:** 1 **duration:** Spring/Summer Session **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.

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,

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.

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.

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.

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.

Fredericton 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 a Fredericton high school, and is entering the third year of a degree program. The recipient must have demonstrated successful academic performance. **donor:** The Fredericton Foundation.

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.

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.

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. **Awarding Agency:** The University in consultation with the Associated Alumnae. **donor:** The late Miss Zula V. Hallett.

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.

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.

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 student on each UNB campus who has completed the normal requirements for the first year of the program in which (s)he is registered and has demonstrated successful academic performance. **donor:** The Provincial Chapter of New Brunswick IODE.

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.

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.

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.

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.

Dasho Lhaderla Award
field: Unrestricted. **value:** $2,000. **number:** 1. **duration:** 1 year. **conditions:** Awarded to a UNB student from Bhutan who has completed the minimum requirements of the first year of his/her degree program. Selection will be based on academic achievement and financial need. **donor:** Ian Aitken.

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.

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 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.

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.

NB Tel 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:** NBTel Mobility

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.

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.

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.

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.

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.

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.

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.

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.

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.

William T. & Annie M. Snodgrass Scholarship
field: Unrestricted. **value:** $250. **number:** 1 **duration:** 1 year. **conditions:** To be awarded annually at the beginning of the second term to a graduate of a New Brunswick high school who has completed at least the normal requirements for the first year of the program in which he/she is registered at UNB, has maintained a good academic standing and is in financial need. The latter condition is to be an important consideration in making the award. **donor:** Dr. Florence Snodgrass.

Ste. Anne's Point Chapter I.O.D.E. Bursary
field: Unrestricted. **value:** Minimum $200. **number:** 1. **duration:** 1 year. **conditions:** Awarded on the basis of academic performance and financial need to a Fredericton campus UNB student who is entering the penultimate or final year of an undergraduate degree program. **donor:** Ste. Anne's Point Chapter IODE.

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.

UNB Associated Alumni Leadership Award
field: Unrestricted. **value:** $2,000. **number:** 1. **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 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. 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:** 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. 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.

University Special 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. **donor:** The University.

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.

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.

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 (15 - Encaenia)
Governor Generals Academic Medal (Encaenia)
Governor Generals Gold Medal (Encaenia - Graduate Student)
Douglas Gold Medal (Encaenia)

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.

BOTH CAMPUSES

ARTS

W. H. Harrison Prize for Conversational French
conditions: A prize of $350 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.

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.

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.

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.

BUSINESS ADMINISTRATION

Certified General Accountants Association of NB Prize
conditions: Two prizes of $700 value ($350 cash + $350 grant towards the CGA program of studies). The prizes are awarded to a student at the Fredericton campus as well as a student at the Saint John campus. Each prize is awarded annually to the student entering the final year of study (90-120 ch) in the Business Administration program who attains 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 recipient 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.

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 - BA 2223 and BA 3227. The recipient must not have received any other accounting award. Donor: CMA Canada. (The Society of Management Accountants of New Brunswick).

Deloitte & Touche Prize in Accounting
conditions: Two prizes of $300 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 (BA 4235 - UNBF, BA 3235 - UNBSJ), and Intermediate Accounting II (BA 4236 - UNBF, BA 3236 - UNBSJ), and have completed 90 ch of the BBA degree program at UNB. The prize is funded by Deloitte & Touche.

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 BA 3413, BA 3424 and BA 3223). 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.

New Brunswick Institute of Chartered Accountants Prize
conditions: A prize of $300 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.

Northwater Prize for Investment Management Writing
conditions: An annual prize of $1,000 to be presented to the undergraduate or graduate student in the Faculties of Administration (UNBF) or Business (UNBSJ) who writes the best essay on a topic related to investment. The topic will be assigned annually by the Board of Governors Investments Committee and the papers judged by a panel of faculty from both campuses. The prize is funded by Northwater Capital Management Inc.

ENGINEERING

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.

UNRESTRICTED

Alumni Prize
conditions: An annual prize of $250 has been established by The Associated Alumni and is awarded to the student who makes the highest grade point average on the examinations in the required subjects of the Freshman year. This prize consists of money and books in equal portions and is presented to the winner by a representative of the Society.

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.

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.

Lieutenant Governor of New Brunswick Silver Medal
conditions: Fifteen 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.

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.

FREDERICTON CAMPUS

ARTS

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.

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 Professor of Classics. No student may receive the medal twice.

Ambassodor 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 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 Spain's Prize I
conditions: A book prize to be awarded annually on the recommendation of the Department of Spanish and Latin American Cultures 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 of Spanish and Latin American Cultures 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 Prizes
conditions: Two book prizes in French and German awarded annually on the recommendation of the Departments of French and of German and Russian respectively 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.

Marion Anderson Memorial Prize
field: Arts. **value:** $1,700. **number:** 1. **duration:** 1 year. **conditions:** Awarded 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. **donor:** 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.

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.

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.

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
field: History. **value:** $250. **number:** 1. **duration:** 1 year. **conditions:** Awarded to a student entering the Senior level (91-120 ch) who has attained high academic standing and also demonstrated a wide interest in History. **Awarding Agency:** The University on the recommendation of the History Department. **donor:** Associated Alumni.

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.

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.

Bliss Carman Memorial Prize
field: Unrestricted. **value:** $100. **number:** 1. **duration:** 1 year. **conditions:** Undergraduate submitting the best group of six poems of not more than forty lines each. No student may win the scholarship more than twice. **apply:** The Chair of the Department of English. **donor:** The late Dr. Lorne Pierce.

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.

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.

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.

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.

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.

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.

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.

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.

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 German and Russian 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.

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.

Dr. Vicky Gray Memorial Award
field: Women's Studies. **value:** $650. **number:** 1. **duration:** 1 year. **conditions:** Awarded 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. **Awarding Agency:** 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. **donor:** The Estate and Friends of Dr. Vicky Gray.

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.

Richard Burpee Hanson Prize
field: Arts. **value:** $300. **number:** 1. **duration:** 1 year. **conditions:** 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. **apply:** The Dean, Faculty of Arts, University of New Brunswick. **donor:** Mrs. R.B. Hanson.

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.

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.

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.

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.

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.

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.

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.

William Stuart Macfarlane Prize
field: Classics. **value:** Up to $5,000. **number:** 1. **duration:** 1 year. **conditions:** Graduating student who, in the opinion of the authorities of UNB dealing with such matters, is the best classical scholar in Latin and Greek of the graduating class of said University. **apply:** The Dean, Faculty of Arts, UNB. **donor:** 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.

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.

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.

Theresa McGrath Prize

conditions: A book prize (a French/English dictionary) to be awarded annually on the recommendation of the French Second Language Education group to a graduating student with a concentration in French 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 and 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.

Thomas Forsyth McIlwraith Prize

field: Anthropology. **value:** $200. **number:** 1. **conditions:** A prize in honour of Thomas Forsyth McIlwraith, the first person in Canada to hold a professorship in Anthropology. Open to any Honours or Majors student with the highest standing in Anthropology who has successfully completed 90 ch but who has not yet graduated. **Awarding Agency:** The University on the recommendation of the Arts Council Committee on Honours and Prizes. The selection will be based on the student's average in Anthropology courses; departmental advice may be sought to resolve a tie. **donor:** Dr. Alfred G. Bailey.

Senator Muriel McQueen Fergusson Memorial Prize in History

conditions: A prize of $250 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.

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.

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 will now have an annual value of $1,650 and will be awarded 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.

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.

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.

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.

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
field: History. **value:** About $800. **number:** 1. **duration:** 1 year. **conditions:** Woman 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. **apply:** Department of History. **Awarding Agency:** The University, Department of History. **donor:** Mrs. Phoebe W.R. Keiffer.

Robert Fulton Ross Memorial Prize in Anthropology
conditions: A prize of $100 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 German and Russian 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.

Sainz Family Spanish Award
conditions: An award of $100 to be made annually on the recommendation of the Department of Spanish and Latin American Cultures 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.

Alvin J. Shaw Prize in Spanish
conditions: A prize of $500 to be awarded annually on the recommendation of the Department of Spanish and Latin American Cultures 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.

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 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 Book Prizes
conditions: Up to six book 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.

Dept. of Spanish & Latin Amer. Cultures Third Century Award
conditions: A prize of approximately $450 to be awarded annually on the recommendation of the Department of Spanish and Latin American Cultures 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 Spanish and Latin American Cultures. A student may receive this award more than once.

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.

Willie Stewart Prize in Arts 1000
conditions: This prize of $400 has been established by a former student in honour of 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 a former student in honour of 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.

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.

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.

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 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 of approximately $2,000 for a student in Classics and/or Ancient History on the Fredericton campus who has 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.

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; 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.

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
field: Classics. **value:** Up to $800. **number:** 1 or more.
duration: 1 year. **conditions:** To one or more students, graduate or undergraduate, who continue their studies in Classics and Ancient History and are deemed by the Department to be worthy recipients of these awards. **apply:** The Dean, Faculty of Arts, UNB.
donor: The late Miss Edna White, Class of 96 and LLD 1948

BUSINESS ADMINISTRATION

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.

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.

Ernst & Young Prize
conditions: A prize of $300 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 Planning Capital Expenditures. 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.

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.

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.

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.

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 (BBA '79).

COMPUTER SCIENCE

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.

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.

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.

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.

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.

EDUCATION

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.

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.

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.

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.

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.

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.

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.

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.

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.

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.

Lorne Joseph Simon Prize
conditions: A prize of $1000 to be awarded annually to an outstanding full-time Fredericton campus First Nations student, with preferences given to a promising writer. The prize will be awarded on the recommendation of the Faculty of Education (Micmac-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.

ENGINEERING

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.

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.

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 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.

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.

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.

R. J. Collier Memorial Prize
field: Electrical Engineering. **value:** $1,000. **number:** 1. **duration:** 1 year. **conditions:** 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. **Awarding Agency:** Faculty of Engineering on the recommendation of the Electrical Engineering Department. **donor:** Friends and students of the late Professor R.J. Co

Ralph M. Francis 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.

L. A. Gale Prize
field: Surveying Engineering. **value:** $545. **number:** 1. **duration:** 1 year. **conditions:** Awarded to a Canadian student upon completion of six terms of Surveying Engineering who shows academic promise and is in need of financial assistance. **apply:** Department of Geodesy and Geomatics Engineering. **Awarding Agency:** The University on the recommendation of the Department of Geodesy and Geomatics Engineering. **donor:** Anonymous.

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.

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.

Allan K. Grimmer Prize
field: Civil Engineering. **value:** Up to $1,200. **number:** 4. **duration:** 1 year. **conditions:** 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. **Awarding Agency:** The University on the recommendation of the Department of Civil Engineering. **donor:** The late Allan K. Grimmer.

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.

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.

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.

Gottfried Konecny Survey Award
field: Survey Engineering. **value:** $980. **number:** 1. **duration:** 1 year. **conditions:** A student with high academic standing, creative abilities, and a constructive attitude towards the surveying profession who has completed six terms of the Surveying Engineering program. Financial need will also be considered. **Awarding Agency:** The University on the recommendation of the Department of Geodesy and Geomatics Engineering. **donor:** The Gottfried Konecny Survey Award Fund.

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
field: Engineering. **value:** $250. **number:** 1 **duration:** 1 year. **conditions:** Student having highest standing in the introductory surveying course. **donor:** Family of the late Mr. Purves Loggie.

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.

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.

New Brunswick Road Builders Scholarship
field: Civil Engineering. **value:** $750. **number:** 1 **duration:** 1 year. **conditions:** Awarded to a full-time Civil Engineering student in the penultimate year of the regular program based on experience, need, and an interest in road building. The award is to be given to a student who is a resident of the Province of New Brunswick. **donor:** Road Builders Association of New Brunswick Incorpo

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.

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.

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.

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.

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.

The Late Richard Laurence Weldon Prize in Mechanical Engineering.
field: Mechanical Engineering. **value:** $1,715. **number:** 1 **duration:** 1 year. **conditions:** Awarded annually 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 hold another major award tenable during his final year. **donor:** 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.

FORESTRY

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.

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.

Simon Chippin Award
field: Forestry. **value:** $100. **number:** 1. **duration:** 1 year. **conditions:** 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. **apply:** Dean of Forestry and Environmental Management. **Awarding Agency:** The University on the recommendation of the Faculty of Forestry and Environmental Management. **donor:** The late Simon 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.

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.

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.

B. W. Flieger Memorial Prize
conditions: A prize of $1,500 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.

J. Miles Gibson Forestry Award
field: Forestry or Forest Engineering. **value:** Variable. **number:** Multiple. **duration:** 1 year. **conditions:** Awarded to a student with high academic standing entering the second year of a program leading to the degree of Bachelor of Science in Forestry or Forest Engineering. **Awarding Agency:** The University on the recommendation of the Gibson Award Committee. **donor:** Friends of J. Miles Gibson.

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.

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.

Nova Scotia Forestry Association Prize
field: Forestry or Forest Engineering. **value:** $100. **number:** 1. **duration:** 1 year. **conditions:** Awarded to a student from Nova Scotia beginning his/her second year of study in Forestry or Forest Engineering who achieved the highest standing in his/her first year at UNB. **Awarding Agency:** The Nova Scotia Forestry Association. **donor:** The Nova Scotia Forestry Association.

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.

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.

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.

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.

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.

KINESIOLOGY

Dr. Garnet Copeland Award
field: Unrestricted **value:** $1,000 **number:** 1. **duration:** 1 year. **conditions:** Awarded to a tudent 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 varsity athletic ability at UNB and have achieved at least a 3.0 assessment year grade point average. **apply:** Director of Athletics and Assistant Registrar, Undergraduate Awards. **Awarding Agency:** The University, on the recommendation of a committee consisting of Brian Copeland or a designated family member, the Director of Athletics and an appointment by the President. **donor:** Dr. Garnet Copeland Family **deadline:** April 15.

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.

John Meagher Prize
conditions: A prize of $1000 is awarded to the student who has completed three years (101 credit hours) of the Bachelor of 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.

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.

Robert F. Watters Memorial Award
conditions: An award of $100 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.

Agnes Grey Wilson Prize
conditions: A prize of $150 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.

NURSING

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.

Dr. Katherine MacLaggan Memorial Prize
field: Basic degree course in Nursing. **value:** $1,900. **number:** 1. **duration:** 1 year. **conditions:** The award is made 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. **Awarding Agency:** The University in consultation with the Faculty of Nursing. **donor:** Fund established by friends of the late Dr. Kather

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.

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.

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.

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.

SCIENCE

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.

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.

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.

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.

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 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.

Dr. Philip Cox Memorial Prize
field: Biology. **value:** $200. **conditions:** 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.)

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.

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.

Dorothy Bennett Elson Prize
conditions: An annual prize of $150 has been established by the Associated Alumnae and is awarded to the female student who achieves the highest standing in first year Physics.

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.

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 $250 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.

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.

SGS Canada Inc Prize in Organic Chemistry
conditions: A prize of $200 to be awarded to a Fredericton campus student who achieves high standing in CHEM 2401/2422 (Organic Chemistry I & II). The prize is funded by SGS Canada Inc.

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.)

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.

MULTIPLE PROGRAMS

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.

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.

Dr. C. C. Jones Prize
field: Unrestricted. **value:** $250. **number:** 1. **duration:** 1 year. **conditions:** Regularly enrolled 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. **Awarding Agency:** Associated Alumni, UNB. **donor:** The Associated Alumni of UNB.

Prize in Actuarial Science
conditions: A prize of $100 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 by the Society of Actuaries.

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 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.

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.

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.

UNRESTRICTED

Adam Cameron Prize
conditions: An annual prize of $450 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.

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.

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.

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. 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.

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.

SAINT JOHN CAMPUS

ARTS

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.

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 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 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.

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.

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.

Erskine Ireland Carter Memorial Prize in Psychology
conditions: A prize of $250 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.

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.

Dept. of Humanities & Languages Prize in Philosophy
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 English
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.

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.

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.

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).

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.

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.

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.

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.

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.

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.

Social Science Club Prize
conditions: Two prizes of $100 each to be awarded annually on the recommendation of the Department of Social Science, to full-time students majoring in a Social Science on the Saint John campus, who have completed 60 ch or more in the program, and who have shown the greatest improvement in the assessment-year grade point average in successive years. The prize is being funded by the Social Science Club.

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.

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.

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.

BUSINESS ADMINISTRATION

Erskine Ireland Carter Memorial Prize in Business Admin.
conditions: A prize of $250 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.

Dean's Award in E-Commerce Studies
conditions: A prize of $200 to be awarded annually to a UNB Saint John student enrolled in the Business Administration degree program, with a concentration in E-Commerce, who has the highest standing in the third year E-Commerce courses. The selection of the recipient will be made by the UNBSJ Dean of Business in consultation with UNBSJ Faculty of Business members. The prize is funded by Dr. Craig S. Fleisher, on behalf of the Canadian Council for Public Affairs Advancement (CCPAA).

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.

Craig S. Fleisher Award for Excellence in E-Commerce
conditions: A prize of $200 awarded annually upon graduation to a UNBSJ Business student who has demonstrated outstanding performance in the E-Commerce concentration. The selection of the recipient will be made by the UNBSJ Dean of Business in consultation with UNBSJ Faculty of Business members. The prize is funded by Dr. Craig S. Fleisher, on behalf of the Canadian Council for Public Affairs Advancement.

Investment Dealer's Association (Saint John Chapter)
conditions: An award of $500 to be given annually, on the recommendation of the Faculty of Business, to the full-time Business student with the highest cumulative grade point average after 90 credit hours and who has completed the required finance courses for the BBA degree. The award is funded annually by the Saint John Chapter of the Investment Dealers' Association and was first awarded in October 1992. The prize is awarded at fall Convocation.

R. Wayne Jollineau Prize in Business
conditions: A prize to be awarded annually at Spring Convocation, 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.

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.

Mary Louise Lynch Prize in Memory of Harriet L. Irving
conditions: A prize of $200 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.

SCIENCE, APPLIED SCIENCE, & ENGINEERING

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.

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.

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.

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.

Christopher Cusack Computer Science & Data Analysis Prize
conditions: A prize of $300 to be awarded annually on the recommendation of the Department of Applied Statistics and Computer Science to a student graduating with a BSc(DA) or BSc(CS) degree. In the event of a tie, preference will be given to a student graduating with a BSc(DA) 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.

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 BSc(DA). 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. A. Flemming, a former Professor of Mathematics and Statistics at UNB Saint John.

Pauline Graham Data Analysis Prize
conditions: A $300 prize to be awarded in the Fall term for a student in the BSc(DA) 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.

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.

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.

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.

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.

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

Saint John Computer Science Prize
conditions: A prize of $200 to be awarded annually to a student enrolled in the BSc(CS) or BSc(DA) 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 Applied Statistics and Computer Science. 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 ASCS.

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 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.

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 2535 (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.

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.

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.

Walter C. & Marion (Waring) White Biology Prize
conditions: A prize of up to $480 to be awarded annually on the recommendation of the Biology Discipline 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.

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.

UNRESTRICTED

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.

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.

Mary Louise Lynch Prize in Memory of Annie McGuiggan
conditions: A prize of $200 to be awarded annually on the recommendation of the Registrar to a graduate of St. Vincent's High School 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.

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.

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.

SCHOLARSHIPS FOR PART-TIME STUDENTS

Part-time students are encouraged to contact the College of Extended Learning for scholarship applications.

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).

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.

CAMPUS Scholarships for Part-time Students.
field: Any undergraduate degree or certificate program at **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:** CAMPUS (Organization for Continuing, Adult, Mature and Part-time University Students.) **deadline:** Fall - August 15; Winter - December 1; Spring - April 1; Summer - June 1.

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 (September - August); (3) have successfully completed a minimum of 30 ch (normally at UNB); (4) be 21 years of age or older; (5) demonstrate financial need; (6) be a graduate of a high school 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. **deadline:** August 15 for fall awards, December 1 for winter awards, and April 1 for spring/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.

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 institutions. **value:** Minimum $100 per course, maximum $300 per course. **duration:** A recipient may not receive more than one of these **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.

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.

Jeanette Robinson Belyea Scholarship.
field: Unrestricted **value:** Up to $900. **number:** 1 **duration:** 2 years. **conditions:** Awarded every second 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:** The Secretary, Board of School Trustees, St. Stephen, N.B. **Awarding Agency:** Board of School Trustees, Town of St. Stephen. **donor:** The late Jeanette Robinson Belyea.

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 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 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.

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.

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.

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

Gilbert W. Ganong Scholarship.
field: Unrestricted. **value:** $900. **number:** 1 **duration:** 2 years. **conditions:** Awarded every second year to a deserving student entering from the County of Charlotte. **apply:** The Secretary, Board of School Trustees, Town of St. Stephen, N.B. **Awarding Agency:** Board of School Trustees, Town of St. Stephen, N.B. **donor:** The late Mrs. Maria F. Ganong.

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. Edward and Lillian A. Harley Scholarship.
field: Science-related program UNB Saint John. **value:** $500 total, $250 each year for two years. **number:** 1 awarded each year **duration:** 2 years. **conditions:** Awarded in June, to a student of high academic standing, in need of financial assistance, who is a graduate of St. Vincents High School. Student must attend UNB Saint John, preference will be given to those entering first year; to receive second installment, high academic standing must be attained. **apply:** President of St. Vincents Alumnae Association. **Awarding Agency:** St. Vincents Alumnae Association.

Walter Harris Scholarship.
field: Unrestricted **value:** $1000 UNBSJ; $500 NBCC-Saint John Entrance **number:** 2 **duration:** 1 year **conditions:** Awarded to Saint John residents related to members of the Saint John Labor Council. Consideration will be given to financial need and community work. One award of $1000 will be provided to a UNB Saint John student. One award of $500 will be provided to a NBCC Saint John student. **apply:** The Greater Saint John Community Foundation, P.O. Box 20061, Brunswick Square, Saint John, NB E2L 5B2 (506)672-8880 **Awarding Agency:** The Greater Saint John Community Foundation.

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.

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.

Rotary Foundation Scholarships.
ield: 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.

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. **apply:** Rosi Jory, University of New Brunswick, Department of Humanities and Languages, 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. 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.

Saturn Commitment to Excellence Award Program.
field: Unrestricted **value:** $1,500 **number:** 4 **duration:** 1 year. **conditions:** Saturn Canada recognizes exceptional female students attending Canadian Universities. The five students whose submissions are judged to be the best will receive a $1,500 scholarship. **apply:** www.saturncanada.com **Awarding Agency:** Saturn Canada **deadline:** End of October.

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.

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.

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.

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SECTION D
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.

Living to Learn fosters an academic context within the residence community, facilitating a peer-supported learning environment.

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 all on-campus residence rooms. Please consult the UNB Residences Application Form for current ResNet availability.

The residences are administered by Residential Life & Conference Services with a team based approach to leadership within the community and the houses. Each house is supported by a House Team of elected and selected student leaders and functions as part of a Cluster.

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.

Director: a full-time professional responsible for leadership, overall management, governance, quality, development, and long-term vision of the Residence Community.

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.

Assistant Director (Residential Life): a full-time professional working with the Associate Director (Residential Life) whose responsibilities include heading the Residence Life Team's day-to-day activities; guiding and directing programming; and contributing actively to broader unit direction and policy.

Residence Facilities Manager: a full-time professional responsible for the physical operation of the residences (including janitorial services, maintenance, repairs, and capital improvements), finance and administration, and vending contracts.

Community Coordinators: full-time professionals responsible for all day to day residential life matters within their Cluster.

House Dons: University faculty, staff members or senior 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): shares the same qualifications and responsibilities as the Don, except for the Don heading the House Team.

Proctors (Educational & Hall): experienced undergraduate or graduate 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 the approximately 35 students on their Hall.

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.

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 a special responsibility for the admission of students in their first undergraduate year and 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 will be mailed out in late July.

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. All other students (transfer students, St. Thomas University students, students entering law/graduate school, etc.) should contact Residential Life & Conference Services directly for instructions on residence application. 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 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 during March. Completed forms and a deposit should be submitted according to instructions issued by Residential Life & Conference Services.
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 against a decision to refuse readmission may be addressed to the Associate Director (Residential Life).
4. Reapplicants are, where possible, readmitted to a house of their choice 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:

- 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 accomodation 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 rates 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. MEALS ARE NOT SERVED during Thanksgiving weekend in the first term or during the mid-term break in the second term although supplemental meal plans for these periods may be offered if there is sufficient interest.

   (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, those 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 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.

OFF-CAMPUS HOUSING

Students are responsible for making their own arrangements for off-campus housing. The university maintains an Off-Campus Housing Office to assist students with finding suitable off-campus housing. Up-to-date rental listings are available from the Off-Campus Housing Office. This listing is constantly changing and is therefore not mailed out. 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 from the Off-Campus Housing Office.

Students living off-campus may choose from a variety of meal plans available from the food services contractor.

For further information concerning off-campus housing or Magee House, contact the Off-Campus Housing Office, Residence Administration Building, UNB, Box 4400, Fredericton, N.B. E3B 5A3. Phone (506) 453-4800, Fax (506) 453-3585.

GENERAL

For further information about the above and other regulations pertinent to the residence system, please contact Residential Life & Conference Services, UNB, P.O. Box 4400, Fredericton, N.B. E3B 5A3. Phone (506) 453-4800; FAX (506) 447-3059; E-mail: resadmin@unb.ca; www.unb.ca/residence/reslife.html.

SAINT JOHN CAMPUS

RESIDENCES

The Saint John campus offers co-educational residence facilities for 71 students in the Sir James Dunn Residence. Comprised of 57 single rooms, 7 double rooms and 3 two-bedroom apartments, the residence is located adjacent to the Thomas J. Condon Student Centre. Two of the single rooms are specially equipped to accommodate physically challenged occupants.

The residence also includes various lounge/meeting/study areas, two laundry rooms, a mailroom and a vending machine area. The residence is a non-smoking environment. Dining facilities for residents are provided in the Baird Dining Room in the Student Centre which is connected to the residence by a tunnel, thus allowing residents easy indoor access not only to the Student Centre but to the athletics centre, the library and the campus academic buildings.

Residence life is administered by the Director of Student Services through the Don (who is usually a staff or faculty member) and three residence assistants (student residents in their 2nd, 3rd or 4th year). These RAs are also trained to be academic resource persons to their fellow students. A student House Committee, elected by residents, works with the Don and RAs in coordinating house activities.

Residence physical plant, cleaning and finances are administered by the Manager, Housing and Food Services, who reports to the Director of Finance & Administration.

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 Office is located in Annex A, Room A1, e-mail och@unbsj.ca, telephone 648-5952, fax 648-5959, website: 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.

For more information on residence accommodation at UNB Saint John, call or write the office of Housing and Food Services, UNB Saint John, P.O. Box 5050, Saint John, N.B. E2L 4L5. Phone (506) 648-5755.

FACILITIES AND SERVICES

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 at the Institute 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 Section G of the Calendar.

Bridging Year Program

The Institute also offers a Bridging Year Program for Aboriginal students who are not ready for admission to regular status in a UNB Faculty. 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.

Students who achieve a pass standard in their non-credit courses and a grade point average of 2.0 or higher in their credit courses are eligible to transfer to the Faculty for which the Bridging Year was designed. Students who do not meet these standards will be required to withdraw from university.

Associated Alumni of the University of New Brunswick

The Associated Alumni of the University of New Brunswick has 50,000+ 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 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 Brusnwick. 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 at 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 for over 3,000 persons 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 Conference and Canadian Interuniversity Sport (CIS) in the sports of Men's and Women's Basketball, Volleyball, Soccer, Wrestling, Swimming, Hockey and Cross-Country as well as Women's Field Hockey.

SAINT JOHN CAMPUS

The University varsity athletics program in Saint John offers such sports as soccer, basketball, badminton, volleyball and hockey for men and women. In conjunction with the SRC, club programs are also available for rugby, indoor soccer, cross country, fencing, cheerleading and track and field.

The G. Forbes Elliot Athletics Centre opened in 1975 and the facility 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, basketball, badminton, soccer, tennis, and table tennis, and fitness classes. The fitness facilities as well as the indoor tennis courts are particularly appealing to the community.

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 seating for 5,000, as well as ancillary facilities.

In addition, by using community facilities and ice-hockey arenas, the University Athletics Department provides an all-around program of healthy recreational and wellness activities for the total university population and foster sports competition through varsity teams.

Awards Office (Undergraduate)

The University maintains facilities on the Fredericton campus, located in Sir Howard Douglas Hall, where students may make application for scholarships and bursaries. The Awards Office looks after scholarship 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: http://www.unb.ca/bookstore/ or contact them by telephone at 453-4664 or via email at 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 Libary 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: http://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. They offer spiritual counselling, worship services, and opportunities by which members of this community are encouraged to integrate their faith and learning. Campus Ministry conducts worship services, Bible studies, discussion groups, special lectures, and Christian Scholars gatherings, and the chaplains are involved in the academic community as sessional lecturers in various departments. 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 team is composed of a number of clergy and spiritual advisors from churches of different faiths in the Saint John area. They volunteer their time on campus weekdays from 9:30 a.m. to 4:00 p.m. in the Campus Ministry Office, Room 33, Ward Chipman Library building and answer calls of students any time of the week. 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.
The College Hill Daycare is a non-profit daycare servicing University of New Brunswick and Saint Thomas University staff, faculty and students. This High Scope based program offers childcare 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 (506) 458-2883.

Computing Services

See **Integrated Technology Services.**

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:

Part-time Degree and Certificate Courses: Degree-credit courses in many disciplines which can be applied towards a variety of degree programs; credit courses for certificate programs (e.g. Certificate in Family Violence Issues; Certificate in Administration; Certificate Program in Software Development; Certificate in Film Production; Certificate of Proficency in French; Certificate of Proficiency in Spanish; Certificate in Adult Education). To serve the needs of part-time students in off-campus communities, the Faculties of Education and Nursing offer academic programs to selected locations. These programs include the Masters in Education, the Bachelor of Nursing for RN's, and the Masters in Nursing. 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 is conducted through the College of Extended Learning.

Non-Degree Certificates and Workshops: the College of Extended Learning offers a number of specialized certificate programs to enhance the personal and professional development of individuals. Professional development programs offered include the Managment Development Program, Human Resources Management Certificate, Public Service Managment Certificate Program, and the Information Technology Professional Program. The College offers 1 to 4 day workshops on a variety of topics including effective leadership, Train-the-Trainer, and change managment. A wide range of courses are offered which are designed to enhance the personal development of learners including courses in creative writing, American Sign Language, painting and drawing, as well as programs like the Maritime Writer's Workshop and KidsQuest.

English Language Programme See Separate Section entitiled English Language Programme - Fredericton Campus, below.

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).

Writing and Math Centre: The Centre 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.

Financial Assistance: Advice and information on loans, bursuries and scholarships for part-time students is offered.

Adult Learner Services: Advice and information for adults considering or enrolled in academic studies at UNB.

Prior Learning Assessment: In some cirumstances, 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.

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); email: extend@unb.ca; website: www.unb.ca/extend.

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 Managment, 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. **The Modern Language Centre**, located in Annex A, offers Second Language Training Courses (non-credit), designed to allow students to acquire rapidly the ability to function and communicate in English and French.

a. *French Help Centre:* this service provides extra help for full and part-time students, covers all language skills with emphasis on problems encountered when learning French.

b. *Second Language Training Courses (non-credit)*: designed to allow students to acquire rapidly the ability to function and communicate in French, English, or Spanish.

c. *Testing Service:* three types (for French or English): the Diagnostic Test, the Proficiency Test, or the Written Test. Institutional TOEFL testing also available.

d. *Consulting Service:* evaluates second language needs in the work place.

For further information on the Centre, contact the Co-ordinator at (506) 648-5655.

7. **OPTAMUS** is the part-time and mature student organization and support group. Phone (506) 648-5694, or visit the Student Centre, Room 221.

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

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.

Counselling Services provides the following:

1. **Personal and Career Counselling** services to help students deal with social, personal, marital and relationship problems, career problems and concerns;

2. **Career Resource Library** which includes up-to-date information concerning careers, academic calendars, self-development, job search techniques, Canadian companies, and study and work abroad.

At Counselling Services, there is a friendly, helpful staff, including professional counsellors, and a Career Consultant, who helps students use the library. Services are provided on a drop-in basis as well as by appointment. All staff maintain strict confidentiality in their dealings with students who make use of Counselling Services.

For additional information please visit our website at: http://www.unb.ca/counselling/

SAINT JOHN CAMPUS

Counselling Services provides private, 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

Career Counselling is available for those uncertain of career paths, and for those who want to know what to do upon graduation and what to do with their majors.

Counselling services are provided in a concerned, supportive environment. Students in crisis will be seen without appointments. Every effort is made to provide a constructive intervention and counselling follow-up. Counselling Services is located in Oland Hall, G18. To make an appointment, please call 506-648-5557 or email 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 and part-time employment on campus during the academic year; as well, we assist with summer jobs, internships and working abroad. We provide in-depth resume, cover letter and interview guidance (by appointment) and on-going Job Search Strategy counselling. There are approximately 1,500 employment opportunities and over 80 company information sessions held on campus each year.

Student employment opportunities can be seen at our web-site: www.unb.ca/employment.

For information contact: Phone (506) 453-4620; Fax (506) 453-4610; E-mail employment@unb.ca.

SAINT JOHN CAMPUS

The **Campus Employment Office** on the Saint John campus assists students and graduates in obtaining permanent, summer and part-time employment. Services for students include: work-study programs, employment counselling, labour market information, assistance with resumes and cover letters, job search strategies and interview preparation. Employer services include posting job notices on-campus and assisting with employer information sessions for students and graduates. Service is provided throughout the year. Students and graduates are encouraged to contact the Campus Employment Office early in the academic year to review job opportunities and take part in the fall recruiting campaigns offered by many employers. The Employment Office and the Career Resource Centre are located in Student Services, Room G18, Oland Hall. Phone: 506-648-5680 or e-mail kbonner@unbsj.ca

English Language Programme

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.

The following non-credit formats are available for UNB students/ prospective students.

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. September - April: individualized 3-week, small-group modules
2. May - August: 5-week, large group sessions

B. **Intensive English Term Format,** daily classes, 23 hours per week, 14-week term basis

C. **English Language Classes:** September - April

1. Daily classes; 10-30 hours per week
2. Night classes; one 3-hour block per week

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: Mary Murray, UNB English Language Programme, Phone: (506)453-3564; email: elp@unb.ca; Website: http://www.unb.ca/coned/elp/.

SAINT JOHN CAMPUS

The Modern Languages Centre is an English as a Second Language (ESL) school operated by the University of New Brunswick, Saint John campus. It offers a full-time English Immersion program for students from other parts of Canada and from around the world. Students have the option of choosing either a 7-week or more Cultural Immersion Program (not a preparatory program for academics) or the 14-week English for Academic Purposes Program which prepares students for academic studies at UNB Saint John, and are also offered the chance to experience New Brunswick culture first-hand by living with a local family in the MLCs Homestay program. The MLC also offers an ESL Support Program for students with a TOEFL Score of between 500 and 549 and who wish to pursue academic studies. Exciting workshops and fun activities outside the classroom are a part of the ESL experience.

Students interested in studying at the Modern Languages Centre should be aware that application procedures, schedules and fees are different from those of other UNB departments. Courses for 7 weeks begin in January, March, May, July, September and November. Courses for 14 weeks begin in January, May and September. Fees are $1,470 for a 7-week course and $2,940 for a 14-week course, and are subject to change without notice.

Please contact the Modern Languages Centre directly for more detailed information and for application forms. The phone number is (506) 648-5599; the fax number is 506-648-5846; the e- mail address is modlang@unbsj.ca, and the mailing address is Modern Languages Centre, University of New Brunswick, P.O. Box 5050, Saint John, New Brunswick, CANADA, E2L 4L5. Students can also visit the website at www.unbsj.ca/mlc/index.htm.

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 office 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 Special Opportunities Grants, Canada Study Grants, Millennium Scholarships and; need information on terms of repayment.

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 situation.

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.

For application information and deadlines, please contact the Financial Aid Office of UNB, Room 3, Alumni Memorial Building, (506) 453-4796.

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, bank loans, 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, Oland Hall, G15, 648-5765 or email 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 much of this is sponsored by the Creative Arts Committee of UNB and St. Thomas University and reflects 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. **Fine Arts Minor:** Students from all Faculties interested in one of the Fine Arts taught on campus (Creative Writing, Film, Music, Theatre and Visual Arts) have available to them a 24 credit hour program leading to a Minor in Fine Arts. This program involves both theoretical and practical work. (See courses, Fine Arts Minor in this Calendar). A Certificate Program in Film Production is also available. For information contact the Faculty of Arts.

2. **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.

3. **The Centre for Musical Arts**, established in 1992, is under the direction of Richard Hornsby. It includes a Concert Series, a Young Musicians Program, and a Summer Music Camp. There are many ensembles available to students such as the Bicentennial Choir (Director, Shari Saunders), 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).

4. **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).

5. **The Creative Arts Committee**, chaired by Tony Short, offers an annual concert series in which nationally and internationally acclaimed artists and touring companies are brought to campus throughout the academic year. In addition, the Committee generally promotes student participation in different areas of the Fine Arts.

6. **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. The program is directed by Dr. Barry Cameron of the Department of English.

7. **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).

8. **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.

9. **Memorial Hall** is the site for on-campus as well as touring drama and music productions. It also houses the UNB Art Centre.

10. **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 the Creative Arts Committee.

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." 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:

1. in the four residence dining areas (Students who live off campus have the option of buying a meal plan or buying occasional meals on a cash basis;
2. in the Student Union Building, food outlets located in various university buildings, and
3. in vending machines located in various university buildings.

General information concerning food services, vending, and beverage contracts may be obtained from the Associate Director (Residental Life), whose office is in the Residence Administration Building, or calling 453-4800.

Information concerning planning an on-campus event involving food or beverages, or hosting a conference on campus may be obtained from the Director, Conference Services, whose office is in the WU Conference Centre, or by calling 453-5135.

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, 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 or on the Internet at http://www.unb.ca/gradscchl/.

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 medicare-equivalent plan administered by the University. International students on both campuses should contact Student Accounts and Receivable Services on the Fredericton campus for details of the medicare-equivalent plan.

International students with landed immigrant status do qualify for Medicare and hospital benefits and must register with the Province immediately upon arrival.

Supplementary Health and Dental Coverage

All full-time undergraduate 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 medicare-equivalent 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 27, 2007 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 24, 2003.

Please refer to Section C - Financial Information for Health Insurance fees and payment deadlines.

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.

Nursing and physician services are available to UNB and STU students. The main function of the Student Health Centre is to provide acute episodic care. 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

As the Saint John campus is located adjacent to the Saint John Regional Hospital, medical emergencies are directed to its Out-Patients Department.

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. Call 447-3068 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 Cenre 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 resource@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 Community Relations Office provides general information on the campus and University as a whole to the general public as well as the University community. The office also keeps a listing of all academic, cultural and social events on campus and advises on special event management.

Integrated Technology Services

FREDERICTON CAMPUS

In support of UNBs technology needs, the eight units of Integrated Technology Services provide a variety of facilities and services for students. See http://www.unbf.ca/its/students/ for a listing of these services and for step-by-step instructions on how to activate your PIN, computing accounts and UNB e-mail, access your personal information (marks, timetables) and more.

ITS Help Desk

The ITS Help Desk can answer or refer technology questions to the proper location. Questions involving application software, accounts, general access computer labs, student printing, accessing web services, and problems with technology misuse (such as abusive e-mail) are some of the many types of questions handled by the ITS Help Desk, open 8 a.m. to midnight every day except Christmas and New Years Day. Just e-mail helpdesk@unb.ca, phone (506) 453-5199, or drop by in person to D-11 Head Hall . Free software, the status of services, information about outages and other information is available from the ITS Help Desk website at http://www.unb.ca/helpdesk.

Imaging Services

Among the services offered by Imaging Services are colour copying, digital printing, desktop publishing, high quality scanning, offset printing, booklet making, report binding, laminating, faxing, photo ID cards and printing T-shirts. The main Imaging Services location is Rm 106, Eaton Multimedia Centre. Satellite locations are Rm 109 Carleton Hall and Rm E10A Head Hall. To contact Imaging Services call (506) 453-4843 or e-mail imaging@unb.ca.

Media Services

Media Services is equipped to provide audio visual service, equipment and production support to all teaching/research functions at UNB. All standard types of audio-visual equipment such as projectors, VCRs and tape recorders are available for loan. Technical assistance, photographic, slide and print production are also available. Media Services can be reached at (506) 453-4704, mediaser@unb.ca, or visit Rm 124 in the Eaton Multimedia Centre.

Web & Instructional Support Services

This unit consists of two main groups: the Web Team (who is responsible for the UNB website) and the Instructional Support Team (who provides non-credit instructional workshops and operates two IT labs at the top and bottom of the hill running both Mac and Windows operating systems). These labs, located in Rm 234 Eaton Multimedia Centre, (506) 458-7660 and D69 Head Hall, (506) 452-6329, support a variety of multimedia software, flatbed and slide scanning, digital and analog video editing, colour printing on plain paper and transparencies and access to a plotter capable of printing posters up to 3 feet wide as well as one-on-one assistance to help you help yourself. (Not all services are provided in both labs.) The Eaton Multimedia Centre Lab also houses the UNB non-print library, loans tapes for language courses and provides two viewing areas for VHS, DVD and 16 mm media.

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

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 and UNBSJ. 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 Students Advisor's office also administers all aspects of the CIDA contracts for students studying at UNB under CIDA's various agencies.

The office also provides information to Canadian students regarding exchange programs. Phone (506) 453-4860.

SAINT JOHN CAMPUS

The International Student Advisor's office on the Saint John campus is located in Room A9 of the International Centre. Orientation, counselling and information are available to all international and landed immigrant students and their families. The International Student Advisor provides assistance and information on arriving in Saint John, finding accommodations, student authorization, health insurance, campus and community resources, and social events. Phone (506)648-5842 or e-mail: donahue@unbsj.ca

Study Abroad Coordinator

Information and advice on study abroad opportunities for UNB Saint John students is also available. Phone (506) 648-5618 or e-mail studentabroad@unbsj.ca]

Libraries

FREDERICTON CAMPUS

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 3,500 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 6,000 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 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 Library.

Opening hours are posted at the entrance to each library and on the library web site at www.lib.unb.ca

SAINT JOHN CAMPUS

As part of Information Services & Systems, UNBSJs 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 184,000 volumes, 58,000 microforms, government documents and maps, and 900 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 80 licensed bibliographic databases, which include indexes, abstracts, and full-text material. Among the items appearing in full-text are approximately 4,000 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 http://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.

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 Centre

FREDERICTON CAMPUS

Math Help Centre:

The Math Help Centre provides individual tutoring, group tutorials, workshops and exa 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 453-4646 for an appointment or e-mail mhc@unb.ca.

Writing Centre:

The Writing 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 (506 453-4646). The current Writing Centre workshop schedule and contact information are available online: http://www.unb.ca/extend/wss/wss.htm

SAINT JOHN CAMPUS

Math Help Centre:

One-on-one tutoring available for various math and stats courses. Drop by the Help Centre to schedule an appointment, Oland Hall G32. Sign-up sheets are posted weekly.

Writing Centre

Private one-on-one tutoring, help with essays, writing problems, major research papers any writing task. Lectures and workshops on writing and proper documentation by special arrangement. Call or drop by Student Life and Support Services, Oland Hall G18 or call (506) 648-5501 to make an appointment.

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 - occupies 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.

Parking

See **Security and Traffic.**

Part-Time Students

See **Continuing Education and Programs for Part-Time Student**s.

Post Office

FREDERICTON CAMPUS

The Campus Post Office, located in the basement of Sir Howard Douglas Hall, provides a full range of postal services as a Sub Post Office (No. 2) of the Canada Post Corporation. Summer hours are from 8:00 a.m.-3:45 p.m. and winter hours, 8:30 a.m.-4:15 p.m., Monday through Friday.

SAINT JOHN CAMPUS

Mailboxes exist in various locations on campus. Stamps are available at the Bookstore.

Research Centres

FREDERICTON AND SAINT JOHN CAMPUSES

With research being conducted on both the Fredericton and Saint John campuses, the University is the largest research centre 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 in the investigation of problems of mutual interest. Active interdisciplinary research units include the Institute for Biomedical Engineering, the Centre for Conflict Studies, the Muriel McQueen Fergusson Centre for Family Violence Research, the Centre for Nuclear Energy Research, the Canadian Research Institute for Social Policy, the Centre for Property Studies and the Canadian Rivers Institute, to name a few. The Centre for Research and Development Services, the research administration and development unit, facilitates the undertaking of research within the university on behalf of industrial, 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 Vice-President (Research).

Security and Traffic

FREDERICTON AND SAINT JOHN CAMPUSES

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 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.

For further information on parking regulations, services provided, as well as information on sagety and security tips, refer to the UNB website at www.unb.ca/security.

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 affects grades, performance evaluations, or any academic or 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 :
http://www.unb.ca/hr/Policies/harassment.html

FREDERICTON CAMPUS
Advisors Under Sexual Harassment Policy

CAMPBELL, Gail (History, Tilley Hall, Rm. 116)	458-7430/453-4621	campbell@unb.ca
CRAFT, Sandra (Biology, Bailey Hall, Rm.(214)	452-6333/453-4583	scraft@unb.ca
HARALAMPIDES, Katy (Head Hall, Rm. B4)	453-5125	katy@unb.ca
MAHER, Robert (Administration, Singer Hall, Rm. 346)	458-7654	maherr@fac.fadmin.unb.ca
MERRITT-GRAY, Marilyn (Nursing, MacLaggan Hall, Rm. 213)	458-7634/453-4642	mmerritt@unb.ca
MIGHTY, Joy (Administration, Singer Hall, Rm. 368)	458-7351/458-7710/453-4869	ejmighty@unb.ca
SPARKS, Maureen (Kinesiology, LB Gym, Rm. C-120)	447-3333 Ext.7040	sparks@unb.ca

SAINT JOHN CAMPUS
Advisors Under Sexual Harassment Policy

DESSERUD, Donald (History & Politics, Hazen Hall, Rm. 346)	648-5600/648-5727	desserud@unbsj.ca
DEVARENNE, Sarah (Oland Hall, Rm. 126)	648-5695	sdevaren@unbsj.ca
MUNRO, David (G. Forbes Elliot Athletics Centre, Rm. 105)	648-5520/648-5532	munro@unbsj.ca
WAYE, Daphne (Financial & Admin. Srvs., Oland Hall, Rm. 119)	648-5523	wayed@unbsj.ca

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.

A broad selection of professional courses for teachers is offered on both campuses during the Spring and Summer Sessions. Also, certain postgraduate courses required for the degrees of Bachelor of Education and Master of Education are available.

The University also offers three special programs as part of its overall Summer Session on the Fredericton campus: two six-week immersion sessions, (May-June and July-August), are available through the English Language Program for those wishing to increase their facility in English. Also, a six-week immersion program is available for high school students during July-August. Contact the English Language Program, College of Extended Learning.

In addition to the degree-credit courses, a variety of social, cultural and related educational activities (e.g. Maritime Writers Workshop) are provided to complement the summer program.

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), web site: http://www.unb.ca/web/extend/. 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).

Student Affairs and Services

FREDERICTON CAMPUS

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 acts as ombudsperson for students, assisting individual students or groups of students in dealing with such things as academic matters, appeals, disciplinary matters. The Director is administratively responsible for a comprehensive array of programs including Counselling, Financial Aid, Health, International Student Advisor, Services for Students with Disabilities, Student Development, and Student Employment. 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 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 3A, phone (506) 453-4898, fax 453-5005.

SAINT JOHN CAMPUS

Director of Student Life and Academic Services

The Director, together with the Student Services staff, administers the Writing Centre, Counselling, Financial Aid, Campus Employment Office, Athletics, Residence Life and student orientation activities. The Director also acts as the campus ombudsperson for students in dealing with academic appeals and disciplinary matters; assists in helping persons with disabilities and international students who need to adjust to university; manages the student Peer Helper and Peer Mentor programs; is an executive member of the Campus Ministry; offers counselling on study and university related problems; manages the Student Success and Study Skills programs; is chair of the Student Life and Orientation Committee; and, finally, is responsible for the general management of the Student Services Resource Centre, which includes career and job information, study skills books and videos, scholarship, loan and graduate study information, and a host of related test application forms. Phone: (506) 648-5690; Fax: (506) 648-5681; E-mail: rwp@unbsj.ca

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 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, the office of the part-time student organization, OPTAMUS, 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 2001-2002.

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 and 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 thier program of study. Please contact the Coordinator of Services for Students with Disabilities at (506) 453-3515 for more detailed information.

SAINT JOHN CAMPUS

Students should ask Student Services or the Registrars office about the "Procedures for Assisting Students with Special Needs at UNB Saint John." This paper outlines assistance available and how to get it. Furthermore, UNB Saint John is new, very accessible, connected by tunnels and elevators and compact in size. In particular, the Writing Centre at Student Services helps students with disabilities meet the challenge of university. Finally, a student-run Ability Awareness group plans events in conjunction with Student Services each year.

SECTION E
General Information and Degree Programs
SAINT JOHN CAMPUS

ACADEMIC PROGRAMS

The University of New Brunswick in 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: : Economics, English, French, History, Information and Communication Studies, International Studies, Mathematics, Philosophy, Politics, Psychology, Sociology, Sport and Exercise Psychology, Statistics

  Honours: Economics, English, History, Psychology and Sociology

- **BACHELOR OF BUSINESS ADMINISTRATION**
  - Cop-op Option
  - **Majors** in: Economics, French, Accounting, Electronic Commerce, Human Resource Management

- **BACHELOR OF NURSING**
  - BN Basic Program
  - BN/RN Program

- **BACHELOR OF SCIENCE**

  Majors : General Biology, Environmental Biology, Marine Biology

  Specializations: Biology with Specialization in Zoology, Psychology, Biology-Psychology, Mathematics, Statistics, and General Science

- **BACHELOR OF SCIENCE IN COMPUTER SCIENCE**

  Specializations: Sortware Engineering, and High-Performance Scientific Computing

  Honours : Sortware Engineering, and High-Performance Scientific Computing

- **BACHELOR OF SCIENCE IN DATA ANALYSIS**

  Majors : Computer Science, Economics, Mathematics, and Statistics

- **BACHELOR OF HEATH SCIENCES**
  - Nuclear Medicine
  - Radiation Therapy
  - Radiography and Respiratory Therapy

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:
  - Criminal Justice
  - English
  - History
  - French
  - Mathematics
  - Philosophy
  - Statistics
  - International Studies
  - Cognitive Neuroscience

- 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 degree programs in Engineering and in Computer Science, and the first year of degree programs in Kinesiology, and Recreation and Sports Studies are also available.
- Certificate programs are offered in:
  - Business Administration
  - Accounting
  - Electronic Commerce
  - Human Resource Management
  - Data Analysis
  - French Levels I and II
  - 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.

Admission and University Regulations.	See Section B.
Fees	See Section C.
Scholarships and Loans	See Section C.
Services and Facilities	See Section D.

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:

1. 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.

2. 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.

3. 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.

4. 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

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. A grade of C or better meets the prerequisite standards for Business Administration courses.

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.

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, 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 2672 , BA 4223 , 3 chs electives or non-business options
Winter Term	BA 1504 , BA 2606 , BA 3224 , 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

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 2672 , 3 chs elective or option.
Winter Term	BA 1504 , BA 2606 , BA 2663 , 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.

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.

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*
- BA 1504 Intro to Organizational Behaviour
- ECON 1013 Intro to Economics - Micro
- Social Science Elective*
- Humanities or Language Elective**

First Year: Winter Term
- HTM 1503 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
- HTM 2217 Management Accounting for the Hospitality Industries
- BA 2672 Introduction to Management Information Systems
- Electives or Options** 6 ch

Third Year: Winter Term
- BA 2123 Introduction to Electronic Commerce
- BA 2606 Business Decision Analysis II
- Electives or Options** 9 ch

Third Year: May-August

- Optional co-op work term

Fourth Year: Fall Term
- BA 3371 Marketing of Services
- BA 3425 Managerial Finance
- HTM 4101 Advanced Management, Hospitality and Tourism Operations
- HTM 4129 Tourism and Research Methods
- Electives or Option** 3 ch

Fourth Year: Winter Term
- HTM 4161 - Planning and Development of Sustainable Tourism
- 12 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
- BA 2672 Introduction to Management Information Systems
- 6 ch electives or options **

Third Year: Winter Term
- BA 2123 Introduction ton to Electronic Commerce
- BA 2606 Business Decision Analysis II
- 9 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 4101 Advanced Management, Hospitality and Tourism Operations
- HTM 4129 Tourism and Research Methods
- 3 ch electives or options**

Fourth Year: Winter Term
- HTM 4161 Planning and Development of Sustainable Tourism
- 12 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

GENERAL INFORMATION

On the Saint John campus there are eight programs leading to the degree of Bachelor of Arts: Majors programs in French, Philosophy and Politics, and Majors and Honours programs in Economics, English, History, Psychology and Sociology.

BA Degree Regulations

Intent: The BA Degree regulations are intended to ensure that the student is exposed to a good range 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.

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 at least 120 hours of courses, except that certain Honours programs may require successful completion of up to 126 ch of courses. A grade of D or above indicates successful completion of a course, except as stated elsewhere in the Calendar. All programs of study must have the approval of the Dean of the Faculty.

2. Normally the student will successfully complete 60 ch of lower-level courses (i.e. courses whose number begins with 1 or 2) before taking the 60 ch (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 12 ch of lower- level courses may be substituted in the total of 60 ch 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 60 ch of 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 of high ability may choose 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) for permission to enter the majors program(s) concerned. Students who fail to apply for acceptance to a majors program before they have successfully completed 60 ch of courses may find that they will be required to complete successfully more than 120 ch of courses in order to fulfill the majors requirements and get a

degree. A student cannot get a BA degree without fulfilling the requirements for at least one majors program. Course selections for students in majors programs must be approved by the appropriate Chair of Departments (or their designates) as well as by the Dean of the Faculty.

4. Among the 60 ch of lower-level courses, a student must successfully complete at least 6 ch of courses from each of any three of the four groups listed below. Up to 18 ch of courses may be taken in any one discipline, but not more than 12 ch may be taken in any other discipline.

Group 1:	Classics, English, History, Humanities, Philosophy. Courses in French, German, or Spanish Civilization also form part of this group.
Group 2:	French, German, Greek, Latin, Spanish. (Language, not Civilization, courses.)
Group 3:	Economics, Information & Communication Studies, Politics, Psychology, Sociology.
Group 4:	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. up to 12 ch of some Education and, for the purposes of this degree only, up to 27 ch of Kinesiology courses can be counted towards a BA degree, subject to the agreement of the appropriate departments.

   b. all credit hours successfully completed in Humanities courses (designated HUM) and Social Science courses (designated SOCS) and Business Administration courses (designated BA) count towards a BA degree, provided that program regulations are adhered to.

   c. all core studies courses in Education may be used for Arts elective credits up to the maximum of 12 ch. Methods courses in Education are not eligible for Arts elective credits. Non-core studies courses which are similar to Arts courses may be considered for Arts elective credit on an individual basis by th e Dean of Arts.

6. A student may not take more than 6 courses at any one time without the written permission of the Dean.

7. For the purposes of the BA degree, a course offered at UNB with a number ending in shall have the credit-hour rating assigned to it by the Faculty offering the course, up to a maximum of 6 ch.

8. For the purposes of the BA degree, a course offered at UNB with a number ending 1 to 9 shall have the credit-hour rating assigned to it by the Faculty offering the course, up to a maximum of3 ch.

9. Exceptions to these credit hour designations in the BA program may be made only by the Dean of the Faculty and the Registrar.

10. Requirements for the 60 ch of upper-level courses are listed in the regulations of the appropriate majors programs.

11. 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-.

12. 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.

COGNIITVE 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)

Perception	
Cognitive Processes	PSYC 3693
Human Neuropsychology (Prerequisite: PSYC 3711 Physiological Psychology)	PSYC 3723
Cognitive Neuroscience (Prerequisites: PSYC 3711 and either PSYC 3383 or PSYC 3693)	PSYC 4733
	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

COMMUNICATION AND PROFESSIONAL WRITING

The Minor in Communication and Professional Writing (27 ch) is an interdisciplinary program designed to complement a range of degrees.

The Certificate, intended for persons who would like official recognition of their competence in professional communication, is available to any student enrolled in the Minor upon successful completion of a further 3 credit hours. The Certificate is also open to persons not enrolled in a degree program. Each program (the Minor and the Certificate) has a bilingual stream (French and English) which would be accredited as such.

Program of Study

The Minor consists of 27 ch and the Certificate consists of 30 ch. A grade of "C+" or better must be attained in all required and elective courses in both programs.

The following 12 ch are required in each program (Minor and Certificate in English, Bilingual Minor and Certificate): CPW1001 , CPW1002 , CPW2001 and CPW2002 .

For the Bilingual Stream (Minor and Certificate), in addition to the above, the following 9 ch are required FR3203 , FR3204 and FR4204 .

For the Minor in the Bilingual Stream an additional 6 ch are required (for a total of 27 ch) which may be selected from the following: CPW2003 , CPW3003 , CPW3004 , CPW4005 and CPW4006 or list one.

For the Certificate in the Bilingual Stream an additional 9 ch are required (for a total of 30 ch) which may be selected from the following: CPW2003 , CPW3003 , CPW3004 , CPW4005 , and CPW4006 or list one.

For the Minor in English, a further 15 ch of elective courses may be selected (for a total of 27 ch) from the following: CPW2003 , CPW3003 , CPW3004 , CPW4005 and CPW4006 or list one.

For the Certificate in English, a further 18 ch of elected courses may be selected (for a total of 30 ch) from the following: CPW2003 , CPW3003 , CPW3004 , CPW4005 and CPW4006 or list one.

List One:Other possible electives: (each course is 3 ch)

BA2001	Verbal Communication
FR3084	Le monde des affaires en français/Conducting Business French
FR3714	Aspects des cultures acadienne et franco-ontarienne/Aspects ofAcadian and Franco Ontarian Culture
FR3724	Aspects de la culture québécoise/Aspects of Quebec Culture
HUM2120	Effective Writing
NURS3092	Nursing Research
PSYC2102	General Experimental Psychology

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 three 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 1004)
PSYC 4233	(3 ch)	Programme Evaluation (PSYC 1003 , 1004 , 2102 , 2901). Sociology students may substitute Sociology 3100 for PSYC 2901 .
SOCI 2611	(3 ch)	Qualitative Criminology 1 (SOCI 1001 and one of SOCI 1002 , 1003 , 1004 , 1005 or 1006).
SOCI 2614	(3 ch)	Qualitative Criminology 2 (SOCI 1001 , and one of SOCI 1002 , 1003 , 1004 , 1005 , or 1006 ; SOCI 2611)

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 3386	(3 ch)	Canadian Criminal Justice System
HIST 3377	(3 ch)	Social History of Crime in Canada
PHIL 2124	(3 ch)	Contemporary Moral Problems
POLS 1201	(3 ch)	Introduction to Canadian Politics
POLS 3365	(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)	Abnormal Psychology
PSYC 3752	(3 ch)	Drugs and Behaviour
SOCI 2603	(3 ch)	Sociology of Deviance
SOCI 3611	(3 ch)	Socio-Legal Studies
SOCI 3901	(3 ch)	Sociology of Policing
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 , 301 3 , 3023 , 3665 , 4035 , 4045 , BA 1605 , 2606 ; and ECON 4265 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 s econd 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

This certificate is a stand-alone program intended for visiting international students and for members of the community interested in financial markets. 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 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 , 3511 , 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. It is also possible, however, for part-time students in the early years option of the Consecutive BEd Program to complete their requirements over a four-year period. For more details of other options, refer to Section G of this Calendar.

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 English 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 an honours seminar. 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 assignments additional to the regular course load.

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 , or 3007)
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 , ENGL 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 literature 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 program; 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 (3ch) Upon successful completion of ENGL 4801 , and 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 3002 , 3003 , 3004 , 3007 , 3105 , 3106 , 3107 , 3108 or 3109)
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 program 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 (1200 and/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 Sepcial 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 literature 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, at least 24 of which must be in upper level courses, with at least 3 ch to be taken in each of categories (a), (b), (c) and (d) above.

Optional Program: English (Drama)

Students wishing to concentrate in drama may elect the Majors option in English (Drama). This program will consist of at least 48 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 6 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), or (d).

Minor

The Minor in English will consist of 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

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 tak en 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 in Gender Studies

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 GEND-eligible courses. (NOTE: The required 24ch does not include the prerequisites required for the GEND-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 GEND-eligible courses. (NOTE: The required 30ch does not include the prerequisites required for the GEND-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 GEND-eligible courses with at least 6ch in two of the three groups.

For the Certificate in Gender Studies:
27ch from the following list of GEND-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 GEND Coordinator. Students seeking credit for courses not on this list must have written approval from the GEND Coordinator prior to enrolling in the course. GEND 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 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 4906 Honours Seminar I
- HIST 4907 Honours Seminar II

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 requirments 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: These 1000 level courses are not open to students who have already taken higher level university history courses without written permission from the course 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 including HIST 3333 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 and Minor Program Requirements

MAJOR DEGREE REQUIREMETNS

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 division/27 upper division) comprised of the following courses:

Lower division:

*	ICS 2001	Introduction to Information & Communication Studies
*	SOCI 1000	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 division:

*	ICS 3001	Theories of Information and Communication
*	ICS 3003	Electronic Research

* ONE of 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

* 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 DEGREE REQUIREMENTS

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 the requirements for a major or double-major in one other discipline in the Faculty of Arts, and 36 credit hours (15 lower division/21 upper division) comprised of the following courses:

Lower division:

*	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 division:

*	ICS 3001	Theories of Information and Communication
*	ICS 3003	Electronic Research

* ONE of 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

* 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 DEGREE REQUIREMENTS

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 division:

*	ICS 2001	Introduction to Information & Communication Studies
*	CS 1703	Introduction to Computing Concepts
*	CS 1713	Multimedia and the Information Highway
*	SOCI 2251	Film and Society
*	SOCI 2253	Sociology of the Media: From TV to the Internet

Upper division:

*	ICS 3001	Theories of Information and Communication
*	ICS 3003	Electronic Research

* 3 credit hours of 3000/4000 electives from the ICS-eligible list

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	Econ 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 Section E under "Arts" degrees for more information.

MATHEMATICS AND STATISTICS

Majors and Minors

Mathematics Major

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 , 1703 , 2003 , 2013 , 2213

b. MATH 3713 , 3733 , STAT 3083 , 3093

c. At least six upper level mathematics courses. A maximum of two courses from CS 3113 , 3733 an upper level Statistics course may count toward the six courses.

Suggested elective for the first year is STAT 1793 (or equivalent).

At least two courses in Computer Science are required.

Statistics Major

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 , 1013 , 1703 , 2003 , 2013 , 2213 , STAT 1793

b. MATH 3713 , 3733 , STAT 3083 , 3093

c. At least five upper level Statistics courses. A maximum of two courses from DA 4203 , 4243 and an upper level Mathematics course may count toward the five courses.

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, with a maximum of 6 ch Statistics courses. 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 paverage 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.

Major

Students choosing the discipline major must complete a minimum of 42 credit hours of Politics courses, including POLS 1201 , POLS 2401 , POLS 2501 , 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 .

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 , 2401 , 2501 , and at least 3 credit hours of courses from either POLS 1301 or 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 , 1004 , 2102 , 2901 , 4053 .

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.

Of the 51 ch of approved Psychology courses, the following 24 ch are compulsory: PSYC 1003 , 1004 , 2102 , 2901 , 3913 , 4053 , 4143 , 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 , 3383 , 3503 , 3603 , 3632 , 3693 , 3711 , 3723 , 4583 , 4693 , 4733 , 4833

Group II: Social/Personality

PSYC 2201 , 2401 , 3222 , 3263 , 3293 , 3343 , 3412 , 3461 , 3752 , 4463

Group III: Clinical/Applied

PSYC 3263 , 3313 , 3323 , 3362 , 3393 , 3493 , 3553 , 3724 , 3725 , 3803 , 4213 , 4214 , 4233 , 4493

The remaining 3 credits of psychology courses may be selected by the student. All Psychology courses taken for the Honours degree must be passed with at least a C (2.0).

Students may apply to the Honours program at the start of the third or fourth year. To be eligible to apply they must have a minimum cumulative grade point average of 3.3 (B+). Preferably, students should apply at the beginning of the third year.

After admission, an Honours student must maintain a cumulative grade point average of 3.0 during each year of study within the program.

To graduate with an Honours degree in Psychology a cumulative grade point average of 3.3 (B+) is necessary 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.

The remaining 27 ch may be selected by the student.

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 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.

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 , and one of SOCI 1002, 1003, 1004, 1005, 1006).
KIN 2023 (3 ch)	
Introduction to the Sociology of Sport	(SOCI 1001, and one of SOCI 1002 , 1003, 1004, 1005, 1006)
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 2203	Interpersonal Relations	(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 and one of SOCI 1002 , 1003 , 1004 , 1005 , OR 1006 are 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 and one of Sociology 1002 , 1003 , 1004 , 1005 or 1006 before taking any sociology courses at the 2000 level or above. Sociology 1001 is a prerequisite for SOCI 10021006. Students may receive credit for only one of Sociology 1002 , 1003 , 1004 , 1005 , 1006 . 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. A minimum grade of C (2.0) is required for all sociology courses taken to meet the Majors or Honours requirements or prerequisites.

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. Courses in the 4000 series are specialized courses intended mainly for Majors and Honours students. 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. Students must satisfy the prerequisite requirements of upper level courses. In addition to SOCI 1001 and one of SOCI 1002 , 1003 , 1004 , 1005 , or 1006 , students intending to Major or Honour in Sociology must have completed at least six 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.

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 24 ch:

*	SOCI 1001	Introduction to Sociology
*	One of:	
	SOCI 1002	Introduction to Social Problems and Issues
	SOCI 1003	Making Sense of Modern Life
	SOCI 1004	Collective Behaviour, Youth Cultures and Rationalism
	SOCI 1005	Critical Sociologies: Feminism, Ethnomethodology, Marxism
	SOCI 1006	Exercising the Social Imagination
*	SOCI 3000	Theoretical Foundations of Sociology
*	SOCI 3100	Statistical Analysis of Social Data
*	SOCI 3103	Strategies of Social Research
*	SOCI 4013	Contemporary Sociological Research

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.

Students 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. For a second-class Honours degree an average of 3.3 is required in these courses. 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 36 ch:

*	SOCI 1001	Introduction to Sociology
*	One of:	
	SOCI 1002	Introduction to Social Problems and Issues
	SOCI 1003	Making Sense of Modern Life
	SOCI 1004	Collective Behaviour, Youth Cultures and Rationalism
	SOCI 1005	Critical Sociologies: Feminism, Ethnomethodology, Marxism
	SOCI 1006	Exercising the Social Imagination
*	SOCI 3000	Theoretical Foundations of Sociology
*	SOCI 3100	Statistical Analysis of Social Data
*	SOCI 3103	Strategies of Social Research
*	SOCI 4013	Contemporary Sociological Research
*	SOCI 4014	Designing Research Proposals
*	SOCI 4015	Honours Thesis

* Six 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 pshychology.

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	General Experimental 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 1000 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	Abnormal Psychology	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

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 conceptu al 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 backg round 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 awar ding 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 BA 4173) 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 Faculty of Business offers programs leading to Certificates, at two levels, in Business Administration as well as certificates in Accounting, Human Resource Management and Electronic Commerce. These 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. While designed primarily for part-time study, students may pursue a certificate program on a full-time basis subject to the availability of the courses required. Participants will have an opportunity to study the basic principles of administration and management; to improve analytical skills; to increase their awareness of the various factors contributing to effective decision making; and to understand the basic functions of organizations.

All courses for the certificates are degree-credit courses. Individuals who successfully complete certificate courses and who are subsequently admitted to a degree program normally will receive credit towards a degree for courses acceptable in the particular degree program. Individuals admitted to a BBA degree program will normally be able to apply all successfully completed certificate courses to their degree program.

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, N.B. E2L 4L5.

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. A grade of C or better meets the prerequisite standards for Business Administration courses.

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 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 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. 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. The normal course load for studnets 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.

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.

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

.

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. C and D 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
BA 1504	Intro to Organizational Behaviour
Social Science elective*	
Humanities or Language Elective*	

Winter Term

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

BA 2858	Personnel Administration
BA 2672	Introduction to Management Information Systems
BA 2217	Accounting for Managers II
BA 2606	Business Decision Analysis II
Business Elective/Option	

Winter Term

BA 2303 Principles of Marketing
BA 3623 Management Science: Deterministic Models
Business Electives or Option Courses - 9 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 3705 Business Law
Business Electives or Option Courses - 6 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), whether completed at UNB or their approved equivalents taken elsewhere. Relevant courses transferred from elsewhere will be assessed for purposes of averaging by the Faculty involved at the time the major is applied for; and
   ii. earn a minimum grade of C in the following compulsory courses: BA 1504 , 2758 , 2858 , 3813 , 4129 , and 4898 ; and
   iii. earn a minimum grade of C in six credit hours of electives chosen from the following: BA 4813 , 4853 , 4854 , 4855 , 4856 , 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 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 . 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)

BA 1504	Intro to Organizational Behavior
MATH 1853	Math for Business I
ECON 1013	Intro to Economics - Micro
Social Science elective*	
Humanities or Language Elective*	

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 2858	Personnel Administration
BA 2672	Introduction to Management Information Systems
BA 2217	Accounting for Managers II
BA 2606	Business Decision Analysis II
Business Electives or Optional Courses - 6 ch	

Winter Term (January - April) Work Term I

Spring/Summer Term (May - August)

BA 2303	Principles of Marketing
BA 2903	Work Term Report I
BA 3623	Management Science: Deterministic Models
BA 3425	Managerial Finance
Business Electives or Option Courses - 9 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 3705	Business Law
BA 3903	Work Term Report II
Business Electives or Option Courses - 9 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

Notes:

* 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.

** 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.

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.

If students' course selections deviate from the schedule above they are responsible for obtaining academic advise from either a Faculty of Business or Co-op advisor. Students are responsible for their own academic planning and course selection.

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.

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 600 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 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.

BACHELOR OF COMPUTER SCIENCE

BCS students taking Computer Science should refer to Section G of this Calendar, Bachelor of Computer Science. First and second year courses for the degree are available on the Saint John campus; a limited section of third and fourth year courses are also available. A typical first year course load would include five courses per term as follows:

CS 1073	Intro to computer Programming in Java	(1st term)
CS 1083	Computer Science Concepts (Java)	(2nd term)
MATH 1003	Intro to Calculus I	(1st term)
MATH 1013	Intro to Calculus II	(2nd term)
CS 1303	Discrete Structures I	(1st term)
One	1000 level science course chosen from:	
	Biology, Chemistry, Geology or Physics	(both terms)
One	1-2000 level course chosen from:	
	Humanities, Social Sciences or Business Admin	(both terms)
One	Elective	(both terms)

BACHELOR OF HEALTH SCIENCES

To enrol in the Bachelor of Health Sciences (BHS) degree, students must be enrolled in a Canadian Medical Association (CMA) accredited program in Nuclear Medicine, Radiation Therapy, Respiratory Therapy or Radiography or have completed such an accredited program.

Note: 75 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 enrol in the B.Sc. program.

Required Courses:

YEAR 1:

- MATH 1003 / 1013 ,
- BIOL 1001 / 1012 / 1017 ,
- CHEM 1041 / 1046 / 1072 / 1077 ,
- PHYS 1000 ,
- PSYC 1003 / 1004 .

YEARS 2, 3, and 4:

In addition to the requirements of the appropriate accredited program, students must complete the following University courses:

- BA 1504
- one of NURS 2031 , CPW 1001 or CPW 1002
- one of CS 1703 or CS 1803
- STAT 2263
- one of PSYC 3383 , PSYC 3692 , PSYC 3711 , PSYC 3723 , PSYC 3724 or PSYC 3752 (PSYC 3711 is strongly recommended)
- NURS 3144
- PHIL 3133 and PHIL 3134
- HSCI 4091 and HSCI 4092
- one (3ch) elective of 3000 level PSYC courses listed above, or 3ch of 3000/4000 level NURS courses, or 3ch of 3000/4000 level 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. Credit will be granted only for those courses which are essentially equivalent to Year 1 BHS courses as listed above.

Students must begin in the program by Fall 2004 and complete all of the program requirements by Spring 2010.

BACHELOR OF NURSING DEGREE

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 atti tudes 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 Nurses Association Testing examinations 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 146 ch
BN/RN Program	Minimum 66 ch

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 re gulations must be made to the Registrar in writing.

Any point not covered in the following regulations will be governed by the General University Regulations.

General Regulations

1. A student whose session 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 session 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 Department, be required to withdraw from the program.
2. A student who twice fails to achieve at least a "C" grade in any Nursing course will be required to withdraw from the Nursing program.

3. A student must receive at least a "C" grade or a clinical "pass"
   a. in each required Nursing course before proceeding to ensuing Nursing courses and
   b. in all required non-nursing courses, except electives, before proceeding to the next year of Nursing courses.
4. A student repeating a Nursing course may, at the discretion of the Nursing Department, also be required to repeat the Nursing course that immediately preceded it. and
5. Basic degree students must complete the program within 6 years of enrolment. and
6. The requirements for the Basic degree are 100 ch in courses taught by Nursing Faculty and 46 ch in courses provided by other faculties. and

Curriculum for BN (Basic) Students

(See Section H for descriptions of these courses.)

Year I

Term 1: PSYC 1003 (3 ch); NURS 1011 (3 ch); NURS 1032 (4 ch); NURS 1042 (3 ch); BIOL 1411 (3 ch); BIOL 1416 (2 ch).

Term 2: PSYC 1273 (3 ch); NURS 1022 (3 ch); NURS 1023 (3 ch); BIOL 1412 (3 ch); BIOL 1417 (2 ch) Open Elective* (3 ch).

Year II

Term 1: BIOL 2831 (3 ch); Writing Designated Course (3 ch); NURS 2020 (3 ch); NURS 2030 (3 ch); NURS 2041 (4 ch).

Term 2: BIOL 2852 (3 ch); Writing Designated Course (3 ch); NURS 2132 (3 ch); NURS 2020 (3 ch); NURS 2030 (3 ch); NURS 2031 (4 ch).

Following Term 2: NURS 2063 (5 ch).

Year III

Term 1: STAT 2263 (4 ch); BIOL 3251 (3 ch); NURS 3072 (3 ch); NURS 3073 (3 ch); NURS 3092 (3 ch).

Term 2: Open Elective* (3 ch); NURS 4111 (3 ch); NURS 4121 (3 ch); NURS 4123 (6 ch).

Following Term 2: NURS 3103 (5 ch).

Year IV

Term 1: Open Elective* (3 ch); Open Elective* (3 ch); NURS 3061 (3 ch); NURS 3062 (3 ch); NURS 3144 (3 ch); NURS 4142 (3 ch).

Term 2: NURS 4132 (3 ch); NURS 4133 (2 ch); NURS 4152 (7 ch); Nursing Elective (3 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 Associ ation 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 cumul ative 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 (15 ch)

BIOL 2831 , 2852 (6 ch); Faculty approved Writing course(s) (6 ch); STAT 2263 or equivalent (3 ch).

Electives (18 ch)

At least 3ch of these electives must be a nursing elective, and at least 9 ch must be non-nursing electives.

Required Nursing Courses (33 ch)

(See Section H of the Calendar for course descriptions)

NURS 2011 (3 ch); NURS 2031 (4 ch); NURS 3144 (3 ch); NURS 3092 (3ch); NURS 4142 (3 ch); NURS 4111 (3 ch); NURS 4112 (3 ch); NURS 3061 (3ch); NURS 3062 (3 ch); NURS 4132 (3 ch); NURS 4133 (2ch).

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, thes e 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 4184	Professional Values/Ethical Issues
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 RECREATION AND SPORTS STUDIES

NOTE: This calendar copy has been revised based on changes to the Kinesiology degree programs approved by the Fredericton Senate (See Section G of this Calendar). At the time of printing of this calendar it is subject to approval by the Saint John Senate. Students are advised to contact the Department of Social Science for details.

General Information

The Faculty of Kinesiology offers two degree programs: Bachelor of Recreation and Sport Studies, and a Bachelor of Science in Kinesiology. The Saint John campus offers the first year of the four-year program for both of these programs. The **Bachelor of Recreation and Sport Studies [BRSS]** program is inter-discipline based, with the focus on the social-psychological aspects of recreation and leisure in society, and on the management and delivery of recreation, park, and tourism services. BRSS students will select one of the following programs/minors: Recreation & Sport Management, Outdoor Recreation Minor, Tourism Minor, Leisure and Aging Minor, and General Recreation/Sports Studies. 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 program delivery and organization management in various recreation, leisure, park, and tourism organizations.

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. This figure provides for the accommodation of up to 20 students at the Saint John campus.

Transfer Students

1. A minimum session grade point average of 2.0 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 133 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 RLS 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 RLS courses.

Repeating Courses

1. Regulations pertaining to repeating courses can be found in Section B of this Calendar.

2. The removal of deficiencies or conditions acquired in whatever manner 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., KIN 3900 (12), KIN 3913 (3), KIN 3914 (3), KIN 3923 (3), KIN 3953 (3), KIN 3954 (3), KIN 4800 (12), KIN 4910 (6), KIN 4950 (6), and RLS 3100 (12).

2. Normally, students may elect a maximum of six (6) ch from directed study courses, i.e., RLS 4093 (3), RLS 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. The minimum credit hour total to graduate with a BRSS is 133 ch.
2. Students must complete at least 48 ch of KIN/RLS 3000-4000 level (including required and elective) courses in order to graduate with the BRSS degree.

YEAR 1 (36 ch)

[FOR STUDENTS AT THE SAINT JOHN CAMPUS]

REQUIRED CORE:

KIN 1001	Introduction to Kinesiology	3ch
BIOL	1551 / 1012 / 1711 / 1752	6ch
ENGL	1200 / 1500	6ch
PSYC/SOCI	Psychology/Sociology Courses	6ch
Non KIN/ RLS	Electives	15ch

**NOTE: Upon transferring to Fredericton for the second year of the BRSS degree program, students from the Saint John Campus must select the following courses to complete first year requirements:

KIN/RLS	Electives - select 2 of the following 3: KIN 2081 / 2093 / 2002 (RLS 2042)	6ch
KIN/RLS	Activities	1ch

YEARS 2 - 4

CORE COURSES (39 ch)

KIN 2011	Intro Sport & Rec Management	3ch
RLS 2032	Programming	3ch
ADM 2213	Principles of Marketing	3ch
RLS 3051	Advanced Management	3ch
RLS 3061	Delivery Systems	3ch
RLS 3072	Planning	3ch
KIN 4412	Leadership	3ch
KIN 3900 & RLS 3100	Internship	12ch
KIN 2113	Computers in Rec/Sport Admin	3ch
RLS 3101	Applications of Research	3ch

DISCIPLINE COURSES (12 ch)

KIN & RLS	Psychology & Sociology (see note below)	3ch
KIN 3093	Ethics	3ch
RLS 4092	Senior Seminar	3ch
KIN/RLS	Activities	3ch

Note: Recreation Management, Outdoor, Tourism, Gerontology: RLS 2062 Soc/Psyc of Leisure (3 ch); Sport Management KIN 2023 - Intro to Sociology of Sport (3ch) or KIN 2032 -Intro to Sport Psychology (3ch)

BRSS Students will select on of the following programs/minors:

1. **RECREATION & SPORT MANAGEMENT**

KIN/RLS	REQUIRED COURSES	6ch
RLS 3052 / KIN3111	Recreation, Sport & the Law	3ch
RLS 4081	Marketing of Recreation/Tourism Services	3ch
BUSINESS MINOR	Courses approved by Faculty of Administration	21ch
KIN/RLS	Electives	9 ch
NON KIN/RLS	Electives	12 ch

2. **OUTDOOR RECREATION MINOR**

FACULTY COURSES		9ch
RLS 2303	Outdoor Recreation	3ch
RLS 4331	Interpretation	3ch
RLS 4311	Facilities	3ch
OUTSIDE COURSES		15ch
BIOL 2113	Ecology	3ch
FOR/BIOL/ECON	Approved Electives	12ch
KIN/RLS	Electives	9ch
Non KIN/RLS	Electives	15ch

3. **TOURISM MINOR** MINOR (Faculty Courses -6 ch + Outside courses -18 ch)

FACULTY COURSES		6ch
RLS 2502	Tourism	3ch
RLS 4081	Marketing	3ch
OUTSIDE COURSES	Tourism Courses on Saint John Campus	18ch
KIN/RLS	Electives	9ch
NON KIN/RLS	Electives	15ch

4. **LEISURE in AGING MINOR** MINOR (Faculty Courses -6ch + Outside courses -18 ch)

FACULTY COURSES		6ch
KIN 3141	Wellness & Aging	3ch
KIN 3242	Phys Act & Older Adult	3ch
OUTSIDE COURSES		18ch
GERO 2013		3ch
GERO 2023		3ch
GERO/SOCI/PSYCH	Approved Electives	12ch
KIN/RLS	Electives	9ch
NON KIN/RLS	Electives	15ch

5. **GENERAL RECREATION/SPORT STUDIES CURRICULUM**

KIN/RLS	Electives	21ch
NON KIN/RLS	Electives	27ch

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 RLS 4900 : Honours Research Project, and
4. Complete a minimum of 48 ch of courses at or above the 3000 level (KIN /RLS and/or non-KIN/RLS courses).
5. Complete KIN 3001 as a prerequisite, or as a co-requisite to RLS4900 .

BACHELOR OF SCIENCE

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 Science in 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 1000
3. 12 ch upper level Biology Grouped Electives
4. 6 ch electives non-Biology science courses, 7 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 , 3645 , 3663 , 3755 , 3685 , 3755 , 4765 , 3955 , 4215 , 4565 , 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

Three program are offered: **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.

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 c ontinue 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 C S 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 a nd 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 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)

MATH 1703 , 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 , 3023 plus 21 chs of economics courses or approved substitutes. ECON 3665 is highly recommended.

Mathematics Requirements:
MATH 3713 , 3303 , STAT 3083 , 3093 ;
Three chosen from: MATH 3073 , 3243 , 3503 , 3733 , CS 3113.
Three chosen from:
DA4203 , 4243 , STAT 3383 , 3713 , 4043 , 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 .

MATHEMATICS AND STATISTICS OPTIONS

MATHEMATICS MAJOR

First Year (Minimum 39 ch)

As required under the BSc general regulations. Students are strongly advised to take MATH 1703 in first year.

Second Year (Minimum 30 ch)

MATH 2003 , 2013 , 2213 plus electives equivalent to seven term courses.

Third Year and Fourth Year (Minimum 69 ch)

MATH 3713 , 3733 , STAT 3083 , 3093 plus 18 ch of upper level MATH courses. A maximum of two courses from CS 3113 , DA 4123 , and an upper level STATS course may contribute to these 18 ch.

Plus 30 ch of upper level (3-4000 level) elective courses approved by the department.

Plus 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.

STATISTICS MAJOR

First Year (Minimum 39 ch)

As required under the BSc general regulations. Students are strongly advised to take MATH 1703 and STAT 1793 as the electives in first year.

Second Year (Minimum 30 ch)

MATH 2003 , 2013 , 2213 plus electives equivalent to seven term courses.

Third Year and Fourth Year (Minimum 69 ch)

MATH 3713 , 3733 , STAT 3083 , 3093 plus 15 ch of upper level STATS courses A maximum of two courses from DA 4203 , 4243 and 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 program.

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 4503 (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 an 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 , 3383 , 3503 , 3603 , 3632 , 3693 , 3711 , 3723 , 4583 , 4693 , 4733 , 4833 ;

2. **Social Personality:**
   PSYC 2201 , 2401 , 3222 , 3232 , 3263 , 3412 , 3461 ; 4463 ,

3. **Clinical/Applied Psychology:**
   PSYC 3313 , 3323 , 3362 , 3393 , 3493 , 3553 , 3724 , 3803 , 4213 , 4214 , 4233 , 4493 .

An Honours student must successfully complete an Honours Thesis (PSYC 4143 and 4155). This typically requires that a student conceive, plan, perform and report an experiment under t he 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 Honoursprogram. 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 maint ained. 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 co ntain 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 3.0 at the end of the third year and must take BIPS4000 in addition to the above requirements.

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 , 2615 , CHEM 1041 , 1046 , 1072 / 1077 , MATH 1003 , 1013 , PHYS 1000 , ENGL 1200 or 1500 . Students interested in Optometry should take PSYC 1003 , 1004 instead of the English course.

SECOND YEAR

Pre-Dentistry
BIOL 2012 , 2065 , 2245 , 3055 , 2485 or 3251 , 3635 or 4775 , CHEM 2401 , 2416 , 2422 , 2457 , plus 12 ch Humanities and/or Social Sciences.

Pre-Medicine
BIOL 2065 , 2245 , 3055 , CHEM 2401 , 2416 , 2422 , 2457 , STAT 2263 (or equivalent), plus 21 ch Humanities and/or Social Science.

Pre-Veterinary Medicine
BIOL 2015 , 2485 , CHEM 2401 , 2416 , STAT 2263 (or equivalent), plus 9 ch Humanities and/or Social Sciences.

BACHELOR OF SCIENCE IN COMPUTER SCIENCE

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.

Regulations:

1. The total curriculum consists of a minimum of 141 credit hours.
2. A grade of "C" or better is required for prerequisite program courses. Students who fail to attain a "C" or better in such a course must repeat it until that grade level is attained.
3. Overall, a minimum of 50 ch of upper-level courses are required.

Curriculum:

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
DA 3603	Computer Organization and Architecture
CS 3913	Algorithms I
CS 3983	Technical Report I
CS 4613	Programming Languages
CS 4983	Technical Report II

One of:

CS 2503	Intro to Information Processing
CS 2513	Intro to Information Systems
CS 3123	High-Speed Numerical Computation

Two of:

CS 4103	Parallel Processing Numerical Algorithms
CS 4113	Advanced Scientific Computing
CS 4913	Theory of Computation
CS 5065	Introduction to Functional Programming
DA 3003	Software Design and Development
DA 3503	Database Management Systems I

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).

Science/Engineering Electives:
Nine credit hours normally taken in the first two years of the programme.

Other Programme Requirements:
Twenty eight credit hours of free electives.

AREAS OF SPECIALIZATION:

The basic degree is obtained by satisfying the basic curriculum outlined above. In addition to the basic degree, two specializations or curriculum options are described:

1. **Specialization in High-Performance Scientific Computing**,
2. **Specialization in Software Engineering**

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

NOTE: The Specialization in Software Engineering is not an accredited program and DOES NOT lead to registration as a Professional Engineer.

For the Bachelor of Science in Software Engineering (BScSWE) see program details contained in the Bachelor of Science in Engineering section of this calendar.

Required Courses

DA 4503	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.

DA 4003	Software Project Management and Quality Assurance
DA 4013	Software Process Improvement
DA 4023	Leading-edge Technology in Software Development
DA 4093	Team Software Development Project

Note: The following courses have to be selected from the core studies in order to meet the prerequisites:

DA 3003	Software Design and Development
DA 3503	Database Management Systems I
STAT 3083	Probability and Mathematical Statistics I

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:

1. CS 4913: Theory of Computation
2. CS 3113: Introduction to Numerical Methods
3. 15 ch in Science
4. CS 4xxx (4ch) A fourth year CS elective, excluding CS 4613 , CS 4993 , and CS 4913 . DA 4003 , 4013 , 4123 , 4503 , 4604 are acceptable substitutes.
5. CS 4993 with a grade of B or better, in lieu of CS 4983 .

It is recommended that Physics 1000 or the EE 1713 /Physics 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: MATH 2503 , STAT 3083 , and STAT 3093 .

Honours in Software Engineering: STAT 3703 .

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".

BACHELOR OF SCIENCE IN 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.

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

MATH 1003 , 1013 , 2003 ; at least one of MATH 2013 , 2213 ; STAT 1793 , 3083 , 3093 , DA 4993 ; CS 1073 , 1083 , 1303 , 2013 , 3113 ; at least one of CS 2113 , DA 3053 .

II. Regulations Governing Course Selection

1. At least 12 ch of courses selected from CS 3323 , 3913 , DA 3003 , 3503 , 3603 , 4003 .
2. At least 6 ch of courses selected from DA 4203 , 4243 , STAT 3703 , 4043 , 4703 .
3. At least 6 ch of courses selected from DA 4123 , MATH 3703 , 3303 , 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 Applied Statistics and Computer Science or the Department of Mathematical Sciences.
8. A grade of C or better is required in any CS, MATH, STAT, or DA course used as a prerequisite.

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	ntro to Computer Programming in Java	(1st term)
CS 1083	Computer Science Concepts (Java)	(2nd Term)

Plus electives equivalent to 5 term courses.

Computer Science Major

A student in the BScDA degree who wishes to major in Computer Science must complete the following courses:

a. MATH 2213

b. CS 2003 , 2303 , 2403 , 2803 , 3323 , 3913 , 4613

c. DA 3503 , 3603

d. Three upper-level CS or DA courses chosen in consultation with the Department of Applied Statistics and Computer Science. These courses are in addition to those in (a)-(c). DA 4503 and 4604 are highly recommended.

Economics Major

A student in the BScDA degree who wishes to major in Economics must complete a minimum of 36 ch in Economics as follows:

a. ECON 1013 , 1023 , 2013 , 2023 , 3013 , 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 BScDA 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 , 1703 , 2003 , 2013 , 2213

b. MATH 3713 , 3733 , STAT 3083 , 3093

c. At least six upper level Mathematics courses. A maximum of two courses from CS 3113 , DA 4123 , and an upper level Statistics course may count toward the six courses.

Suggested elective for first year is STAT 1793 (or equivalent).

At least two courses in Computer Science are required.

Statistics Major

A student in the BScDA degree who wishes to major in Statistics must complete a minimum of 48 ch in Statistics or approved substitutes as follows:

a. MATH 1003 , 1013 , 1703 , 2003 , 2013 , 2213 , STAT 1793

b. MATH 3713 , 3733 , STAT 3083 , 3093

c. At least five upper level Statistics courses. A maximum of two courses from DA 4203 , 4243 and 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 a re 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 Science in 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 Applied Statistics and Computer Science 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 (12-2 or 12-0) 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 BSC(DA) 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.	One of:		
	CS 2513 :	Intro to Information Systems	4 ch
	DA 2503 :	Packaged Software Decision Aids	4 ch
3.	At least 9 ch chosen from		
	MATH 1013 :	Intro to Calculus II	3 ch
	MATH 1703 :	Discrete Structures I	4 ch
	CS 1083 :	Computer Science Concepts (Java)	4 ch
	CS 2013 :	Software Engineering I	4 ch
	CS 2503 :	Intro to Information Processing	4 ch

Other choices may be approved in consultation with the Department of Applied Statistics and Computer Science or the Department of Mathematical Sciences.

4. Sufficient additional credits, chosen in consultation with the Department of Applied Statistics and Computer Science or the Department of Mathematical Sciences, to bring the total to 34 ch.

Further information may be obtained by contacting the Department of Applied Statistics and Computer Science or the Department of Mathematical Sciences.

BACHELOR OF SCIENCE IN ENGINEERING

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, and Mechanical Engineering. Geological, Forest and Surveying 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 at least 85 credit hours of approved courses at UNBSJ, will have the opportunity to complete the Bachelor's degree req uirements in Chemical, Civil, Computer, Electrical and Mechanical Engineering at UNBF in two additional fall and two additional winter terms. Students in Surveying, Geological and Forest Engineering will require six or more terms at UNBF 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
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
Surveying (Geodesy & Geomatics) Engg.:	remote sensing of the environment
	mapping of land and water resources
	monitoring of topographic change
	hazard mapping
	environmental information systems

At UNBSJ the following courses are equivalent to the same courses at UNBF and/or to the other UNBF courses listed opposite:

PHYS 1917 = PHYS 1913/18 ; PHYS 2055 = PHYS 2962/67 ; PHYS 2975 = PHYS 2872/77 or PHYS 2972/77 ; CHE 2503 = ME 2503 ; CE 2023 = ME 2121 ; ME 3413 = CHE 2102 ; GEOL 1044 + 1074 = GEOL 1021 + GEOL 1022 ; ME 3232 = CE 3963 ; ME 3413 = ME 3413 + ME 3415 ; ME 3482 = FE 3313 ; ME 3513 = ME 3511 + ME 3515 ; CE 2703 = CHE 2703 .

Note: A C grade minimum is required for all prerequisite and all core and technical elective courses used for credit towards the B.Sc.(Eng.) degree.

Standard Engineering Programs

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 , CE1013 , CHEM1041 , CHEM1046 , PHYS1917 , EE1713 , CS1003 or ME1003 .

Term 2:
MATH1013 , CHEM1072 , CHEM1077 , CHE1004 , ME1113 , ECON1073 , CSE*.

Term 3:
MATH2503 , CHEM2601 , CHEM2886 , MATH2503 , CHE2503 , CHEM2401 , CE2023 , STAT2593

Term 4:
MATH2513 , ME3413 , CHEM2622 , CHEM2897 , CE2703 , CHE2412 , MATH3503 , CS3113

Civil Engineering

Term 1:
CE1013 , MATH1003 , CE1003 , PHYS1917 , SE1001 , GEOL1044

Term 2:
CHEM1882 , MATH1013 , ME1113 , CS1003 , ECON1073 , GEOL1074

Spring Camp: GGE1803

Term 3:
CE2023 , CHE2503 , ME1003 , MATH2503 , STAT2593 , EE1713

Term 4:
MATH2513 , CE2603 , CE2703 , CE2953 , CE3033 , ME3232

Computer Engineering

Term 1:
MATH1003 , EE1713 , CE1013 , CS1073 , PHYS1917 , CS1303 or ME1003

Term 2:
MATH1013 , CS1083 , CHEM1882 , ME1113 , ME1013 , ECON1073, CSE*

Term 3:
MATH2503 , EE2773 , CS2013 , CHE2503 , STAT 2593 , CMPE2013

Term 4:
MATH2513 , MATH3503 , EE2213 , EE2783 , EE2703 , ME3232

Joint Computer Science/Survey Engineering

Term 1:
CE1013 , MATH1003 , PHYS1917 , SE1001 , CS1073 , ME1003 , EE1713

Term 2:
CS1083 , CHEM1882 , MATH1013 , ME1013 , CS2513 , ECON1013, ME1113

Spring Camp: GGE1003

Electrical Engineering

Term 1:
MATH1003 , EE1713 , CE1013 , CS1073 , PHYS1917 , CS1073 , ME1003

Term 2:
MATH1013 , CS1083 , ME1113 , CHEM1882 , ECON1073 , CSE*

Term 3:
MATH2503 , EE2773 , CS2013 , CHE2503 , STAT2593 , CMPE2013

Term 4:
MATH2513 , MATH3503 , EE2783 , EE2213 , EE2703 , PHYS2055 or PHYS2975

Forest Engineering

Term 1:
CE1013 , MATH1003 , ME1003 , PHYS1917 , SE1001 , EE1713 , CSE*

Term 2:
CS1003 , CHEM1882 , MATH1013 , ME1113 , CSE*

Geologocal Engineering

Term 1:
CE1013 , GEOL1044 , MATH1003 , ME1003 , PHYS1917 , SE1001 , EE1713

Term 2:
CHEM1882 , GEOL1074 , MATH1013 , ME1113 , ECON1073

Spring Camp: GGE1803

Geodesy & Geometics Engineering

Term 1:
CE1013 , MATH1003 , ME1003 , PHYS1917 , SE1001 , CS1073 , ME1003

Term 2:
CS1083 , CHEM1882 , MATH1013 , ME1013 , ME1113 , ECON1073

Spring Camp: GGE1003

Mechanical Engineering

Term 1:
CE1013 , MATH1003 , ME1003 , PHYS1917 , CS1003 , EE1713

Term 2:
CHEM1882 , MATH1013 , ME1013 , ME1113 , ECON1073 , CSE*

Term 3: CE2023 , CHE2503 , MATH2503 , ME2321 , STAT2593 , EE2773

Term 4:
MATH2513 , ME2332 , ME3413 , ME2613 , ME2222 , ME3513

Term 5:
Complete Term 1 & 3 requirements + 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 , EE1713 , CE1013 , CS1073 , PHYS1917 , CS1303

Term 2:
MATH1013 , CS1083 , CHEM1882 , ME1113 , ECON1073 , CSE*

Term 3:
MATH2503 , EE2773 , CS2013 , CS2303 , STAT2593 , CMPE2013

Term 4:
CS2403 , CS2513 , EE2213 , ME2613 , ME3232 , 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 , CE1013 , PHYS1917 , EE1713 , ME1003 , CS1073

Term 2:
MATH1013 , ME1113 , CHEM1882 , ECON1073 , CSEs

Note: CSE* = Complimentary studies elective

BACHELOR OF SCIENCE IN KINESIOLOGY

NOTE: This calendar copy has been revised based on changes to the Kinesiology degree programs approved by the Fredericton Senate (See Section G of this Calendar). At the time of printing of this calendar it is subject to approval by the Saint John Senate. Students are advised to contact the Department of Social Science for details.

General Information

The Faculty of Kinesiology offers two degree programs: Bachelor of Science in Kinesiology and a Bachelor of Recreation and Sport Studies. The Saint John campus offers the first year of the four-year program for each of these degree programs. 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 should select the Bachelor of Science in Kinesiology degree program and should apply to the Faculty of Education for the BScKin/BEd concurrent program. The application deadline for the concurrent BScKin/BEd program is January 31 of each year. Students who, after completing the BScKin degree program, decide they wish to teach, may apply to the consecutive BEd degree program. The BEd degree program taken after the BScKin 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. This figure provides for the accommodation of up to 20 students at the Saint John campus.

Transfer Students

1. A minimum session grade point average of 2.0 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 134 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 RLS courses. Students receiving a final grade of "D" in KIN1001 may repeat KIN1001 as a co-requisite to other second year KIN and RLS courses.

Repeating Courses

1. Regulations pertaining to repeating courses can be found in Section B of this Calendar.

2. The removal of deficiencies or conditions acquired in whatever manner, 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., KIN 3900 (12), KIN 3913 (3), KIN 3914 (3), KIN 3923 (3), KIN 3953 (3), KIN 3954 (3), KIN 4900 (12), KIN 4910 (6), KIN 4950 (6), and RLS 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. In the BScKin degree program activity lab courses are not required but may be taken as General KIN/RLS Electives up to a maximum of 6 credit hours.

2. The minimum credit hour total to graduate with a BScKin would be 134.

3. 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 (41 - 42 ch)

[FOR STUDENTS AT THE SAINT JOHN CAMPUS]

REQUIRED CORE

KIN 1001	Introduction to Kinesiology	3ch
BIOL 1551	Principles of Biology, Part I	3ch
BIOL 1006	Biological Principles Lab, Part I	2ch
BIOL 1012	Biological Principles, Part II	3ch
BIOL 1017	Biological Principles Lab, Part II	2ch
BIOL 1711	Systemic Human Anatomy I	5ch
BIOL 1752	Structural Human Anatomy II	5ch
MATH 1003	Introduction to Calculus I	3ch
ENGL	1200 / 1500	6ch
Choose one of the following:		
CHEM	1041 / 1046 and 1072 / 1077	10ch
or		
PHYS 1000		9ch

****NOTE**: Upon transferring to Fredericton for the second year of the BscKin degree program, students from the Saint John Campus must select one (1) of the following three (3) courses to complete first year requirements:

KIN 2002	History of Sport and Recreation	3ch
or		
KIN 2081	Introduction to Wellness and Active Living	3ch
or		
KIN 2093	Introduction to Philosophy of Sport and Recreation	3ch

Year 2 (38 ch)

REQUIRED CORE

KIN 2051	Prevention and Care of Athletic Injuries	4ch
KIN 2062	Introductory Biomechanics	3ch
BIOL 2721	Human Physiology I	5ch
BIOL 2782	Human Physiology II	5ch
ENGL	1103 or 1144 or 1145	3ch
KIN 2072	Introduction to Motor Control and Learning	3ch
KIN 2023	Introduction to Sociology of Sport	3ch
KIN 2032	Introduction to Sport Psychology	3ch
KIN 2160	Laboratory Methods in Kinesiology	3ch
Choose 1 of the following:		6ch
PSYC	1013 / 1023	
or		
ANTH	1001 / 1002	
or	1st Year Sociology	

Year 3 and 4 (57 ch)

REQUIRED CORE (to be completed in 3rd year)

STATS 2263	Statistics for Students of Biological Sciences	3ch
KIN 3001	Introduction to Research Methods in Kinesiology	3ch
KIN 3081	Introductory Exercise Physiology	3ch
KIN 3282	Physical Activity, Health and Wellness	3ch
KIN 3482	Bioenergetics of Exercise	3ch
KIN Electives	(Choose 27 ch) (see Note 1 & 2 below)	27ch
Non-Kin Electives	(Choose 15 ch) (see Note 1 & 2 below)	15ch
	TOTAL	**134CH**

NOTES:
Note 1: of the 42 ch of KIN and NON-KIN electives in 3rd and 4th year at least 27 must be at the 3000/4000 level)
Note 2: see advisor for suggested KIN and NON-KIN electives.

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 /RLS and/or non-KIN/RLS courses).
5. Complete KIN 3001 as a prerequisite, or as a co-requisite to KIN 4900 .

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 BKin/BEd concurrent program will follow the BKin (General)curriculum outlined above, and in addition will compete 45 ch of Education courses. Twelve(12) ch of the 21 ch of Non-KIN/RLS Academic Electives may be Education courses. BKin/BEd students will only be required to complete 12 ch of the "Either KIN/RLS or Non-KIN/RLS Academic Electives", three (3) ch of which may be Education 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 (39 ch)

REQUIRED CORE

KIN 1001	Introduction to Kinesiology	3ch

One of the following three:

KIN 2002	History of Sport and Recreation	3ch
KIN 2081	Introduction to Wellness and Active Living	3ch
KIN 2093	Introduction to Philosophy of Sport & Recreation	3ch

BIOL 1711	Human Anatomy I	5ch
BIOL 1752	Human Anatomy II	5ch
BIOL 1001	Biological Principles, Part I	3 ch
BIOL 1006	Application in Biology, Part I	2ch
BIOL 1012	Biological Principles Part II	3ch
BIOL 1017	Application in Biology, Part I	2ch
MATH 1003	Introduction to Calculus I	3ch

Choose 1 of the following:

	CHEM 1001 / 1006 and CHEM 1012 / 1017	10ch
or	PHYS 1940 / 1945	

YEAR 2 (33 ch)

REQUIRED CORE

ENGL	1103 / 1144/ 1145	3ch
KIN 2062	Introductory Biomechanics	3ch
BIOL 2721	Human Physiology I	5ch
BIOL 2782	Human Physiology II	5ch
KIN 2072	Introduction to Motor Control and Learning	3ch
KIN 2023	Introduction to Sociology of Sport	3ch
KIN 2032	Introduction to Sport Psychology	3ch
KIN 2160	Laboratory Methods in Kinesiology	3ch
	KIN Activity Labs: (2x1ch)	2ch
	Non-Kin Electives	3ch

YEAR 3, 4 AND 5 (121 ch)

REQUIRED CORE to be completed in 3rd year

STATS 2263	Statistics for Students of Biological Sciences	3ch
KIN 3001	Introduction to Research Methods in Kinesiology	3ch
KIN 3081	Introductory Exercise Physiology	3ch
	KIN Activity Labs	7ch
	KIN Electives	18ch
	Non-Kin Electives	27ch
	Education Courses	60ch

DIPLOMAS OF ADVANCED UNDERGRADUATE STUDIES

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, contact the Education Coordinator at 648- 5593. To register for the DAUS Program, students should contact the appropriate department at UNBF:

Chair, Curriculum and Instruction Telephone: 506-453-3500 Fax: 506-453-3569

Chair, Educational Foundations & Learning Centre: Telephone: 506-453-3513 Fax: 506-453-4765

Chair, Adult and Vocational Education: Telephone: 506-453-3508 Fax: 506-453-3569

Faculty of Education University of New Brunswick Bag Service No. 45333 Fredericton, N.B. E3B 6E3

SECTION F
DESCRIPTION OF COURSES
SAINT JOHN CAMPUS

Standard Course Abbreviations

Biology	BIOL
Biology-Psychology	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
Gender Studies	GEND
Geology	GEOL
German	GER
Greek	GRK
Health Science	HSCI
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

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 pre-sented 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 rerequisites.
3, 4 and 5	Advanced level course which requires a substantial background.
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.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 -	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 indicated by a slash line, e.g., 5C/L/S.

Before registration, check all course offerings in the official Timetable. 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. Prerequisite: Grade 12 Chemistry and Grade 12 Physics or equivalent.

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. BIOL 1001 or equivalent 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*) (WR)

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. Prerequisite: BIOL 1001 or BIOL 1551 with a grade of B or higher.

BIOL 2065 Introductory Biochemistry 4 ch (3C 3L*) (WR)

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). Prerequisite: BIOL 1001 or BIOL 1551 with a grade of B or higher.

BIOL 2125 Introductory Botany 4 ch (3C 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. Prerequisite: BIOL 1001 or BIOL 1551 with a grade of B or higher.

BIOL 2245 Introductory Molecular Cell Biology 4 ch (3 C3L*)

Studies cell membranes, motility and sensory systems; gene regulation and molecular embryology; DNA, RNA, protein synthesis, viruses and molecular genetics. Prerequisite: BIOL 1001 or BIOL 1551 with a grade of B or higher.

BIOL 2485 Introduction To Microbiology 4 ch (3 C3L*)

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. Prerequisite: BIOL 1001 or BIOL 1551 with a grade of B or higher.

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. Prerequisite: BIOL 1001 or BIOL 1551 with a grade of B or higher.

BIOL 2615 Introductory Zoology 5 ch (3C 3L)

Classification, functional morphology, development and evolution of the major animal groups. Prerequisite: BIOL 1001 or BIOL 1551 with a grade of B or higher.

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 1410. For Nursing students only.

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 3075 Microscopy of Animal Cells & Tissues (A) 4 ch (2C/4L)

Practical aspects of various techniques of light microscopy and the preparation of animal cells and tissues for examination by light microscopy; introductory animal histology. Prerequisites: BIOL 2065 and permission of instructor.

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 (WR)

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. Students must have a cumulative grade point average of 3.0 or better.

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*) (WR)

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 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 (A) 3 ch (3C 1S)

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 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 3605 Invertebrate Morphology (A) 5 ch (3C 3L)

In-depth study of invertebrate structure, development and phylogeny. Prerequisite: BIOL 2615.

BIOL 3625 Functions of Invertebrate Animals (A) 3 ch (3C)

Studies the functions and behaviour of selected invertebrate phyla, emphasizing the organismic approach. 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 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 3 days at UNBSJ followed by 6 days at the BBS, Bahamas. Prerequisites:BIOL 2615 and BIOL 3055.

BIOL 3685 Crustacean Biology (A) 3 ch (2C 3L*)

A discussion of the general biology of the Crustacea, with special emphasis on marine representatives. Comparative aspects of anatomy, physiology, behaviour, and life histories are considered. Limited enrollment: preference will be given to Marine Biology Majors, then other students based on C.G.P.A. Prerequisite: BIOL 2615.

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 (WR)

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. Students should have a cumulative grade point average of 3.5 or better.

BIOL 4155 Current Topics in Biology (4159) 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*) (WR)

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 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) (WR)

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

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 4 ch (2C 3L)

A theoretical and applied approach to the science of ecotoxicology, including application of the tools and procedures used to understand toxicant fate and effects in ecosystems. Both field (eg. community level environmental "effects" monitoring) and laboratory (eg. LC50 tests) methods for understanding contaminant fates and effects will be examined. Prerequisites: CHEM 2422, CHEM 2457.

BIOL 4855 Biometrics 3 ch (2C 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 3.0 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. **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.

b. T**he 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.

c. **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.

Note: 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 1504 Intro. to Organizational Behaviour 3 ch (3C) (W)

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.

BA 1605 Business Decision Analysis I

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 Verbal Communications 3 ch(3C)

Introduces students to topics related to business communications, including preparing and delivering presentations, interviewing, basic speaking and listening skills, and running business meetings. Emphasis on experiential learning. Prerequisite: open only to BBA students with at least 30 ch 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, 1504

BA 2606 Business Decision Analysis II

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 Electronic 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.Prerequisites: BA2672 or permission of the instructor.

BA 2672 Introduction to Management Information Systems 3 ch (3C)

This course 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. Prerequisites: 30 credit hours or admission to the Certificate in Electronic Commerce.

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 Personnel Administration 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 1504

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, pluralism, foreign ownership, consumerism, and the multinational organization are examined. Trends are extrapolated to predict future business and other institutional forms. Examines the many new demands made on business by various groups e.g. consumers, ecologists, employees, minorities, young people, anti-technology groups, etc., and how they affect business decision making. Normally open only to third and fourth year students. Prerequisite: BA 1504 or consent of the instructor.

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 3425 Managerial Finance

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 1504.

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 1504.

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 or consent of the instructor.

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 or consent of the instructor.

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 or permission of instructor.

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 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 or consent of the instructor.

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. Prerequisite: BA 1504.

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

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

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 LE) (W)

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 LE) (W)

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, BA3126, or BA3305. Students should be in their final 30 credit hours of BBA program or have permission of the instructor.

BA 4129 Research Methodology 3 ch (SLE)

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: BA 2606 and 2858.

BA 4147/ 4148 Research Report (O) 3 ch (3C)(W)

These courses involve 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

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 controversial areas in financial reporting. Topics covered vary according to the changing importance of current accounting issues. Coverage includes price level accounting and human resource accounting. Prerequisite: BA 3235.

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 Accounting 3 ch (3C)

Selected topics in advanced accounting including branch office accounting and governmental accounting. Consolidated financial statements are covered in detail. 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

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, 3328 and 2604.

BA 4334 Public and Non-Profit Marketing 3 ch (3C)(W) (O)

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 3 ch (3C) (O)

Primarily a case course designed to give students experience in applying the knowledge acquired in BA 3413, 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 (0) 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 3 ch (3C) (O)

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

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 1504.

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 1504.

BA 4603 Independent Study - Quantitative Methods

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: All courses required for the BBA program except BA 4101, which should be taken concurrently. Credit will not be granted for both BA 2672 and BA 4673.

BA 4803 Independent Study - Human Resource Management & Industrial Relations

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 (4522) 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 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

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. Prerequisite: BA 2858

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.Prerequisite: BA 2858.

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. Prerequisite: BA 2858.

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. Prerequisite: BA 2858

BA 4866 Management of Technology (0) 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. Prerequisite: BA 2858

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. All other courses required for the HRM major, including the five compulsory courses BA 1504, 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 causticchlorine will be presented. Note: the subsequent course, CHE 2004, is taken in Year 3 at UNBF.

CHE 2412 Chemical Engineering Laboratory I 3 ch (1C 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.

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: A grade of C or higher in CHEM 1882 or each of CHEM 1041, CHEM 1046, CHEM 1072, CHEM 1077 and MATH 1013.

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 BSc students. 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. 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. An introduction to organic chemistry. 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 1041/1046 and 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 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) (WR)

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 Siences 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) (WR)

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 termomolecular 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 1041, CHEM 1072, CHEM 1046, 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 3202 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 3221 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 3202.

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 3202.

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.

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 : Statistics 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 centre. 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)

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.

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.

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 3ch (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 3ch (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 3ch (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 3ch(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.

COMMUNICATION AND PROFESSIONAL WRITING

Note: See beginning of Section F for abbreviations, course numbers and coding.

CPW 1001 Writing in the Disciplines I (3 ch W)

Introductory strategies for effective scholarly writing in different disciplines. No prerequisite.

CPW 1002 Effective Oral Communication I (3 ch)

This courses emphasizes on oral communication in the classroom and workplace, and public speaking. It will introduce students to organizing and making presentations and encourage them to develop confidence and clarity. No prerequisite.

CPW 2001 Writing in the Disciplines II (3 ch W)

Develops knowledge of the features and conventions of academic communication. Prerequisite: CPW 1001

CPW 2002 Effective Oral Communication II 3 ch

Develops the practice and theory of oral communication in the classroom and workplace, public speaking, and introduces more advanced topics, such as working with the press, as well as working with a wider range of media in presentations. Prerequisite: CPW 1002

CPW 2003 Theory and Practice of Technical and Professional Communication I 3 ch (W)

This course is a broad-based introduction to theories of workplace communication. It also introduces the practice of workplace and other professional communication (technical writing, editing, proof-reading, document design, on-line publishing). Prerequisite: CPW 1001

CPW 3003 Theory and Practice of Technical and Professional Communication II **3 ch (W)**

Develops students understanding of current theory and research in workplace communication, and given them the opportunity to pursue workplace and other professional communication, such as editing, proof- reading, document design, on-line-publishing, and technical writing, in more depth. Prerequisite: CPW 2003

CPW 3004 History and Application of Communication **3 ch (W)**

History of rhetoric and communication from the Classical period to the current day, and its practical applications for contemporary spoken and written discourse. Emphasis on the development of theories in response to changes in social, political, and philosophical climate. Prerequisite: CPW 2001

CPW 4005 The Rhetoric of Text and Image **3 ch (W)**

This course introduces students to the interaction of texts and images in such professional writing fields as advertising, book illustration, technical documentation, journalism, and public relations. Issues may includes visual and textual literacy, the semiotics and rhetoric of design, and the ideological basis of social communication. Prerequisite: CPW 3003

CPW 4006 Writing Strategies: Theory and Practice **3 ch (W)**

This is an advanced course for proficient writers who wish to become excellent. Emphasis on persuasive, reader-oriented, non-academic writing and genres, both communicative and creative. Students can expect to improve their writing, as well as their theoretical understanding of composing and its contexts. Prerequisites: CPW 2001 or CPW 3003.

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 in Fortran **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 1023 Algorithms and Languages **4 ch (3C 1L)**

Intended for Civil Engineering students. Introduces algorithms; in particular how to devise and implement algorithms and how to convert a problem into a computer-based notation. This course will introduce essential aspects of writing and reading APL and Fortran. Equal emphasis will be placed on the three components: Algorithms, APL, and Fortran.Note: This course may not be taken for credit by Computer Science and Data Analysis students. Note: Credit will not be given for both CS 1003 and CS 1023.

CS 1073 Introduction to Computer Programming in Java **4 ch (3C 1L)**

Intended for Computer Science and Electrical Engineering students. Includes problem analysis, algorithm design, and program structure. Covers the use of loops, arrays, objects, and methods. Debugging and verification of programs. Uses the Java programming language. 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. Numerical applications. Recursion. Introduction to software engineering. 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 1703 and CS 1303. Prerequisites: NB Advanced Math 120, Math 1863 or its equivalent

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 Comp. 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)

The analysis and design of complex algorithms and programs with emphasis on the methodology of disciplined programming. This course requires one or more term projects and provides an in-depth treatment of a high level programming language. Prerequisite: CS 1083.

CS 2053 Introduction to APL and Online Program 4 ch (3C)

Introduction to the APL language and its use as a notation and interactive programming language for problem solving. Techniques will be developed to take advantage of the powerful data operators of APL. Online and Computer Graphics applications will be considered. This course is intended for second year Computer Science students. Prerequisite: CS 1003 or CS 1073.

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. Prerequisites: Math 1703 or CS 1303.

CS 2403 Operating Systems Principles I 4 ch (3C 1T)

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: 50 ch in BCS, BScCS or BScDA and CS 1083.

CS 2503 Introduction to Information Processing 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 (3C) for 4 weeks only

Basic language constructs (input/output, variables and types, control structures). Object oriented concepts, such as classes, objects, attributes and methods. Programming with multiple classes. Note: Credit will not be given for both CS 1083 and CS 2616. Prerequisites: 2 term courses in programming, excluding CS 1083

CS 2617 C/C++ for Java Programmers 1 ch (3C) for 4 weeks only

Basic language constructs (input/output, variables and types, control structures), classes, pointers, and preprocessor. Prerequisites: CS 1083 or CS 2616, or equivalent

CS 2618 Fortran for Programmers 1 ch (3C) for 4 weeks only

Basic language constructs (input/output, variables and types, control structures), libraries and modules, file processing and arrays. Prerequisites: 2 term courses in programming.

CS 2773 Java Programming for the Internet 3 ch

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 real-world examples. An introduction to the World Wide Web and HTML included. Credit cannot be obtained for both CS 1073 and CS 2773. 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 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 3 terms of calculus and one of CS 1073 plus CS 2618 or CS 1003.

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 either Math 1703 or CS 1303

CS 3813 Computer Systems Organization 4 ch (3C 1L)

Review of Boolean algebra and logic design, computer elements, system organization, performance measurement, instruction sets, microprogramming, floating-point and integer representation and operations, cache and virtual memory systems, buses, I/O subsystems and interfacing, introduction to design language and processor design. A design project is required. Prerequisites: CS 2003, CS 2803. Note: Credit will not be given for both CS 3813 and DA 3603.

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 3322, and either MATH 3703 or CS 2303.

CS 3983 Technical Report I 2 ch (2C) (W)

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 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)[W]

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 4ch(3C)[W]

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 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 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 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 4983 Technical Report II 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 3983

CS 4993 Honours Project 4 ch (2S) (W)

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 Lamda 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/BScDA/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 3003 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

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 Exploratory Data Analysis 4 ch (3C iT)

Stem-and-leaf displays. Letter value displays. Boxplots and batch comparison. Resistant lines for y versus x. Transforming and smotting data. Analysis of residuals. Analysis of two-way tables by medians. Prerequisite: 6 ch in each of three subjects: Mathematics, Statistics, and Computer Science.

DA 3403 Data Management 4 ch (3C 1T)

Discussion of selected topics at an advanced level concerning the storage and manipulation of data using the computer. The use of an advanced operating system (e.g. UNIX) for programming and data analysis. Shell programming. Regular expressions and their use in data manipulation utilities. A very high-level language suited for data manipulation. Prerequisite: CS 2013 or equivalent programming experience.

DA 3503 Database Management Systems I 4 ch (3C 2L)

File structures inclusing relative and indexed file processing; index-structures; introduction to database concepts; the relational data model; interactive and embedded query languages; client-server systems; database administration. Co-requisites: CS 3323, CS 2403.

DA 3603 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: Creidt will not be given for both DA 3603 and CS 3813. Prerequisites: CS 2003, CS 2013.

DA 4003 Software Project Management and Quality Assurance 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: DA 3003

DA 4013 Software Process Improvement 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: DA 3003 and STAT 3093

DA 4023 Leading-edge Technology in Software Development 4ch(3C)[W]

Selected topics at an advanced level. Content will vary. Potential topics: software evolution, formal methods, system engineering, program visualization. Prerequisites: DA 3003, CS 3913.

DA 4093 Team Software Development Project 4ch(3C)[W]

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: DA 3003 and consent of instructor.

DA 4123 Numerical Solution of Systems 4 ch (3C 1T)

Emphasis on linear systems with discussion on topics 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 4203 Introduction to Multivariate Data Analysis 4 ch (3C 1T)

Multivariate normal distribution; multivariate regression and the analysis of variance; canonical correlations; principal components; classification procedures; factor analysis; computer applications. Prerequisites: 6 ch in Statistics, 3 ch in Computer Science and some exposure to matrix algebra.

DA 4243 Statistical Computing 4 ch (3C 1T)

The contents will include random number generation, simulation of random variables and processes, Monte Carlo techniques and integral estimation, the computation of percentage points and percentiles, resampling methods. Prerequisites: STAT 3703, a course in computer programming.

DA 4503 Database Management Systems II 4 ch (3C 2L)

Relational theory. Normalization. Advanced query languages. Query optimization. Concurrency control and recovery. Security and integrity. Overview of hierarchical, network, and object-oriented data models. Prerequisites: CS 3323, DA 3503.

DA 4604 Data Communications 4 ch (3C 1T)

Transmission modes and codes, error control. Network building blocks and topology, line protocols and control. Network architectures, reliability and security, multi-domain networks. Prerequisite: DA 3603 or equivalent.

DA 4803/ 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) (W)

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 3 ch (3C)

Considers the general theory of regional development within the framework of the national economy.

ECON 2052 Political Economy of Regions II 3 ch (3C)

Concerned with regional development policies. Special attention given to the Atlantic provinces.

ECON 2091 Contemp. Issues in the Cdn Econ I 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. Prerequisite: 3 ch of Economics.

ECON 2092 Contemp. Issues in the Cdn Econ II 3 ch (3C)

Analysis of specific economic phenomena in Canada.

ECON 2095 The New Brunswick Economy 3 ch

Examines the New Brunswick economy; sources and analysis of data; evaluation of trends and policies. Prerequisites: ECON 1013 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. Prerequisite: 3 ch of Economics recommended.

ECON 2213 Poverty, Inequality and Income Redistribution 3ch

Definition, extent and causes of poverty. Distribution of income and wealth in Canada and abroad. Rationales for and effectiveness of income redistribution policies. Prerequisite: 3 ch of economics

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.

ECON 3091 Urban Economics I 3 ch (3S)

The objective is to analyze 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.

ECON 3092 Urban Economics II 3 ch (3S)

Examines problems of and policies for urban areas. Emphasizes urban problems particularly relevant to Saint John.

ECON 3099 History of Economic Thought 3 ch (3C)

A study of the major contributions to economic analysis from Adam Smith to Alfred Marshall. Prerequisite: 6 chs of Economics.

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 3 ch (3C)

The principles of taxation and government expenditures, with emphasis on Canadian institutions and issues. Prerequisite: ECON 1013

ECON 3233 Public Sector Economics II 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. Prerequisite: ECON 1013

ECON 3375 Labour Economics 3 ch (3C)

Determinants of labour supply and demand. Includes structure of wages, male-female earnings differentials, employment insurance, unions, strikes, and labour relations. Prerequisite: ECON 1013.

ECON 3401 International Trade & Trade Policy 3 ch (3C)

The principles of international trade, and issues in trade policy; NAFTA and other trade agreements. Prerequisite: ECON 1013, or ECON 1073

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 3 ch

Development theory at both sectoral and aggregate level; analysis of growth, employment, distribution of income, intersectoral investment allocation, and investment in human capital. Prerequisite: 6 ch of Economics or ECON 1073.

ECON 3542 Topics in International Development 3 ch

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 incestment, technology transfer, regional economic blocks, structural liberalization, debt and development financing, high rate of population growth and exhausting of natural resources. Prerequisite: 6 ch of Economics.

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 3 ch (3S)

Comparative study of costs and benefits and the impact of public projects and policy initiatives. Prerequisite: ECON 1013 and 1023 or ECON 1073.

ECON 3755 Environmental Economics 3 ch (3C)

Examines interaction of ecological and economic systems, considering population growth, food supply, non-renewable resources. Prerequisite: ECON 1013, ECON 1023.

ECON 3835 Market Strategies and Organization 3 ch (3C)

The analysis of market structure, firm strategy and performance, and public policy issues. Prerequisite: ECON 1013.

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 3 ch

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. . Prerequisite: 12 ch in Economics

ECON 4999 Topics in Economics II 3 ch

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. Prerequisite: 12 ch in Economics.

EDUCATION

Note: See beginning of Section F for abbreviations, course numbers, and coding.

ED 3021 Human Development and Learning: An Overview 3 ch

Developmental perspectives on human growth and learning.

ED 3031 The Education of Exceptional Learners 3 ch (3C)(O)

Provides the student with an introduction to the field of knowledge associated with exceptional learners.

ED 3041 The Theory and Practice of Education 3 ch (3C)(O)

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 3 ch (3C)(O)

An overview of the legal, organizational, financial and professional aspects of schools and school systems.

ED 3063 Health Promotion in Schools 3 ch (3C)(O)

Examines concepts and inter-relationships among nutrition, exercise, and well-being within educational contexts.

ED 3241 Music for the Classroom Teacher 3 ch (3C)(O)

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 3 ch (3C)(LE)(O)

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 3 ch (3C)(O)

Teaching Mathematics, Grades K-3 emphasis.

ED 3475 Movement Education for the Elementary Teacher 3 ch (3C)(O)

Overview of physical education program in elementary schools. Program planning, practical work.

ED 3511 Introduction to Science Education 3 ch (3C)(O)

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 3 ch (3C)(O)

Consideration of the history of social studies, debates about the content of social studies and the current state of social studies in Canada.

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 3 ch (3C)(O)

Art education theories and practices as they apply to learning across the curriculum.

ED 4354 Literacy Learning in Early Years 3 ch (3C)(O)

Current theories of the nature of literacy learning and their relationship to instructional practices in the early years.

ED 4451 Health Education 3 ch (3C)(O)

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 3 ch (3C)(O)

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 5 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 (Consecutive or Concurrent); (2) 30 ch in BEd courses, including 12 ch in Subject Areas/Methodologies courses; (3) GPA 2.0.

ED 5021 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. ED 3561 and ED 4562

ED 5053 Middle Level Education 3 ch (3C) (O) 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 3 ch (3C)(O)

Concepts and principles: teacher made tests, standardized tests, test construction, selection, administration and interpretation across the curriculum.

ED 5314 Drama Across the Curriculum 3 ch (3C)(O)

Group process drama will be employed to study in any curriculum subject, such as history, mathematics, science and social studies. No experience necessary.

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)

The electrical design process, group projects, simulation and construction, laboratory measurement techniques. Project management. Economic, safety and environmental aspects. Oral presentations and written report. Co-requisites: EE 2773, EE 2213, 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, a grade of C or higher in 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: A grade of C or higher in 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 six credit hours of English at the lower level unless otherwise indicated or unless special permission is obtained from the instructor

Note: See beginning of Section F for abbreviation, course numbers and coding.

ENGL 1200 Introduction to Modern Literature in English 6 ch (W)

An introduction to the development of major literary movements since 1800. A study of poetry, drama, short stories, essays and novels written in English.

ENGL 1500 Introduction to World Literature 6 ch (W)

An introduction to the development of major literary movements and forms in world literature. A study of epics, folk tales, romances, short stories, novels and poetry.

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 3002 Chaucer: The Canterbury Tales 3 ch (3C) (W)

A study of Chaucer's major literary achievement and its relevance to the concerns of the 21st century.

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 The Medieval Legends of King Arthur 3 ch (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 drama vision.

ENGL 3105 Shakespeares Earlier Plays 3 ch (W)

This course is a study of a selection of Shakespeare's earlier plays (pre-1500) 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 centuryís end. 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 The Novel Before Austen 3 ch (3S/C) (W)

This course examines the development of the novel genre in the 18th Century.

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) (W)

Studies the novel of Victorian Britain from Dickens to the end of the 19th 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 the 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 the World War II. Prerequisite(s): ENGL 1200, 1500 or equivalent.

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 (W)

A study of texts in a variety of genres by women to the mid-eighteenth century.

ENGL 3622 Writing by Women II 3 ch (W)

A study of texts in a variety of genres by women since the mid-eighteenth century.

ENGL 3631 Studies in Gender and Genre 3 ch (W)

This course is an examination of the development of masculinities and/or femininities in the context of a particular or several literary genre(s).

ENGL 3702 The Women of The Arthurian Legend 3 ch (W)

The course examines the representation of women in 19th and 20th Century retelling of the Arthurian legend.

ENGL 3705 Literature of the West Indies, Africa and India 3ch(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 Contemporary Science Fiction 3 ch (3C)(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 3 ch

A workshop seminar in which a variety of poetic styles and forms are studied and practised: weekly assignments.

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/FR 1203 LB **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 1203 L'est obligatoire.

FR 1203/FR 1203 LB **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 1203 L is compulsory.

FR 1204/FR 1204 LB **Communication en français II** **3 ch**

Suite de FR 1203. Développement et exploration de la communication linguistique et des différences culturelles. FR 1204 LB est obligatoire. Prérequis: FR 1203, 1203 L et FR 1205.

FR 1204/FR 1204 LB **Communicating in French II** **3 ch**

Continuation of FR 1203. Develops and explores language communication and culture differences. FR 1204 L is compulsory. Prerequisite: FR 1203, 1203 L AND FR 1205.

FR 1205 **Module de la laboratoire I** **1 ch (3C 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 (3C 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 (3C 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 (3C 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'ensignement 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/FR 2203 LB **Communication en français III** **4 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 2203 LB est obligatoire. Prérequis: FR 1203 LB ou FR 1205, FR 1206.

FR 2203/FR 2203 LB **Communicating in French III** **4 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 2203 LB is compulsory. Prerequisites: FR 1203 LB or 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 (3C)**

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 (3C)**

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 Principes fondmentaus de l'acquisition du langage 3 ch

(3C)Approche chomskyenne de la compétence linguistique chez lêtre humain. Étude des concepts fondamentaux de lapprentissage dune langue maternelle et seconde, suivie de discussions sur les mécanismes dapprentissage. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3412 Fundamentals of Language Learning 3 ch (3C)

A Chomskyan approach to linguistic competence in humans. Basic concepts cover first and second language acquisition and are followed by discussions on learning mechanisms. Prerequisite: FR 2204 or 2304, or equivalent.

FR 3422 Évolution langagière et classification génétique 3 ch (3C)

Lévolution du français, du latin au français actuel. Étude des équences dialectales et de leur évolution historique, inspirée principalement des origines et du développement des français acadien et québécois. Prérequis : FR 2204 ou 2304, ou équivalent.

FR 3422 Language Change and Genetic Classification 3 ch (3C)

The evolution of the French language from Latin to present day French. Dialectal branching and their historical motivations, with special emphasis on the origins and evolution of Acadian and Quebec French will be considered. Prerequisite: FR 2204 or 2304, or equivalent.

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.

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 GEND-eligible courses.

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.

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) 3ch

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) 3ch

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 4091 Health Science Research I 3ch (3C)

The role of research in the health sciences, recent advances through research, fundamental and applied research, evaluation of research, research proposal development and evaluation, ethics issues in research. (For Health Science (BHS) students only.) Co-requisite: STAT 2263

HSCI 4092 Health Science Research II 3ch (3C)

A research project course in Health Sciences. Students will complete a research project (normally) in the area of health sciences in which they are taking the BHS. (For Health Science (BHS) students only.) Prerequisite: HSCI4091.

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 3ch (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.

HIST 2207 England and Scotland: 1483-1708 3ch (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 3ch (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 or equivalent

HIST 2407 U.S. History: Colony to Nation 3ch (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 3ch (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 3ch (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, 2102, 2207, 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, 2102, 2207, 2208

HIST 3174 Nation-States in Modern Europe: France, Germany and Italy in Comparative Perspective 3ch (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, 2102, 2207, 2208

HIST 3185 Britain, 1688-1760: The Age of Oligarchy 3ch(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, 2102, 2207, 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, 2102, 2207, 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, 2102, 2207, 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, 2102, 2207, 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, 2102, 2207, 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, 2102, 2207, 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 3ch (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 3ch (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 3ch (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 3321 Canadian Colonial Society 3ch (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 3333 History: Theory and Practice 3ch (W)

This course introduces all majors and honours students to historical methodology, the process of historical research, and the influences on selected major historical studies. Prerequisite: Honours or Majors admission

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 3385 Social History of Crime in Canada 3 ch

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 1301 or equivalent

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 1301 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 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 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 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 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)

HENG 4000. Honours Thesis for Joint Honours Program in English and History 6 ch (W)

HIST 4906 Honours Seminar I 3ch (W)

Selected topics for Honours History students. Prerequisite: Honours admission.

HIST 4907 Honours Seminar II 3ch (W)

Selected topics for Honours History students. Prerequisite: Honours admission and HIST 4906.

HISTORY & ENGLISH
Joint Honours Program

Note: See beginning of Section F for abbreviations, course numbers and coding.

HENG 4000 Joint Honours Thesis 6 ch (W)

Honours thesis for Joint Honours Programme in English and History. Prerequisites: Acceptance into the Joint Honours Programme in English & History.

HOSPITALITY AND TOURISM

Note: See beginning of Section F for abbreviations, course numbers and coding.

HTM 1503 Introduction to Tourism 3ch

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 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 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 Advanced Management, Hospitality And Tourism Operations 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.

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. Open to 3rd and 4th year HTM students or permission of instructor.

HTM 4165 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 1503

HTM 4503 Independent Study - Hospitality and Tourism

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 4505 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.

HTM 4515 International Tourism 3 ch (3C)

This course studies the structure, environment, and special characteristics of international tourism. Topics include the nature, importance and measurement of country/destination image; host/visitor interactions; factors motivating, facilitating and constraining international travel; and, types of international travelers and their needs. Also included will be the measurement, forecasting and promotion of international travel.

HTM 4525 Profit And Control In Hospitality And Tourism Operations 3 ch (3C)

A study of the information systems useful in examining value-added processes within the industry. Interpretive, analytical and judgmental skills will be applied in the study of environmental and quality costs; ABC costing; performance evaluation and other topics at an advanced level. Considerable emphasis will be given to the development of yield management philosophies which were developed in the travel sector and are now being adopted throughout the industry.

HTM 4535/ 4545 **Special Topics In Hospitality Management/Tourism And Travel** **3 ch (3C)**

These courses survey various issues and events that influence the hospitality and tourism industries. Topics will vary from year to year reflecting contemporary issues and events.

HTM 4555 **Adventure And Leisure Tourism Development** **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.

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 tothe 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 2120 **Effective Writing** **6 ch (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 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 3223 **Writing Short Fiction** **3 ch (W)**

A workshop-seminar in which notable examples of short fiction are studied and the writing of short stories is practised: weekly assignments.

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.

INFORMATION AND COMMUNICATION STUDIES

Note: See beginning of Section F for abbreviations, course numbers and coding.

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 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 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 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

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 povverty in a global perspective. 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 Seminar in International Studies 3 ch

Interdisciplinary advanced seminar on International Studies topics, and global issues. Prerequisites: IS 1001, 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

KINESIOLOGY

Note: See beginning of Section F for abbreviations, course numbers and coding.

KIN 1001 Introduction to Kinesiology 6 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 1000, 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 1000 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 that basic concepts in the areas of morpho-syntax, semantics and phonology. Prerequisite: 6 ch of any first year course.

LING 3202 Linguistics II 3 ch

It presents the basic concepts in the areas of dialectical variation, language acquisition, artificial language, and language change. Prerequisite: LING 2102.

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: New Brunswick Advanced Math 120 or Math 1863 or its equivalent.Note: Credit will not be given for both MATH 1003 and 1823.

MATH 1013 Introduction to Calculus II 3 ch (4C)

Definition of the integral, fundamental theorem of calculus, techniques of integration, l'Hopital's rule, improper integrals, 1st order differential equations, complex numbers. Prerequisite: A grade of C or higher in either MATH 1003 or 1823.

MATH 1703 Algebraic and Discrete Structures 4ch (3C/1T)

Introduces topics in discrete Mathematics important in computer Science, including propositional logic, predicate logic, proofs, sigma notation, mathematical induction, elementary set theory, asymptotic analysis. Note: Credit will not be given for both Math 1703 and CS 1303 Prerequisite: New Brunswick Advanced Math 120 or Math 1863 or its equivalent.

MATH 1823 Calculus for Business 3 ch (4C)

Polynominal, logarithmic and exponential functions. Limits and derivatives. Extreme values and related rates. Simple integration. Difference and differential equations. Throughout, applications to business and economics will be stressed. Prerequisite: New Brunswick Advanced Math 120 or Math 1863 or its equivalent.Note: Credit may not be obtained for both MATH 1823 and 1003.

MATH 1833 Finite Mathematics for Business 3 ch (3C)

Matrices and systems of linear equations. Linear programing concepts; graphical solution of two-variable problems. Permutations and combinations. Elementary probability. Prerequisites: New Brunswick Math 112 and 122 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)

A review of high school Mathematics topics, particularly those covered in the Advanced Math 120 course. Topics include: linear and quadratic functions, absolute value, the exponential and logarithm functions, the concept of inverse functions, graphing, basic sequences and series, and the binomial theorem. Note: Students who have passed Advanced Math 120 New Brunswick Mathematics (or equivalent) should not elect this course; they should enrol in MATH 1003 or Math 1853. MATH 1863 is designed only to serve as preparation for MATH 1003 or 1853.

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 2213 Linear Algebra 3 ch (3C)

Vector spaces, linear transformations, eigenvalues and eigenvectors, complex vector spaces, inner product spaces, diagonalization of Hermitian matrices, quadratic forms. Prerequisite: MATH 1013 or both MATH 1823 and MATH 1833.

MATH 2503 Calculus and Linear Algebra for Engineers I 3 ch (3C 1T)

Ordinary differential equations, infinite series and linear algebra. See note following MATH 2003. Prerequisite: A grade of C or higher in MATH 1013.

MATH 2513 Calculus and Linear Algebra for Engineers II 3 ch (3C 1T)

Polar coordinates, parametric equations, analytic geometry and vectors, differential calculus of functions of several variables, multiple integrals. See note following MATH 2003. Prerequisite: A grade of C or higher in MATH 1013.

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 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 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 1003 or 1823 and 1833.

MATH 3503 Differential Equations for Engineers 3 ch (3C 1T)

Systems of 1st and 2nd order ordinary differential equations, Laplace transforms, power series solutions and elementary properties of Lagendre polynomials and the Bessel functions Jn, Fourier series, boundary value problems. Prerequisite: A minimum of grade C in MATH 2503, with MATH 2513 to be taken concurrently; or equivalent.

MATH 3703 Algebraic and Discrete Structures II 3 ch (3C)

Sets, relations, semi-groups, groups, rings, partially ordered sets, boolean algebra, logic, recurrence relations and graphs. Applications from automata, switching theory, and language development in Computer Science. Prerequisite: MATH 1703. Corequisite: 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 3733 Abstract Algebra 3 ch (3C)

An introduction to the elementary theory of groups. Rings and Fields. Applications to number theory. Prerequisite: MATH 3703 and MATH 2213.

MATH 3753 Applications of Mathematical Models 3 ch (3C)

This course provides an overview of mathematical modelling for particular applications. It is intended to introduce students in a variety of disciplines to Mathematical Modelling based problem solving. General concepts such as stochastic vs. deterministic modelling 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, MATH2013, MATH 2503, or permission of the instructor.

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.

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 (CADKEY). 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. Corequisite: 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 (MATH 1013 concurrently), PHYS 1917 or equivalent.

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 prerequisite: 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 inportant 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 comunications, 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, CS 1003 or other introductory programming course, ME 1003, 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 2121 (or CE 2023), ME 2321.

ME 2613 System Dynamics 4 ch (3C 2L)

System concept, dynamic system elements; mechanical, electrical, fluid and thermal. Systems 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, (MATH 2503 concurrently).Recommended prerequisite: EE 1713.

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 comparsion 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 Introduction to Nursing 3 ch (W)

Orientation to the nursing program, nursing roles and values, student/faculty relationships, communication skills, study skills and choices. The course is intended to lay the foundation for the development of the student as a professional nurse and as a lifelong learner.

NURS 1022 Health Across the Lifespan I 3 ch (W)

Focuses on health promotion issues across the lifespan. Includes concepts such as teaching and learning theory, primary health care, critical thinking and human responses. Provides theoretical content required for NURS 1023, Clinical Practicum.

NURS 1023 Clinical Practicum: Health Across the Life Span I 3 ch (3L)

Complements and supplements NURS 1022. Involves 9 hours of nursing practice weekly. The main focus of the learning activities in each section is health promotion/disease prevention. However, the actual practice experience and the client growth and developmental stage will vary depending on the practice area assigned.

NURS 1032 Caring Relationships I 4 ch (3C 1L)

The major emphasis of this course will be on exploring the personal meaning of caring within the context of the nurse-client relationship. Students will have an opportunity to explore the theoretical underpinnings of communication and caring and will examine the interdependence of such concepts as self, caring, mutuality, empowerment, and caring relationships. The lab component of the course will provide the student with an opportunity to develop a beginning level of skill in working with clients, especially in the orientation phase of the caring relationship.

NURS 1042 Health Assessment I 3 ch (W)

Includes the concepts of self, community, health and health promotion. Focuses on health assessment, lifestyle choices and population health.

NURS 2011 Concepts for Professional Nursing Practice 3 ch (W)

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 2020 Health Across the Lifespan II 6 ch

The major focus of this course will be on supportive/rehabilitative care. Students will examine concepts and topics such as change, chronicity, nursing diagnosis and pharmacology. Interwoven throughout discussion will be various aspects of growth and development, nutrition, assessment, teaching/learning areas, professional/ethical responsibilities and health promotion/disease prevention. Students will be encouraged to examine the similarities and differences in relation to stressors and events which impact at these different stages of lifespan development.

NURS 2030 Clinical Practicum: Health Across the Lifespan II 6 ch (6L)

Complements and supplements NURS 2020. Co-requisite: NURS 2020

NURS 2031 Caring Relationships II 4 ch (3C 1L)

The major emphasis of this course will be on exploring the personal and professional meaning of caring within nursing practice. Students will have the opportunity to explore caring from the perspective of client as individual, family, group, and community. Social and cultural factors that influence the caring/helping process will be considered as well as such concepts as mutual problem-solving, conflict resolution, values clarification, and group process. The lab component will provide students with the opportunity to develop competencies in the use of more advanced communication skills within the working and termination phases of the caring/helping relationship.

NURS 2041 Health Assessment II 4 ch (3C 1L)

Includes physical and psycho-social assessment of adults. Lab experiences provide opportunities for students to develop competence 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)

Includes theory and application of pharmacological principles and terminology, the biopsychosocial aspects of pharmacology and current issues in pharmacology. The course will focus on pharmacology as a science for improving health and on the application of the content to patient/client education. Prerequisites: BIOL 1410, BIOL2831. Co-requisite: BIOL 2852, Open to Health Sciences students with instructor's approval.

NURS 3061 Community DevelopmentI 3 ch

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 3103, may be open to Health Sciences students with Instructor's approval.

NURS 3062 Clinical Practicum: Community Development I 3 ch (3L)

Complements and supplements NURS 3061. Emphasis is placed on applying program development skills in community settings. Co-requisite: NURS 3061, may be open to Health Sciences students with Instructor's approval.

NURS 3072 Nursing in Complex Situations I 3 ch

Introduces students to curative nursing care practice in an acute care institutional setting. Perpares students to care for clients and their families experiencing acute illness. Major health challenges examined using a curative pratice model. Prerequisite: NURS 2063.

NURS 3073 Clinical Practicum: Nursing in Complex Situations 6 ch (6L)

Complements and supplements NURS 3072.

NURS 3092 Nursing Research 3 ch

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 3103 Concentrated Clinical Practice II 5 ch (5L)

This course is designed to provide students with an opportunity to practice acquired and new nursing skills in institutional settings. Practice will be in complex situations. Issues arising from clinical practice will be examined.

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 3144 Issues in the Canadian Health Care System 3 ch

This course focuses on the history and organization of the Canadian Health Care System and discusses current health care issues. Prerequisite: Open to non-nursing students with Instructor's approval.

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 4112 Clinical Practicum: The Family as Client 3 ch (3L)

Complements and supplements NURS 4111. For BN/RN students only. Co-requisite: NURS 4111.

NURS 4121 Nursing in Complex Situations II 3 ch (3C)

Builds upon previous learning in preparing students to assume greater independence and autonomy primarily in curative nursing practice. Allows for continued development in acute nursing practice generally, within the context of primary health care. Emphasis is given to the integration and application of knowledge in complex client situations encountered in an acute care setting with a focus on the family as the unit of care. Prerequisite: NURS 3072, NURS 3073, and NURS 3092 as pre- or co-requisite.

NURS 4123 Clinical Practicum: Nursing Families in Complex Situations 6 ch (6L)

Complements and supplements NURS 4111 and NURS 4121. Designed to provide students with the opportunity to care for families who have at least one member experiencing an acute illness, or an acute episode of a chronic illness. Students will be expected to provide curative and/or palliative are for clients and families in multiple settings, including home and hospital. Pre- or Co-requisites: NURS 4111, NURS4121.

NURS 4132 Community Development II 3 ch

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 3061, NURS 3062, may be open to Health Sciences students with Instructor's approval.

NURS 4133 Clinical Practicum: Community Development II 2 ch (2L)

Complements and supplements NURS 3061, NURS 3062 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 Trends and Issues in Professional Nursing Practice 3 ch

Historical development of nursing as a profession, current and future trends in nursing practice, education, administration and research. Mandates of the national professional association, local professional associations, unions, and special interest groups as well as nurses professional commitments are examined.

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

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.(This course is not a prerequisite for other courses in logic at UNBF.)

PHIL 2003 Introduction to Moral, Social and Political Philosophy 3 ch (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

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

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

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 3ch (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 3ch (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

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

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 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 aboundaries. 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 3ch (3c/t)(W)

Survey course focusing on Canadian government and politics at the national level.

POLS 1301 Introduction to Comparative Politics 3ch (3c/t)(W)

Summary comparisons of the political systems, cultures, and structures of various states, derived from European and non-European examples.

POLS 2401 Researching Politics I 3 ch

An introduction to the ideas and principles that serve as the foundation for Political Science. 3 ch of Political Science at the 1000' level

POLS 2501 Researching Politics II 3 ch

An introduction to some of the majors approaches and techniques used to research and analyze politics.

POLS 2601 Introduction to International Politics 3ch (3c/t)(W)

General introduction to the historic and contemporary practices of international relations.

POLS 3007 Digital Democracy 3 ch

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)

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)

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 (3S/T) (W)

Examines the role of gender in Canadian social movements, political parties and political institutions, including Parliament, the courts and the media.

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

Explores the development, goals, strategies and political impact of interest groups and social movements. Prerequisite: POLS 1201

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 3ch (3S/T)(W)

Focuses on various aspects of political leadership at the federal level Prerequisite: POLS 1201

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)

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)

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)

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)

An emphasis on the power relationships of the office of the Chief Executive.

POLS 3325 Gender and Comparative Politics 3 ch (3S/T) (W)

Comparative study of gender issues in selected countries, including women's political organizations, political participation and social policies affecting women.

POLS 3333 Comparative European States 3 ch (3S/T)

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

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 3ch (3S/T)(W)

Examines the political structures, decisions and processes underlying Asia's role in the global economy. Prerequisite: POLS 1301

POLS 3401 The Political Thought of J. S. Mill 3 ch (3C/S) (W)

A study of his selected writings.

POLS 3401 Modern Political Thought 3 ch

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. Prerequisite: POLS 2401

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 3ch (3S/T)(W)

This course surveys the tradition of Canadian political thought from Confederation to the present. Prerequisite: POLS 2401

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

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 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 (3S/T)

Introduction to the gender aspects of international relations including militarism, nationalism, international political economy, the environment and human rights.

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 3683 Human Rights 3 ch (3S/T)

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 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 3ch(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/S)(W)

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/S)

A study of theory, methods and research findings in infancy and childhood. Examines social, cognitive, emotional and physical development.

PSYC 2401 Fundamentals of Social Psychology 3 ch (3C/S)

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 1L)

Designed to acquaint the student with the basic tools of statistics which are used to summarize and analyze psychological data.

PSYC 3222 Sex Differences 3 ch (3C/S/L)

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

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. Prerequisite: PSYC 2201 or PSYC 1273

PSYC 3313 Introduction to Psychological Testing 3 ch (3C/L) (W)

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 (W)

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) (W)

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 (1C 2L)

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/S/L)

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 (1C 2S)

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/S/L) (W)

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 Abnormal Psychology 3 ch (3C/S)

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 (1C 2S) (W)

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 Physiological Psychology 3 ch (3S)

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.

PSYC 3723 Introduction to Human Neuropsychology 3 ch

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

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 3723

PSYC 3725 The Dementias 3 ch

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 3752 Drugs and Behaviour 3 ch (3C/L)

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

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 (3C1L)

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 (3S) (W)

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) (W)

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) (W)

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) (W)

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. Prerequisite(s): PSYC 2201, PSYC 3493, and permission of instructor

PSYC 4214 Practicum in Child Studies II 3 ch (4C/S) (W)

A continuation of PSYC 4213. Prerequisite: PSYC 4213

PSYC 4233 Programme Evaluation 3 ch

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 4463 Special Topics in Personality 3 ch

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

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)(W)

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 (3S) (W)

An examination of some of the persistent theoretical questions in learning. Prerequisite: PSYC 3503.

PSYC 4733 Cognitive Neuropsychology 3ch

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 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. Prerequisite(s): None.

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.

SOCI 1001 Introduction to Sociology 3ch (3C)

Surveys the basic concepts, theories and analytical methods of sociology and introduces students to sociology as a way of thinking.

SOCI 1002 Introduction to Social Problems and Issues 3ch (3C)

Provides a broad overview of the major social problems of Canada and the world, in general. Introduces students to topics such as gender inequality, socio-economic disparities, problems of race and ethnicity, crime and violence, environmental problems and problems of human development.

SOCI 1003 Making sense of Modern Life 3 ch (3C)

Encourages students to make sense of the societies they inhabit by applying sociological concepts to selected aspects of modern life.

SOCI 1004 Collective Behaviour, Youth Cultures and Rationalization 3ch (3C)

Examines issues of collective behaviour, rationalization, subcultures and race within contemporary society.

SOCI 1005 Criticial Sociologies: Feminism, Ethnomethodology, Marxism 3ch (3C)

Introduces students to the critical sociologies of feminism, ethnomethodology and (Neo-)Marxism and their application to contemporary social life.

SOCI 1006 Exercising the Social Imagination 3ch (3C)

Provides students with an opportunity to develop, apply and test out their sociological insights in order to examine ad assess how sociological approaches help us to understand social life.

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 3ch

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 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 2533 Social Movements and Social Revolutions 3 ch (3C/O)

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 Qualitative Criminology 1 3ch

Introduces students to the field of qualitative criminology. Focuses on criminological developments since the work of Becker in the 1950s. Emphasis will be placed on interactionist, ethnomethodological, feminist and other micro-level analyses of crime in Western societies.

SOCI 2614 Qualitative Criminology 2 3 ch

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: Sociology 2611

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 3000 Theoretical Foundations of Sociology 6 ch

An overview of the origins and development of sociology. Considers major theorists such as Marx, Durkheim and Weber, and examines readings from original works. Prerequisite: Twelve credit hours of sociology

SOCI 3003/ ECON 3099 Sociology of Economic Ideas 3ch (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 3100 Statistical Analysis of Social Data 6 ch (3S)

Emphasizes the process of analyzing social data, focusing on probability, sampling, and the proper selection, use and interpretation of statistical techniques. Stresses use of the SPSS-X computer library. Prerequisite: SOCI 3103.

SOCI 3103 Strategies of Sociological Research 3 ch (3C)

Introduction to the logic of sociological research, covering conceptualization, theory construction, measurement, principal data sources, methods of qualitative and quantitative data collection.

SOCI 3105 Qualitative Methods in the Social Sciences 3 ch

Introduces students to the inter-disciplinary emergence of qualitative methods (e.g., feminist, interactionist, textual) in recent years. Emphasis will be on the epistemological, philosophical and reflexive concerns which undergird these recent approaches.

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 3503 Social Organization 3 ch (3C/O)

Models of social organization; the units of social structure; the bases of social integration; social control and social change.

SOCI 3523 Sociology of Third World Development 3ch (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 3610 Criminology 6 ch (3C)(W)

A basic course consisting of an examination of the historical development of criminological theory, and the causes of crime and the methods of investigation into criminal behaviour.

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: Sociology 2614

SOCI 3615 Historical Sociology 2 3ch

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: Sociology 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 3703 Social Demography 3 ch (3C)

An examination in both historical and contemporary settings of the demographic correlates of urbanization and industrialization. Gives attention to how patterns of fertility, mortality and migration both reflect and influence social change.

SOCI 3813 Sociology of Work 3 ch (3C)(W)

A sociological analysis into the nature of contemporary work and the division of labour. Topics include the meaning of work, theory of alienation, evolving patterns of industrialization and labour relations, occupational culture, the deskilling of work and solutions to alienated labour.

SOCI 3822 Sociology of Modernization 3ch (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 3901 Sociology of Policing 3 ch

Examines the evolution of policing and police forces throughout the past century, recent changes in the nature of urban and rural policing, police-minority groups interaction, new initiatives in modes of policing, and the impact of technology.

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 overview of twentieth century developments in sociological theory: concepts, recent contributions, theoretical issues and controversies. Considers major theorists such as Parsons, Giddens and Habermas and selects readings from original works. 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: Sociology 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 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: Sociology 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: Sociology 3611

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 3974 Contemporary Spanish American Prose Fiction 3 ch

Representative novels and short stories by Spanish American renowned writers like Borges, Vargas, Llosa, Garcia Marquez, Octavio Paz et al. whose works exemplify the social conflicts and ideological contradictions of the region. Taught in English. Prerequisite: none.

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 or 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. Prerequisites: New Brunswick Mathematics 112 and 122 or equivalent. NOTE: Credit can be obtained for only one of STAT 1793, 2263, 2264, 2593, PSYC 2901.

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. Prerequisites: New Brunswick Mathematics 112 and 122 or equivalent. NOTE: Credit can be obtained for only one of STAT 1793, 2263, 2264, 2593, PSYC 2901.

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. Prerequisite: MATH 1013.Note: Credit can be obtained for only one of STAT 1793, 2263, 2593.

STAT 2783 Introduction to Non-parametric Methods 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 3083/3093.

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 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 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 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 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 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.

SECTION G
UNDERGRADUATE PROGRAMS
FREDERICTON CAMPUS

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 Laws
- Bachelor of Medical Laboratory Science
- Bachelor of Nursing
- Bachelor of Philosophy in Interdisciplinary Leadership
- Bachelor of Kinesiology
- 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 Science
- Bachelor of Kinesiology/Bachelor of Education
- Bachelor of Science/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

Honorary degrees conferred from time to time by the University upon persons who have achieved distinction in scholastic or public service include the degrees of:

Doctor of Science;
Doctor of Letters;
Doctor of Civil Law; and
Doctor of Laws.

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

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	Law in Society	Music
English	German	Economics	Linguistics	Theatre
History	Greek	Political Science	International Development Studies	Visual Arts
Philosophy	Latin	Psychology	Women's Studies	Film/Video
World Literature and Culture Studies	Russian	Sociology	Multimedia Studies	Creative Writing
	Spanish		Russian and Eurasian Studies	
			German 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 60-120
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 enroll 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 enroll in any course to meet the requirements of any level of the degree program unless they enroll 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 (60-120 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 enrolls 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 I nternational 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 66 ch.

   Students wishing to be admitted to Honours should apply in writing to the Chairs of the Departments 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 30 -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.

PROGRAMS OF STUDY

ANTHROPOLOGY

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. physical 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

ANTH 3604 through ANTH 3724 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 ANTH1001 and 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 ANTH1001 and 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 1002 , 18 ch of third-level, and 18 ch of fourth- and fifth-level anthropology courses, including ANTH5701 and ANTH5702 .
- **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 ANTH5701 and ANTH5702.

CLASSICS AND ANCIENT HISTORY

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 , 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.

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

German: Minor, Major, Honours
German Studies: Minor, Major
Linguistics: Double Major, Joint Honours
Russian and Eurasian Studies: Minor, Major
Spanish: Minor, Major, Honours
World Literature and Culture Studies: Major, Honours

The Department also offers courses in Japanese and Chinese.

GERMAN

GENERAL INFORMATION

Language Acquisition

A wide variety of language acquisition courses is offered at all four undergraduate years. Students with no previous experience of German will normally enroll either in GER 1001/1002. 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

The department offers advanced literature courses which focus on various writers, movements, and aspects of German literature. Students specializing in German will attain a wider knowledge of different literary genres and will study a variety of literary masterpieces.

Linguistics

A limited number of courses in German linguistics can be taken towards a degree in German or within the framework of the interdepartmental Majors program in linguistics offered by the Faculty of Arts.

Courses in English

For those students who are not primarily drawn to German language courses, but who still retain a lively interest in the German contribution to Western civilization, the Department offers several courses in which texts and instruction are in English, and for which no knowledge of German is required.

Summer 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.

MINOR, MAJORS AND HONOURS

Minors

Students in Minors are required to complete 24 ch in German, taken in the following sequence: GER 1001 / 1002 ; GER2001 / 2002 ; GER 3011 , and 3022 , and 6 ch from advanced literature and linguistics courses.

Majors

Students majoring in German (single or double majors), are required to complete 24 advanced ch in German, with no grades below C.

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-.

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 AND MAJORS.

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.

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.

Course selections must be made in consultation with the Program Director.

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:

ENGL 3563	Ficton, 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	Introduction 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 3063	Literature of the Holocaust
GER/GS 3072	Studeis 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 Centure
HIST 3796	History of the Music Dramas of Richard Wagner
HIST 4015	The Origin of the Second World War
HIST 4101	Fascism and Film: Studies of European Fascism and the Holocaust
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 2206	Medieval Europe
+HIST 3223	The Medieval Church
+HIST 3333	Totalitarianism Extended: The Age of Dictators
+HIST 3363	Germany 1871-1945
+HIST 3373	The Germanies Since 1945
+HIST 4313	Aspects of German History I (Seminar)
+HIST 4323	Aspects of German History II (Seminar)

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
POLS 3363	Contemporary Germany
POLS 3432	Europe: East and West
POLS 3483	Hegel and Marx
+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 2233	Contempory Moral Philiosophy
+PHIL 3163	Modern Philosophy II
+PHIL 3543	Existential Philosophy
+PHIL 4563	Martin Heidegger

LIINGUISTICS

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.

Program 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 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

Optional Courses: GROUP B

ABRG	Micmac language courses at any level
ABRG or NATI	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
ENGL 3040	Chaucer and Co.
FR	French language courses at 3000 and 4000 levels
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	Child Development
PSYC 3243	Development of Cognitive Processes
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 offered jointly by the University of New Brunswick and Saint Thomas University. It is 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.

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):
(*Courses marked with an asterisk are offered by STU)

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
POLS 3110	Politics in Russia and Ukraine
POLS 3113	The Foreign Policies of East European States
POLS 3361	Politics in Eastern Europe
POLS 3431	Nations and Nationalism in the USSR
POLS 3432	Europe: East and West
POLS 3831	Politics and Society in Contemporary China
HIST 2-350*	Russian Civilization: Sources and Interpretations, from Pre-Christian Times to the Twentieth Century
HIST 2-351*	Early Russia: Kiev and Muscovy
HIST 2-352*	Early Modern Russia: The Seventeenth and Eighteenth Centuries
HIST 2-353*	Modern Russia: The Nineteenth Century
HIST 2-354*	Revolutionary Russia: The Twentieth Century
HIST 356*	Early Russian Imperialism
HIST 357*	Modern Russian Imperialism
HIST 358*	Religion and the Church in Early Russia
HIST 359*	Religion and the Church in Early Modern and Modern Russia
HIST 450*	The Russian Golden and Silver Ages
HIST 3185	Early Russia: Sources and Interpretations
HIST 3186	Modern Russia: Sources and Interpretations
HIST 3045	Eastern Europe in the 20th Century
HIST 4075	The History of European Jews
GEOG 5644	Geography of the USSR

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 courses offered in English, such as courses in Civilization (SPAN 2013 , SPAN 3014 , SPAN 3015) nor SPAN 3113, SPAN 3973 , SPAN 3983 and SPAN 3984 . 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 one course in Business Spanish, SPAN 1304 . SPAN 1304 may be taken any time after SPAN 1203 has been successfully completed, and SPAN 2203 is the prerequisite for SPAN 2204 .

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.

MINORS, MAJORS AND HONOURS.

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 ; 1204 or 1304 ; 2203 ; 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 ; 1204 or 1304 ; 2203 ; 2204 ; and 12 ch in Spanish Civilization (SPAN 2013 , SPAN 3014 , SPAN 3015 , SPAN 3113 , SPAN 3563 or SPAN 3564).

3. A Minor in Spanish Literature, consisting of SPAN 1203 ; 1204 or 1304 ; 2203 ; 2204 ; and 12 additional ch in Spanish and Latin American literature (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 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 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

MAJORS AND HONOURS.

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 / SPAN 1013	The Culture of Spain and Latin America I	3 ch (3C) [w]
WLCS / SPAN 1014	The Culture of Spain and Latin America II	3 ch (3C) [w]
WLCS / RUSS 1043	Russian Culture I	3 ch (3C) [w]
WLCS / RUSS 1053	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 World Literature and Culture 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

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 Econonomic 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, Politial 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 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 (for Arts students only). 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, HONOURS AND MINOR

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 ECON3013 , ADM2623 and 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 statistics 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. A Joint Concentration in Economics and Finance is also available from the Faculty of Administration. (Please see *Business Administration Programs*).

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, particulary 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 2624 or approved substitutes, ECON3665 , 5665 , 4625 , 4023 and 4013 .

An Honours student must complete ECON 3013 , 3023 , ADM2623 and 2624 before entering the fourth year.

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.

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. 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.

ADDITIONAL INFORMATION

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 DigitDigit

These digits identify courses within each subject classification.

AREAS OF STUDY

Economic Theory

1001	Economics of Everyday Life
1002	Economics of Public Policy
1013	Introduction to Economics: Micro
1023	Introduction to Economics: Macro
1073	Econ for Engineers
3013	Econ Theory I: Microecon
3023	Econ Theory I: Macroecon
3055	Public Policy Analysis
4023	Econ Theory II: Macroecon
4013	Econ Theory II: Microecon
5013	Topics in Microecon Theory
5023	Topics in Macroecon Theory

1 Money and Banking

2103	Intro to Money & Banking

2 Public Economics

2203	Intro 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	Interntl Econ: Theory & Policy
3412	Interntl Finance & Devt

5 Economic Development & Growth; Regional Economics

3514	Theory of Regional Dev
3524	Theory of Regional Econ Policy
5515	Gen Regional Econ Theory

6 Mathematical Economics & Quantitative Methods

3665	Math Econ I: Econ Anal
4625	Econometrics I
5625	Econometrics II
5645	Applied Econometrics
5665	Math Econ II

7 Resource Economics

3724	Econ of Human Resources
3744	Recreation Economics
3755	Envt Econ
3794	Nat Resource Econ I
3865	Energy Economics: Intro
5794	Nat Resource Econ II
5724	Econ of Human Resources
5755	Environmental Economics II
5775	Econ of Fisheries Mgmt

8 Applied Economics

3801	Econ of Transp I
3815	Introduction to Health Economics
5815	Health Economics
5825	Indust Org: Theory
5835	Indust Org: Policy

9 Other Areas

2505	Information Technology and the Canadian Economy
2905	Contemp Issues in the Can Econ
4775	Econ of Can Immigration
5989	Topics in Econ I
5999	Topics in Econ II

ENGLISH

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 at the front of this book.

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 below. This policy does not apply to the regular courses of the introductory and intermediate levels, nor to the Honours Seminars.

Introductory and Intermediate-Level Programs:

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 number 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.

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 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.

For students transferring credits from another university, at least half the advanced-level credits required for a Major in English must be from courses offered 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 is strongly recommended for those who wish to do 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 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 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.

FINE ARTS

General Information

The Fine Arts interdisciplinary Minor is intended to enable a student who wishes to pursue an interest in Creative Writing, Film/Video, Music, Theatre or the Visual Arts 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 Dram a 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 2705	History of Visual Culture Part I
HIST 2715	History of Visual Culture Part II
HIST 3701	Approaches to Cultural Studies
HIST 3705	History of Classical Art

HIST 3715	History of Medieval Art
HIST 3716	Renaissance Art
HIST 3721	The Body in Western Art, 1300-1700
HIST 3725	History of Baroque Art
HIST 3728	18th and 19th Century Western Art
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

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

Students' initial placement in the sequence depends on their competence in French. All students taking French as a second language for the first time at UNB are required to take a placement test prior to registration. Students' test results will be a main factor in determining which courses they will be advised to take. Normally students who have taken no French before will register in 1300 ; students who did not complete Grade XII will register in 1324 , 1325 or 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 during the first week of term. 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 , followed by 1144 . Both pairs are followed by 2154 and 2164 .

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 taken away from 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 have to 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 pour chaque cours de niveau avancé en études françaises.

Spécialisation:	42 cr
Concentration:	36 cr
Double spécialisation ou double concentration:	30 cr

Trois types de cours sont requis :

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 / FR 1144 or FR 2164 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

Persons 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 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 the earliest convenient moment. 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 which interest him or her

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

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 suitable for students in their first or second year of University (i.e. in their first 60 ch) and are open to both Arts students and non-Arts students. Some courses at this level may have restrictions as noted in the course descriptions. Subject to general regulations, these courses may also be taken for credit by students in the upper years of their programs.

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 12 ch of History at the 1000- or 2000-level, at least 6 ch of which must be in Foundation Courses (see the list of Foundation Courses below). This must be followed by an additional 12 ch at the 3000- or 4000-level. A total of at least 24 ch of History courses must be completed. A grade of C or better in each individual course is required for the Minor.

Majors Program

A Single Major in History requires the completion of 42 ch of history courses, with a mark of C or better in each course. The following distribution requirements must be met:

i. At least 6 ch must be in Foundation Courses from the list below (and 12 ch of Foundation Courses is recommended).

ii. No more than 18 ch at the 1000- or 2000 - level, and at least 24 ch at the 3000- or 4000- level.

iii. 18 of the 42 ch of history courses must be in a field of concentration. At least 12 of these 18 ch 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.

The departmental Director of Majors must approve the program of every majors student.

Double Majors

A Double Major in History requires the completion of 36 ch of History courses, with a mark of C or better in each. At least 6 ch must be chosen from the list of Foundation courses below. At least 24 ch 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

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

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 major, double-major or minor in History, or to do Honours in History, are required to complete at least 6 ch of Foundation courses, and are strongly advised to complete at least 12 ch. Any Foundation course may be taken in the first or second year, or at a later stage if necessary.

See notes under General Information at the beginning of the History section for an explanation of the general purpose of 1000-level and 2000-level courses.

Courses taken at other institutions and presented to satisfy the Foundation course requirement must be approved by the Director of Majors or Honours.

The Foundation courses include all courses previously listed under this section and the courses now numbered as follows:

HIST 1300	Introduction to Canadian History
HIST 2013	Medieval History Part 1: Europe to 1200
HIST 2014	Medieval History Part 2: Europe 1200-1500

Note: Students who wish to present medieval history toward satisfying the Foundation course requirement must present both HIST 2013 and HIST 2014 .

HIST 2023	Early Modern Europe Part 1: 1300-1650
HIST 2024	Early Modern Europe Part 2: 1650-1800

Note: Students who wish to present early modern European history toward satisfying the Foundation course requirement must present both HIST 2023 and HIST 2024.

HIST 2100	Modern Europe
HIST 2203	Tudor to Georgian Britain: 1485-1815
HIST 2204	Britain from Waterloo to the 1960s

Note: Students who wish to present British history toward satisfying the Foundation course requirement must present both HIST 2203 and HIST 2204 .

HIST 2403	Introduction to U.S. History Part 1: Colonial Period to Civil War
HIST 2404	Introduction to U.S. History Part 2: Civil War to the Present

Note: Students who wish to present American history toward satisfying the Foundation course requirement must present both HIST 2403 and HIST 2404 .

INTERNATIONAL DEVELOPMENT STUDIES

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.

Inquiries about the International Development Studies Program should be directed to: Dexter J. Noel, Director International Development Studies program Department of Spanish, Carleton Hall, Room 337 (458-7469; 453-3571); e-mail ids@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 (6ch)

2. **Elective Courses:**
Courses may be chosen from the list provided annually by the Director. Other 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

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
BA 3703	Business Law I (UNBSJ: BA 2703)	3ch
CLAS 3923	Roman Law	3ch
ECON 3845	Introduction to Law and Economics	3ch
LAW 4003	Law and Society	3ch
PHIL 2703	Introduction to Issues in the Philosophy of Law	3ch
PHIL 2704	Introduction to Classics 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 3610	Criminology (UNBSJ: SOCI 3610)	6ch
SOCI 4355	Sociology of Law (UNBSJ: SOCI 4613)	3ch

Elective Courses

BA 3704	Business Law II	3ch
BA 4123	Issues in Business and Society	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 3703	Issues in Contemporary Legal and Moral Theory	3ch

PHIL 3704	Authors in Contemporary Legal and Moral Theory	3ch
POLS 3291	Governing Indians in Canada	3ch
POLS 3292	Self-Government and Aboriginal Community	3ch
POLS 3633	International Public Law	3ch
PSYC 3023	Drugs and Behaviour (UNBSJ: PSYC 2752)	3ch
SOCI 2603	Sociology of Deviance (UNBSJ: SOCI 2603)	3ch
SOCI 3623	White Collar Crime	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

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

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 Western Society
PHIL 2073	Introduction to Issues in Aesthetics
PSYC 2403	Fundamentals of Social Psychology
PSYC 2643	Principles of Perception
SOCI 1513	Picturing Society: Image, Meaning and Memory in the Photographic Era
SOCI 1533	Wired: Internet and Society
SOCI 2203	Interpersonal 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 / LING 3114	Gender Roles in Cross-cultural Perspectives
ANTH 3184	Cultural Organisation
ANTH 3411	Phonetics and Phonemics
ANTH / LING 3412	Language and Culture
ANTH 3431	Non-Verbal Communication: Interdisciplinary Theory and Methodology
CLAS 3303	Classical Archaeology
CLAS 3353	Greek Art

CLAS 3363	Roman Art
CLAS 3443	Thucydides and the Pelopennesian War (based on multimedia research tool PERSEUS)
ECON 3845	Law and Society
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 3404	Introduction a la linguistique II
FR 3504	Introduction aux etudes litteraires II
FR 3524	Roman et cinema (The Novel and Film)
FR 3534	Ecrits de femmes
FR 3554	Survol de la litterature noire dexpresison francaise
FR 3574	Littérature pour la jeunesse (Literature for Children and Young Adults)
FR 3684	Theatre francaise
FR 3884	Theatre et poesie du Canada francais depuis 1945
GER/GS/WLCS 3072	Studies in Contemporary German Cinema
HIST 3701	Approaches to Cultural Studies
HIST 3715	History of Medieval Art
HIST 3716	History of Renaissance Art
HIST 3725	History of Baroque and Rococo Art
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
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 3254	Photography and Society
SOCI 3274	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	Creative Writing: Screen-Writing and Writing for New Media
FNAT 3113	Computers in Music
FNAT 3123	Musical Composition
FNAT 3133	Conducting
FNAT 3703	The Power of Images
FR 3054	Redaction I
FR 4034	Perfectionnement de l'expression orale II
FR 4054	Redaction II
MM 3001	Media Design II
MM 3002	Media Process
MM 4112	Visual Communication for Multimedia

Technical Group

MM 3003	Media Tools II
MM 3212	Lens Media
MM 3213	Applied Aspects of Virtual Reality
MM 3362	Digital Sound
MM 3412	Text Editing
MM 4401	Animation Concepts

Project

See departmental listings for course descriptions:

MM 4980	Multimedia Project

PHILOSOPHY

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:	6 ch in Philosophy, or the permission of the instructor, is prerequisite.
4000 Courses:	12 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.

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

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).

Majors Programs

1. In order to be admitted to the Majors, Double Majors, Honours or Joint Honours programs in Political Science, a student must already have completed 6 ch of Political Science courses, which may be counted towards the total credit hours required to meet program requirements.
2. 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.
3. 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.
4. 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
  - 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

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.

- **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

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

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 , 4213 , 4223 ;
3	Clinical	2313 , 3313 , 3353 , 3373 , 3383 , 4303 , 4313 ;
4	Personality and Social	2403 , 3403 , 3415 , 3453 , 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 theDepartment of Extension and Summer Session. 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 student's degree program. 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. Only students with an average GPA in Psychology courses of 3.5 will be considered for the Honours program.

Minor

A Minor will consist of 24 ch in Psychology courses and will include the following: PSYC 1013, 1023, 2113 and two Foundation courses (PSYC 2203, 2313, 2403, 2603 and 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 489 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 in Psychology 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 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, completed in the fourth year, supervised by a Psychology faculty member and organized in the Honours Thesis Research Seminar. Honours students who are serious about developing research skills should take the Basic Research Seminar (PSYC 3150) in their third year.

Joint Honours in Psychology will consist of 48 ch in Psychology courses including the 26 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 (3713 , 3745 , 3773), at least one of the following lab courses(3723 , 3753 , 3783) and at least one of the following seminar courses (4713 , 4743 , 4773). Students must also include BIOL 1001 , 1012 , 2053 ,

2093 and a minimum of four additional courses in Biology to be selected in consultation with the Chairs of both Departments.

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

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 at least 24 ch in Sociology and must include at least 6 ch of Level 1 Sociology courses. The other courses for the Minor must be approved by the Director of Undergraduate Studies and should form a coherent set or sequence of courses as called for by the general University Regulations for the Minor.

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 33 ch of Sociology of which 18 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 2100 , SOCI 3004 , SOCI 3014 , SOCI 3103 . SOCI 2100 must be completed before enrolling in SOCI 3004 , SOCI 3014 , SOCI 3103 or SOCI 3100 .

Honours

1. A minimum of 48 ch in Sociology is required for Single Honours. At least 36 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 30 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 2100 , SOCI 3004 , SOCI 3014 , SOCI 3100 , SOCI 3123 , SOCI 5000 and SOCI 5203 . For Single Honours 6ch of Level 4 Sociology courses and for

   Joint Honours 3 ch of Level 4 Sociology courses are required. Students must complete SOCI 2100 before enrolling in SOCI 3004 , SOCI 3014 , or SOCI 3100 , all of which are prerequisites for Level 5 courses.

3. An Honours Essay is required in the final year. A preliminary draft will ordinarily be done in conjunction with a Level 3 or 4 seminar course. The paper will be completed as SOCI 5203 .

WOMEN'S STUDIES

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 fulfil 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 & Health

CLAS 3903	Women in Ancient Greece: Portrayals and Realities
ED 5181	Feminist Theory & Education
ENGL 2954	Gender, language, Communication & Censorship
ENGL 3164	Women and/in Film
ENGL 3823	Major Women Writers I
ENGL 3843	Major Women Writers II
ENGL 5165	The Lady and the Wanton: The Presentation of Women in Medieval Literature
FR 3534	Ecrits de femmes/Women's Writing
FR 3834	Écrivaines québécoises contemporaines
HIST 2021	Women in History
HIST 3003	European Women 1450-1800
HIST 3255	Women's Voices in the Western World 1750-1930
HIST 3606	Women in Modern Asia
HIST 3737	History of Women Artists
HIST 4313	History of Women in Canadian Society
HIST 5245	Women in Industrial Britain 1700-1880
KIN 4242	Women, Sport & Physical Activity
PHIL 3103	Philosophical Foundations of Feminism
POLS 3443	Women in the History of Political Thought
POLS 3613	Gender and International Relations
PSYC 3223	Research in Sex and Gender Differences
PSYC 3263	Psychology of Women
PSYC 3493	Women and Mental Health
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
WLCS 4063	Century Women Writers

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 EDUC 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

Concurret 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. 21 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 , 2303 , 2023
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

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 , 4997
2. 12 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 Department of Extension and Summer Session. 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 conjuction with a degree program, with the approval of the appropraite 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 Certificate in Film Production required courses will be scheuled 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 3999	Film and Video Production	(3 ch)
ENGL 3998	Advanced Film Production	(6 ch)
ENGL 3993	Directing and Acting for Film and Television	(6 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) 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 section entitled "Bachelor of Laws" in Section L of this Calendar.

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 new 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

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 commerce, 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 3173. 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 Department of Extension and Summer Sessions, 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

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
ECON 1013	Introduction to Economics: Micro	3
ED 3862	Information Processing I	3
ENGL 1103	Fundamentals of Clear Writing	3
ABRG 4664	Aboriginal Entrepreneurship	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
ED 3872	Personal Finance and Consumer Education	3
Winter Term		
ADM 2413	Principles of Finance	3
ADM 2513	Organizational Behaviour	3
ADM 3173	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 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.

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 successfully complete 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 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 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.

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.

G. 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.

H. Students may select a Joint Concentration in Finance and Economics by selecting appropriate optional courses, and meeting additional credit hour requirements. See Sections 12 and 13.

I. Students who elect to seek the Honours BBA degree must complete a major in an area of Administration. A major shall consist of the successful completion of 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.

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 36 ch in the first year of the program, and 30 ch in the second year 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 30 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 credit hour specifications.

8. At least 12 of the 30 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 entrance into 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 may refuse to admit to Honours students whose cumulative GPA is below 2.5 at the completion of 66 ch.
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 - 36 Credit Hours

A. 21 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)
- PHIL 2153 (either term)

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.

37 - 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)

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 3173 (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 36 ch. ADM 2163, 2164, 2623, and 2624 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 ADM3215 , ADM 3216 , ADM 3225 , and at least one additional elective to earn a concentration in Accounting. Available electives for the Accounting concentration are: ADM 4215 , ADM 4216 , ADM 4275

E-Business
Student must take the following required courses: ADM4725 I ntroduction to Electronic Commerce and ADM4732 Electronic Business Strategies.

Students must also take two electives from the following courses to receive a concentration: ADM4715 Database Management; ADM4716 MIS Administration; ADM4711 Electronic Commerce Technology; ADM4772 Global Issues in Electronic Commerce; ADM4773 E-Business Entrepreneurship; ADM4776 The Law and Electronic Business.

Finance
Students must take ADM 3415 , and at least three additional electives to receive a concentration. Available electives for the Finance concentration are: ADM3435 , ADM3445 , ADM4415 , ADM4416 , ADM4425 , ADM4426 , ADM4445 , ADM4455 , ADM4475 , one elective approved by the Associate Dean-Programs.

Human Resources Management (IR/HRM)
Students must take ADM3815 and three HRM electives to receive a concentration. Available electives in HRM are: ADM3875 , ADM4825, ADM4835 , ADM4836 , ADM4837 , ADM4855 , ADM4875 , ADM4876 , ADM4877 , ADM4878 .

International Business
Students must take the following four courses to receive a concentration in International Business: ADM4155 , ADM4355 , ADM4455 , ADM4855 .

Marketing
Students must take ADM3315 , ADM3345 , ADM4325 , and a Marketing elective to earn a concentration in Marketing. Available electives in Marketing are: ADM4175 , ADM4315 , ADM4335 , ADM4345 , ADM4355

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 .

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	ADM 4416	ADM 4425	ADM 4455
ECON 3665	ECON 4045	ECON 4035	ECON 4625

plus 3 ch of Economics electives selected from the following:

ECON 2103	ECON 2203
ECON 3401	ECON 3412
ECON 5645	ECON 5682

14. Major Courses

Effective with the 2003-2004 academic year, majors in designated subjects will be available for Honours BBA students. Please consult the Faculty of Administration for additional information.

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.

BACHELOR OF COMPUTER SCIENCE

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 Science in 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, 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 my 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 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., 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. ENGL1010 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 math or stats) offered by the Faculty of Science, normally including a laboratory component. (*Note* : Students may choose EE1713 to partially satisfy this requirement.)

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 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	Number Theory
	MATH 3333	Combinational Theory
	MATH 3343	Networks and Graphs
	MATH 3363	Finite Math
	MATH 4063	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 I
CS 2013	Software Engineering I
CS 2023	Procedural Program Development
CS 2303	Discrete Structures II
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. PHYS 1913 , 1918 and EE 1713 (Area 1)

c. 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 , 1833 , ADM 2623 (BA 2603), ADM 2715 , ADM 3713 (BA 3101), PHIL 1053 .
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 , 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 seven 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 2773 , EE 2783 , EE 3121 and 2 of CS 4815 , CS 4825 , CS 4835 and CS 4865 , plus 1 from Group A, B or C.

Software Systems

CS3013 , 2 from CS 4015 , CS 4025 , CS 4405 , CS 4905 ; 1 from CS 3025 , CS 4735 ; 1 from group A.

Information Systems

CS3013 , 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 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 3403 , CS 4525 , GGE 5413 , GGE 3342 .

GROUPS:

Group A:	Non-core CS 3000, 4000, and 5000 level courses, excluding CS 3903 .
Group B:	EE 3132 , 3221 , 3313 , 3323 , 3513 , 4243 , 4261 , 4532 , 4543
Group C:	Approved courses taken from MATH and STAT 3000 and 4000 level courses, excluding those taken to satisfy core requirements.
Group D:	ADM3525 , ADM3573 , ADM3625 , ADM3626 , ADM3627 , ADM3785 , 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 4905 , 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 CS1073, CS1083, CS1303, CS2013, and CS3323. Of the remaining 3 courses, 2 must be at second year level or above; with the third 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.

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 (MATH2203 may be used as an equivalent), 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 English 122, Math 112/122, Adv. Math 120, Physics 122, Chemistry 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

Year 1
Term 1: CS 1073 , MATH 1003 , ME 1003 , PHYS 1913 , PHYS 1918 (2ch), GGE 1001 .
Term 2: CE 1013 , CHEM 1882 , CS 1083 , CS 2513 , MATH 1013 , ME 1013 .
Survey Camp: GGE 1003

Year 2
Term 1: CS 2013 , GEOL 1001 , GE 1026 , MATH 2503 , GGE 2101 , GGE 2701 . *Term 2:* CS 2023 , EE 1713 , MATH 2513 , ME 1113 , GGE 2012 , GGE 2413 . Survey Camp: GGE 2013

Year 3
Term 1: CS 2813 , CS 3113 , EE 3181 , LAW 4071 (1ch), MATH 3543, GGE 3111 , GGE 3202 .
Term 2: MATH 3513 , GGE 3022 , GGE 3122 , GGE 3042 , GGE 4211
Survey Camp: GGE 3023

Year 4
Term 1: CS 1303 , Complementary Studies Elective, GGE 2501 , GGE 4313 , GGE 3353 , GGE 4222 .
Term 2: CS 2303 , CS 3413 , ECON 1073 , GGE 4512 (2ch).

Year 5:
Term 1: CS 3013 , CS 3503 , 2 Complementary Studies Electives, GGE 4323 , GGE 4403 .
*Term 2:*CS 3323 , LAW 5002 (2ch), GGE 4541 , GGE 4003 (2ch), GGE 4xxx (GGE Technical Elective)

Year 6:
Term 1: CS 3813 , CS 3913 , CS 4613 , CS 4/5xxx (CS Senior Elective), GGE 4711 or CS 4983 (2ch), GGE 4xxx (GGE Technical Elective).

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 on pp B.4 and B.5.

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 2303 , 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 are all 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 3013	Software Engineering II
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 2023 , CS 2813 , CS 2875 , 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 2013 , (one or two of CS 2023 , CS 2813)
Fall:	CS 3013 , 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 2013 , one elective
Fall:	CS 3013 , 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

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, 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), 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.

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. (to take effect September 2004).

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. (to take effect September 2004.)

Teachable subjects are: English, French, Languages, History, Geography, Political Science, Classics, Economics, Canadian Studies, Biology, Chemistry, Physics, Environmental Science, Music, Drama, Visual Arts, Theatre Arts, Graphic Arts and Design, Technology Education, Computer Science, Information Technology, Family Studies, Home Economics, Business Administration, Commerce.

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 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, ED 4002) and the Field Studies Practicum (ED 5000) required in the program. 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.

f. Students are responsible for all travel and living expenses incurred.

g. Re-registration (a) 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. (b) 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.

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 six 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 six credit hours of methods in the subject area.

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.

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 Aspects of Education History, Philiosophy and Practice of Education	Two 1 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	9 ch of approved courses from human development and learning; social, cultural and political aspects of education; history, philosophy and practice of education - adult years option	6 or 12 week practicum; may be in settings other than schools (9 or 15 ch)	Consult the Faculty for requirements and options	Preparation for teaching adult learners
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 Aspects 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 or 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 seven (7) subject areas and should consult with Faculty Advisors when a specific course is not listed.

1. Art Education
2. Literacy/Drama Education
3. Mathematics Education - ED 3424
4. Music Education- ED 2241 or ED 3241
5. Physical Education - ED 3475
6. Science Education- ED 3511
7. Social Studies Education - ED 3621

Students may also choose a concentration consisting of at least 12 ch of approved courses in one of the areas listed below.

Program Opton 2: Middle Years or 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

Aboriginal Education
Art Education*
Business/Information Technology Education*
Early Childhood Education
French Second language Education*
Geography Education*

School Counselling
Health Education
Literacy/Drama Education*
Mathematics Education*
Music Education*
Physcial Education*
Science Education*
Social Studies Education*
Special Education
Technology Education

Consult the Faculty of Education for details of concentration requirements.

Concentrations for Program Options 2

Art Education	ED 3211 , ED 5154 , plus two other approved education courses
Business/Information Technology Education	ED 3862 , ED 4862 , ED 4863 , ED 4864 .
French Second Language Education	ED 3560 , and two of ED 4568 , ED 4569 , ED 4075 . For Immersion, consult the Faculty.
Geography Education	Four approved education courses.
Health Education .	ED 4451 and three of ED 3063 , 4791 , 5065 , 5451
Literacy/Drama Education	ED 5353 , 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

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 (6 ch), Field Studies (9-15 ch), Curriculum Studies (21 ch), Education Electives (18-24 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 (Adult Education Pattern)

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	15 ch	Approved courses from Core Studies listings in Section H of the Calendar.
Field Studies	9-15 ch	Approved practicum, seminars, and independent study; site of the practicum to be negotiated.
Curriculum Studies	30-36 ch	Approved courses about the development and delivery of education programs, courses about particular learner levels, and courses which focus on the integration of Core, Field, and Curriculum Studies. Up to six (6) credit hours for prior experience may be granted in Field Studies in consultation with Faculty of Education advisors.

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 Micmac-Maliseet Institute at UNB.

Core Studies

Education courses are listed below by area. (Note: All course selections must be approved by a Faculty of Education advisor.) ED courses are normally not available to non-education students. Exceptions are ED 4791 , ED 3021 , ED 3031 , ED 3061 , ED 3063 .

Exceptional Learners

School Years:

ED3031	The Education of Exceptional Learners

Adult Education

ED4032	Adult Learners with Special Needs

Field Studies

School Years

ED4000	Student Teaching for BEd (4 year) Program
ED4001	Field Experience 1
ED4002	Field Experience 1
ED5000	Field Studies Practicum for Consecutive/Concurrent BEd Programs
ED5566	Field Experiences in TESL

Adult Education

ED3010	Practicum in Adult Education
ED4010	Practicum in Adult Education
ED4011	Reflective Practice In Adult Education
ED5010	Advanced Practicum in Adult Education
ED5011	Preparing for Prior Learning Assessment

History, Philosophy and Practice

School Years:

ED3041	The Theory & Practice of Education
ED3042	History of Educational Ideas
ED4164	Techniques of Teaching
ED5044	The School and Society
ED5045	Philosophies of Education

Adult Education:

ED4042	Introduction to Adult Education
ED4051	The Community College

Human Development and Learning

School Years:

ED3021	Human Development and Learning: An Overview

Adult Education:

ED3024	Understanding the Adult Learner
ED4102	Transition to Adulthood
ED5022	Transformative Learning

Independent Studies

ED4191 , 5191	Independent Studies
ED5013 , 5033 , 5043	Special Topics in Education

School Law

ED3051	School Law and Organization (*not required for students not seekeing teacher certification)

Social, Cultural and Political Aspects of Education

School Years:

ED3033	Teaching in a Cultural Context
ED3043	Aboriginal Education
ED3061	Personal/Social Issues in Education
ED4031	Toward Diversity in the Classroom
ED4075	Bilingualism and Education
ED5032	Inclusion from the Early Years
ED5062	Cultural Constructions of Childhood
ED5313	Cultural Studies through Theatre

Adult Education:

ED4061	Interactive Strategies: Helping Relationships with Adults
ED5063	Societal Trends for Adult Education
ED5183	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	Interactive Strategies in Adult Education: Communication Practices
ED4110	Methods and Strategies in Adult Education: Theory and Practice
ED4113	Interactive Strategies in Adult Education: Learning Materials
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 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

Cultural 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
ED4791	Nutrition Concepts
ED4451	Health Education
ED5065	Personal Growth and Helping
ED5451	Special Topics in Health Education

Home Economics Education

ED4761	Philosophical Foundations of Home Economics
ED4771	Children, Families and Society
ED4773	Families and Society -Family Development
ED4774	Family Economic Issues
ED4791	Nutrition Concepts
ED5781	Home Economics Education for Middle Learners
ED5782	Home Economics for Young Adult/Adult Learners

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
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

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

ED2241	Introduction to 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.

ED3560	Introduction à la didactique du français langue seconde (FLS)
ED3561	Introduction to Second Language Education
ED4075	Bilingualism and Education
ED4562	Advanced Studies in ESL Education
ED4568	Le développement langagier en classe de langue seconde
ED4569	L'enseignement en immersion
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
ED5086	Tutoring Practicum
ED5091	Learning Disabilities: Introduction
ED5094	Foundations of Mental Retardation
ED5095	Educational Intervention for Persons with Mental Retardation
ED5096	Behavioural/Emotional Disorders: Introduction

Technology Education

ED3943	Introduction to Technology
ED3976	Technology Education for Special Students
ED3990	Industrial Experience
ED4923	Teaching Junior High Technology
ED4944	Electronic Communications
ED4945	Graphic Communications Systems
ED4975	Technology Laboratory Organization and Management
ED4985	Introduction to Bio-Related Technology
ED5913	Production Enterprise Systems
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

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

Program Description

Candidates in a BEd degree program who wish to have official recognition of their proficiency in teaching in an immersion program may apply for the Certificate which is administered by the Faculty. Interested students should seek the approval of the French Second Language (FSL) unit in the Division at the earliest convenient moment. Full-time students may work toward the Certificate as part of their undergraduate program. Persons having completed the BEd degree may work towards the Certificate as part-time students.

Requirements

All candidates to the Certificate program will be required to satisfy the usual requirements for a French education or other concentration or major, plus complete a minimum of 12 ch related to teaching in immersion with no grade below "C".

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 Mi'kmaq Linguistics and Curriculum Development

The Faculty of Education occasionally offers degree credit courses leading to a Certificate in Mi'kmaq Linguistics and Curriculum Development. The certificate requires a total of 36 ch.

The courses are: ABRG2681 , ABRG2682 , ABRG2683 , ABRG2684 , ABRG4681 , ABRG4682 , ABRG4683 , ABRG4684 , ED3685 , ED3687 , ED4686 , ED5683

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. Two compulsory courses:
   - ED 3561 - Introduction to Second Language Education
   - ED 4562 - Advanced Studies in ESL Education
2. Two further approved courses in the area of language education,
3. Practicum in TESL

Eligibility

In order to be eligible for the CTESL, candidates must either have completed an undergraduate degree or be currently enrolled in a BEd program. Candidates must also possess an advanced level of oral and written proficiency in English upon entry to the program.

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 setting 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.

Residency Requirements Students must normally complete a minimum of 24 ch of work for the DAUS on campus as full or part-time students.

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.

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 INTERDISCIPLINARY MINOR

General Information

The Environmental Studies interdisciplinary minor provides an academic framework for understanding the growing body of literature and scholarship on contemporary environmental problems.

Eligibility

Admission to the introductory course (ENVS 2003 : Environmental Issues for the 21st Century) is open to any student in any faculty, preferably students entering their second year. Admission to the Environmental Studies Minor is open to students in any faculty, who have successfully completed 60 ch towards a degree. With the permission of the Coordinator of Environmental Studies, students may count for credit toward the Minor either of the following: transfer credit for courses taken at other universities and approved for credit in their degree program and/or courses taken before they entered the minor program.

Program of Study

The Minor consists of four full course equivalents (a minimum of 24 ch) of course work, selected in consultation with the Coordinator of Environmental Studies. The precise number of credit hours received for any given course is governed by the regulations of the Faculty in which the student is majoring.

1. Two full course equivalents (12 ch) of required courses: ENVS 2003 Environmental Issues for the 21st Century - 3 ch ENVS 2023 Understanding Environmental Issues - 3 ch ENVS 4001 Applied Environmental Problem Solving - 3 ch ENVS 4002 Stakeholder Approaches to Environmental Problem Solving - 3 ch

2. A minimum of 4 approved term courses (12 ch) from the list of Approved Courses, with no more than 1 term course (3 ch) in any one group. Students are encouraged to select courses which will give them a broad base.

Science Group

BIOL 2113	Ecology
BIOL 3459	Economic Botany
BIOL 4233	Conservation Biology (A)
BIOL 4352	Historical Community and Environmental Change
BIOL 4861	Environmental Biology
FOR 3445	Forest Ecology: Populations
FOR 3455	Forest Ecology: Communities and Ecosystems
FOR 3456	Forest Ecology: Cycles and Flows
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
BIOL 4191	Wildlife Management
FOR 2006	Forest Dynamics and Management
FOR4656	Wildlife Habitat
FOR 5095	Conservation (A)
RLS 2302	Outdoor Recreation
RLS 3303	Parks and Protected Spaces: Planning and Mgmt
RLS 4331	Outdoor Recreation: Interpreting the Environment (A)

Humanities Group

ANTH 5032	Environment and Society
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 3106-9	Selected Topics in Philosophy of the Environment

Social Sciences Group

ECON 3755	Environmental Economics
ECON 3794	Natural Resource Economics I
GEOG 5642	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 could be incorporated to the above list, provided approval is granted by the Faculty involved and the Coordinator of Environmental Studies.

BACHELOR OF LAWS

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. E-mail: lawadmit@unb.ca or visit our website at 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 www.law.unb.ca

BACHELOR OF NURSING

Mission Statement

The Faculty of Nursing at the University of New Brunswick is empowered to care for the health of people in a variety of health related contexts and environments by educating competent, caring professional nurses.

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.

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, accomodation will be required.

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 Interventation 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" grade in any Nursing course will be required to withdraw from the Nursing program.
3. A student must receive at least a "C" grade or a clinical "pass"
   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 or restricted electives (a nursing elective taken as an open elective requires a "C" grade for credit).
5. 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.
6. For those students commencing the BN Program in September 2001, the requirements for the Basic degree are 105 ch in courses taught by the Faculty of Nursing and 37 ch in other faculties; for those students who entered the BN program prior to September 2001 the requriements for the basic degree are 98 ch in courses taught by the Faculty of Nursing and 43 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 45 ch in Nursing and 21 ch in other courses are required.

Curriculum for BN for Students Entering the Basic Program After September 2001

YEAR I

Term 1:	NURS 1011 (3ch), NURS 1032 (3ch), BIOL 1711 (5ch), Open Elective (3 ch), Writing elective (English, French or Writing designated Course) (3 ch).
Term 2:	NURS 1225 (3ch), NURS 1235 (4ch), BIOL 2782 (5ch), Open Elective (3 ch), Growth & Development Elective (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 3251 (3 ch).
Term 2:	NURS 3031 (3 ch), NURS 3072 (3 ch), NURS 3073 (6 ch), NURS 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).

Note: +Nursing Electives. A series of Nursing electives in practice and non-practice settings are offered.

Curriculum for BN for Students Who Entered the Basic Program Prior to September 2001

YEAR III

Term 1:	NURS 3052 (3 ch), NURS 3061 (3 ch), NURS 3062 (3 ch), BIOL 3251 (3 ch), Open elective (3 ch), *Restricted elective (3 ch) *choose from the following: Philosophy, Psychology, Sociology, Women's Studies, Political Science, Economics, Anthropology. Please Note: The Restricted elective requirements in Years II and III cannot be from the same discipline.
Term 2:	NURS 3072 (3 ch), NURS 3073 (6 ch), NURS 3082 (3 ch), NURS 3092 (3 ch).
Intersession:	NURS 3103 (5 ch).

YEAR IV

Term 1:	NURS 4111 (3 ch), NURS 4121 (3 ch), NURS 4123 (6 ch), + Nursing elective (3 ch).
Term 2:	NURS 4132 (3 ch), NURS 4133 (2 ch), NURS 4142 (3 ch), NURS 4152 (7 ch).

Note: +Nursing Electives. A series of Nursing electives in practice and non-practice settings are offered.

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 (5 ch)
2. BIOL 3251 or equivalent: Microbiology (3 ch)
3. STAT 2263 or equivalent: Any introductory Statistics course (3 ch)
4. A lifespan development elective

YEAR I

Term 1:	Is not a Nursing semester, however, it may be used to complete prerequisite courses.
Term 2:	NURS1121 (3ch), NURS1136 (3ch), NURS1135 (4ch), NURS1142 (4ch), NURS3052 (3ch) or NURS3144 3ch).
Intersession:	NURS2171 (2ch) and NURS2172 (7ch) and NURS2132 (3ch).

YEAR II

Term 1:	NURS3065 (4ch), NURS3066 (4ch), NURS2132 (3ch), NURS3092 (3ch), Pathophysiology (tentatively BIOL2521).
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.
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 3014 * (3ch), 3025 (3ch), 3134 (3ch), 3144 (3ch), 3164 (3ch), 3174 (3ch), 3211 (3ch), 3215 (3ch), 3222 (3ch), 3225 (3ch), 3234 (3ch), 3244 (3ch). NURS 4002 ** (3ch), 4012 ** (3ch).

Notes: * NURS 3014 is a pre-requisite or co-requisite of other 3000 level Nursing courses. ** Prerequiites for NURS4002 and NURS4012 include: NURS 3014 , 3025 , 3134 , 3164 , 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

Open Electives (12ch), Non-nursing (Writing designated course) elective (3ch), Pathophysiology (3 ch), English (3ch), STAT 2263 (3ch) or equivalent.

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. Part-time students will normally be required to complete 3 ch of university course work before enrolling in the introductory nursing course.

Credit Hour Requirements for Nursing Programs

Basic degree program (prior to Sept. 2001)	Minimum 141 ch
Basic degree program (after Sept. 2001)	Minimum 142 ch
Advanced Standing Degree Program	Minimum 91 ch
BN/RN Program	Minimum 66 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 ch)
NURS 4234	Independent Study	(3 ch)
NURS 4244	Healthful Lifestyles	(3 ch)
NURS 4254	Issues 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 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 3014	Concepts of the Nursing Paradigm	(3 ch)
NURS 3211	Family Systems 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 Information

The Renaissance College Undergraduate Leadership Program is a rigorous eight term degree 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 an 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

University 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.

General Regulations

Any point not covered in the following regulations will be governed by the General University Regulations. Students are advised to read the Regulations in Section B of the Undergraduate Calendar.

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 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. The integrative focus of the program, especially in the first year, requires that students be full-time in order to complete all non-elective requirements in the first year. Unique 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 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 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 3995	Directed Studies in Interdisciplinary Leadership	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 4997	Directed Studies in Interdisciplinary Leadership	3 ch

Total credit hours of core courses is 87 ch

Electives

Electives shall constitute a minimum 51 credit hours, with at least 24 ch assigned to a UNB Minor Program

BACHELOR OF RECREATION AND SPORTS STUDIES (BRSS)

NOTE: This calendar copy has been revised based on changes to the Kinesiology degree programs approved by the Fredericton Senate (See Section G of this Calendar). At the time of printing of this calendar it is subject to approval by the Saint John Senate. Students are advised to contact the Department of Social Science for details.

General Information

The Faculty of Kinesiology offers two degree programs: Bachelor of Recreation and Sport Studies, and a Bachelor of Science in Kinesiology. The four year **Bachelor of Recreation and Sport Studies [BRSS]** program is inter-discipline based, with the focus on the social-psychological aspects of recreation and leisure in society, and on the management and delivery of recreation, park, and tourism services. BRSS students will select one of the following programs/minors: Recreation & Sport Management, Outdoor Recreation Minor, Tourism Minor, Leisure and Aging Minor, and General Recreation/Sports Studies. 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 program delivery and organization management in various recreation, leisure, park, and tourism organizations.

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. This figure provides for the accommodation of up to 20 students at the Saint John campus.

Transfer Students

1. A minimum session grade point average of 2.0 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 133 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 RLS 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 RLS courses.

Repeating Courses

1. Regulations pertaining to repeating courses can be found in Section B of this Calendar.

2. The removal of deficiencies or conditions acquired in whatever manner 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., KIN 3900 (12), KIN 3913 (3), KIN 3914 (3), KIN 3923 (3), KIN 3953 (3), KIN 3954 (3), KIN 4800 (12), KIN 4910 (6), KIN 4950 (6), and RLS 3100 (12).

2. Normally, students may elect a maximum of six (6) ch from directed study courses, i.e., RLS 4093 (3), RLS 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. The minimum credit hour total to graduate with a BRSS is 133 ch.

2. Students must complete at least 48 ch of KIN/RLS 3000, 4000 level (including required and elective) courses in order to graduate with the BRSS degree.

YEAR 1 (34 ch)

KIN 1001	Introduction to Kinesiology	3ch
BIOL	1551 / 1552 / 1923 / 1711 / 1752	6ch
ENGL	1102 / 1144 / 1145	3ch
PSYC / SOCI	Psychology / Sociology Courses	6ch
KIN / RLS	Electives (2 of the following) KIN 2081 / 2093 / 2002 (RLS 2042)	6ch
Non KIN / RLS	Electives	9ch
KIN / RLS	Activities	1ch

YEARS 2 - 4

Core Courses (39 ch)

KIN 2011	Intro Sport & Rec Management	3ch
RLS 2032	Programming	3ch
ADM 2213	Principles of Marketing	3ch
RLS 3051	Advanced Management	3ch
RLS 3061	Delivery Systems	3ch
RLS 3072	Planning	3ch
KIN 4412	Leadership	3ch
KIN 3900 & RLS 3100	Internship	12ch
KIN 2113	Computers in Rec/Sport Admin	3ch
RLS 3101	Applications of Research	3ch

Discipline Courses (12 Ch)

KIN & RLS	Psychology & Sociology (see note below)	3ch
KIN 3093	Ethics	3ch
RLS 4092	Senior Seminar	3ch
KIN/RLS	Activities	3ch

Note: Recreation Management, Outdoor, Tourism, Gerontology: RLS 2062 Soc/Psyc of Leisure (3 ch); Sport Management KIN 2023 - Intro to Sociology of Sport (3ch) or Kin 2032 -Intro to Sport Psych. (3ch).

BRSS Students will select on of the following programs/minors:

1. **RECREATION & SPORT MANAGEMENT**

KIN/RLS	REQUIRED COURSES	6ch
RLS 3052 / KIN3111	Recreation, Sport & the Law	3ch
RLS 4081	Marketing of Recreation/Tourism Services	3ch
BUSINESS MINOR	Courses approved by Faculty of Administration	21ch
KIN/RLS	ELECTIVES	9 ch
NON KIN/RLS	ELECTIVES	12ch

2. **OUTDOOR RECREATION MINOR**

Faculty Courses		9 ch
RLS 2303	Outdoor Recreation (3ch)	
RLS 4331	Interpretation (3ch)	
RLS 4311	Facilities (3ch)	
Outside Courses		15 ch
BIOL 2113	Ecology (3ch)	
FOR/BIOL/ECON	Approved Electives (12 ch)	
KIN/RLS	ELECTIVES	9 ch
Non KIN/RLS	ELECTIVES	15 ch

3. **TOURISM MINOR**
(Faculty Courses -6 ch + Outside courses -18 ch)

Faculty Courses		6 ch
RLS 2502	Tourism (3ch)	
RLS 4081	Marketing (3ch)	
Outside Courses	Tourism Courses on the Saint John Campus	18 ch
KIN/RLS	ELECTIVES	9 ch
NON KIN/RLS	ELECTIVES	15 ch

4. **LEISURE in AGING MINOR**
(Faculty Courses -6ch + Outside courses -18 ch)

Faculty Courses		6 ch
KIN 3141	Wellness & Aging (3ch)	
KIN 3242	Phys Act & Older Adult (3ch)	
Outside Courses		18 ch
GERO 2013	(3ch)	
GERO 2023	(3ch)	
GERO/SOCI/ PSYCH	Approved Electives (12ch)	
KIN/RLS	ELECTIVES	9 ch
NON KIN/RLS	ELECTIVES	15 ch

5. **GENERAL RECREATION/SPORT STUDIES CURRICULUM**

KIN/RLS	ELECTIVES	21 ch
NON KIN/RLS	ELECTIVES	27 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 RLS 4900 : Honours Research Project, and
4. Complete a minimum of 48 ch of courses at or above the 3000 level (KIN /RLS and/or non-KIN/RLS courses).
5. Complete KIN 3001 as a prerequisite, or as a co-requisite to RLS4900 .

BACHELOR OF SCIENCE

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 programs are available in these options. Pass degree programs are also available in Biology and Geology. Those selecting either Chemistry or Physics options have the additional choice of taking either the regular or an Applied program, which places more emphasis on the industrial and other applications of the subject, generally by permitting more courses in Engineering and related areas to be elected. Co-operative programs are also available in Biology and in Chemistry which combine the academic studies with summer work terms in industry or government laboratories. The remaining degree option, General Science, offers a broader, more flexible program. 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; however, the degree will not be conferred a second time. BSc degree holders from another university may apply for admission to and follow a program 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 B.Sc. programme with the University of New Brunswick and enter a programme leading to a degree in a science-based health profession at a recognised 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 recognised 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 recognised 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 B.Sc. 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 B.Sc. 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 B.Sc. programme before entering a Professional School but who have compelted at least 67 ch at UNB toward a B.Sc. will be considered on an individual basis.

UNB recognizes that a number of field courses are offered at the Huntsman Marine Science Centre which may be used as part of the degree requirements for students at UNB subject always 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 program, 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 program, 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 program. The second course in the pair may not be attempted until the first is passed.

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.

Science Minors

Minor programs are offered to broaden a student's educational background and complement a Major or Honours program. 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 program may not 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 program.

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 programs 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) or equivalents**

* Any exceptions allowed in a particular program will be noted in the program 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

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 two of:

BIOL 2113	Ecology	(3 ch)
BIOL 2133	Population Biology	(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 must be taken in one of the second year core modules.

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*.

   Notes: Students must take one of the following lecture plus lab combinations: BIOL 3521 ; 3801 plus 3908 ; (3031 or 4082) plus 4057 ; or (3261 or 3491) plus 3207 . Students enrolled in this program may count only 8 ch of field courses toward their major requirements (additional field courses may be taken as electives). Students must complete 30 ch of approved electives (minimum of 12 ch of Arts electives).

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. Honours students are not limited in the number of field course credit hours used to meet upper level Biology course requirements.

   The two Honours Programs differ as follows.

   i. **Honours by Course:** Students must have (and maintain) a minimum cgpa of 3.3 to be accepted into (and remain in) this program.

   ii. **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:** Some upper level courses (3000 and 4000 level) have limited enrolment. Priority for admission is given to Honours students, with Year IV students having priority over Year III.

Within Years, students will be selected based on cgpa. If space permits students from all four programs are entitled to enroll in these courses. Some Biology courses are designed for non-Science students. Students enrolled in Biology programs may take these courses with permission of the Biology Chair, but they can only be considered as electives for the purposes of the Biology Programs. Such courses include: BIOL 1711 , 1752 , 2501 , 2512 , 2721 , 2782 , 3251 , and 3851 . 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. Applications, available in the Department of Biology office, are to be filed with the Director of Co-operative Program following completion of Year I.

2. Students must successfully complete Year II in Science and be accepted into either the 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 2 work-terms during the course of their program. The work-terms may alternate with study-terms, or the terms may run consecutively over two or more terms.

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 for the Co-op designation to appear on University transcripts. Details of each successful work-term will appear on the student's transcript.

7. Students must complete at least one study-term after their last work-term.

8. "Co-operative Education in Biology" will follow the degree designation on the student's 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 2113 , 3383 or 3173 , 3703 , 3801 , 3872 , 3908 , 4741 , 4861 , 4992 .
Primary electives:	BIOL 2133 , 3031 , 3673 , 4223 , 4570 .

Entomology Concentration

Basic program:	BIOL 2133 , 3301 , 3401 , 3459 , 3601 , 3801 , 3908 , 4119 , 4819 , 4822 , 4861 , FOR 4602 .

General Zoology Concentration

Basic program:	BIOL 3601 , 3703 , 3801 , 3908 .
Highly recommended:	BIOL 3173 and/or BIOL 3383 .
Primary electives:	BIOL 2133 , 3181 , 3673 , 3872 , 4162 , 4722 , 4732 , 4741 .

Molecular and Microbiology Concentration

Second Year:	CHEM 2422 , MATH 2003 , 2213 , or 2503 / 2513 .
Third and Fourth Years:	BIOL 3031 , 3132 , 3207 , 3261 , 3491 , 4057 , 4151 , 4272 , CHEM 3503 , 3523 .

Parasitology Concentration

Basic program:	BIOL 3601 , 3673 , 3688 , 3703 , 3801 .
Primary electives:	BIOL 2133 , 3872 , 4992 .

Physiology Concentration

Basic program:	BIOL 3521 , 3801 , 3872 , 3908 , 4822 , 4861 .
Primary electives:	BIOL 3031 , 3132 , 3207 , 3261 , 4119 , 4162 , 4819 .

Plant Biology Concentration

Second Year:	BIOL 2043 , 2053 , 2083 , 2113
Advanced Courses:	BIOL 3301 , 3321 , 3332 , 3342 , 3377 , 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 , 2105 , 2113 , 2133 , 2143
Advanced Courses:	BIOL 3541 , 3703 , 3872 , 4191 , 4233 (OR FOR 5095), 4352 , 4722 , 4732 , 4741 , 4861 , 4899
Field courses:	BIOL 3173 , 3383 , 4443 , BIOL 6183

CHEMISTRY OPTION

There are three chemistry degree programs: Major, Honours and Honours Co-op. All three programs have national accreditation under the Canadian Society for Chemistry and are acceptable for graduate work in chemistry and/or chemistry related fields. 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.

First Year

CHEM 1001 , 1006 , 1012 , 1017 , MATH 1003 , 1013 (or MATH 1053 , 1063), PHYS 1040 , 1045 , plus two more term lecture courses chosen from BIOL 1001 , 1012 , GEOL 1001 , 1012 , plus 6 ch electives.

The minimum credit hour requirements beyond first year are:

Major: 68 chemistry, 6 mathematics, 21 approved electives.

Honours: 74 chemistry, 6 mathematics, 21 approved electives.

Honours Co-op: 74 chemistry, 6 mathematics, 21 approved electives, two work terms.

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) of the Faculty of Arts courses must be chosen from ENGL 1103 , ENGL 1104 , HIST 2905 , HIST 2915 , HIST 2925 , HIST 3905 , HIST 3915 , HIST 3925 , PHIL 1005 , PHIL 2113 , or PSYC 2753 .

Major Program

Second Year
CHEM 2201 , 2222 , 2237 , 2401 , 2422 , 2416 , 2601 , 2622 , 2637 , MATH 2003 , 2213 or equivalent (approved by the Chemistry department), plus approved electives.

Third Year
CHEM 3001 , 2111 , 3132 , 3202 , 3236 , 3401 , 3602 , plus approved electives.

Third Year
CHEM 3001 , 2111 , 3132 , 3202 , 3236 , 3401 , 3602 , 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 , 2222 , 2237 , 2401 , 2422 , 2416 , 2601 , 2622 , 2637 , MATH 2003 , 2213 or equivalent (approved by the Chemistry department), plus approved electives.

Third Year
CHEM 3001 , 2111 , 3132 , 3202 , 3236 , 3401 , 3602 , plus approved electives.

Fourth Year
CHEM 3221 , 3416 , 3421 , 3616 , 4000 , two of 4222 , 4422 , 4622 , plus approved electives.

Honours CO-OP Program

Second Year
CHEM 2201 , 2222 , 2237 , 2401 , 2422 , 2416 , 2601 , 2622 , 2637 , MATH 2003 , 2213 or equivalent (approved by the Chemistry department), CHEM 2903 (Work term I), plus approved electives.

Third Year
CHEM 3001 , 2111 , 3132 , 3202 , 3236 , 3401 , 3602 , CHEM 3903 (Work term II), plus approved electives.

Fourth Year
CHEM 3221 , 3416 , 3421 , 3616 , 4000 , two of 4222 , 4422 , 4622 , plus approved electives.

Note: It is strongly recommended that Honours Co-op students choose CHE 1004 , 2004 , 2503 and CS 1003 among their electives.

GEOLOGY OPTION

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 those of the Geology Major Program with the addition of GEOL 4900 (see "Description of Courses, Geology"). Entrance to the Geology Honours Program requires a cumulative grade point average of at least 2.5, overall, and 3.0 in Geology courses 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 (excluding first year) of 3.0 and a grade of B- or higher in GEOL 4900 are required.

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.

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 Year

GEOL 2131 , 2142 , 2122 , 2321 , 2602 , 2703 , 3131 , 3322 , 3703 , 4312 , CS 1003 , plus at least 13 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.

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.

MATHEMATICS AND STATISTICS OPTIONS

The Department of Mathematics and Statistics offers an Honours and a Majors BSc degree in Mathematics and in Statistics. 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 of Mathematics courses which are free electives in the student's degree program. Credit must be obtained for MATH 1003 and 1013 (or MATH 1053 and 1063), either as part of the above requirements or as part of the Major degree program. A maximum of 6 ch of Statistics may count toward the 24 ch requirement.

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.

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 1213 (prerequisite Grade 12 Mathematics), 2253, 2263, and 2264 (prerequisite Grade 11 Mathematics), and 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 of Statistics and Mathematics courses, which are free electives in the student's degree program. Credit must be obtained for MATH 1003 and 1013 (or MATH 1823 and 1013) either as part of the above Minor requirements or as part of the Major degree program. At least 15 ch of the Minor must be Statistics courses, 12 of which must be at the 3000 level or above.

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. It is strongly recommended that students take STAT 1213 or an equivalent course in their first year.

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. STAT 4043 and 4053 .

iii. At least 15 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. MATH 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:

i. STAT 3083 and 3093 . (Note: These courses may be taken in second year.)

ii. STAT 4043 , 4053 , 4073 , and 4083 , MATH 3003 , 3103 , and one of MATH 3033 , 3043 , 3113 , 3243 .

iii. At least 12 more credit hours of approved 3-4000 level Statistics courses giving a total of 39 ch of Mathematics and Statistics courses at the 3000 level or above. A maximum of 6 ch of 3-4000 level Mathematics courses, chosen from (ii) above or from MATH 3803 , 3813 and 3843 , may be substituted for some of these credit hours of Statistics.

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.

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 grade point average of at least 3.5 on the work of the first two years.

All students in the Honours program will be required to complete successfully an Honours project (PHYS 4100) with a grade of B- or higher. This may be done over the third and fourth years but is more generally done in fourth year. Students must have arranged with the Department for an appropriate project and supervisor by October 15 of their final year and must submit a report to the Department by March 15.

An Honours student, otherwise meeting the requirements, but having a cumulative grade point average between 2.0 and 3.0, or a grade of less than B- in PHYS 4100 will receive a Physics Major degree.

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 , 3041 , 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 , 4100 , plus approved physics electives totalling at least 9 ch, plus STAT 3083 , plus additional approved electives totaling at least 6 ch.

Major Program

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 , 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 , 3021 , 3031 , 3041 , 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 , 4100 , + 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 , 3041 , 3051 , 3122 , 4021 , 4051 , 4071 , 4122 , 4100 , 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.

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 , 1013.
2. Two more term courses of first year science lectures with labs (either Chemistry or Physics).
3. 6 ch of electives.

Second Year

1. PSYC 2113 , PSYC 2123 , BIOL 2093
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 9 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, 12 ch chosen from List A (6 ch must be at advanced level), and 15 ch of electives.

List A: Biology, Chemistry, Computer Science, 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 132 credit hours, including requisite lab courses, conforming to the above pattern. At least 12 ch of the 24 ch of Advanced Psychology electives (in third and fourth year) must be chosen from Group 1. The minimum acceptable grade in all required courses is normally 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. At least 12 ch of the 15 ch of Psychology electives (in third and fourth year) must be chosen from Group 1.

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 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 3.5. After admission, a cumulative grade point average of 3.5 must be maintained. To graduate with an Honours degree, a grade point average of 3.5 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. Normally, the thesis research must be in one of the areas represented by Group 1 courses (requires prior approval by the Psychology Undergraduate Program Coordinator).

Group 1 courses:

3023 , 3113 , 3123 , 3213 , 3243 , 3313 , 3615 , 3623 , 3633 , 3713 , 3723 , 3733 , 3745 , 3753 , 3773 , 3783 , 4603 , 4613 , 4713 , 4743 , 4773

Group 2 courses:

3033 , 3043 , 3233 , 3263 , 3273 , 3353 , 3373 , 3383 , 3403 , 3415 , 3423 , 3463 , 4213 , 4223 , 4313 .

Group 3 courses:*

PSYC 4003 , 4103 , 4203 , 4303 , 4403 Topical Seminars; PSYC 3150 Basic Research Seminar (6ch), PSYC 4110 Honours Thesis Research Seminar (6ch)

* Note: Dependent on course content Group 3 courses could count as Group 1 Advanced Psychology electives (to be determined by the Psychology Undergraduate Program Coordinator).

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 , 2216 , CHEM 2201 , CHEM 2222 , 2401 , 2422 , 2601 , MATH 2003 .

Years III-IV (35 ch)

BIOL 3031 , 3491 , 4057 or 3207 , 4082 , 4151 or 4272 , CHEM 2622 , 2416 , 2857 , 3401 or 3421 , 3503 , 3523 , MATH 2213 .

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 BIOL 4151 or 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 , 3251 , 3261 , 3311 , 3401 , 3801 , 3207 or 4057 , 4149 , 4363 , 4553 .

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 4892 are offered in alternate years. Special care is required in scheduling.

BIOLOGY-PHYSICS OPTION

First Year

BIOL 1001 , 1006 , 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 , two of BIOL 2113 , 2133 or 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 3207 or 4057 ; CHEM 2401 ; PHYS 2021 / 2026 , 2872 / 2877 or 2072 / 2077 , 3011 , 3023 , 3031 , 3041 , 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 4100 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 , 3041 , 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-ECONOMICS OPTION

The establishment of a new joint program between the Department of Mathematics in the Faculty of Science and the Department of Economics in the Faculty of Arts will lead to the Bachelor of Science degree in Economics and Mathematics. This new program will focus on the overlap between the disciplines and the required courses will be chosen to make a coherent package.

The motivation for the program is to equip students with the necessary analytic skills to pursue a graduate degree in Economics. The combination of mathematics and economics is a natural one as students will see practical applications of mathematics in their economics courses and the rigorous techniques from mathematics will aid students in their problem-solving skills.

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 , 3243 , and two courses chosen from MATH 3033 , 3073 , 3803 , 3473 , 4423 , 4433 , 4853 .

2. STAT 3083 , 3093 , 4443 , and two courses chosen from STAT 3303 , 3353 , 3383 , 4053 , 4073 , 4303 .

3. plus all of ECON 3013 , 3023 , 4013 , 4023 , 4625 , 5665 plus at least an additional 3 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: CS 3113 , 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

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.

Second Year

PHYS 2011 , 2021 / 2026 , 2032 , 2041 , 2052 / 2057 , 2072 / 2077 , MATH 2003 , 2013 , 2213 , plus approved electives totalling at least 9 ch.

Students intending to follow an Honours program must include MATH 2203 .

HONOURS PROGRAM

Third and Fourth Year

PHYS 3011 , 3051 , 3023 , 4071 , 4113 / 4122 , 4021 / 5123 , 3041, 4051, 4100, MATH 3033 , 3043 , 3073 , 3103 , 3113 , 3243, plus at least 9 ch of approved MATH/STAT electives, plus 9 ch of additional approved electives.

MAJORS PROGRAM

Third and Fourth Years

PHYS 3011 , 3051 , 3023 , 4071 , 4021 / 5123 , 3041 , MATH 3503 , 3243 , plus approved electives totalling at least 6 ch chosen from the list of basic Physics courses below, plus at least 21 ch of MATH/STAT electives, plus 9 ch of approved electives.

Basic Physics Courses: PHYS 4113 , 4122 , 4142 , 3152 , 4051 , 5133 , 3162 , 5153 .

PHYSICS-(BIOLOGY) OPTION

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 , 3041 , 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 4100 (Thesis Project).

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).

* PSYC 2103 , 2903 and 2000 level courses from Group 1 (see Psychology Option, Section E.) are acceptable as second year science courses in General Science. The 21 ch of upper year courses in a Psychology concentration must be taken from Group 1, Psychology Option, (See Section E.) or other approved Psychology courses and should include PSYC 3713.

Notes:

1. Two courses (6 ch) in History of Science must be chosen within the electives of the program.
2. 6 ch of English (e.g. ENGL 1103 / 1104) are strongly recommended as electives.
3. 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 Section G of this Calendar.

CONCURRENT BSc/BEd OPTION - GENERAL SCIENCE

Science students may apply to the Faculty of Education for admittance to this program at the beginning of the second term of their first year. Students will be accepted into the BSc/BEd concurrent degree program based on the following criteria:

- successful completion of the first year science program,
- 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 program 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 program. 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.

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.

BACHELOR OF MEDICAL LABORATORY SCIENCE

The degree of Bachelor of Medical Laboratory Science is offered through the Faculty of Science. Enrollment will be limited. Students may enter the BMLS Program only with approval by the Dean of Science or program Director. The program requires completion of the Registered Technologist Program at the NB Community College in Saint John, either prior to, or following the first year at UNB.

The BMLS degree is offered through two options: (a) BMLS General (4.5 year requirements below) and (b) BMLS Honours (5 year requirements* below) and include the requirement of a two-year Laboratory Diploma from the New Brunswick Community College in Saint John, or equivalent credential. For graduation, a minimum of 84 ch or 115 ch of approved UNB courses (in addition to NBCCSJ Diploma credits{42ch}) are required for the General and Honours options, respectively. After graduation, students seeking registration as "Registered Technologists" must pass the Canadian Society of Medical Laboratory Technologists exams as required for professional practice. *Note: A minimum 3.0 cgpa is required for admission into the Honours Option

First Year

These are courses common to the first year of the UNB BSc program: BIOL 1001 , 1012 , 1006 , 1017 , 2792 , CHEM 1001 , 1012 , 1006 , 1017 , MATH 1003 , 1013 , and PHYS 1040 , 1045 or GEOL 1001 , GEOL (3ch) elective and Technical (4ch) elective.

Second & Third Years

Second and third years consists of the requirements for the general Registered Technologist Program (normally 24 months long) taken at the New Brunswick Community College in Saint John, NB.

Fourth and Fifth Years

These are courses offered by UNB that meet CSMLT Certification and are related to the field of medical laboratory science in theoretical knowledge and laboratory techniques; BIOL 2033 , 2043 , 2053 , 2501 , 2512 , 3031 , 3132 , 3311 , 4057 , 4082 , CHEM 2401 , 2422 , STATS 2264 , an approved Arts (3ch) and Technical (4ch) elective. Note: in event of timetable conflicts, approved substitutions will be permitted.

Fifth Year

Fifth year courses represent the additional requirements (in addition to 3.0 cgpa minimum average)* for the Honours Option. These courses provide theory and practice in advanced medical laboratory science techniques and allow students an area of specialization; BIOL 3145 , ED 4871 , 4872 , MLS 4145 , 4900 , and 11 ch of approved Technical Electives.

JOINT PROGRAM IN ARTS AND SCIENCE

The 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. For further information see the description under the Arts degrees.

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.

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.

For further detail, see "Bachelor of Arts" portion of Section E.

CONCURRENT DEGREES IN COMPUTER SCIENCE AND SCIENCE

For details, see the Computer Science portion of this calendar.

BACHELOR OF SCIENCE IN ENGINEERING

Faculty of Engineering

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 Associations of Professional Engineers.

General Information

All students registering in Engineering must achieve credits in certain required basic courses as well as additional credits from a group of electives. The recommended first year courses for students who have passed the N.B. grade 12 high school examinations in Physics, Mathematics and Chemistry, or equivalent, with suitable grades, are PHYS 1913 / 1918 and CHEM 1882 (except for Chemical Engineering which requires CHEM 1001 / 1012 / 1006 / 1017). Students with insufficient grades in Mathematics and Physics will be required to take PHYS 1940 / 1945 in place of PHYS 1913 / 1918 . Those with insufficient grades in Mathematics are encouraged to take MATH 0863 and achieve a grade of C or better before commencing MATH 1003 . (MATH 0863 is offered through the Department of Extension and Summer Session.) Those with insufficient Chemistry grades must take CHEM 1801 prior to CHEM 1882 .

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 a number of 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 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 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.

MATH 1003	MATH 1013
PHYS 1913 / 1918	CHEM 1882
CE 1013	ME 1113
CS 1003	EE 1713
GGE 1001	ME 1003 or ME 1013
Complementary Studies or	ECON 1073

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 after first year.

General Regulations

1. The minimum requirement for a Bachelor of Science in Engineering is the accumulation of 170 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 pre-requisite, all core and technical elective 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 trasnferring 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 Complimentary 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, English (Non-language), History, Philosophy, Political Science and Sociology

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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, periodic reports submitted by both the students and the company, and technical reports submitted by the students on their projects/experience upon completion of the work period.

Program Description:

I. 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.

II. 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 regular academic terms (one or two) encompassed by the work term.

III. Additional Details for Co-op and PEP

i. Participation in the cooperative education programs is contingent upon the approval of the students department/program and the Dean, and the availability of work term positions. Students must meet the academic requirements of the respective department.

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. The specific implementation of Co-op and PEP by each department/program will be subject to guidelines established by the Engineering Faculty Co-op Coordinating Committee.

v. 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.

vi. 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

General Information

A minimum of 173 credit hours (ch) is required to obtain a bachelors degree in Chemical Engineering. Seventeen of these are complementary studies, and 12 are technical electives where the Department exercises a considerable degree of control over the students choice. Economics 1073 or its equivalent and Law 5002 must be taken within the complementary studies package. The list of recommended courses below may be completed in an eight-term program. The student may arrange for a program which spans a longer period of time provided all required courses are taken. For example, the Department has prepared a ten-term program. Details can be obtained by writing to the Chair.

Students can choose one of five Option programs. These are: Nuclear and Power Plant Engineering; Environmental; Pulp and Paper; 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

The normal number of credit hours necessary for a bachelor's degree is 183. In Chemical Engineering, 18 of these are complementary studies, and 12 are technical electives where the Department exercises a considerable degree of control over the student's choice. Economics 1073 or its equivalent and Law 5002 must be taken within the complementary studies package. The list of recommended courses below may be completed in an eight-term program. The student may arrange for a program which spans a longer period of time provided all required courses are taken. For example, the Department has prepared a ten term program. Details can be obtained by writing to the Chair.

Complementary studies is generally defined as any course outside the Engineering and Science Faculties and the Department of Mathematics. All complementary studies must be approved by the department.

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.

Required Courses

MATH 1003	Intro Calculus I
MATH 1013	Intro Caluculus II
MATH 2503	Calculus for Eng I
MATH 2513	Calculus for Eng II
MATH 3503	Diff Equations for Eng
STAT 2593	Statistics for Eng
CS 1003	Computer Programming
CHEM 1001 / 1012 / 1006 / 1017	General Chemistry
CHEM 2622	Electrochem & Chemical Kinetics
CHEM 2886	Chemistry Laboratory for Chemical Eng. I
CHEM 3886	Chemistry Laboratory for Chemical Eng. III
CHEM 3897	Chemistry Laboratory for Chemical Eng. IV
PHYS 1913 / 1918	Fund. of Physics for Eng
EE 1713	Elect & Magnetism
EE 2683	Electric Circuits & Machines
or	
EE 2723	Elec Circuits & Electronics
CE 1013	Appl Mechanics I
ME 2121	Strength of Materials
or	
CE 2023	Mechanics of Materials
ME 1003	Eng Graphics
CHE 1004	Intro Chem Eng
CHE 1014	Comm & Info Sys
CHE 2004	Mass & Energy Bal
CHE 2012	Eng Thermodynamics
CHE 2401	Applied Organic Chemistry
CHE 2412	Chem Eng Lab I
CHE 2503	Materials Science
CHE 2703	Fluid Mechanics
or	
CE 2703	Fluid Mechanics
CHE 2123	Chem Eng Thermodynamics
CHE 3304	Heat Transfer
CHE 3314	Fluid-Particle Interactions
CHE 3324	Staged Processes
CHE 3418	Numerical Methods in Chem Eng
CHE 3505	Chemical Process Design
CHE 4221	Process Design, Econ. & Safety I
or	
CHE 4821	Nuclear & Power Plant Design I
CHE 4222	Process Design, Econ. & Safety II
or	
CHE 4822	Nuclear & Power Plant Design II
CHE 3424	Chem Eng Lab II
CHE 3434	Chem Eng Lab III
CHE 4101	Chem Reaction Engineering I
CHE 4341	Mass Transfer Operations
CHE 4404	Chem Eng Lab IV
CHE 4601	Process Dynamics & Control
CHE 4003	The Engineering Profession

Students who have successfully completed CHEM 1882 and CGE 1001 and who wish to transfer to Chemical Engineering will not be required to take CHEM 1001 / 1006 / 1012 / 1017 .

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 offered under the Nuclear and Power Plant Engineering Option may also be taken, subject to prerequisites and availability of resources.

Some of these electives may not be offered in the term indicated or may be withdrawn. Other electives may be provided. Students should consult with the Department at registration for up-to-date information on this matter.

CHE 3423	Chemical Engineering Practice School
CHE 4234	Process Design & Simulation
CHE 4314	Air Pollution Control
CHE 4724	Spec Topics in Chem Eng
CHE 4734	Spec Topics in Chem Eng
CHE 4744	Spec Topics in Chem Eng
CHE 4814	Chemical Engineering Report
CHE 4914	Thesis
CHE 5004	Thermodynamics of Waste Heat Recovery
CHE 5114	Chem Reaction Engineering II
CHE 5124	Adsorption & Adsorption Processes
CHE 5234	Oil & Gas Process Engineering
CHE 5254	Polymer Reaction Eng & Processing
CHE 5314	Chem Process Indistries
CHE 5334	Radiative Hear Transfer
CHE 5344	Combustion
CHE 5414	Adsorp & Membrane Based Pro in Pollut Ctrl
CHE 5524	Math Methods in Chem Eng
CHE 5534	Process Identification for Advanced Control
CHE 5614	Chemical Process Control
CHE 5714	Electrochemical Eng
CHE 5744	Steam Supply Systems
CHE 5754	Steam & Gas Turbines
CHE 5764	Special Topics in Power Plan Eng
CHE 5804	Nuclear Chem 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

Complementry Studies Program

The Chemical Engineering Complementary Studies Program consists of the two required courses below and 12 ch of electives. Breadth of knowledge and communication skills are essential for a professional chemical engineer. In view of this, at least one 3 credit hour course from the following disciplines is required: Anthropology, Classics, English (non-language), History, Philosophy, Political Science and Sociology.

Required Courses

- ECON 1073 Economics for Engineers
- LAW 5002 Commercial Law: Engineering

Nuclear and Power Plant Engineering Option

The Nuclear and Power Plant Option Program is available to all students from the Departments of Chemical Engineering or Mechanical 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 the required replacement courses and 15 credit hours of technical electives of which at least three courses must be from List A. Students will not be required to complete CHE 3434 Chemical Eng Lab (3 ch).

Required Courses:(Replacements for Standard Program Courses)

- CHE 3823 replaces CHE 3423 (Practice School)
- CHE 4821 replaces CHE 4221 (Process Design I)
- CHE 4822 replaces CHE 4222 (Process Design II)

In the event of suitable projects not being able to be procured in industry, students will be permitted to take the regular Chemical Engineering courses instead of the replacement courses.

List A: Technical Electives

CHE/ME 5744	Steam Supply Systems	(3/4 ch)
CHE/ME 5754	Steam and Gas Turbines	(3/4 ch)
CHE 5804	Nuclear Chemical Processes	(3ch)
CHE 5834	Nuclear Engineering	(3ch)
CHE 5854	Nuclear Heat Removal	(3ch)

List B: Technical Electives

CHE 4744*	Special Topics in Chem Eng (in Nuclear or Power Plant Eng)	(1ch)
CHE 4314	Air Pollution Control	(3ch)
CHE 5344	Combustion	(3ch)
CHE 5824	Corrosion Processes	(3ch)
ME 5223	Mechanical Behaviour of Materials	(4ch)
ME 5463	Heat Transfer II	(4ch)
ME 5713	Non-destructive Testing	(4ch)
ME 5833	Non-destructive Testing	(4ch)

In the event of a List A technical elective not being able to be 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)inconjunction 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.

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
or	
ME 4623	Automatic Controls I

Required Courses

ME 3703	Mechanical Engineering Measurements (4 ch)
EE 4343	Industrial Control Systems (4 ch)
CHE 5534	Process Identification for Advanced Control (4ch)
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 .

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 5314	Chemical Process Industries: Overview & Environmental Impact
CHE 5414	Adsorption & Membrane-Based Processes in Pollution Control
CHE 5344	Combustion
CE 5432	Water and Wastewater Treatment
CE 5473	Elements of Environment Eng for Chem Engineers

(Note: The above CE courses are offered yearly but the CHE courses are offered only every two years)

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 the following conditions apply to students in:

Chemical Engineering:	Successful completion of 80 ch of the program in Chemical Engineering.
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 5923	Papermaking
CHEM 4832	Pulp and Paper Testing
CHE 5913	Pulp Production

(Note: All above courses are offered every year)

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) 453-4510.

Research Option Program in Chemical Engineering

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 Challenge program (Province of New Brunswick), 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 Eng. Report (CHE 4814 , 3 ch) or a Chem. Eng. thesis (CHE 4914 , 6 ch). 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.

- Chemical Engineering Required Courses: 154 ch
- Humanities and Non-Technical Electives: 17 ch
- CHE 5000 level Technical Elective: 3 ch
- CHE 4814 Chem Eng Report: 3 ch
- CHE 4914 Chem Eng Thesis: 6 ch

CIVIL ENGINEERING

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 180 credit hours (ch) is required. 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, prerequisite and corequisite courses have been established by the Department. Students entering the program who do not have marks greater than 70 percent (or equivalent) in advanced high school level Mathematics and Physics, and/or in advanced high school level Chemistry will be required to take an additional introductory Physics course and/or an additional Chemistry course. These subjects will increase the total credit hours in their program.

All prerequisite, core and technical elective courses must be passed with a C or better. Complementary studies electives may be passed with a D or better.

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 two Non-Civil Engineering environmental technical electives 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 Electrical, 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 156 ch in the 180 ch program.

The core courses required of all Civil Engineering students are shown below. All of these core courses must be passed with a C or better.

Core Courses

CE 1003	Intro to Civil Eng
CE 1013	Applied Mech I
CE 2023	Mech of Materials
CE 2512	Materials for Civil Eng
CE 2603	Construction Eng I
CE 2703	Fluid Mechanics
CE 2953	Civil Eng Systems Analysis
CE 3033	Struct Analysis
CE 3053	Reinf Concrete Design I
CE 3063	Struct Steel Design I
CE 3113	Soil Mech I
CE 3123	Foundation Eng I
CE 3201	Transportation Eng
CE 3403	Intro Environmental Eng
CE 3713	Hydraulics & Hydrology
CE 3933	Numerical Methods for CE
CE 3963	Eng Economy
CE 3973	Technical Communications
CE 4003	The Engineering Profession
CE 4613	Construction Eng II
CE 4983	Senior Report I
CE 4993	Senior Report II
CHE 2503	Materials Science
CHEM 1882	General Chemistry
CS 1003	Intro to Computer Programming
ECON 1073	Economics for Eng
EE 1713	Electricity and Magnetism
GE 1026	Geology Lab for Engrs
GEOL 1001	The Earth:Its Origin, Evol'n & Age
GEOL 2022	Engineering Geology
HIST 2925	Techno and Western Soc
or	
SOCI 2534	Techno and Social Change
LAW 5002	Commercial Law
MATH 1003	Intro to Calc I
MATH 1013	Intro to Calc II
MATH 2503	Calc for Eng I
MATH 2513	Calc for Eng II
ME 1003	Engineering Graphics
ME 1113	Applied Mech II
PHYS 1913	Fund Physics for Eng
PHYS 1918	Physics for Eng Lab
GGE 1001	Intro to Geodesy & Geomatics

GGE 1803	Practicum for CE (2 weeks)
ENGL 1103	Fund of Clear Writing
STAT 2593	Prob and Statistics for Eng

Electives

The minimum number of credit hours of electives in the Civil Engineering program is 24. The ranges of credit hours of electives in each of the three categories of electives are given as follows:

Category of Electives	Credit Hours
Civil Engineering Technical Electives	14 - 18
Non-Civil Engineering technical Electives	0 - 4
Complementary Studies Electives	6

Technical Electives must be passed with a C or better, and Complementary Studies Electives must be passed with a D or better.

Technical Electives

The minimum number of credit hours of Civil Engineering Technical Electives is 14. The choice of Civil Engineering Technical Electives shall be subject to the approval of the Chair of the Department. All Civil Engineering Technical Electives may not be available in any academic year.

CE 5013	Earthquake Eng
CE 5033	Bridge Design
CE 5043	Struct Eng
CE 5053	Reinf Concrete Design II
CE 5063	Struct Steel Design II
CE 5073	Struct Masonry Design
CE 5083	Struct Wood Design
CE 5113	Soil Mech II
CE 5132	Foundation Eng II
CE 5141	Embankments I
CE 5153	Waste Geotechnics
CE 5201	Road Matls & Struct
CE 5212	Pavement Design I
CE 5222	Traffic Eng
CE 5232	Transport Facility Design
CE 5241	Pavement Mgt
CE 5313	Urban Planning
CE 5342	Site Planning
CE 5402	Environmental Planning
CE 5411	Water Supp & Waste Rem
CE 5421	Water and Waste Analysis
CE 5432	Water & Waste Treatment
CE 5473	Elem of Enviro Eng for Chem Eng
CE 5501	Eng Plastics
CE 5512	Construction Matls
CE 5603	Const Equip & Method
CE 5612	Const: Fin & Ind Issues
CE 5623	Project Mgt
CE 5702	Open Channel Hyd
CE 5712	Water Resources Eng
CE 5742	Eng Hydrology
CE 5753	Eng Hydrogeology
CE 5913	Special Studies in CE I
CE 5923	Special Studies in CE II
CE 5933	Special Studies in CE III

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 Transpo
FOR 4303	Rem Sensing of Nat Res
MATH 3503	Diff Equations for Eng
MATH 3513	Partial Diff Eqs & Complex Vars
ME 1013	Des Geom with Computer Appl
ME 4263	Mech & Elect Equip
ME 4453	Air Cond
GGE 4403	Geographic Info Systems
T ME 3213	Mgt and Tech in Modern Corp
T ME 3423	Emerging Technologies

Complementary Studies Electives

A complete Civil Engineering program requires 6 credit hours of complementary studies electives. Course selections are subject to departmental approval, and also must meet the Faculty of Engineering, General Regulations for Complementary Studies requirements.

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

General Information

The applications of Computer Engineering are highly diversified and there are many separate but related fields in which electrical and computer engineers may apply computer technology, both in hardware and software. The Computer Engineering program is one of three distinct programs offered by the Department of Electrical and Computer Engineering. (See the separate sections for details about the Electrical Engineering Program and the Software Engineering Program). The early part of the program is designed to develop orderly thinking and basic understanding in areas common to both Electrical and Computer Engineering and to provide a basic knowledge of relevant subjects. The latter part permits students to broaden their knowledge by allowing for a number of elective subjects in Electrical and Computer Engineering or in such related areas as Mathematics, Physics, Computer Science and in other Engineering disciplines. The program also makes available courses in cultural subjects which will enable the student to become more strongly aware of social and professional factors both as engineers and as individuals.

While not a requirement, practical work with an electrical manufacturing, operating or research organization during the summer months is strongly recommended.

The Department of Electrical and Computer Engineering believes strongly in the value of relevant industrial experience at the professional level for its students. To support this concept the Department participates in the Professional Experience Program (PEP) Internship and Co-op Program as described under that heading earlier in the Bachelor of Science in Engineering portion of Section E. In Computer Engineering, students must have completed between 110 and 165 or between 35 and 80 credit hours of their engineering degree requirement with appropriate standing before commencing PEP Internship or Co-op period, respectively.

In addition to its undergraduate curriculum, the Department offers a wide range of courses for graduate students and has an active research program in several fields.

Required Courses

A minimum grade of C is required for all prerequisite and all core and technical elective courses used for credit towards the B.Sc.E. degree.

In order to satisfy a prerequisite requirement, a minimum grade of C must be obtained.

CE 1013 *	Applied Mechanics I
CHEM 1882	General Chemistry
CMPE 2013	Sim and Eng Analysis
CMPE 3213	Advanced Software Eng
CMPE 3533	Signals and Systems
CMPE 4543	Communications Network Engineering
CS 1073 *	Intro Computer Prog
CS 1083	Computer Sci Concepts
CS 1303	Discrete Structures I
CS 2013	Software Engineering I
CS 3323	Intro to Data Structures
EE 1713 *	Electricity and Magnetism
EE 2213	Digital Systems I
EE 2773	Electric Circuits
EE 2703	Intro to Electrical Design
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 Eng Systems
EE 3323	Linear Control Systems
EE 3833	Electromagnetic Fields and Waves
EE 4243	Data Communications
EE 4543	Digital Signal Processing I
MATH 1003 *	Intro Calculus I
MATH 1013 *	Intro Calculus II
MATH 2503	Calc Linear Algebra for Eng
MATH 2513	Linear Algebra for Eng II
MATH 3503	Diff Eqn for Eng
ME 1003 *	Engineering Graphics
ME 1113 *	Applied Mechanics II
PHYS 1913 *	Fund Physics (for Engineers)
PHYS 1918	Physics Laboratory (for Engineers)
STAT 2593	Probablility & Stats for Eng
ME 3232	Engineering Economics
or	
CE 3963	Engineering Economics
EE 4003	The Engineering Profession
EE 4013	Thesis I
EE 4023	Thesis II
EE 4273	Real Time Op of Microcomputers
EE 4261	Microprocessor System Design
LAW 5002	Commercial Law: Engineering

Technical Elective Courses (12 ch)

Complementary Studies Electives (12 ch)

Note: * Standard first year course

Technical Elective Courses

Each student is required to take 3 technical elective courses (normally 12ch). At least two of the electives must be EE or CMPE courses from the following list.

CMPE 4223	Safety Critical System Design
CMPE 4233	Topics in Computer Engineering
CS 3913	Algorithms I
CS 4613	Programming Languages
CS 4725	Intro to Artificial Intelligence
CS 4735	Computer Graphics
EE 3611	Machinery I
EE 3622	Machinery II
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 4332	Feedback Control Systems
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 Fiber Comm
EE 4933	Intro to Bio-Med Eng

Note: Other senior level technical courses may be taken subject to department approval. Students are encouraged to take combinations of electives which will permit them some degree of concentration in one of the major areas of Computer Engineering.

Complementary Studies Electives

The complete CMPE program requires 12 credit hours of Complementary Studies elective courses. The choice of courses is subject to the Faculty of Engineering regulations for Complementary Studies Electives and the following restrictions:

1. Three credit hours must be in one of the Humanities and Social Science (HSS) courses from the short list: Anthroplogy, Classics, Literature, History, Philosophy, Political Science and Sociology.
2. Three credit hours must be in any of the Humanities and Social Sciences (HSS) courses including the above list.
3. Three credit hours must be in Economics, given by the Department of Economics (usually ECON1073 Economics for Engineers).
4. Three credit hours must be in any of the above areas, or Business Administration, or Technology Management and Entrepreneurship (TME).

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 a program in Computer Engineering, including EE3323 .
2. Approval by the student's department and the Instrumentation and Control Option coordinator.

In order to complete the option students must complete the following three required courses and one area elective chosen from the list below. In addition, the EE 4013 and EE 4023 Thesis project must be in the area of instrumentation and/or control (subject to approval by the Instrumentation and Control Option coordinator).

Required Courses

ME 3703	Mechanical Engineering Measurements	(4 ch)
EE 4343	Industrial Control Systems	(4 ch)
CHE 5534	Process Identification for Advanced Control	(4 ch)

Area Electives (Select one)

EE 4332	Feedback Control Systems	(4 ch)
ME 5653	Predictive Control and Intelligent Sensors	(4 ch)
EE 4353	Robotics	(4 ch)
EE 4163	Electronic Instrumentation	(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

General Information

The applications of electricity are highly diversified and there are many separate but related fields in which electrical engineers may specialize, including power, communications, electronics, systems and computer technology. The Electrical Engineering program is one of three dstinct programs offered by the Department of Electrical and Computer Engineering. (See the separate section for details about the Computer Engineering Program and the Sortware Engineering Program). The early part of the program is designed to develop orderly thinking and basic knowledge and understanding in the various fields of Electrical Engineering. The latter part permits students to broaden their knowledge by allowing for a number of elective subjects in Electrical Engineering or in such related areas as Mathematics, Physics, Computer Science and other Engineering disciplines. The program also makes available courses in cultural subjects which will enable the student to become more strongly aware of social and professional factors both as engineers and as individuals.

While not a requirement for the bachelor's degree in Electrical Engineering, practical work with an electrical manufacturing, operating or research organization during the summer months is strongly recommended.

The Department of Electrical and Computer Engineering believes strongly in the value of relevant industrial experience at the professional level for its students. To support this concept the Department participates in the Professional Experience Program (PEP) Internship and Co-op Program as described under that heading earlier in the Bachelor of Science in Engineering portion of Section E. In Electrical Engineering, students must have completed between 110 and 165 or between 35 and 80 credit hours of their engineering degree requirement with appropriate standing before commencing PEP Internship or Co-op period, respectively.

In addition to its undergraduate curriculum, the Department offers a wide range of courses for graduate students and has an active research program in several fields.

Required Courses

A C-grade minimum is required for all prerequisite and all core and technical elective courses used for credit towards the B.Sc.E. degree.

In order to satisfy a prerequisite requirement, a minimum grade of C must be obtained.

CE 1013 *	Applied Mechanics I
CE 3963	Engineering Economics
or	
ME 3232	Engineering Economics
CHE 2503	Materials Science
CHEM 1882 *	General Chemistry
CMPE 2013	Simulation & Engineering Analysis
CS 2013	Software Engineering I
CS 1073 *	Intro Computer Prog
CS 1083	Computer Sci Concepts
EE 1713 *	Electricity and Magnetism
EE 2213	Digital Systems I
EE 2703	Intro to Electrical Design
EE 2773	Electric Circuits
EE 3013	Technical Writing
EE 2783	Networks
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 3611	Machinery I
EE 3622	Machinery II
EE 3811	Electromagnetic Fields
EE 3822	Electromagnetic Waves
EE 4013	Thesis I
EE 4023	Thesis II
EE 4003	The Engineering Profession
EE 4543	Digital Signal Processing I
LAW 5002	Commercial Law:Engineering
MATH 1003 *	Intro Calculus I
MATH 1013 *	Intro Calculus II
MATH 2513	Linear Algebra for Eng II
MATH 2503	Calc Linear Algebra for Eng
MATH 3503	Diff Eqn For Eng
STAT 2593	Probability & Stats for Eng
ME 1003 *	Engineering Graphics
ME 1113 *	Applied Mechanics II
PHYS 1913 /18*	Fund Phys for Eng/Lab
PHYS 2872	Light & Sound and PHYS 2877 Lab
or	
PHYS 2972	Light & Sound and PHYS 2977 Lab
or	
PHYS 2962	Atomic and Nuclear Physics and PHYS 2967 Modern Physics Lab
Technical Elective Courses	(20 ch)
Complementary Studies Electives	(12 ch)

Note: * Standard first year course

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 4543	Communications Network Engineering
EE 3253	CAE Systems
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	Microproc Sys Design
EE 4273	Real Time Op of Microcomp
EE 4283	VLSI System Design
EE 4332	Feedback Control Systems
EE 4343	Industrial Control Sys
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 4841	Antennas & Propagation
EE 4853	Microwave Engineering
EE 4863	Optical Fiber Comm
EE 4933	Intro to Bio-Med Eng

Students are encouraged to take combinations of electives which will permit them some degree of concentration in one of the major areas of Electrical Engineering. Suggested combinations are available from the Department in the areas of electronics, computer engineering, communications and fields, power apparatus, power systems, and control.

Students wishing to take combinations of electives other than those suggested may do so provided Department approval is obtained and the timetable permits. It is permissible to take two non-Electrical Engineering technical electives and hence gain an introduction to other areas. If a three ch course is chosen as a technical elective (e.g. mathematics) a minimum of 180 ch is still required for graduation.

In general, any approved course offered by

1. Departments in the Faculty of Engineering other than Electrical Engineering
2. The Faculty of Science
3. The Faculty of Computer Science
4. The Department of Mathematics

may be taken for Technical Elective credit. A list of available courses which currently have the approval of the Department may be obtained from the Department Office.

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 restrictions:

1. Three credit hours must be in one of the Humanities and Social Science (HSS) courses from the short list: Anthroplogy, Classics, Literature, History, Philosophy, Political Science and Sociology.
2. Three credit hours must be in any of the Humanities and Social Sciences (HSS) courses including the above list.
3. Three credit hours must be in Economics, given by the Department of Economics (usually ECON1073 Economics for Engineers).
4. Three credit hours must be in any of the above areas, or Business Administration, or Technology Management and Entrepreneurship (TME).

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 Electrical Engineering, including EE3323 .
2. Approval by the student's department and Instrumentation and Control Option coordinator.

In order to complete the option students must complete the following three required courses and one area elective chosen from the list below. In addition, the EE 4013 and EE 4023 Thesis project must be in the area of instrumentation and/or control (subject to approval by the Instrumentation and Control Option coordinator).

Required Courses

ME 3703	Mechanical Engineering Measurements	(4 ch)
EE 4343	Industrial Control Systems	(4 ch)
CHE 5534	Process Identification for Advanced Control	(4 ch)

Area Electives (select one)

EE 4332	Feedback Control Systems	(4 ch)
ME 5653	Predictive Control and Intelligent Sensors	(4 ch)
EE 4353	Robotics	(4 ch)
EE 4163	Electronic Instrumentation	(4 ch)

In the event that a required course is not offered as scheduled, an area elective will be designated as a required course.

GEOMATICS ENGINEERING (Geodesy & Geomatics Engineering)

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 for suitable placement.

Curriculum

In the 180 ch 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 approved relevant practical experience under the Co-Operative Education Programme administered by the Department.

Students who have other post-secondary educational credits are advised to write to the Chair of the Department for information on credits that may be allowed.

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:

MATH 1003	Introduction to Calculus I
MATH 1013	Introduction to Calculus II
MATH 2503	Calculus and Linear Algebra for Engineers I
MATH 2513	Calculus and Linear Algebra for Engineers II
MATH 3543	Differential Geometry for GGE
PHYS 1913	Fundamentals of Physics for Engrs
PHYS 1918	Physics Laboratory for Engrs
CHEM 1882	General Chemistry - Physical and Inorganic
GEOL 1001	The Earth: Its Origin, Evolution and Age
GEOL 1026	Geology Laboratory for Geological Engineers
CS 1003	Introduction to Computer Programming
CS 1013	Computer Science Concepts
CS 3113	Introduction to Numberical Methods
CE 1013	Applied Mechanics I
ME 1003	Engineering Graphics
ME 1013	Descriptive Geometry with Computer Graphics
ME 1113	Applied Mechanics II
EE 1713	Electricity and Magnetism
EE 3181	Electronic Surveying for (for GGE students)
ECON 1073	Economics for Engrs
LAW 4071	Real Property Law: Geomatics Eng
LAW 5002	Commercial Law: Engrs
GGE 1001	Intro 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 2701	Technical Communication
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 4003	The Engineering Profession
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	Practium IV
GGE 4711	Technical Report
STAT 2593	Probability and Statistics for Engineers

Technical Electives:

GGE 5013	Water Levels and Tides
GGE 5041	Engineering Surveying
GGE 5061	Mining Surveying
GGE 5072	Hydrographic Data Management
GGE 5093	Industrial Metrology
GGE 5131	Special Studies in Adjustments
GGE 5242	Special Studies in Geodesy
GGE 5332	Special Studies in Photogrammetry
GGE 5342	Remote Sensing
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
GGE 4723	Thesis

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(GGE) 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 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 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 18 specified courses, totalling 67 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. This Certificate has been recognized by the International Hydrographic Organization (IHO) and the International Federation of Surveyors (FIG) as meeting their Academic Category A standards for the training of hydrographic surveyors. Detailed Certificate information is available from the Department.

Courses required to complete the Certificate:

CS 3113	Introduction to Numerical Methods
EE 3181	Electronic Surveying for GGE
GEOL 4501	Exploration Geophysics I
GEOL 4512	Exploration Geophysics II
LAW 5002	Commericial Law: Engr
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	Water Levels and Tides
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. This Certificate is designed to meet the International Hydrographic Organization and the International Federation of Surveyors "Full Category A" standards for training of hydrographic surveyors. 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
LAW 4071	Real Property Law
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 2 credit hours

Engineering and Exploration Surveying

GEOL 4501	Exploration Geophysics I
GEOL 4512	Exploration Geophysics II
MATH 2503	Calculus and Linear Algebra I
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

Geodetic Surveying

MATH 2503	Calculus and Linear Algebra I
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

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:	15 credit hours

Mapping and Geographic Information Systems

GGE 2413	Mapping Concepts & Technology
GGE 3111	Introduction to Adjustment Calculus
GGE 4403	Geographic Information Systems
GGE 4313	Imaging and Mapping III
Electives:	at least 11 credit hours

GEOLOGICAL ENGINEERING

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.

The geological engineer may 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 methods of utilizing the dwindling reserves of natural resources and of managing the wastes which are 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 206. 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 terms. Students may elect, or be required, to extend the time beyond 9 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

CHEM 1882	Gen Chemistry
CE 1013	Applied Mech I
CE 2023	Mech of Mats
CE 2703	Intro Fluid Mech
CE 3113	Soil Mech I
CE 3713	Hydraulics & Hydrology
CE 3933	Numerical Methods for Civil Engineering
CE 3963	Eng Economy
CE 3973	Technical Communications
CE 4003	The Engineering Profession (or equivalent)
CE 4613	Construction Engineering
CS 1003	Intro to Computer Prog in Fortran
ECON 1073	Econ for Eng
EE 1713	Elect & Mag
ENGL 1103	Fundamentals of Clear Writing

GGE 3342	Imaging and Mapping II
GGE 4403	Geographic Information Systems
GE 1026	Geology Lab for Geological Engineers
GE 2022	Engineering Geology
GEOL 1001	The Earth: Its Origin, Evolution and Age
GEOL 2131	Crystallography & Mineralogy
GEOL 2142	Optical Mineralogy & Petro.
GEOL 2212	Sedimentology I
GEOL 2321	Structural Geology I
GEOL 2602	Principles of Geochemistry
GEOL 2703	Field School
GEOL 3131	Ig & Met Petrology
GEOL 3411	Rock Mechanics
GEOL 4512	Expl Geophysics II
GE 4983	Senior Report I
GE 4993	Senior Report II
LAW 5002	Com Law for Eng
MATH 1003	Intro Calculus
MATH 1013	Intro Calculus II
MATH 2503	Calculus for Eng I
MATH 2513	Calculus for Eng II
ME 1003	(or ME 1013) Eng Graphics
PHYS 1913	Fund of Physics (for Eng)
PHYS 1918	Phys Lab (for Eng)
STAT 2953	Probability and Statistics for Engineers
GGE 1001	Intro to Geodesy & Geomatics
GGE 1803	Practicum for CE

Geoenvironmental Option

1. Compulsory Courses

BIOL 2113	Ecology
CE 3403	Intro to Env Eng
GE 5753	Eng Hydrogeology
GEOL 3442	Environmental Geology
GEOL 3631	Geochem of Nat Waters
GEOL 3713	Field School

2. Complementary Studies Electives (6 ch)

3. Minimum of 11 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	Water and Wastewater Treatment
GE 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	Found Eng I
GE 4412	Applied Rock Mech
GE 5753	Eng Hydrogeology
GEOL 3322	Structural Geology II
GEOL 3703	Field School

2. Complementary Studies Electives (6 ch)

3. Minimum of 11 Credit Hours of Technical Electives must be selected from:

*CE 5113	Soil Mechanics II
*CE 5132	Found. Eng. 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
GE 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	Min Resources Utilization
GEOL 3322	Structural Geology II
GEOL 3703	Field School
GEOL 4461	Economic Geology
GEOL 4472	Economic Geology II
GEOL 4501	Expl. Geophysics I

2. Complementary Studies Elective (6 ch)

3. Minimum of 4 Credit Hours of Technical Electives must be selected from:

*CE 5132	Found. Eng. 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

* One of these four courses must be taken to meet the degree requirements if a single course is taken; however an additional course (and additional credit hours) beyond the minimum may be required to meet the four credit hour requirement.

Complementary Studies

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.

MECHANICAL ENGINEERING

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.

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 mechanics, materials, design, thermodynamics, fluid mechanics, manufacturing engineering and system dynamics. 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.

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 core, prerequisite, and technical elective courses must be passed with a grade of C or better.

CE 1013 *	Applied Mechanics I: Statistics
CHEM 1882 *	General Chemistry
CS 1003 *	Intro to Computer Programming
CS 3113	Intro to Numerical Methods (or CE 3933)
One of:	
ECON 1073 *	Economics for Engineers
or	
ECON 1013	Introduction to Economics: Micro
EE 1713 *	Electriciy and Magnetism
EE 2683	Electric Circuits and Machines
EE 2723	Electric Circuits and Electronics (or EE 2773)
LAW 5002	Commercial Law: Engineering
MATH 1003 *	Introduction to Calculus I
MATH 1013 *	Introduction to Calculus II
MATH 2503	Calculus and Linear Algebra for Engineers I
MATH 2513	Calculus and Linear Algebra for Engineers II
MATH 3503	Differential Equations for Engineers
ME 1003 *	Engineering Graphics
ME 1013 *	Descriptive Geometry with Comp Graphics
ME 1113 *	Applied Mechanics II: Dynamics
ME 2121	Strength of Materials(or CE 2023)
ME 2143	Kinematics and Dynamics of Machines
ME 2222	Manufacturing Engineering I
ME 2321	Communications and Intro to Design
ME 2332	Design of Machine Elements
ME 2503	Material Science (or CHE 2503)
ME 2613	System Dynamics
ME 3232	Engineering Ecomomics (or CE 3963)
ME 3341	Design of Machine Systems
ME 3352	Optimization and Computer Aided Design
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 4003	The Engineering Profession
ME 4283	Manufacturing Engineering II
ME 4343	Solid Mechanics
ME 4623	Automatic Controls I
ME 4843	Senior Project Proposal
ME 4853	Senior Project Report
PHYS 1913 *	Fundamentals of Physics (for Engineers)
PHYS 1918 *	Physics Laboratory (for Engineers)
PHYS 2972	Light and Sound (for Engineers)
PHYS 2977	Light and Sound Laboratory (for Engineers)
STAT 2593	Probability and Statistics for Engineers

Total credit hours of core courses:	156 ch
Complementary Studies Electives:	12 ch
Technical Electives (see section below):	16 ch
TOTAL CREDIT HOURS FOR DEGREE:	184 ch

* These courses are accepted by other engineering departments as first year courses.

Normally 184 ch are required for the BScE degree in Mechanical Engineering. Students are permitted to take approved courses with less than the normal credit hour weighting provided they complete a total of at least 180 ch which includes at least 15 ch of technical electives and at least 11 ch of Complementary Studies electives.

Technical Elective Courses (16 ch total)

In addition to core courses, the students select a program of technical courses appropriate to their interests. Courses may be selected from the following list, as available, or from any other technical course approved from courses offered outside the Department. At least 7 ch must be Mechanical Engineering electives. Courses below the 3000 level are not normally considered as suitable technical electives.

ME 4153	Kinematic Synthesis
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 5183	Random Vibration
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 5463	Heat Transfer II
ME 5473	Energy Management
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 5888	Composite Materials
ME 5913	Biomechanics I
ME 5923	Industrial Ecology

Complementary Studies Electives (normally 12 ch total)

In addition to the core courses and technical electives, students select 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.

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 15 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)
ME 5888	Composite Materials	(4 ch)

Automation and Contols

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:

BA3642	The Management of Quality Assurance
BA3643 / ADM 3685	Total Quality Management
BA4624 / ADM 4615	Production and Operations Management / Operations Management I
BA4636 / ADM 1616	Operations Management II
BA4638 / ADM 4686	Project Management
BA4646	Management Systems Analysis
BA4647 / ADM 4677	Inventory Management (subject to availability)
BA4648 / ADM 4655	Global Manufacturing Systems (subject to availability)

Other courses many 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 5744 / ME 5744	Steam Supply Systems	(3/4ch)
CHE 5754 / ME 5754	Steam and Gas Turbines	(3/4ch)
ME 5373	Nuclear Reactor Engineering	(3ch)

B. **Any two of:**

CHE 5344	Combustion	(3ch)
CHE 5804	Nuclear Chemical Processes	(3ch)
CHE 5824	Corrosion Processes	(3ch)
CHE 5854	Nuclear Heat Removal	(3ch)
ME 5163	Machinery Vibration and Noise	(4ch)
ME 5463	Heat Transfer II	(4ch)
ME 5473	Energy Management	(3ch)
ME 5713	Nondestructive Testing	(4ch)

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 15 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 in the mechanical engineering program, and 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
EE 4343	Industrial Control Systems
CHE 5534	Process Identification for Advanced Control

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
ME 5653	Predictive Control and Intelligent Sensors
ME 5663	Hydraulic Power Systems
EE 4353	Robotics
EE 4543	Digital Signal Processing I

Other courses may be selected with the permission of the mechanical engineering associate chair in instrumentation and control 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

TME3013	Entrepreneurial Finance
TME3113	Business Planning and Strategy in an Entrepreneurial Environment
TME3213	Quality Management
TME3313	Managing Engineering and Information Technology Projects
TME3413	Technological Creativity and Innovation
TME3423	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:

TME3346	Marketing of Technological Goods and Services
TME3913	Experiential Learning - Technology Management and Entrepreneurship

Students must complete two approved electives.

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.

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 154 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 B.Sc.F. 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 not shown, but 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 B.Sc.F. Degree:

Work experience is an important part of professional development for B.Sc.F. 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	Biological Principles-Laboratory, 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

Term 2

BIOL 1012	Biological Principles, Part II
BIOL 1017	Biological Principles-Laboratory, 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 2425	Autecology of Forest Vegetation
FOR 2505	Soils for Plant Growth
FOR 2973	Structured Problem Solving Camp
FOR 2435	Physiological Processes in the Forest
STAT 2253	Intro Statistics for Forestry Students

Term 2

FOR 2006	Forest Dynamics and Management
FOR 2416	Development and Structure of Woody Plants
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
FOR 3455	Forest Ecology: Communities & Ecosystems

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	Lanscape Pattern, Dynamics and Interpretation
FOR 4625	Integrated Management of Insects and Fungi
FOR 4973	Forestry Field Camp II

Term 2

FOR 4005	Social Values in Forest Management
FOR 4956	Forest Ecology: Practicum

YEAR 5

Term 1

FOR 5020	Management Practicum
FOR 5990	Individual Project for BScF Degree

Term 2

FOR 5020	Management Practicum
FOR 5990	Individual Project for BScF Degree

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 1073	Programming in Java
CS 3503	Systems Analysis and Design
FOR 2265	Using Computers to Communicate
FOR 4285	GIS in Forestry II
FOR 4313	Digital Image Processing
GGE 2413 .	Mapping Concepts and Techniques

   In addition, students must choose 3 credit hours from among -

FOR 4205	Quantitative Forest Characterization
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 4515	Systems Analysis and Design II, or
CS 5735	Geographical Application Design & Development

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
RLS 2052	Foundation of Tourism
RLS 3042	History of Parks & Recreation
RLS 3303	Parks & Protected Spaces
RLS 4311	Facility Planning & Design
RLS 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
RLS 2062	Psyco-Socio Aspects of Lesiure
RLS 2302	Outdoor Recreation
RLS 3021	Sociology of Lesiure
RLS 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 students 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	Hist Community & Environmental Change
d.	BIOL 2053	Genetics*
	BIOL 2033	Biochemistry
	BIOL 2093	Zoology*
	BIOL 4741	Fish Biology
	BIOL 4861	Environmental Biology
	BIOL 3702	Vertebrate Zoology
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 4232	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.

Required Courses (15 ch)

CHEM 2401	Organic Chemistry
FE 3803	Wood Technology
FE 3873	Physical and Mechanical Properties of Wood
ADM 3346	Marketing of Technological Services and Products
FE 4853	Processing of Wood Products

Electives(9 ch)

FOR 5881	Kiln Drying and Preserving Wood
FE 5873	Performance of Structual Wood Systems
CHE 5903	Engineering Principles in Pulp and Paper Processes
FE 4863	Wood Engineering

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 bio-physical 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 16 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 Studes 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 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.

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 183 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 (a.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 prerequisite and core courses used for credit towards the BScFE degree.

Curriculum

In order to obtain a BScFE degree, a minimum of 183 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 153 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.

FOR 1000	Intro to Forestry
FOR 1901	Oral & Written Communications I
FOR 1902	Oral & Written Communications II
BIOL 1923	Botany for Non-Majors
PHYS 1913/1918	Physics for Engineers
CE 1013	App. Mech I
MATH 1003	Calculus I
MATH 1013	Calculus II
MATH 2503	Engg. Math I
MATH 2513	Engg. Math II
CS 1003	Intro. Comp.
GGE 1001	Intro to Geodesy & Geomatics
CHEM 1882	Gen. Chem.
ME 1003	Engineering Graphics
ME 1113	App. Mech II
GEOL 1001	The Earth: Its Origin, Evolution and Age
GEOL 1026	Geology Lab for Engineers
EE 1713	Elec./Mag.
FE 3601	Engineering Economics
FOR 2505	Soils for Plant Growth
CE 2023	Mech. of Mat.
FOR 4576	For. Hydrology & Aquatic Habitat
FE 3703	For. Op. Concepts
FOR 2006	For. Dynamics and Management
STAT 2593	Prob. and Stats. for Engineers
FOR 3005	Silviculture and Stand Intervention Design
CE 3933	Num. Methods
FE 3303	Thermal Eng
CHE 2503	Mat. Sci.
FE 3773	For. Eng. Operations
CE 2703	Fluid Mech.
FE 3233	Forest Operations Research I
FE 3363	Machine Design I
FE 3803	Wood Tech.
FE 3033	Struct. Anal.
FE 3143	Nat. Res. Geotechnique
FOR 4005	Social Values in Forest Management
FE 5780	Forest Operations Planning Project
FE 5990	Project Report
FE 5933	Prof. Workshop
LAW 5002	Commercial Law

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):

BA3642	The Management of Quality Assurance
CHEM2401	Organic Chemistry I
FE3873	Physical and Mechanical Properties of Wood
FE4853	Processing of Wood Products
FE4863	Wood Engineering
FE5873	Performance of Structural Wood Systems
FOR5881	Drying and Preserving Wood
TME 3346	(BA3346) Marketing of Technological Services and Products

BACHELOR OF SCIENCE IN KINESIOLOGY

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 should select the Bachelor of Science in Kinesiology degree program and should apply to the Faculty of Education for the BScKin/BEd concurrent program. The application deadline for the concurrent BScKin/BEd program is January 31 of each year. Students who, after completing the BScKin degree program, decide they wish to teach, may apply to the consecutive BEd degree program. The BEd degree program taken after the BScKin 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. This figure provides for the accommodation of up to 20 students at the Saint John campus.

Transfer Students

1. A minimum session grade point average of 2.0 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 134 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 RLS courses. Students receiving a final grade of "D" in KIN1001 may repeat KIN1001 as a co-requisite to other second year KIN and RLS courses.

Repeating Courses

1. Regulations pertaining to repeating courses can be found in Section B of this Calendar.
2. The removal of deficiencies or conditions acquired in whatever manner, 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., KIN 3900 (12), KIN 3913 (3), KIN 3914 (3), KIN 3923 (3), KIN 3953 (3), KIN 3954 (3), KIN 4900 (12), KIN 4910 (6), KIN 4950 (6), and RLS 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. In the BScKin degree program activity lab courses are not required but may be taken as General KIN/RLS Electives up to a maximum of 6 credit hours.
2. The minimum credit hour total to graduate with a BScKin would be 134.
3. 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: (39 ch)
Required Core

KIN 1001	Introduction to Kinesiology	3ch
One of the following three courses:		3ch
	KIN 2002 : History of Sport and Recreation	
	KIN 2081 : Introduction to Wellness and Active Living	
	KIN 2093 : Introduction to Philosophy of Sport & Recreation	
BIOL 1711	Human Anatomy I	5ch
BIOL 1752	Human Anatomy II	5ch
BIOL 1001	Biological Principles, Part I	3ch
BIOL 1006	Application in Biology, Part I	2ch
BIOL 1012	Biological Principles Part II	3ch
BIOL 1017	Application in Biology, Part I	2ch
MATH 1003	Introduction to Calculus I	3ch
Choose 1 of the following:		
	CHEM 1001 / 1006 and CHEM 1012 / 1017	10ch
or	PHYS 1940 / 1945	10ch

YEAR 2 (38 ch)
Required Core

KIN 2051	Prevention and Care of Athletic Injuries	4ch
KIN 2062	Introductory Biomechanics	3ch
BIOL 2721	Human Physiology I	5ch
BIOL 2782	Human Physiology II	5ch
ENGL	1103 or 1144 or 1145	3ch
KIN 2072	Introduction to Motor Control and Learning	3ch
KIN 2023	Introduction to Sociology of Sport	3ch
KIN 2032	Introduction to Sport Psychology	3ch
KIN 2160	Laboratory Methods in Kinesiology	3ch
Choose 1 of the following:		
	PSYC 1013 / 1023	6ch
or	ANTH 1001 / 1002	6ch
or	1st Year Sociology	6ch

YEAR 3 and 4 (57 ch)
Required Core to be completed in 3rd year

STATS 2263	Statistics for Students of Biological Sciences	3ch
KIN 3001	Introduction to Research Methods in Kinesiology	3ch
KIN 3081	Introductory Exercise Physiology	3ch
KIN 3282	Physical Activity, Health and Wellness	3ch
KIN 3482	Bioenergetics of Exercise	3ch
KIN Electives	Choose 27 ch (see Note 1 & 2 below)	27ch
Non-Kin Electives	Choose 15 ch (see Note 1 & 2 below)	15ch
	TOTAL	**134CH**

NOTES:
Note 1: of the 42 ch of KIN and NON-KIN electives in 3rd and 4th year at least 27 must be at the 3000/4000 level)
Note 2: see advisor for suggested KIN and NON-KIN electives.

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 /RLS and/or non-KIN/RLS courses).
5. Complete KIN 3001 as a prerequisite, or as a co-requisite to KIN 4900.

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 BKin/BEd concurrent program will follow the BKin (General)curriculum outlined above, and in addition will compete 45 ch of Education courses. Twelve(12) ch of the 21 ch of Non-KIN/RLS Academic Electives may be Education courses. BKin/BEd students will only be required to complete 12 ch of the "Either KIN/RLS or Non-KIN/RLS Academic Electives", three (3) ch of which may be Education 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 (39 ch)

Required Core

KIN 1001	Introduction to Kinesiology	3ch
One of the following three:		
	KIN 2002 : History of Sport and Recreation	3ch
	KIN 2081 : Introduction to Wellness and Active Living	3ch
	KIN 2093 : Introduction to Philosophy of Sport & Recreation	3ch
BIOL 1711	Human Anatomy I	5ch
BIOL 1752	Human Anatomy II	5ch
BIOL 1001	Biological Principles, Part I	3ch
BIOL 1006	Application in Biology, Part I	2ch
BIOL 1012	Biological Principles Part II	3ch
BIOL 1017	Application in Biology, Part I	2ch
MATH 1003	Introduction to Calculus I	3ch
Choose 1 of the following:		
	CHEM 1001 / 1006 and CHEM 1012 / 1017	10ch
or	PHYS 1940 / 1945	10ch

YEAR 2 (33 ch)

Required Core

ENGL	1103 / 1144/ 1145	3ch
KIN 2062	Introductory Biomechanics	3ch
BIOL 2721	Human Physiology I	5ch
BIOL 2782	Human Physiology II	5ch
KIN 2072	Introduction to Motor Control and Learning	3ch
KIN 2023	Introduction to Sociology of Sport	3ch
KIN 2032	Introduction to Sport Psychology	3ch
KIN 2160	Laboratory Methods in Kinesiology	3ch
	KIN Activity Labs: (2x1ch)	2ch
	Non-Kin Electives	3ch

YEAR 3, 4 AND 5 (121 ch)

Required Core to be completed in 3rd year

STATS 2263	Statistics for Students of Biological Sciences	3ch
KIN 3001	Introduction to Research Methods in Kinesiology	3ch
KIN 3081	Introductory Exercise Physiology	3ch
	KIN Activity Labs	7ch
	KIN Electives	18ch
	Non-Kin Electives	27ch
	Education Courses	60ch

BACHELOR OF SCIENCE IN SOFTWARE ENGINEERING

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 B.Sc.SwE 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 B.Sc.SwE degree, a minimum of 180 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

MATH 1003	Introduction to Calculus I
MATH 1013	Introduction to Calculus II
MATH 2503	Calculus and Linear Algebra for Engineers I
STAT 2593	Probability and Statistics for Engineers
CE 1013	Applied Mechanics I
CHEM 1882	General Chemistry
LAW 5002	Engineering Law
ME 1113	Applied Mechanics II
ME 2613	System Dynamics
ME 3232	Engineering Economics
PHYS 1913	Introduction to Physics
PHYS 1918	Physics Laboratory
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 2023	Procedural Program Development
CS 2303	Discrete Structures II
CS 3413	Operating Systems I
CS 2513	Introduction to Information Systems
CS 3013	Software Engineering II

CS 3323	Introduction to Data Structures
CS 3503	Systems Analysis and Design
CS 3513	Database Management Systems I
CS 3913	Algorithms I
CS 4613	Programming Languages
EE 1713	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 4003	Engineering Profession
EE 4243	Data Communications
or	
CS 4865*	Data Communications and Distributed Computing
EE 4273	Real-time Operation of Microcomputers
CMPE 2013	Simulation and Engineering Analysis
or	
CS 3113**	Introduction to Numerical Methods>
SWE 4013	Software Project Design
SWE 4023	Software Project Implementation
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.

Basic Science Electives

Core courses in Basic Science include Physics 1913 / 1918 and 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 4925	Theory of Computing
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

The 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:

1. At least three credit hours must be in Economics and be given by the department of Economics. This usually takes the form of ECON1073 Engineering Economics.

2. 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.

3. 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.

4. At least three additional credit hours must be in the Humanities and Social Sciences (HSS).

SECTION H
DESCRIPTION OF COURSES
FREDERICTON CAMPUS

Standard Course Abbreviations

Aboriginal Education	ABRG
Anthropology	ANTH
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
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	RLS
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 pre-sented 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.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 -	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 indicated by a slash line, e.g., 5C/L/S.

Before registration, check all course offerings in the official Timetable. Not all courses listed are given every year

ABORIGINAL STUDIES

Includes courses reserved for students in the Mi'kmaq-Maliseet Institute Programs for Aboriginal Students.

ABRG 1411 Finite Mathematics 3ch

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

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 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 nutokehkikem it.

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 3011 Classical Debates in Anthropology (O) 3 ch (3S) [W]

Examines the most influential theorists in the discipline from 1850 to 1950, emphasizing the fields of social and cultural anthropology and archaeology. Prerequisite: ANTH 1001 and ANTH 1002 or permission of the instructor.

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 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 3124 Nomads 3 ch (3C)[W]

Examines the structure of nomadic societies. The technological and ecological parameters of social organization are emphasized as well as the political and economic factors affecting continuity and change in social organization.

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 2144.

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 neo-colonial 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, bio-archaeological 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 3412 Language and Culture 3 ch (3C)[W]

Application of Linguistics to Anthropology: the new ethnology, primate communication, Whorfian hypothesis, and the ethnography of speaking.

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 3 ch (3L) [W]

An examination of how and why people are different in their adaptability to varying environments. The emphasis is biocultural and the course includes such topics as disease, diet, environmental stress, growth and development, and demography. 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 3624 Eastern Algonquian (Micmac, Maliseet) 3 ch (3C)[W]

Prehistory and ethnohistory of the native peoples of the Atlantic region. Religion, folklore, social organization and linguistics are emphasized. Students who have previously received credit for AB 2684 or AB 4685 cannot take ANTH 3624 for credit.

ANTH 3644 Melanesia (A) 3 ch (3C)[W]

Continuity and change in contemporary cultures of Melanesia, especially New Guinea; the importance of Melanesian data for issues in anthropology.

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 3674 Aboriginal Northwest Coast (O) 3 ch (3C)[W]

Examines social and cultural research on the aboriginal cultures of the north Pacific coast of North America. Models of pre-contact and contemporary social and political organization, art and culture, potlatch and feasting, economics and land issues are discussed. Prerequisite: ANTH 2174 or permission of the instructor.

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 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 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]

Evaluates the application of medical anthropology for 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 selected case studies will deal with explanatory models; ethnicity, gender, stigma and disease; and international health issues and intervention programs. Prerequisite(s): ANTH 3502.

ANTH 4522 Human Evolution (O) 3 ch (3L) [W]

Examines the genetic basis of human evolution. With the advent of modern genetics technologies, it has been possible to compare and contrast evolutionary relationships at the genetic level. Recent information from molecular genetics and DNA studies indicate that humans and chimpanzees are closer genetically to each other than either is to the gorilla. The current debate in biological anthropology surrounds the origin of anatomically modern Homo sapiens, based on DNA evidence. An in-depth examination of the fossil evidence along with the genetic picture will be considered. Prerequisite(s): ANTH 3522.

ANTH 4602 Anthropology and Genetics (A) 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 but emphasizes the practical usage of human genetics to the field of anthropology. The Human Genome Project and its application holds promise for the cure of many genetic diseases in the future. However, the project has its critics who point to the numerous ways that the information obtained could be used in unethical and elitist ways. A basic knowledge of human genetics, its application in anthropological research as well as the ethical dilemmas will be examined. Prerequisite(s): ANTH 2502.

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 (O) 3 ch (3S) [W]

Examines the gender dimension of health and addresses the articulation of gender roles and ideology with health status, the organization of health care, and health policy from a cross-cultural perspective. Gender is a cultural construct, and cultural ideas about women's health and women's bodies differ between social groups and historic periods. However, 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. Gender ideology influences an individual's experience of sickness, sense of empowerment, and relationship to the family and to other health care providers. The course will also examine how expressions of gender and power can play a role in prevention and treatment strategies. Prerequisite(s): ANTH 3502.

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 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 with 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. Cross Listed as ED 5684.

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.

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: urses 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 (3)

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 (3)

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 , 1006 , 1012 , 1017 or equivalent 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, procaryotic and eucaryotic cell structures and functions, heredity and evolution. Prerequisite: CHEM 122 is highly recommended. Corequisite: BIOL 1006. 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 1551.

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. Prerequisite: BIOL 1001 or equivalent. Corequisite: BIOL 1017. Note: Students intending to major in Biology must take BIOL 1017 as a corequisite. Credit can be obtained for only one of BIOL 1012, BIOL 1552 or BIOL 1923.

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. Corequisite: 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 5 ch (3C/3L)

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 have first priority. Others may apply to the Chair of the Department of Biology. Corequisite: BIOL 1001 or permission of the instructor

BIOL 1752 Human Anatomy II 5 ch (3C/3L)

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 have first priority. Others may apply to the Chair of the Department of Biology. 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 2065 Research Foundations in Organismal Biology 4 ch (1C/3L) (W)

Techniques and approaches to the study of life at the organismal level. Includes topics in Bacteriology, Botany and Zoology.

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 Ecology 3 ch (3C)

Introduces concepts of ecology common to terrestrial, fresh water and marine ecosystems. Provides a basis for further ecological or environmental studies.

BIOL 2133 Population Biology 3 ch (3C)

An introduction to the analysis of plant and animal populations, including the regulation of populations.

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 2216 Microbiology Techniques Laboratory 2 ch (3L)

Introduces students to techniques involved in the culture of living cells. Sterile technique and microscope use are emphasized in studies of the growth of bacteria, their viruses and plant cell culture. Open only to Biology-Chemistry Majors and Honours. Co-requisite: BIOL 2073.

BIOL 2422 Plant Propagation 3 ch (3C/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 3ch (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 3ch (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 2721 Human Physiology I 5ch (3C/3L)

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. Prerequisitie: 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 5 ch (3C/3L)

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 3ch (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 2850 AL Pathophysiology 6 ch

A Department of Extension open access course designed for Registered Nurses, and assuming a first course in physiology, this course examines the physiology of human beings. The course emphasizes the integrative physiology of organ systems and the maintenance of homeostasis. This sets the stage for discussions on the prevention of malfunction by management of the internal and external environment and on how malfunction in any component of the system can lead to disease processes.

BIOL 3031 Cell and Molecular Biology 3 ch (3C)

Emphasizes the principles of gene expression and cellular regulation. The perception of intra- and extracellular signals, signal transduction pathways, and cellular responses will be examined emphasizing experimental approaches. Topics: the perception of environmental clues, cell cycle regulation, phosphorylation cascades, programmed cell death, and organelle-nucleus interactions. Examples from all biological kingdoms will be used to emphasize universal cellular regulatory mechanisms. Prerequisites: BIOL 2043, 2033 and 2053.

BIOL 3102 Somatic Cytology and Histology 4 ch (2C 3L) (A)

A study of cell structure using prepared slides. Alternates with BIOL 4570. 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 3207 Advanced Microbiology Laboratory 4ch (2C3L) (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 3251 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 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 and oral report on the scientific activities of the work term. Credit for the course is dependant 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 3301 Taxonomy of the Seed Plants 4 ch (2C 3L)

The identification, description and classification of seed plants and a consideration of taxonomic concepts, literature and methods. Genetic and evolutionary variation, speciation and species concepts emphasized.

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 3ch(3C)

Surveys recent advances in the regulation of growth and development of form in plants. Prerequisites: BIOL 3321, BIOL 3401, or BIOL 3031.

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 3377 Plant Growth and Development Laboratory (A) 2 ch (4L)

A laboratory which includes work in tissue culture, embryogenics, protoplast isolation, and other basic techniques used in plant biotechnology. Prerequisite: BIOL 3436; pre- or co-requisite: BIOL 3332.

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 - 10 days in length. 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 Introductory 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 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 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 3601 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. 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 3802 Advanced Animal Physiology 3 ch (3C)

This course focuses on the in-depth examination of selected physiological processes, with an emphasis on recent developments in animal physiology. Prerequisite(s): BIOL 3801

BIOL 3851 Physiology and Pathophysiology II 3ch (3C)

A continuaton of BIOL 2832. Limited Enrolment. Nursing and BMLS students ahve 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 2832.

BIOL 3872 Ethology 3 ch (3C)

Considers physiological foundations of behaviour and deals with topics of motivation, displacement behaviour, hormones, evolution and learning.

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 the obtained data in relation to the literature. This is principally a hands on course, enhanced where appropriate with computer emulation's. Limited enrolment. Pre-requisite: BIOL 2025. Pre- or co-requisite: BIOL 3801

BIOL 4057 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 4083, 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 4083

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 4119 Insect Physiology 4 ch (4C/S)

A review of the principal functions in insects. Pre- or co-requisite: BIOL 3801.

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 4 ch (3C 2L/S)

Studies biological, economic, and human factors affecting wildlife populations. Prerequisite: Any one of STAT 1213, 2253, 2263, 2264, or FOR 3082.

BIOL 4223 Phycology 5 ch (3C 3L)

Systematic survey of the diverse protistan lineages traditionally studied under the heading of phycology. Both traditional and modern molecular perspectives concerning algal evolution and relationships will be explored. Endosymbiont theory, as well as aspects of algal biology, anatomy and cytology, will be prevalent themes for discussion. A portion of the laboratory component is in the form of a field trip and a charge for transportation and/or accommodation will be levied. Note: Restricted to 20 students. Prerequisite: Completion of the Year II Organismal module. Recommended: Completion of the Year II Cellular/Ecology modules.

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 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: BIOL 2033, 2043, 2053 or permission from instructor. Recommended: BIOL 2083, 3401.

BIOL 4443 International Ecology Field Course 4ch (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 4570 Experimental Microtechnique (A) 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 4722 Ornithology 5 ch (3C 3L)

Studies birds; natural selection, morphological adaptations, migration, behaviour, and reproduction, in an ecological way. Prerequisite: BIOL 2093.

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.

BIOL 4819 Insect Behavior 4 ch (4C/S)

Studies intra- and interspecific interactions and the application of behaviour to insect control. Pre- or co-requisite: BIOL 3801.

BIOL 4822 Neurophysiology Seminar 2 ch (2S)

Neuronal function, sensory physiology, physiology of the peripheral central nervous systems with particular reference to invertebrates. Prerequisite: BIOL 3801 or equivalent.

BIOL 4861 Environmental Biology 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 (A) 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 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.

BY 103N Study Skills Development I

BY 104N Study Skills Development II

Non-credit courses in study skills development. Involve the use of on-campus services, non-credit training sessions, and special tutoring sessions.

BY 105N Secondary Education Makeup I: English

BY 106N Secondary Education Makeup II: Mathematics

BY 107N Secondary Education Makeup III: Biology

BY 108N Secondary Education Makeup IV: Chemistry

BY 109N Secondary Education Makeup V: Physics

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.

BUSINESS ADMINISTRATION

This section contains course descriptions for students entering the program after September 2001. For students who entered the program prior to September 2001, please contact the Faculty of Business Administration or see the 2001-2002 on-line Undergraduate Calendar for BA course descriptions.

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 36 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 36 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, focussing 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 36 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 decesion-making. Reviews basic principles and concepts to convey the conceptual framework of the accounting discipline. Prerequisite: 36 ch

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: 36 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: 36 ch and 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: 36 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: 36 ch, Math 1823 and 1833 or equivalents. BBA students must complete this course during the first 75 ch.

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 3173 Business Law I 3 ch (3C)[W]

Examines the impact of law on business decisions and activities. Includes an introduction to the Candadian 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: 36 ch.

ADM 3175 Business Law II 3 ch (3C)[W]

Introduces the law that affects various functional aspects of a business. Topics inlcude: 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 3173.

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. Focusses 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 2313, 3315.

ADM 3375 (TME 3346) Marketing of Technological Services and Products 3 ch (3C)

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 3525 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 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 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, ADM 2223, 2313, 2513, 2623.

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 Industrial 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 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, 2624, 3173, 3573, 3713.

ADM 4155 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 4175 Studies in Small Business 3 ch (3C LE) [W]

Considers the problems associated with starting and operating a small enterprise. Focusses upon actual small business successes and failures. Prerequisite: 96 ch.

ADM 4176 Management of New Enterprise 3 ch (3C LE) [W]

Focusses 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

This course 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 LE) [W]

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 LE)[W]

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)

This course is designed to enhance a students basic understanding of the usefulness of financial reporting in operating, financing, and investing decisions. Appropriate skills in the area of financial statement analysis will be developed. The course begins with a review and understanding of generally accepted accounting principles in Canada and elsewhere. It progresses through financial statement analysis of Canadian and international companies in different industries and in different geographic areas. Prerequisites: ADM2223 and ADM3415 (or BA3424).

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 4315 Salesforce Management 3 ch (3C LE) [W]

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. Prerequisites: ADM 2313, 3315, 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. Prerequisites: ADM 2313, 3315, 3345.

ADM 4326 Customer Satisfaction and Loyalty 3ch (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. Prerequisites: ADM2313 and ADM3315 or consent of the instructor.

ADM 4335 Contemporary Marketing Issues 3 ch (3C) [W]

Considers contemporary issues in marketing. Requires readings and detailed discussions of articles relevant to the selected topics of enquiry. Prerequisites: ADM 2313, 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. Prerequisites: ADM 2313, 3315, 3345.

ADM 4350 Export Market Entry 6ch (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: ADM2313, ADM3315, and ADM3345. Students will not be permitted to obtain credit in both ADM4355 (or an equivalent) and ADM4350.

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. Prerequisites: ADM 2313, 3315.

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 4425 Investments 3 ch (3C LE)

Introduces investment media, security markets, security analysis, and the role of financial intermediaries in the investment process. Considers the interpretation of economic indicators and the analysis of published financial statements in order to select superior investment opportunities. Covers technical analysis and the efficient market hypothesis, as well as portfolio theory. Significant application of quantitative techniques. Prerequisites: ADM 3415 and ADM 3623.

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 3415 and ADM 3623.

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 3415.

ADM 4450 Student Investment Fund 6ch (3C, LE)

This course presents an 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 New Brunswick Investment Management Corporations (NBIMC) pension assets within the investment policies and procedures of NBIMC. Students are required to carry out detailed analysis of macroeconomic, industry and company fundamentals. On a regular basis, students are required to prepare up-to-date reports and make presentations on their portfolio analysis, selection and management. Prerequisites for the course include introductory courses in accounting, corporate finance, investment and qualitative methods. Eligible students are also required to complete an application form and go through an interview.

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 4525 Leadership 3 ch (3C LE) [W]

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 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 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 3626.

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 3626.

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 3626 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 3626.

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 3626.

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 3626, or equivalent.

ADM 4715 Database Management 3ch (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 3ch (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 4725 Introduction to Electronic Business 3ch (3C)

Introduces students to 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: ADM 3713

ADM 4732 Electronic Business Strategies 3ch (3C)

This course is aimed to expose students to alternate business models and competitive strategies that are pertinent to emerging e-business. Through a number of real life cases, different e-business models such as aggregators, market makers, etailers, infomediaries, community builders , and the like will be analyzed. The revenue models, competitive structure, alliance patterns, and key success factors will be identified. The business models will also address the issues of organizational, operational marketing, and financial integration with the existing business. Prerequisites: ADM 4725.

ADM 4771 E-Business Technology 3ch (3C)

Course exposes students to the current state of e-business technology. Starts with Internet infrastructure and e-business architecture, followed by various e-business technology solutions for presentation, catalogue, transaction processing, payment systems, security, customer relationship management, auction technology, systems integration, data warehousing and data mining. A number of conceptual and practical issues in web design and other e-business applications development are discussed. A significant part of the course involves hands-on lab sessions. Prerequisite: ADM 4725

ADM 4772 Global Issues in Electronic Business 3ch (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 4725

ADM 4773 E-Business Entrepreneurship 3ch (3C)

Overview of the knowledge-based economy and impact of the Internet on organizations; 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. Students are required to create a new venture, develop a website and write a business plan that can be presented to potential investors. Prerequisites: ADM4725 or equivalent.

ADM 4776 The Law and Electronic Business 3ch (3C)

This course is designed to introduce the student to the law that affects electronic business. The course examines potential liabilities associated with doing business on-line and explores strategies for managing risk exposure. Such topics as the enforceability of electronic contracts, computer crime, rights of domain names, copying on the Internet and jurisdiction over the Internet are explored. Prerequisites: ADM 3173 and ADM 4725

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 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 Public Policy and Labour-Management Relations(O) 3 ch (3C LE)

Examines the influence of public policy on labour-management relations. Emphasizes industrial relations policy and labour law. Also considers relevant aspects of labour market programs, labour standards legislation, social policy and economic planning. Prerequisite: ADM 3875.

ADM 4837 New Forms of Work and Participation (O) 3 ch (3C LE)

Traces the attempts to reform the internal task and decision-making structure of the traditional work organization to the benefit of the average worker. Topics include: changes in societal values, job redesign and autonomous work groups, European co-determination schemes, contemporary cases of employee ownership in North America, and relevant findings on productivity and satisfaction. Open to third or fourth year candidates with appropriate background in the social sciences.

ADM 4855 Comparative Industrial Relations Systems 3 ch (3C LE) [W]

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 4875 Contemporary Industrial Relations 3 ch (3C) [W]

Examines major problems confronting labour and management in Canada. Topics include: the structure and philosophy of the labour movement, international unionism, public policy and grievance arbitration, collective bargaining in the public and private sectors, union democracy and incomes policy. Prerequisite: ADM 3875.

ADM 4876 Collective Bargaining (O) 3 ch (S LE)

Examines the institution and process of collective bargaining. Topics include: the evolution of bargaining, theories of bargaining power and behaviour, and relevant legislative framework in North America. Prerequisite: ADM 3875.

ADM 4877 Workplace Industrial Relations (O) 3 ch (3C LE)

Examines the wage effort bargain and ways in which employers and employees attempt to control the conception and execution of work. Topics include: the evolution of workplace control systems, managerial prerogatives and strategies, trade union impact on job control, the effect of technology on factory and office work, workplace democratization and politics. Prerequisite: ADM 3875.

ADM 4878 Negotiation and Dispute Resolution 3 ch (3C)

Appraises conflict, negotiation and dispute resolution principles. Focusses 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 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 1014 Communications and Information Systems 3 ch (2C 1T)(W)

Information resources, including libraries, CD-ROM, and the Internet. Engineering communications, including report writing and presentation skills. Elementary computer applications in word processing, graphics, and presentation packages. Introduction to spreadsheets and computer packages. Prerequisite: CHE 1004.

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.

CHE 2012 Engineering Thermodynamics 4 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 1001/CHEM 1012 or equivalent.

CHE 2123 Chemical Engineering Thermodynamics 4 ch (3C 1T)

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 3ch (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 1001/1012 or equivalent.

CHE 2412 Chemical Engineering Laboratory I 4ch (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. Prerequisite: CHE 2012. Co-requisites: CHE 1014, 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 1001/1012 or equivalent, MATH 1013.

CHE 2703 Introduction to Fluid Mechanics 4 ch (3C 1T)

An introductory treatment of practical fluid mechanics, fluid statics and kinematics, and 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, fluid forces on immersed bodies. Prerequisite: CE 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. CHE 3304 is equivalent to ME 3433. Prerequisites: (CHE 2703 or ME 3511), (CHE 2004 or ME 3413/3415).

CHE 3314 Fluid-Particle Interactions 4ch (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 3 ch (3C)

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. Prerequisites: CHE 2004.

CHE 3418 Numerical Methods in Chemical Engineering 4 ch (3C 1L)

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: MATH 2503, CHE 2004

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. This course can be selected as an alternative to CHE 3414 and is open to students who have completed 90 ch towards their degree. 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. Prerequisites: at least 90 ch completed and CHE 2004, CHE 2412.

CHE 3424 Chemical Engineering Laboratory II 4 ch (2C 3L)(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: CHE 1014. Co-requisite: CHE 3304, CHE 3314.

CHE 3434 Chemical Engineering Laboratory III 4 ch (2C 3L)(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 1014, CHE 3304, CHE 3314).

CHE 3505 Chemical Process Design 4ch (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 1014, CHE 2004, CHE 2012, CHE 2503, CHE 2703, ME 1003, ME 1113

CHE 3823 Nuclear Engineering Practice School 4 ch(W)

A two week industrial practice school at the Point Lepreau Nuclear Generating Station or other selected nuclear facilities. Groups of students with Faculty supervisors, are assigned to engineering projects to be carried out. Students are required to present an oral report at the end of the practice session. A written report is also required.

CHE 4003 The Engineering Profession 2 ch (2 C) (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 135 ch completed in the Engineering degree programme. Prerequisites: CE 4003, CHE 4003, EE 4003, GGE 4003 and ME 4003 are equivalent.

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 4221 Process Design, Economics, and Safety I 3ch (2C 1L 1T)

Combines elements of chemical process design, economics and safety. Topics covered include flowsheet preparation, shortcut design methods, modeling 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. This course is intended to be immediately followed by CHE 4222. Students not wishing to do so should discuss this with the course instructor prior to enrolling. Prerequisite: CHE 3314, CHE 3505, ECON 1073 Co-requisite: CHE 4101, CHE 4341

CHE 4222 Process Design, Economics, and Safety II 6ch (1C 6L 4T)

Students are required to bring the conceptual design developed in CHE 4221 to the final design stage. Comprehensive reports and an oral presentation of the design work are required. This course is a continuation of CHE 4221, and must be taken immediately after completing CHE 4221.Prerequisite: CHE 4221 (previous term). Co-requisite: CHE 4601.

CHE 4234 Process Design and Simulation 3 ch (2C 2L)

Application of numerical techniques to the solution of physical problems associated with process units used in the chemical industry. Use of the modular approach to design chemical processes. Use of PROCESS or other schemes to evaluate various process alternatives.

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. Prerequisites: CHE 3424, (CHE 3434 or valid option program). 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 4821 Nuclear & Power Plant Design, Economics, and Safety I 3ch (2C 1L 1T)

Combines elements of chemical process design, economics and safety. Topics covered include flowsheet preparation, shortcut design methods, modeling 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. Nuclear and power plant engineering processes representative of those in operating plants are chosen for design studies. A comprehensive report and an oral presentation of the design work are required. This course is intended to be immediately followed by CHE 4822. Students not wishing to do so should discuss this with the course instructor prior to enrolling. Prerequisite: CHE 3314, Econ 1073; Cor-equisites: CHE 4101, CHE 4341.

CHE 4822 Nuclear & Power Plant Design, Economics, and Safety II 6ch (1C 6L 4T)

Students are required to bring the conceptual design developed in CHE 4821 to the final design stage. Comprehensive reports and an oral presentation of the design work are required. This course is a continuation of CHE 4821, and must be taken immediately after completing CHE 4821. Prerequisite: CHE 4821 (previous term); Co-requisite: CHE 4601.

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 5004 Thermodynamics of Waste Heat Recovery 3 ch (3C)

The First and Second Laws of Thermodynamics are applied to a number of chemical processes to determine the overall efficiencies. The assessment of various chemical processes are made according to the energy or available energy concept. Schemes for more efficient use of energy by cogeneration, cascading and upgrading of waste heat are considered.

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 & Gass 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 5314 Chemical Process Industries: Overview and Environmental Impact 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.

CHE 5334 Radiative Heat Transfer 3 ch (3C)

An introduction to the fundamental laws of radiative transfer; the Stefan-Boltzmann Law and Planck's Law. Radiative properties of materials; prediction, measurement and use. Radiative transfer between surfaces. The determination of direct and total interchange factors. Radiative interchange within systems with an absorbing and emitting gas. Analysis of radiative transfer for practical problems such as furnaces, high temperature chemical reactors, solar energy collectors and space craft.

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 5414 Adsorption and Membrane Based Processes in Pollution Control 3 ch (3C)

Adsorption as a treatment process in various industries; gas and liquid adsorption studies; fixed bed modelling and designing for gas and liquid adsorption systems; comparison of air and water adsorption systems; membranes for pollution control and applications in industry; new concepts in membrane utilization; liquid and solid membranes processes and typical applications. Corequisite: CHE 4341.

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 5514 Chemical Engineering Computations 3 ch (3C)

Numerical methods for the solution of systems of nonlinear algebraic equations and systems of ordinary differential equations in chemical process simulation, design and optimization.

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. Solutions to Bessel's equation, use of Laplace and Fourier Transforms, the Sturm-Liouville system for eigenvalue solutions, etc. Use of Duhamel's Theorem and the convolution integral. Inversion of LaPlace Transforms by the method of weighted residuals. Assignments involve solutions to specific problems encountered in Chemical Engineering.

CHE 5534 Process Identification for Advanced Control 4ch (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. Coal fired 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. 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. Comparison of power turbines and aircraft engines. Prerequisites: CHE 2012 or ME 3413; CHE 2703 or ME 3511.

CHE 5764 Special Topics in Power Plant Engineering 3 ch (3C)

Specialized study of selected topics related to power plant systems or components with concentration on energy transfer or plant performance. Course content will vary from year to year with selection of one or two topics from the following: Two Phase phenomena; metastable conditions; supersonic effect; cavitation and erosion phenomena; machine dynamics; dynamic simulation; plant performance or other specialized fields. Emphasis is on the direct influence of physical phenomena on the operation of power plant equipment. Prerequisites: CHE 2012, 2703, 3304, or ME 3413, 3511, 3433.

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. Prerequisite: CHE 4801, MATH 2003 or 2503, 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. Prerequisite: MATH 2003/2503; CHE 2703 or ME 3511 (or equivalent).

CHEMISTRY

Note: See beginning of Section H for abbreviations, course numbers and coding.

CHEM 1001 General Chemistry I (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. Co-requisite: MATH 1003.

CHEM 1006 General Chemistry Laboratory, Part I 2 ch (3L)

A selection of experiments designed to accompany CHEM 1001. Co-requisite: CHEM 1001.

CHEM 1012 General Chemistry II (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)

A selection of experiments designed to accompany CHEM 1012. Prerequisite: CHEM 1006; Co-requisite: CHEM 1012.

CHEM 1056 Special General Chemistry Laboratory, Part I 2 ch (3L)

A selection of enriched experiments designed to accompany CHEM 1001 primarily for Science students with appropriate high school lab experience (limited enrollment). Co-requisite: CHEM 1001.

CHEM 1067 Special General Chemistry Laboratory, Part II 2 ch (3L)

A selection of enriched experiments designed to accompany CHEM 1012 primarily for Science students with appropriate high school lab experience (limited enrollment). Prerequisite: CHEM 1056; 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 4 ch (3C 3T/L)

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 3L)

Intended primarily for non-Science students who require an introduction to physical and inorganic chemistry. Covers chemical equilibria, electrochemistry, thermodynamics and chemical kinetics. 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. Prerequisite: CHEM 1001/1012 and 1006/1017 or 1056/1067.

CHEM 2201 Introduction to Inorganic Chemistry I 3 ch (3C)

Periodic properties of the atoms. Bonding, structures and reactions of inorganic compounds. Prerequisites: CHEM 1001 and CHEM 1012 ("D" grade not acceptable).

CHEM 2222 Introduction to 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. Prerequisite: CHEM 1006/1007 or CHEM 1056/1067, 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. Prerequisites: CHEM 1001/1002 or 1801 and 1882. ("D" grade not acceptable). Note: Exemption from CHEM 1801 may be granted if the student obtained 70% or higher in Grade 12 Chemistry at high school.

CHEM 2416 Chemistry Laboratory I 2 ch (3L)

Introduction to experimental chemistry (Organic) Part I. Prerequisite: CHEM 1006/1007 or CHEM 1056/1067 ("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. Prerequisities: MATH 1003/1013 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 2213 or equivalent.

CHEM 2637 Chemistry Laboratory II 2 ch (3L) [W]

Introduction to experimental chemistry (Physical) Part II. Prerequisite: CHEM 1006/1007 or CHEM 1056/1067 ("D" grade not acceptable). Co-requisite: CHEM 2601 and 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. Prerequisite: CHEM 2416; Pre- or Co-requisite: CHEM 2422.

CHEM 2886 Analytical Chemistry Laboratory for Chemical Engineers 1 ch (3*L)

This course teaches the basic techniques and concepts of chemical analysis. Prerequisites: CHEM 1001/1012 and either CHEM 1006/1017 or 1056/1067.

CHEM 2903 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 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 1001/1012 and BIOL 1001/1012, 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. Prerequisite: CHEM 2111.

CHEM 3202 Inorganic Chemistry I 3 ch (3C)

Covers transition metals and introduction to organometallic chemistry. Prerequisites: CHEM 2201, CHEM 2222 and CHEM 3001.

CHEM 3221 Inorganic Chemistry II 3 ch (3C)

Selected aspects of main group inorganic chemistry emphasizing periodic trends. Prerequisites: CHEM 2201 and 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. 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. Prerequisites: CHEM 2416. Co-requisite: CHEM 3401 or CHEM 3421.

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 Bio-Organic Chemistry of Nucleic Acids (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 3523 Bio-Organic Chemistry of Proteins (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. Pre- or 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. 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. Prerequisite: CHEM 2401 and CHEM 2601 and 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. 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.

CHEM 3903 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 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. 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.Pre- or Co-requisite: 4th year level lecture courses in selected project area.

CHEM 4003 Biocomputing in Drug Design II 4ch (3C 1L)

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 Analytical and Inorganic Chemistry Laboratory 3 ch (3L)

Further work in the analytical and inorganic laboratory. Experiments/projects will provide students an opportunity to do further work in previous topics encountered, and to have practical experiences in more advanced topics. Some emphasis will be placed on the role of chemical research. Prerequisites: CHEM 3132 and CHEM 3236.

CHEM 4017 Advanced Organic and Physical Chemistry Laboratory 3 ch (3L)

Further work in the organic and physical laboratory. Experiments/projects will provide students an opportunity to do further work in previous topics encountered, and to have practical experiences in more advanced topics. Some emphasis will be placed on the role of chemical research. Prerequisites: CHEM 3416 and CHEM 3616.

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. Prerequisite: CHEM 3132, CHEM 2601 and CHEM 2622.

CHEM 4132 Instrumental Analytical Chemistry II 3 ch (2C/2L)

A coordinated laboratory-lecture course to introduce the principles of electroanalytical methods, differential thermal analysis, field analytical methods, concepts of signal/noise, simple chemometric methods for data enhancement and aspects of instrumentation. Studies will also relate to the application of analytical chemistry in environmental, clinical, food and industrial situations. The laboratory component is designed to study the operation, applications and limitations of the above methods. Real materials are used to illustrate the common sample preparation methods and method development. Students will use spreadsheet, word processing and program language extensively for data analysis and presentation. Prerequisite: CHEM 4111.

CHEM 4222 Advanced Inorganic Chemistry 3 ch (3C)

Advanced topics in Inorganic Chemistry. Prerequisite: Departmental approval.

CHEM 4422 Advanced Organic Chemistry 3 ch (3C)

Advanced topics in organic chemistry. Prerequisite: Departmental approval.

CHEM 4622 Advanced Physical Chemistry 3 ch (3C)

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. Prerequisite: CHEM 2880 or 2111/ 3132/4801.

CHEM 4909, 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

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 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.

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.

CE 2023 Mechanics of Materials 5 ch (3C 3L)

Elastic and plastic stress, strain; behaviour of beams and columns; torsion; material strength. Prerequisite: CE 1013. Co-requisite: MATH 1013.

CE 2512 Materials for Civil Engineers 3 ch (3C)

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 45 ch 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 2953 Civil Engineering Systems Analysis 4 ch (3C 1T)

Modelling system response with multiple linear regression and stepwise regression. Time series analysis and forecasting; sampling techniques; quality control; nonparametric 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, 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. Co-requisite: CE 3033.

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. Co-requisite: 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)

To introduce 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 2503.

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 4 ch (2C 3L) (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: CE 1003, ENGL 1103

CE 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 135 ch completed in the Engineering degree programme. CE 4003, CHE 4003, EE 4003, GGE 4003 and ME 4003 are equivalent.

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 4983 Senior Report I 4ch (2C 4L) (W)

Presents some of the approaches used to formulate a proposal for an engineering study. Each student will: present a proposal which will serve as the basis for the Senior Report, commence work on the project with the guidance of an approved supervisor, and submit a substantial written progress report of the work completed. Restricted to students with at least 110 ch completed. Prerequisite: CE 3973

CE 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: CE 3973, CE 4983.

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. Restricted to students with 135 ch completed. 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 3L) (W)

An examination of the planning and design of highways and airports; topics include location, layout and geometric 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 and Wastewater Analysis 3 ch (2C 3L)

Review and application of chemistry and microbiology in environmental engineering. Chemical analyses, microscopic examination and biological tests of water and wastewater samples will be conducted in the laboratory. Restricted to students with at least 90 ch completed. Prerequisites: CHEM 1882 or equivalent, CE 3403.

CE 5432 Water and Wastewater Treatment 3 ch (2C 3L)

Introduction to the various unit operations and processes used in the treatment of water and wastewater including physical, chemical and biological processes, the processing and disposal of sludges, and disinfection. Design problems. Visit to treatment works. Prerequisite: CE 5421 (or CE 5473 for Chemical Engineering students).

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 5501 Engineering Plastics 3 ch (3C)

Use and application of plastics, laminates and composites in civil engineering; emphasis on basic factors; time-dependent types of deformation and failure mechanisms; fabrication, characteristics and behaviour of plastic-based composites such as fibreglass laminates, structural sandwiches and plywood. Prerequisite: CHE 2503.

CE 5512 Construction Materials 4 ch (3C 2L)

Materials used in the design and construction of buildings and other structures. Physical and mechanical characteristics, including the wearability, weatherability, absorption, transfer rates, strength characteristics, acoustical and thermal coefficients, and the general application and use of building materials and components of construction. 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 110 ch completed. Prerequisite: CE 2603.

CE 5612 Construction: Financial and Industry Issues 3 ch (3C 1T)

Methods and techniques for estimating costs of construction: labour, equipment, materials, and subcontracts. A computerized approach to estimating is presented. Restricted to students with at least 110 ch completed. Prerequisite: CE 2603.

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 110 ch 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, hydropower, 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.

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.

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 The Historical Roots of Western Civilization 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 Adventures in Archaeology 3 ch (3C) [W]

A consideration of the role of archaeology in our understanding of the vanished civilizations of Europe and the Middle East, examining both the romantic exploits and spectacular finds of early archaeologists, and more recent developments in archaeological science and organization. Emphasis will be placed on ancient city-planning, the recovered treasures of classical art, and the place of archaeology as a tool for understanding ancient life.

CLAS 1403 The Golden Age of Greece 3 ch (3C) [W]

An illustrated introduction to public and private life in classical Athens (450-350 BC), focussing on the artistic, literary and intellectual flowering which accompanied the rise of democracy.

CLAS 1413 From Republic to Empire: The Legacy of Rome 3 ch (3C) [W]

An illustrated introduction to ancient Rome (200 BC-AD 200), focussing on the cultural achievements and practical genius which transformed Rome from a village to a great empire. Considers the values and customs mirrored in the achievements of politicians, architects, poets, generals, satirists, philosophers, sculptors and painters which Rome contributed to Western civilization. Topics include: the Roman family and gender roles, politics and propaganda, social status and slavery, entertainment and leisure, religion and duty, law and rebellion, engineering and architecture, and the individual and society.

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.

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 3323 The Art and Architecture of Greece 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 3333 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 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 3373 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 3383 The Art and Architecture of Asia Minor: The Graeco-Roman Background of Early Christianity 3 ch [W]

A study of the art and architecture of Asia Minor organized around visits to important archaeological sites and major museums in Turkey, and focusing on urban centres identified in the New Testament as having the earliest Christian communities. Travel costs not included in tuition.

CLAS 3393 The Eternal City: Rome from Ancient Times to the Renaissance 3ch (3C)

A study of the ancient and mediaeval history of the city of Rome, concentrating on an in-site examination of the material remains. Travel costs not included in tuition.

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 3443 City and Country in the Graeco-Roman World 3ch (3C) [W]

An examination of literary and artistic portrayals of the city and the country in the ancient world. By focussing on Bucolic poetry, Roman wall painting and domestic architecture, the course looks at the ancient debate of city life vs. country life, Golden Age themes, the figure of the herdsman and the place of pastoral divinities.

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 3533 Mythology and Archaeology 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 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 3ch (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 4903/ 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/ 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 4ch (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: CS1073 or equivalent, EE1713, MATH1013; Co-requisite: MATH2503.

CMPE 3213 Advanced Software Engineering 4ch (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: CS2013.

CMPE 3533 Signals and Systems 4ch (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: ME 1113, MATH 2513, MATH 3503, EE 2783; Co-requisite: STAT 2593.

CMPE 4223 Safety-Critical System Design 4ch (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 modelling and analysis. Prerequisite: EE 3232.

CMPE 4543 Communications Network Engineering 4ch (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

For Computer Science courses the last or fourth digit is coded as follows:

1	first term course
2	second term course
3	term course offered both terms
4-9	term course which may be offered either term.

*Only Undergraduates in their final year with a B average are eligible to take 5th level courses.

The Timetable should be used to check the term and time a course is offered.

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. Prerequisite: CS1003.

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 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. 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 1083.

CS 2023 Procedural Program Development 4 ch (3C2L)

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 2303 Discrete Structures II 4 ch (3C 1T)

Continues CS 1303. Topics covered include: Functions, relations, elementary permutations and combinations, graph theory, finite state machines, diagonalization arguments. Prerequisite: CS 1303 or MATH 2203.

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) (1C) 1 ch

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: CHEM101/1012 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. Prerequisite: CS 1003 or CS 1073, 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. Prerequisite: CS 1303, 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 4 co-op work terms. 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 work term. A student will be awarded CR (credit) for this course. Prerequiste: 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 2303, 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, 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 architechture including parallel database systems. Prerequisite: CS3413 (or CS2403) 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. Prerequisite: Math 2213.

CS 4613 Programming Languages 4 ch (3C)

Structure and major characterisitics 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 2303, 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: Linear Algebra and knowledge of a high level programing language.

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 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 Distributed Computing 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) (3C 3L) 4 ch

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 (O) 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 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. 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. Prerequisite: CS 3983 or CS 3997.

CS 4999 Directed Studies in Computer Science (O) 4ch

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 2303 and 3323 or premission 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: 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 labelling, 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 Networks (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 of Everyday Life 3 ch

Designed to complement Arts 1000. An approach to introductory economics which focusses on human behaviour in the widest sense (rather than just products, industries and money). It emphasizes the application of fundamental concepts, and supplements the standard lecture format with small group work, classroom experiments, and games. The student will learn to describe and understand the forces which shape our society and individual lives, and will develop necessary economic life-skills. Students in the Faculty of Arts who receive credit for ECON 1013 or ECON 1023 may not take ECON 1001 or ECON 1002. The course is not open to BBA students, nor to B.Sc.E, B.Sc.F., B.Sc.FE, or BCS students.

ECON 1002 Economics of Public Policy 3 ch

This course complements ECON 1001. Again, emphasis is on the application of economics, but this course puts more emphasis on contemporary public policy and big-picture' issues. Students in the Faculty of Arts who receive credit for ECON 1013 or ECON 1023 may not take ECON 1001 or ECON 1002. The course is not open to BBA students, nor B.Sc.E., B.Sc.F., B.Sc.FE, or BCS students.

ECON 1013 Introduction to Economics : Micro 3 ch

An introduction to demand and supply, pricing, market structure, and government intervention.

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 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

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

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

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

Thorough treatment of how markets function. Investigates the interaction of consumers, firms and government regulation. Prerequisite: Any first year economics course.

ECON 3023 Economic Theory I: Macroeconomics 3 ch

Thorough development of a theory of aggregate economic behaviour. In particular it investigates the causes of recessions, unemployment, inflation, and interest rate changes. Of central concern is the appropriate role of the government, and the effects of government deficits. Prerequisite: ECON 1023.

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 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 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 3514 The Theory of Regional Economic Development 3 ch (W)

Concerned with the general theory of regional economic disparities and of regional development. Features current economic problems of the Atlantic provinces. Prerequisite: Any First Year Economics Course.

ECON 3524 The Theory of Regional Economic Policy 3 ch (W)

Outlines the role of governments (federal and provincial) in alleviating regional economic disparities. Emphasizes government policies pertaining to the Atlantic provinces. Prerequisite: Any First Year Economics Course.

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 3845 Introduction to Law and Economics 3 ch

Economic aspects of social and legal issues and policies: property, contracts, torts, discrimination, environmental law, and the economics of crime and punishment. 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 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 2624); and ECON 3013 and ECON 3023.

ECON 4775 The Economics of Canadian Immigration 3 ch

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 3ch (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 4035, 4045 or concurrently.

ECON 5645 Applied Econometrics 3 ch

Review of single equation and simultaneous equation methods. Time-series analysis, model building, and forecasting, Monte Carlo simulations. Emphasis is on application using software packages. Prerequisites: At least one of ECON 4625 or 5625. ECON 4013, 4023 or concurrently.

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.

POLS 3112/ ECON 3112 The Political Economy of Russia and Ukraine 3 ch (3C) [W]

Examines the political, economic and social dynamics of government in the two Slavic nations in the post-Gorbachev era.

POLS 3343/ ECON 3343 The European Union in Transition 3 ch (3C) [W]

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/ ECON 3361 Economics and Politics of Transition 3 ch (3C) [W]

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 3633 / ECON 363 **International Public Law** **3 ch (3C)[W]**

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 3831/ ECON 3831 **Contemporary China** **3 ch (3C) [W]**

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.

EDUCATION

ED courses are normally not available to non-education students. Exceptions are ED 4791, ED 3021, ED 3031, ED 3061, ED 3063.

ED 2241 **Introduction to Music Education** **3 ch**

An introduction to the basic materials, philosophies and skills required to teach music in the elementary classroom. Designed for students with little or no musical background or experience.

ED 3010 **Practicum in Adult Education** **6 ch**

Practical, field-based learning based on an individual learning contract and completed in an actual teaching/learning setting. The intent of the practicum is to help students develop the observational, critical and reflective skills necessary to become lifelong experiential and contextual learners.

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 **Interactive Strategies in Adult Education: Communication Practices** **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

Overview of theories, practices and issues in Art Education.

ED 3212 Art Media for Schools 3 ch

An exploration of various art media and their application in curricula.

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

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 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. 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 3 ch

Overview of physical education programs in elementary schools. Program planning, practicalwork.

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 3560 Introduction à la didactique du français langue seconde (FLS)* 6 ch

Examen des principes de base de l'apprentissage, de l'enseignement, et de l'évaluation dans une classe de FSL. Analyse de programmes d'études et de matériaux didactiques. Planification de leçons et d'unités d'enseignement. (Cours obligatoire pour spécialistes en FLS). *Students can receive credit for ED 3560 or ED 3561 but not both. Students must demonstrate a high level of mastery of oral and written French prior to enrolling in ED 3560. In some cases, students will be asked to take an oral and a written test.

ED 3561 Introduction to Second Language Education* 3 ch

An overview of the theories of second language acquisition and learning with special attention to current approaches. Numerous variables such as cognitive, affective and sociocultural factors are examined. *Students can receive credit for ED 3560 or ED 3561, but not both.

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 Processing I 3 ch

An introduction to computer technology and software applications. Provides learners with a functional literacy of computers and the role they play in society.

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 3990 Industrial Experience 6 ch

Approved summer work experience and report.

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 0 ch

Must be completed before ED 5000.

ED 4002 Field Experience II 0 ch

Must be completed before ED 5000.

ED 4011 Reflective Practice In Adult Education 3 ch

Examines the processes, principles and outcomes involved in learning through reflection on professional practice. Students will be expected to draw critically on their own practice for much of the course.

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 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 Interactive Strategies: Helping Relationships with Adults 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 Interactive Strategies in Adult Education: An Introduction to Distance Learning 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/ ED 5191 Independent Studies 3 ch each

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 3495 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 3560 or equivalent.

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 L'enseignement en immersion 3 ch

Perspective historique et examen des principes de base de l'immersion. Accent sur l'intégration de l'apprentissage d'une langue seconde dans l'apprentissage de différentes matières. Étude et application de la pédagogie de l'immersion. Ce cours vise surtout l'enseignement au niveau élémentaire. Prerequisite: ED 3560 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 Processing II 3 ch

An advanced course in the use of computer software within a business/education framework. Prerequisite: ED3862 or approval of instructor.

ED 4863 Microcomputers in the Classroom 3 ch

Provides the secondary school teacher with experience in the use of computer technology for teaching. Presentations are required by the students using software in a variety of curriculum areas.

ED 4864 Software Analysis 3 ch

An analysis of the applications of software with emphasis on system requirements, similarities and differences, and comparisons to other commonly used packages. Students must have previous experience with word processing, spreadsheet, database and communications software systems.

ED 4923 Teaching Junior High Technology 3 ch (3C 3L)

Explores alternative methods and activities for teaching Junior High Technology. Focuses on the Provincial curriculum and developing methods for delivery of content and developing creative activities to facilitate learning. Prerequisite: ED3977.

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/ED 5973 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.

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/ 5033/5043 Special Topics in Education 3 ch each

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 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 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 historicalperspective.

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 Foundations of Speech and Language 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 Foundations of Mental Retardation 3 ch

Identification and etiology of mental retardation as well as the intellectual, social and emotional development of persons with mental retardation.

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

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, children's books, film, videos, family photos, and advertisements, as these influence knowledge and understanding of oneself and others.

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 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 Education and Technology 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 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 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 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 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 3 ch

This course introduces discourses about and approaches to teaching and evaluating writing in schools (K-12), 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. Junior and Senior High.

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. Alternative to ED5355. Prerequisite: ED 5353.

ED 5355 The English Curriculum 3 ch

Philosophical, historical, and other forces affecting English curricula. Undergraduate-graduate seminar. Alternative to ED5354.

ED 5357 Media Literacies 3 ch

Advanced educational media production techniques. Emphasis on video tape production. Individualized media projects.

ED 5358 Critical/Cultural Literacy 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/ 5512/5513 Special Topics in Science Education I, II, III 3 ch each

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, geogrpahical and cultural forces that have given rise to them. Students will complete a practicum in a community organization and report on how it influences conceptions of identity.

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 schoo 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 (Cross Listed with ANTH 5684) 3 ch

This course 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 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 5975 Presentation Strategies in Technology EducationW, 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 alternate week labs.

A C-grade minimum is required for all prerequisite and all core and technical elective courses used for credit towards the B.Sc.E. degree.

EE 1713 Electricity and Magnetism 4 ch (3C 1T 3*L)

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 law, 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 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 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 1713, MATH 1013.

EE 2703 Introduction to Electrical Design 4ch(3C,2L)

Covers the electrical design process, group projects, simulation and construction, laboratory measurement techniques. Project management. Economic, safety and environmental aspects. Oral presentations and written reports. Co-requisites: EE 2773, EE 2213, CMPE 2013.

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 1713, 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 1713

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 2503 or equivalent Co-requisite(s): 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 2783.

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 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 1713.

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: ME 1113, 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 3611 Machinery I 4 ch (3C 1T 3*L)

Theory of magnetic circuits, transformers and dc machines developed from fundamental principles of electromechanical energy conversion. Prerequisites: ME 1113, MATH 2513, EE 2773.

EE 3622 Machinery II 4 ch (3C 1T 3*L)

A study of ac polyphase machines, both induction and synchronous. Prerequisite: EE 3611.

EE 3811 Electromagnetic Fields 5 ch (4C 1T 3*L)

Static and time-varying fields including vector calculus. Maxwell's equations. Prerequisites: MATH 2513, MATH 3503, EE 1713;

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 5 ch(4C 1T 3*L)

Topics include static and time-varying fields including vector calculus, Maxwell's equations, electromagnetic waves, transmission lines. For Computer Engineering students. Prerequisites: MATH 2513, 3503, EE 2773.

EE 4003 The Engineering Profession 2 ch (2 C) (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 practising 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 135 ch completed in the Engineering degree programme. CE 4003, CHE 4003, EE 4003, GGE 4003 and ME 4003 are equivalent.

EE 4013 Thesis I 2ch (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 4ch (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 4142 Electronic Circuit Design 4 ch (3C 3*L)

An elective. Considers the philosophy and practice of the design of semiconductor circuits. Prerequisite: EE 3132.

EE 4163 Instrumentation Design 4 ch (3C 3*L)

An elective. 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)

An elective. 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)

An elective. Digital transmission system components. Standards. The telephone system. Asynchronous and synchronous data transmission and protocols. Data networks. Prerequisite: EE 3221. Corequisite: EE 3232.

EE 4253 Digital Communications 4 ch(3C 3*L)

An elective. 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)

An elective. 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.

EE 4283 VLSI Systems Design 4 ch (3C 3*L)

An elective. Tools and methods for the design of CMOS digital Application Specific Integrated Circuits. One or more design projects. Prerequisite: EE 3232.

EE 4332 Feedback Control Systems 4 ch (3C 3*L)

An elective. Introduction to digital feedback control. Application of programmable controllers. Prerequisite: EE 3323.

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)

An elective. 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)

An elective. Introduces many components of a power system. Prerequisites: EE 3622, EE 3313 or CMPE 3533.

EE 4422 Power System Operation 4 ch (3C 3*L)

An elective. 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)

An elective. 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)

An elective. 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)

An elective. Deals with the philosophy of designing electrical apparatus. Prerequisite: EE 3121, EE 3622.

EE 4653 Power Electronics 4 ch (3C 3*L)

An elective. Deals with high current rectifiers and inverters. Design parameters and practical firing circuits are analyzed. Prerequisite: EE 3121, EE 3622.

EE 4841 Antennas and Propagation 4 ch (3C 3*L)

An elective. Ground wave and ionospheric propagation. Radiating systems including simple antennas, arrays, array synthesis and broadband antennas. Prerequisite: EE 3822 or 3833.

EE 4853 **Microwave Engineering** **4 ch (3C 3*L)**

An elective. 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)**

An elective. 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)**

An elective. Application of electrical engineering to living systems and to health care. Prerequisite: EE 3121

ENGLISH

General Notes on Courses

Courses whose numbers begin with three are normally open only to students in their third and fourth years. Courses whose numbers begin with five are normally open only to students in Honours.

There is a prerequisite of six 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 English, Language Arts, Library and Media 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 during each three-hour class period.

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 writing essays and studying contemporary and earlier non-fiction prose models, students will work to improve their writing and develop their critical and analytical skills. Tutorials use exercises and discussions to assist this development.

ENGL 1145 **An Introduction to Prose Fiction** **3ch (2C 1T) [W]**

Examines a range of short stories, and perhaps one or two novels, from the 19th and 20th centuries. Writing skills are emphasized.

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) LE [W]

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) LE [W]

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 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 practise. 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 2703 Modern American Literature 3 ch (3C)[W]

A selection of American short stories and poems of the 20th century, including stories by writers such as William Faulkner, Eudora Welty, Flannery O'Connor, John Updike, and Bobbie Ann Mason, and poetry by, for example, Robert Frost, Robert Lowell, and Elizabeth Bishop.

ENGL 2901 A Survey of English Literature to 1660 3 ch (3C)[W]

Examines selected works of English Literature from the beginnings to 1660, including poetry, prose and drama.

ENGL 2902 A Survey of English Literature from 1660-1900 3 ch (3C)[W]

Examines selected works of literature in English from 1660 to 1900, including poetry, prose and drama.

ENGL 2903 Literature of Fear and Suspense 3 ch (3C)[W]

The first half of this course deals with classic tales of horror and the supernatural, featuring stories by writers such as Edgar Allan Poe, M.R. James, L.P. Hartley, and Roald Dahl. Attention then shifts to novels of suspense and to "thrillers," such as those by Patricia Highsmith, Susan Hill, Lionel Davidson, and James Dickey.

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/ LING 3006 Linguistic Introduction to Canadian English (A) 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/ LING 3010 History of the English Language (A) 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. 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 class limited to 18; preference given to those who apply to the instructor in writing before registration.

ENGL 3123 Creative Writing: Poetry (O) **3ch (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 (O) **3ch (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 Screen Writing 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. The course is restricted to third- and fourth-year students and those enrolled in the Certificate in Film Production program.

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: English 3193 is a prerequisite for Film Certificate students. It would be a desirable prerequisite for others but not absolutely required. The course is restricted to third and fourth year students and those enrolled in the Certificate in Film Production program. Prerequisite: ENGL 3193 desirable but not essential.

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 beginning of the reign of James I (1603) 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 new forms of prose, and a selection of Milton's works is also included.

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) 6ch(3C both terms or 6C second term)[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 Prose and Poetry I (A) 3 ch (3C)[W]

A study of American literature to the middle of the 19th century.

ENGL 3704 American Prose and Poetry II (A) 3 ch (3C)[W]

A study of American literature from the middle of the 19th century to the present.

ENGL 3743 Nineteenth-Century American Fiction (A) 3 ch (3C)[W]

A study of the major novels to Henry James.

ENGL 3744 Twentieth-Century American Fiction (A) 3 ch (3C)[W]

A study of the major novels from Dreiser to the present.

ENGL 3813 Commonwealth Literature I (A) 3 ch (3C)[W]

A study of selected literature written in English in the West Indies, Africa, and India. Texts are chosen to exemplify ideas and themes characteristic of post-colonial literatures (e.g., colonization, racial consciousness and conflict, language, identity and difference, place and displacement). Works are discussed in the historical, cultural, and political contexts of the authors' societies.

ENGL 3814 Commonwealth Literature II (A) 3 ch (3C)[W]

A study of selected literature written in English in Australia, New Zealand, and Canada. Texts are chosen to exemplify ideas and themes characteristic of post-colonial literatures (e.g., colonization, cultural conflict and hybridity, language, identity, and the location of "home"). Works are discussed in the historical, cultural, and political contexts of the authors' societies.

ENGL 3823 Major Women Writers I (A) 3 ch (3C)[W]

A study of selected poems by British, American, and Canadian women, in the context of a feminist survey of poetry in English.

ENGL 3843 Major Women Writers II (A) 3 ch (3C)[W]

A study of selected novels by British, American, and Canadian women, in the context of a feminist history of the novel in English.

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 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 6 ch (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(s): 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

Features topics of general interest; these will change annually, and students should consult the Departmental Handbook for each year's offerings. Students from other Faculties are invited to enrol.

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 6ch[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

FVI 2001 Introduction to Family Violence Issues 3ch

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 3ch

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 3ch

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 3ch

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 3ch

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 3ch

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 3ch

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 3ch

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 3ch

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 3ch

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

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 2123 Music Theory I 3ch [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 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 3000 Studio Work 6 ch

Practical Work in one of the fine arts disciplines for students in the Fine Arts Minor only. 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 for students in the Fine Arts Minor only, 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 for students in the Fine Arts Minor only, 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 3ch [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]

Same as Ed 5154. The integral relationship between visual images and other ares 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.

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.

FOREST ENGINEERING

Note: See beginning of Section H for abbreviations, course numbers and coding.

* = Elective Course

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: CS 1003, 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: ME 1113, EE 1713, MATH 1013 and either CE 2703 or CHE 2703.

FE 3306* **Applied Geomorphology (A)** **3 ch (3C/L)**

Basis 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 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: ME 1113, EE 1713, 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 1000, 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 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: ME 1113. Restricted to students with at least 100 credit hours.

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 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, 5911, 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 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 Committeet. 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: A minimum grade of C is required for prerequisite courses.
* = Elective Course

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 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* **Using Computers to Communicate** **2 ch (3L)**

Introduces microcomputer techniques for gathering, exchanging and presenting information using internet and intranet networking; word processing and desktop publishing; graphics illustrating and data charting; computer mapping, overhead and colour slide preparation; web-page design and creation; and computer-based presentations. Prequisites: FOR2973 or equivalent, PC Ownership.

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 2416 Development and Structure of Woody Plants 3 ch (2C 3L)

Development of woody-plant structure from embryo to maturity. Topics include morphogenesis and basic anatomy, development of crown architecture, interrelationships between crown and stem development, wood and elements of wood quality, mechanisms of asexual and sexual reproduction. For each topic, differences among major genera will be considered. Prerequisite: FOR 2425

FOR 2425 Autecology of Forest Vegetation 4 ch (3C 3L)

Recognition and identification of species, environmental requirements, and persistence mechanisms of various life-forms of forest vegetation; interpretation of silvical characteristics of tree species; analysis of stands of tress in relation to general site conditions and relative stage of development; and evaluation of interrelationships among components of forest vegetation over time, including likely responses to perturbation or to interventions of various kinds. Prerequisite: a basic university course in Biology or Botany; Co-requisite: FOR 2435.

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 2466* Forest Health and Community Level Interventions 2 ch (2C)

Relates demands for forest values such as biodiversity, wildlife, recreation and timber to interventions required to obtain them. Community-level interventions are designed based on environmental changes required for tree growth, habitat creation or recreational use enhancement. Introduction to fundamentals of plant density and composition control, community-level access (e.g. nature trail development) and harvesting of forest products. Describes the mechanics of community-level interventions required to bring about environmental changes. Presents techniques for the evaluation of financial costs and benefits associated with community-level intervention.

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, 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 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 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 ArcViewTM, LanDSET, and the Energy Balance Model.

FOR 2973 Structured Problem Solving Camp 2 ch (6D)

Six-day camp prior to fall term. The course will deal with problem definition and solution techniques, data requirement identification and structured problem solving. The course will focus on the creation of algorithms and programs on computers using the Fortran language. Included is an introduction to microcomputer hardware and operating systems.

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 4 ch (3C 3L)

The influence of abiotic and biotic factors on the distribution and abundance of plant and animal populations in space and time. Topics include: natural selection and other genetic processes; population dynamics; life history strategies; herbivory; predator/prey, parasite/host and mutualistic interactions; intraspecific competition; and responses to climatic variation. This course will emphasize the link between ecological concepts and processes and the management of plant and animal populations. Prerequisite: STAT 2253, or permission of instructor.

FOR 3455 Forest Ecology: Communities and Ecosystems 4 ch (3C 3L)

Understanding of community and ecosystem dynamics in response to disturbance and the application of these principles in forest landscape management will be stressed. Topics include succession, patterns and processes of stand development, community structure and physiognomy, interspecific interactions, diversity and stability, and trophic levels. Prerequisite: FOR 2425, 2416, 2505 or permission of instructor.

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 and FOR3455, or permission of instructor.

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 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 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 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, FOR 4545, or permission of instructor.

FOR 4205* Quantitative Forest Characterization (O) 3 ch (4C /L)

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: FOR 2205, or permission of instructor.

FOR 4283* Introducing ArcGIS in Forestry 2 ch

This web-based course explores desktop GIS software, ArcCatalog and ArcMap, using forestry data and applications. Applications include georeferencing digital imagery, adding GPS data, defining map projections, adding attributes tables and relationships, extracting map features, combining maps, measuring forest values and landscapes, identifying management units and stratifying forest stands aspatially as well as spatially. Recommended for students who wish to learn the basics of ESRIs new GIS software suite, ArcGIS. Not available for credit for Computer Applications Minor students. Prerequisites: FOR3285.

FOR 4285* GIS in Forestry II 3 ch (1C 3L)

Advanced geographic information system techniques for forestry application. Introduces object- oriented program ming, ArcView GIS customizing, and the Arc/Info GIS. 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 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 5990 in physiology. Prerequisites: BIOL 1012, BIOL 1017, FOR 2415, 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 3455, 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 4545 **Landscape Pattern, Dynamics and Interpretation** **4 ch (3C 3L)**

Examines the interaction of climate, landform and soils with natural processes such as fire, insect epidemics and wind storms that together lead to the formation of landscape units and their arrangement to form landscape patterns. Exercises will center on recognition and causes of landscape units, measurement of landscape patterns, and their interpretation in terms of a variety of values. The goal of the course is to develop a foundation for assessing the impact of human activities on the environment, and for designing management interventions that produce flows of products and benefits such as timber, water, wildlife, and recreation while preserving overall values such as biodiversity and ecological integrity. Prerequisites: FOR3285

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 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 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 4956 **Forest Ecology: Practicum** **3 ch (3C)**

Knowledge of population, community, and ecosystem processes will be used to forecast possible outcomes of various natural and human-caused influences. The ecological basis of forest ecosystem management and other current forest policy and management issues will be examined through case studies. Prerequisites: FOR 3445, FOR 3455, FOR 3456, FOR 4545, or permission of instructor. Co-requisite: FOR 4005.

FOR 4973 **Forestry Field Camp II** **2 ch (9D)**

An intensive 9-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 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 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. Prequisites: 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 2415 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 2415, 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, 3455, 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 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, 5911, 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.

FOR 5990 Individual Project for the BScF Degree 6 ch (W)

An individual practicum designed to test the student's ability to integrate knowledge with analytical, problem-solving and communications skills through either a research thesis or a detailed problem analysis. Each student is required to give an oral presentation of the material in the Report.

FRENCH

Note: See beginning of Section H for abbreviations, course numbers and coding.

Students taking a French course for the first time must read the section entitled 'Placement' above. Students continuing in French should read the other paragraphs of the section entitled 'Courses' above.

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 Grammaire et expression écrite I 3 cr (3C)

Analyse linguistique des structures de la phrase en vue d'améliorer l'expression écrite. Identification et explication des erreurs courantes. Réservé aux diplômé-e-s de programmes d'immersion.

FR 1184 Grammar and Composition I 3 ch (3C)

Course designed for graduates of French Immersion. Studies the structure of the French sentence from a linguistic point of view, with the practical aim of improving students' command of written French by identifying the reason for their errors.

FR 1194 Grammaire et expression écrite II 3 cr (3C)

L'analyse grammaticale et des textes choisis en vue de développer les habiletés à l'oral et à l'écrit. Réservé aux diplômé-e-s de programmes d'immersion.

FR 1194 Grammar and Composition II 3 ch (3C)

Grammatical analysis and selected texts are used as a basis on which to develop the students oral and written command of French. For graduates of French immersion.

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 Cours de lecture I 3 cr (3C)

Élargissement des connaissances mettant l'accent sur la lecture. Réservé aux étudiant-e-s qui n'ont pas fini leurs études de français au niveau secondaire.

FR 1324 Reading I 3 ch (3C)

For students who have not completed High School French. Aims to extend students knowledge of French by emphasizing reading skills.

FR 1325 Cours de lecture II 3 cr (3C)

Suite de FR 1324. Étude des structures de base du français écrit.

FR 1325 Reading II 3 ch (3C)

Continuation of FR 1324. Study of the basic structures of written French. Prerequisite: None, but FR 1324 is recommended.

FR 1334 Français de base 3 cr (3C)

Développement des acquis verbaux de base, à l'oral et à l'écrit. Réservé aux étudiant-e-s qui n'ont pas fini leurs études de français au niveau secondaire. Nombre limité d'inscriptions.

FR 1334 Basic French 3 ch (3C)

For students who have not completed High School French. Further develops the basic language skills (oral and written) begun at the secondary level. Limited enrolment.

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 Stratégies d'écriture 3 cr (3C)

Identification et mise en pratique de stratégies d'écriture pertinentes pour la production de texte assistée par ordinateur. Analyse des étapes de planification, de mise en texte et de révision. Destiné principalement aux diplômé-e-s des programmes d'immersion.

FR 2154 Writing Strategies 3 ch (3C)

Identification and application of writing strategies in computer-assisted text production. Analysis of various aspects of writing: planning, drafting, revising. Intended primarily for graduates of French Immersion programs.

FR 2164 Analyse textuelle et rédaction 3 cr (3C)

Étude d'un choix de textes contemporains représentatifs de divers genres littéraires. Production de textes d'opinion. Destiné principalement aux étudiant-e-s scolarisé-e-s en français et aux diplômé-e-s des programmes d'immersion.

FR 2164 Textual Analysis and Writing 3 ch (3C)

A reading of selected contemporary works representing various genres. Essay writing. Intended primarily for Francophones and for graduates of French Immersion programs.

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 3ch (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 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 et poésie du Canada français 3 cr (3C)

Étude des principales oeuvres dramatiques et poétiques canadiennes-françaises.

FR 3884 The Poetry and Theatre of French Canada 3 ch (3C)

A study of major works by poets and playwrights of French Canada.

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.

FR 4034 Advanced Oral French II 3 ch (3C)

Aims at perfecting competence in oral French through presentations, discussions, debates on current topics.

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

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.

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.

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 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 1805 Survey and Photogrammetry Camp for Forest Engineers 2 ch

Introduction to photogrammetry. Scale determinations, maps, aerial photographs, photomosaics. Introduction to and application of photo-interpretation principles. Topographic surveying and mapping. Route design and route staking. Two weeks following spring examinations. 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 and total stations. Coordinate transformations and positioning by trigonometric sections. Route and construction surveys. Geodetic control surveys: from triangulation to differential 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 1003/1073 and MATH 2503 or equivalents. Co-requisites: CS 1083 or equivalent, MATH 2513 or equivalent introduction to matrices and systems of linear equations.

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. Co-requisite: LAW 4071.

GGE 2701 Technical Communication 2 ch (1C 2L)

Scientific and technical requirements for written and oral communication in the context of typical engineering circumstances. Students with deficiencies in basic language skills will have tutorials tailored to their specific problems.

GGE 2801 Advanced Surveying 3 ch (2C 3L)

Modern instrumentation for angular and distance measurements. Traverse computations. Route surveying. Engineering surveys. Introduction to photogrammetry. Prerequisites: GGE 1001 and 1803 or equivalent.

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: EE 3181, 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 2503, GGE 3202. Co-requisites: GGE 3022, GGE 3122, GGE 4211.

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 2503, 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: MATH 2503, 2513, GEOL 1001, 1026, PHYS 1913, 1918, ME 1113. 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: EE 3181, MATH 3543, GGE 3342.

GGE 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. Presentations by practicing professional engineers and other invited lecturers to assist the students with integrating social, legal, economic, aesthetic, and other non-technical aspects into engineering. Prerequisite: Restricted to students with at least 135 ch completed in the engineering programme. CE 4003, CHE 4003, EE 4003, GGE 4003 and ME 4003 are equivalent.

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. Prerequisite(s): EE 3181, GGE 3122, GGE 3353, GGE 4211. Co-requisite: GGE 3042.

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.

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 and permission of supervisor.

GGE 5013 Water Levels and Tides 1 ch (1C)

Theory and practical management of tidal data and other water level variations. Vertical reference surfaces. Prerequisite(s): minimum of 135 ch in program.

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 3022, 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 3022, GGE 3122, GGE 4041.

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 (1C, 3-week camp)

Planning, executing and appropriately presenting the results from a hydrographic survey. Seamanship and pilotage. Survey case studies. Three weeks on a hydrographic survey vessel immediately after 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 4072.

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 4041.

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 5242 Special Studies in Geodesy 4 ch (3C 3*L)

Extraterrestrial positioning technology (including GPS, Dopper systems, laser ranging, and very long baseline interferometry), data acquisition and processing. Inertial surveying. Introduction to geodynamics. Practical lab in GPS positioning. Prerequisites: GGE 3202, GGE 4211, GGE 4222.

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 4323.

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)

Legal institutions; review of land law; survey law and boundary law; offshore boundaries and use of hydrographic charts; brief review of law of the sea; the role of the surveyor in the resolution of boundary disputes; condominium and air space surveys; professional responsibilities, ethics and case studies. Prerequiste: GGE 3022, 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 Resouce Management 3 ch

Ecological systems, population problems, pollution concerns, energy needs, mineral exhaustionm 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 4983 Senior Report I 4ch (2C 4L) (W)

Presents some of the approaches used to formulate a proposal for an engineering study. Each student will: present a proposal which will serve as the basis for the Senior Report, commence work on the project with the guidance of an approved supervisor, and submit a substantial written progress report of the work completed. Restricted to students with at least 110 ch completed. 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)

Geotechnical testing and investigations; behaviour and analysis of existing and new waste fills (refuse landfills, wood wastes, sludges, tailings and slimes, dumped fills, and others); location of new sites; evaluation of leachate drainage and control; proper placing of fill material and the global fill; closure of refuse fills. Restricted to students with at least 135 ch completed. Prerequisite: CE 3123.

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.

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.

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.

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 stratigrapy 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 Mineralogy 5 ch (2C 3L)

Systematic study of the common sulfide and oxide minerals with emphasis on their structure, composition, crystal chemistry, phase relations and identification. Laboratory studies emphasize identification of mineral assemblages under reflected light. 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 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 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 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 4713 Field Course in Carbonate Sedimentation and Marine Ecology 5 ch (10 days min.)

An Optional course for 3rd- or 4th-year Geology students, to consist of field studies of reef and reef-associated environments, sediments, and biota, with emphasis on organism-sediment relationships. Field mapping of recent carbonate sediments in relation to depositional models will be augmented by field and laboratory studies of Recent and Pleistocene sediments in terms of diagenetic models. A minimum of 10 days will be spent in the field. Expenses will be met by the individual students. Prerequisites: GEOL 2201, 2212.

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

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 3 ch (3C) [W]A

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/ WLCS 1061 German Culture I 3 ch (3C) [W]

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/ WLCS 1071 German Culture II 3 ch (3C) [W]

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, or 1013 and 1023, 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 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 poltiical forces and concerns of the period. Conducted in English.

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 discusssed 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**

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/ WLCS 3072 **Studies in Contemporary German Cinema** **3 ch**

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.

GREEK

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** **3ch**

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** **3ch**

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/ 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 Page H.1 for abbreviations, course numbers and coding.

INTRODUCTORY COURSES

HIST 1001 Past into Present 3ch (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) 3ch (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 3ch (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) 3ch (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 1300 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.

HIST 1305 Prohibition and Rum-running in Canada, l827-l948 3ch (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 13l5 Canadian History on Film 3ch (3C) [W]

A survey of selected themes in Canadian history and their representation in documentary and dramatic films.

HIST 2013 Medieval History Part 1: Europe to l200 3ch (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 l200-l500 3ch (2C 1T) [W]

Continues the survey of the history of Medieval Europe, beginning c. l200 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 l00 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 2021 Women in History 3 ch (3C)

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.

HIST 2023 Early Modern Europe Part 1, 1300-1600 (O) 3ch (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) 3ch (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 2025 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.

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 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) 3ch (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 2325 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.

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 3ch (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.

HIST 2605 The Making of Modern East Asia 3 ch (2C IT) [W]

First provides a survey of the traditional societies of East Asia: their religions, cultural patterns, social structure, and political institutions. Then focuses on the impact of the modern West, and East Asia's various paths to modernization and resurgence.

HIST 2623 Latin America: Modern Period (O) 3 ch (3C) [W]

Surveys the history of Latin America from independence in the 1820s to the present. Major themes include early nation-building, political violence, revolutionary movements, gender relations, poverty, and grass-roots activism. Geographic focus on Mexico, Brazil, Argentina, and Cuba.

HIST 2705 History of Visual Culture, Part 1: Prehistoric to Medieval 3 ch (3C)[W]

Surveys the history of painting, sculpture, and architecture, from early cave paintings to monumental Gothic cathedrals. Designed both to introduce major artistic movements from around the world, and to examine contemporary art historical approaches to them.

HIST 2715 History of Visual Culture, Part 2: Renaissance to Modern 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.

HIST 2815 An Introduction to the History of Warfare (1) 3 ch(3C) [W]

To study tactics, technology, battle control, logistics and management. Developments will be examined by studying selected campaigns and battles.

HIST 2825 An Introduction to the History of Warfare (2) (A) 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. Credit will not be given for both HIST 1004 and HIST 2825.

HIST 2835 Canada and the Experience of War, 1600-2000 3ch(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.

HIST 2905 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.

HIST 2910 Approaches to History 6 ch (3S) [W]

Is designed as an introduction to the seminar method of historical inquiry. Offers students with a particular interest in history the opportunity to examine three selected historical topics in depth, by means of independent study and group discussion.Restricted admission; enrollment only by permission of the Department.

HIST 2913 Perspectives on History (A) 3ch (3S) [W]

An introduction to the seminar method of historical inquiry for second year students. It provides the opportunity to study a single topic intensively and to prepare a research essay on that topic. Limited Enrolment.

HIST 2915 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.

HIST 2925 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.

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, 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 the family and alternatives to family life.

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) 3ch (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 (2C1T) [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 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 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, l750-l930 (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, l700-l900 (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 France.

HIST 4006 The Enlightenment (O) 3 ch (2C 1T) [W]

Examines the social and political thought of the philosophes as well 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) 3ch (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 4101 Fascism and Film: Studies of European Fascism and the Holocaust (O) 3 ch (3C) [W]

Studies topics on fascism and the Holocaust between 1920 and 1945, including fascist film propaganda, Jewish ghetto films of the Holocaust, survivor testimony, war criminals and Nuremberg Trial films.

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 3301 Twentieth-Century Canada 3 ch (3C)[W]

Explores the Canadian experience in the twentieth century. Among the topics to be considered are Canada at war, relations with the United Kingdom and the United States, the emergence of a regional consciousness, French Canadian nationalism, the Depression, and the development of the modern welfare state. Designed for undergraduates in all faculties. Assumes no prior background in 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 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 work place 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 3371 Development of Canadian Law (A) 3 ch (3C)[W]

Examines law-making and law reform in Canada from Confederation to the Charter. Topics include the role of law in a federal state and a class society; state regulation of the market and the family; and the use of law to secure equal rights for women and minorities. Designed for undergraduates in all faculties. Requires general familiarity with the Canadian political system; involves some research in primary sources.

HIST 3373 Native Issues and the Law in Historical Perspective 3 ch (3C)[W]

Examines the historical roots of issues raised in Canadian landmark legal cases involving aboriginal rights and other related native issues. Considers the historical meaning of contact and pre-contact, differences in French and British treatment of aboriginals, the historical context of the first treaties, the Royal Proclamation of 1763, the origin of reserves, natives and the courts, colonial land granting policies and native land rights, and the Indian Act. (This course is recommended for students in the Law in Society Program.)

HIST 4311 British North American 1783-1860 (A) 3 ch (2C 1T) [W]

Explores a number of major themes in the evolution of the British Colonies in America from the American Revolution to Confederation.

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 3404 The United States: Jefferson to Jackson, 1789-1828 (A) 3 ch (3C)[W]

Examines the establishment of American institutions -- political, legal, economic and social -- under the Constitution. Covers relations with Great Britain and Europe, the War of 1812, the post war and Jacksonian period.

HIST 3405 Nature and the American Mind: Environmentalism and American Culture, Society and Politics (O) 3 ch (3C)[W]

Examines the history of America's relationship with its natural environment from the publication of Emerson's "Nature" in l836 to the Wise Use movement of the l980s. Will trace a "nature ethic" running both with and against the mainstream of American development, by studying the works of Thoreau, Leopold and Carson, among others. Will also examine the fragmentation of this ethic into competing streams: conservation, deep ecology, social ecology, ecofeminism, animal rights, and the relationship these approaches have with American liberalism.

HIST 3406 The Coming of the American Civil War, 1828-1861 (A) 3 ch (3C)[W]

Deals with the antebellum decades including such themes as the growth and disintegration of national political parties, the development of sectionalism, westward expansion, the Mexican War, slavery and the widening split between North and South that ended in Civil War.

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 History of Reform in Modern America (A) 3 ch (3C)[W]

Examines the political and social efforts of reformers in the modern United States, from the late nineteenth-century Populists to contemporary radicals. Focuses on issues of poverty, the women's movement, and African-American struggles for equality.

HIST 3409 History of American Foreign Policy (A) 3 ch (3C)[W]

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 I to the Cold War. Ends with the American withdrawal from Vietnam and the reorientation of U.S. policy.

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 3412 The History of Business (O) 3 ch (3C)[W]

Examines the origins of business techniques such as banking, credit, insurance, bookkeeping, and marketing, and the growth of big business.

HIST 3413 Themes in Caribbean History (O) 3 ch (3C)[W]

Focus on the British Empire before 1833. Topics include effects of American and French revolutions on the British West Indies, and the rise and fall of slavery.

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.

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 premodern societies of Asia, what role women played in the modernization process, and the real status of women in the comtemporary 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 relatedto 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 3715 The History of Medieval Art (O) 3 ch (3C)[W]

Examines art and architecture in Europe from the emergence of Christianity to the middle of the fourteenth century. Topics include the status of the artist, art patronage, and women as both creators and consumers of art.

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 3728 Eighteenth and Nineteenth-Century Western Art (O) 3 ch (3C)[W]

Examines the painting, sculpture and architecture of the eighteenth and nineteenth centuries. Focuses on the art of France, England, Italy, and the United States. Topics include colonialism, the changing representations of the city, the impact of technology on representation, and the shifting understandings of artistic identity.

HIST 3735 The History of Modern Art (O) 3 ch (3C)[W]

The emergence of modern painting out of the traditions of the Renaissance is examined principally in terms of France and England from the year 1800 onwards. The contributions of artists in Italy, Scandinavia and pre-Revolutionary Russia are also examined.

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 both UNB and 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 3811 The Nature of War Since 1945 (O) 3 ch (3C)[W]

Examines causes, conduct and consequences of the wars in Asia, Africa and the Middle East since 1945. Considers the influences of Cold War diplomacy, technology and strategy.

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 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) 3ch (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 1939 (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.

History of Science

Hist 3915 Darwinism: Origins and Impact (O) 3ch (3C) [W]

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 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) 3ch (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 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 5010 Reformation and Revolution in Sixteenth Century Europe 6 ch (3S) [W]

Examines reform and revolutionary movements in 16th-century Europe. The first term discusses the reform programs of humanists, Luther, Calvin, Anabaptists, and rebellious peasants. The second term focuses on the impact of reform movements on the intensified fears of the Devil that led to the witch-hunts of the later sixteenth and seventeenth centuries.

HIST 5023 French Peasants 1500-1940 (O) 3ch (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) 3ch (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 5026 Fascist Movements (A) 3ch (3S) [W]

Studies the roots of twentieth-century fascism, including the political, social and cultural elements which helped and hindered the rise of fascist movements in Europe and elsewhere. Topics include: the rise of the Fascists in Italy and the Nazis in Germany, unsuccessful fascist movements before 1945, neo-fascism after 1945.

HIST 5027 Fascist Regimes (A) 3ch (3S) [W]

Studies the fascists in power. Topics include a comparative study of the society, culture and politics of Fascist Italy and Nazi Germany; collaboration and resistance in Vichy France; reasons for the persistence of the Franco regime in Spain; and the impact of the fascist regimes on contemporary Europe.

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 5033 Vichy France (A) 3 ch (3S) [W]

Examines the circumstances leading to the French defeat of l940 and the installation of the Vichy regime, its quest for arole in Nazi-dominated Europe, and its efforts to recast French institutions and society through the 'National Revolution'. Attention will be paid to everyday life; the phenomena of accommodation, collaboration, and resistance; and Vichy's postwar legacy.

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 (3C) [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, l700-l830(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) 3ch (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 5305 Selected Themes in the History of the Atlantic Provinces Since Confederation 3 ch (3S) [W]

Focuses on a number of themes selected to fit the instructor's and students' interests. Topics such as regionalism, prohibition, feminism, working-class militancy, depression experiences, constitutional evolution, wartime industrialization, Acadian nationalism, free trade initiatives, Newfoundland and Confederation, equal opportunity, and the development of regional disparity may be included.

HIST 5310 Studies in Canadian Intellectual History (O) 6 ch (3S) [W]

Explores the theoretical and methodological issues involved in studying intellectual history. Then focuses on the lives of a series of prominent English-Canadian men and women who flourished in the period of 1815 to 1939 and who were representative of certain intellectual attitudes.

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. Restriction: Not open to students who have taken HIST 5310.

HIST 5320 Studies in the Social and Economic History of Canada 6 ch (3S) [W]

Explores aspects of the development of Canadian society between 1815 and 1914.

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 under-developemnt.

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 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 nineteenth 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 processess involved in collecting historical data, organizing for statistical analysis, analysis of data and interpretation of results.

HIST 5352 Schooling and Scholars in l9th-Century Canada (O) 3 ch (3S) [W]

Focuses on the world of students and their teachers during the l9th century. Changes in education, which influenced thedevelopment 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 andsuch factors as sex, age, geographical location and parents' occupations; and the emergence of free and compulsory education.

HIST 5401 Colonial America 3 ch (3S) [W]

Studies why and how the thirteen colonies which became the United States of America came into being, and how they developed and matured before the American Revolution. Emphasizes the European and British backgrounds, a comparison with other English and non-English colonies in America, Indians, Puritanism, the Plantation Tradition, the Enlightenment, the Great Awakening, and the Old Colonial System.

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 l890-l920 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 5470 Themes in the History of the United States 1607-1860 6 ch (3S) [W]

A study of selected themes in early American history from the colonial period to the eve of the Civil War, with attention to major ideas of the American Revolution, the process of nation-building, and distinctive features of American society, such as slavery.

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 5705 Topics in the History of Art and Culture (A) 3 ch (3S) [W]

Examines selected themes in the history of visual culture. Sample topics include: the historical representation of the body in art, and current challenges to and debates within art history.

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 historiansand writers of memoirs have portrayed them. Provides a survey of the major historical problems surrounding the conductof the war, including: the collapse of the West, the German invasion of Russia, the Japanese attack on Pearl Harbour, areabombing, 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, Palestinians, and fundamentalist Islam.

HIST 5815 The Study of War Since 1945 (A) 3ch (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) 3ch (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

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 (3S) [W]

Deals intensively with issues of Third World dependency and problems of social and economic development. Offered annually. 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 Music of the West Indies 3 ch (3C) [W]

This course studies the ethno-cultural roots of West Indian music and examine the emergence, development and scope of the more dominant forms such as calypso and reggae. Major emphasis is placed on their socio-political, literary and performance values. Offered every second year.

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]

Comprehensive study of a problem in the Third World leading to an honours thesis. Offered annually.

JAPANESE

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 (RLS) courses for students enrolled in one of the degree programs offered by the Faculty of Kinesiology.

Recreation and Sports Studies (RLS) 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 RLS COURSES

Due to the extensive number of KIN and RLS courses full with a waitlist, and to the highly competitive nature of upper-year admissions, the number of KIN and RLS 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 RLS 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 RLS course.

2. Normally, all students must have successfully completed all required pre-requisites to a KIN or RLS course prior to admission to KIN and RLS courses.

3. In all KIN and RLS courses students registered in a degree program offered by the Faculty of Kinesology will be given priority.

4. Normally, KIN 1001 shall be restricted to students in the degree programs offered by the Faculty of Kinesology.

5. Normally, KIN 1001 is the pre-requisite to all 2000, 3000 and 4000 level KIN and RLS courses.

6. Normally, student not registered in a degree program offered by the Faculty of Kinesiology shall be limited to twelve (12) credit hours of KIN/RLS courses.

ACTIVITY COURSES

Basic Activity Labs (1 ch):

KIN2603	Swimming (must pass entry level test) (A)
KIN2623	Basketball
KIN2631	Creative Dance (A)
KIN2642	Dance/Exercise for Older Adults (A)
KIN2652	Social/Folk Dance (A)
KIN2661	Dance Composition (A)
KIN2671	History of Dance (A)
KIN2691	Field Hockey
KIN2693	Basic Fitness Theory and Aerobic Dance Leadership(A)
KIN2701	Golf (A)
KIN2713	Gymnastics (A)
KIN2723	Ice Hockey
KIN2733	Badminton (A)
KIN2742	Skiing (A)
KIN2751	Soccer (A)
KIN2761	Tennis (A)
KIN2771	Rowing (KIN2603 - "C" grade or better in KIN 2603, or a White Level in Red Cross) (A)
KIN2783	Volleyball (A)
KIN2793	Weight Training (A)
KIN2802	Wrestling (A)
KIN2811	Fall Outdoor Recreation (A)
KIN2812	Winter Outdoor Recreation (Prerequisite: KIN2811: Fall Outdoor Recreation) (A)
KIN2821	Canoeing (KIN2603 - "C" grade or better in KIN 2603) (A)
KIN2831	Special Activity Project - Faculty specified
KIN2832	Special Activity Project - faculty specified
KIN2841	Rugby (A)
KIN2851	Special Activity Project (Determined by Faculty)
KIN2852	Special Activity Project (Determined by Faculty)
KIN2861	Leadership Activity*
KIN2862	Leadership Activity*
KIN2871	Baseball (A)
KIN2883	Wall Climbing (A)
KIN2891	Fly-Fishing (A)
KIN2901	Kayaking (A)

Advanced Activity Labs (2 ch)
(Prerequisite: the 2000 level activity):

KIN3623	Basketball (A)
KIN3723	Ice Hockey (A)
KIN3742	Skiing (A)
KIN3753	Soccer (A)
KIN3783	Volleyball (A)
KIN3821	Canoeing (KIN2821; and KIN2603 - "C" grade or better, or a White Level in Red Cross) (A)
KIN3831	Special Activity Project
KIN3832	Special Activity Project
KIN3851	Special Activity Project - Faculty specified
KIN3852	Special Activity Project - Faculty specified
KIN3861	Leadership Activity*
KIN3862	Leadership Activity*

* KIN2861/62, 3861/62. Leadership Activity 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.

* KIN2831/32, 3831/32. 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 (KIN2831,2832,2861,2862, 3831, 3832, 3861, 3862) must represent an opportunity for significant physical or recreational skill attainment and/or improvement by the student.

PROJECT CRITERIA:

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., KIN2831,2832,2861,2862) normally must include at least 40 hours of learning (instruction, practice, study, etc.).

5. A two-credit hour course (i.e., KIN3831,3832,3861,3862) 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 three (3) credit hours of special project and leadership courses, i.e., KIN 2831, 2832, 2861, 2862, 3831, 3832, 3861, 3862.

KIN 1001 Introduction to Kinesiology 3ch (3C,1T)(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 2002/ RLS 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.

KIN 2011 Introduction to Management of Sport and Recreation Organizations 3 ch (3C)(W)

The course is a general overview of some of the management skills required for the operation of sport and recreation organizations. Topics include management ethics, strategic planning, finance and budgeting, marketing and leadership/people management. The course concepts and experiences are designed to apply to public, private and not-for-profit sport/recreation/fitness organizations.

KIN 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.

KIN 2032 Introduction to Sport Psychology 3 ch (3C)(W)

Provides an introduction into the psychological influence of sport on the individual. This will involve an integration of reading, research, and applied work in the area of sport psychology. A wide variety of sport psychology topics will be covered so as to give a broad understanding of the area.

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 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.

KIN 2093 Introduction to Philosophy of Sport, Exercise and Recreation 3ch (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 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.

KIN 2113 The Use of Computers in Sport and Recreation Administration 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.

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 2161 Introduction to Human Factors 3ch (3C)(W)

This course introduces the physical, 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 the overall health and well-being of the worker are explored. Prerequisite: KIN 1001 or consent of the instructor.

KIN 3001 Introduction to Research Methods in Kinesiology 3 ch (3C)

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 3002 Sport History in Canada (A) 3ch (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: KIN 2002 or RLS 2042 or consent of the instructor.

KIN 3011 Comparative Programs in Physical Education, Recreation and Sport (O) 3 ch (3ch)

Examines the evolution, current practice, trends and issues in a variety of selected countries around the world compared to Canada. May involve a field trip at an additional cost. Prerequisite: KIN 2002 or KIN 2023 or RLS 3021 (RLS 2021).

KIN 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: KIN 2023 or RLS 3021 (RLS 2021).

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 3ch (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 3111/ RLS 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. Studies through lecture, case law and selected readings all related to recreation and sport. Prerequisite: KIN 2011.

KIN 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: KIN 2023 with a grade of C or better.

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 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.

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 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: KIN 2023 with a grade of C or better.

KIN 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.

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: Human Physiology II or equivalent

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: Minimum C grade in BIOL 2722 or equivalent.

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: C grade or better in BIOL 2782: Human Physiology II or equivalent; C grade or better in KIN 3081 or equivalent. Consent of the instructor for non-Kinesiology students.

KIN 3900 Sport Management Internship 12 ch

A full-term full-time placement in a professional position in a sport or recreation organization. An opportunity for the student to relate theory to practice through professional career and field experiences. Prerequisites: KIN 2011, KIN 2113, 9 ch of Related Professional Courses, 9 ch of Sport/Recreation Management Courses and 12 ch of the Business Minor.

KIN 3913/ 3914 Practicum I & II 3 ch (3C/L)

Relates theory to practice through professional career and field experiences. Faculty approval is required prior to any service commitment or registration procedures.

KIN 3953/ 3954 Athletic Therapy Practicum I & II 3 ch (3C/ L)(W)

As in KIN 3913. Involves Athletic Therapy internships only. Prerequisite: B grade or better in KIN 2051 and permission of the instructor.

KIN 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.

KIN 4022 Sociological Analysis of Sport (A) 3 ch (3S)(W)

Advanced reading course in selected topics. Prerequisite: KIN 2023 or RLS 3021 (RLS 2021).

KIN 4041 Developmental Coordination Disorders in Children 3 ch (3C)

This course is designed to provide theoretical, conceptual and practical experience in the area of developmental coordination disorders in children. Prerequisite: must have completed 57 ch.

KIN 4072 Neural Control of Human Movement (A) 3 ch (3C)

Designed to provide a fundamental understanding of some of the neural mechanisms involved in the control and learning of movement. Topics such as synaptic transmission, properties of muscle and the motor unit, spinal reflexes, locomotion, and postural control will be introduced. An overview of the hierarchical organization of the nervous system and some of the ascending and descending pathways important for the control of movement will also be examined. Finally, the role of the motor cortex, cerebellum, basal ganglia, and the vestibulo-ocular system in the control of movement will be examined. Selected workshops and demonstration laboratories will be used to enhance the students understanding of the material presented. Prerequisite: KIN 2072 & KIN 3081.

KIN 4082 Advanced Exercise Physiology (A) 4 ch (2.5L)(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: C grade or better in KIN 3482 or equivalent.

KIN 4093 Seminar on Health Care Ethics 3ch (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 3ch (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 4193 Advanced Seminar on Ethics of Sport and Recreation 3ch (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 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 theory and technical and practical in one sport or NCCP Level I Certificate.

KIN 4223 Research Seminar in the Sociology of Sport (A) 3 ch (3S)(W)

Involves one or more research projects conducted during the course. Projects selected from a variety of established research thrusts in the sociology of sport. Prerequisite: KIN 2023 or RLS 3021 (RLS 2021).

KIN 4242 Women, Sport and Physical Activity 3 ch (3C)

This seminar course is designed to provide a forum for the study and discussion of women-centred issues and approaches to sport and physical activity. Prerequisite: must have completed 57 ch.

KIN 4281 Measurement and Evaluation in Exercise Science 4ch (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 4ch (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.

KIN 4412 Leadership Principles and Practices 3 ch (3C)(W)

Deals with the theoretical developments, styles and practical techniques of leadership. Prerequisite: student must have completed 57 ch of their degree.

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. Prerequisite or co-requisite: C grade or better in ED 4791 or equivalent and in KIN 3482 or equivalent. Consent of the instructor for non-Kinesiology students. (Note: ED 4791 is not a prerequisite for 2002-2003).

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 Exercise and Sport Science** **3 ch (3T)**

Provides opportunities to explore in detail a number of special areas in exercise and sport science. 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 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 student's transcript. Open only to students with 57 ch completed towards their degree.

KIN 4910 **Advanced Practicum** **6 ch (6C/L)**

Continuation of KIN 3913/3914. Prerequisite: KIN 3913/3914.

KIN 4950 **Advanced Athletic Therapy Practicum** **6 ch (6C/L)(W)**

Prerequisite: KIN 3953/3954.

KIN 4993/4994 **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 focus of the first part of this course is with information processing and hybrid models of motor control and learning. The role of both central and sensory contributions to the control and learning of goal-directed movements will be examined. The focus of the second part of the course will be on the dynamical pattern approach to the study of motor control. Topics to be discussed in this part of the course include ecological psychology, equilibrium-point control, and the coordination of movement. Lectures and laboratories. Prerequisite: KIN 2072, KIN 3001, STATS 2043 and STATS 3043.

LATIN

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)**

Prequisite: 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 4103/4104 **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 (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 connectionsbetween law and the character or quality of society. Limited to students admitted to the LINS Joint Honours Program.

LINGUISTICS

LING 2401 Introduction to Language 3 ch (3C) [W]

Basic concepts, language structure and change.

LING 3006/ ENGL 3006 Linguistic Introduction to Canadian English (A) 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/ ENGL 3010 History of the English Language (A) 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".

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 grade of at least 60% in New Brunswick Advanced Mathematics (120) or equivalent. Students must also pass a Placement Test which is administered during Orientation week in September. See Note #13 in "Notes to Admissions Chart" in Section B of this Calendar for further details.

MATH 1013 Introduction to Calculus II 3 ch (4C)

Definition of the integral, fundamental theorem of Calculus, techniques of integration. Improper integrals. First order O.D.E.'s. Taylor polynomials. Complex numbers. Conic sections. 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 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 any of MATH 2003, 2213, 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. See also the Note after MATH 1833. Prerequisite: A grade of C or higher in MATH 1013.

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 as part of the concurrent BCS-BSc program should choose MATH 2203. Prerequisite: MATH 1003/1013 or permission of instructor.

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. See note following MATH 1833. 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 2503 Calculus and Linear Algebra for Engineers I 3 ch (3C 1T)

Ordinary differential equations, infinite series, linear algebra. See noteS following MATH 2003 and MATH 1833. Prerequisite: A grade of C or higher in MATH 1013.

MATH 2513 Calculus and Linear Algebra for Engineers II 3 ch (3C 1T)

Vectors, functions of several variables, polar coordinates and parametric curves, multiple integrals. See note following MATH 2003. Prerequisite: A grade of C or higher in MATH 1013.

MATH 3003 Applied Analysis 3 ch (3C)

Vector space of functions, orthogonality, projection theorem, Gram-Schmidt algorithm, the method of least squares, orthogonal polynomial approximations, convergence in normed linear space, contraction mapping principle with applications, orthogonal expansions in Hilbert space, introduction to Fourier analysis, trigonometric series, complex Fourier series, Fourier transform, Laplace transform, Z-transform, Fast Fourier transform, selected applications. Prerequisites: MATH 2013 (or MATH 2503 and 2513), and MATH 2213 (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. Prerequisite: Either MATH 2203 or CS 2303, and MATH 2213. (MATH 3213 recommended).

MATH 3043 Nonlinear Differential Equations, Stability and Chaos 3ch (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. Prerequisite: MATH 2013, 2203, 2213.

MATH 3113 Analysis II 3 ch (3C)

Differential calculus. Riemann-Stieltjes integration. Sequences and series of functions. Fourier series. Prerequisite: MATH 3103.

MATH 3213 Linear Algebra II 3ch (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 3473 Bio-Mathematical Models (O) 3 ch (3C)

Development of mathematical models describing simple biological systems. There is more emphasis on derivation and analysis of models than on agreement with experiment. The principal mathematical tools are differential and difference equations, finite mathematics, operations research and probability and statistics. Possible topics include population dynamics, population genetics, biochemical systems, morphogenesis, dynamics of motion, ecology models and optimal management of biological resources. Prerequisites: MATH 2003-2013 or equivalent.

MATH 3503 Differential Equations for Engineers 3 ch (3C 1T)

Systems of 1st and 2nd order ordinary differential equations, Laplace transforms, power series solutions and elementary properties of Legendre polynomials and the Bessel functions Jn, Fourier series , boundary value problems. Prerequisite: A minimum grade of C in either MATH 2503 or 2513, with the other to be taken concurrently. Alternatively, a minimum grade of C in MATH 2003 with MATH 2013 to be taken concurrently.

MATH 3513 Partial Differential Equations and Complex Variables 3 ch (3C 1T)

Sturm-Liouville problems, eigenfunction expansion, Legendre functions, spherical harmonics, derivation of Laplace and Poisson equations, harmonic functions, Green's formulae, solution of potential theory problems by eigenfunction and Green's function methods, complex analytic function theory, conformal mapping. Prerequisites: MATH 2543 and 2553 or equivalent.Note: Credit will be given for only one of MATH 3243, 3513 and 3523.

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: NB Advanced Math (120), or equivalent and the successful completion of at least one year of a university program.

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 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 and MATH 2013) or (MATH 2503 and 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 Methods of Applied Mathematics (A) 3 ch (3C)

Topics discussed will vary according to demand and may be selected from: transform theory, generalized functions, perturbation methods, asymptotic methods, applied probability, diffusion processes, approximate methods, optimization techniques. Students should consult Department to see which topics may be offered in any given year. Prerequisite: MATH 2003-2013 or equivalent.

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 3ch (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 4853 Mathematics of Financial Derivatives (A) 3ch(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 2013, MATH 2213, STAT 2593 or equivalent, and CS 1003 or equivalent.

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 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.

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, multi-views, 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, are examined in detail. Drafting is emphasized as a communications medium to convey highly technical information and images in a concise and universally recognized format. Upon successful completion of the course the student will be capable of productive work in a drafting environment.

ME 1013 Descriptive Geometry with Computer Graphics 4 ch (2C 3L)

An introductory course in descriptive geometry using interactive computer graphics; includes 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. Corequisite: CS 1003 or other introductory programming course. Prerequisite: ME 1003.

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. Newton's second and third laws, work, energy and momentum of particles are reviewed. Moments of area and inertia. 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 1913, PHYS 1918. Corequisite: MATH 1013.

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: CE 1013.

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: ME 1113. 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 2321 Communications and Introduction to Design 4 ch (3C 2L)(W)

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 1003, ME 1013.

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 1113, ME 2121, ME 2321 or CE 2023.

ME 2503 Materials Science 4 ch (3C 3*L)

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 2L)

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, ME 1113. Recommended: EE 1713. Co-requisite: 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.

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, ME 3413, STAT 2593.

ME 3352 Optimization and Computer Aided Design 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: ME 3511, 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, 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: ME 3413.

ME 3423 Thermodynamics II 3ch (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 1ch (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. 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: 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: ME 3511.

ME 3522 Fluid Mechanics II 3ch (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 4ch (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 CE 2503 (for EE students only), ME 2613 or approved alternate.

ME 4003 The Engineering Profession 2 ch (2 C) (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. Prerequisites: Restricted to students with at least 135 ch completed in the Engineering degree programme. CE 4003, CHE 4003, EE 4003, GGE 4003 and ME 4003 are equivalent.

ME 4153* Kinematic Synthesis 4 ch (3C 3L*)

Euler Savary equation, inflection circle, Cardan circle and instantaneous methods of designing linkages. Chebychev spacing of accuracy points, two, three and four position synthesis of linkages. Synthesis of gear trains. Prerequisite: ME 2143.

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. Prerequisite: 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** **4ch (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 3*L) (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** **4ch (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 2503, 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 4843 **Senior Project Proposal** **2ch (W)**

Mechanical Engineering students are required to prepare and present a technical report based on an industrial or research 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. Research 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 48 ch or less remaining in their program.

ME 4853 **Senior Project Report** **3ch (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 5183* **Random Vibration** **4 ch (3C 2L)**

Introduction to probability distributions and ensemble averages. Correlation, spectral density. Excitation - response relations for linear systems, transmission of random vibration in mechanical systems. Statistics of narrow band processes, fatigue, first passage, failure. Digital spectral analysis, FFT. Simulation. Markov processes, Fokker-Planck equation. Prerequisites: ME 2613, STAT 2593.

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 thermalhydraulics. Accident analysis and safety systems. Prerequisite: CHE 3804 or equivalent. (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 withn mechanical and chemical engineering.

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** **3 ch (3C)**

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 5503* **Application of Computational Fluid Dynamics to Industrial Processes** **4 ch (3C 2L)**

Finite-volume method. 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 CHE 4601 or EE 3323.

ME 5653* **Predictive Control and Intelligent Sensors** **4ch (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** **4ch (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 or CHE 4601.

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.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 5888* **Composite Materials** **4ch (3C 3L*)**

Behaviour, testing, analysis and design of composite materials. Topics include: basic concepts, mechanics of fibre reinforcement, types and properties of fibres, matrices, elasticity of orthotropic laminates, failure and fracture mechanics, damage mechanics, manufacturing technology, fastening and composites repair technology, and applications. Prerequisites: ME 2121 or CE 2023, ME 2222.

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.

MEDICAL LABORATORY SCIENCE

The following courses are presently offered by other Science and Engineering Departments.

MLS 4145 **Directed Studies in Medical Science** **4ch(R)**

Students will conduct research and write a report on a topic of interest within the broad field of medical science. The research will be conducted under the supervision of a staff member who is qualified to provide the proper guidance and assess the value of the work. Prerequisite: Approval of the program advisor.

MLS 4900 **Senior Project** **6ch**

Students undertake a research project and submit a major report (ie. thesis) on the project. The research will be undertaken with the guidance of a member of the Faculty of Science. Students are advised to consult with their intended faculty supervisor near the end of their third year; requirements and guidelines for the Senior Project should be obtained from the program advisor. Prerequisite: Approval of the program advisor.

MULTIMEDIA STUDIES

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 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 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 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

This section contains course descriptions for students entering the program after September 2001. For students who entered the program prior to September 2001, please contact the Faculty of Nursing or the 2001-2002 Undergraduate Calendar for course descriptions.

* courses may be taken by students in either the BN or BN/RN program.

Note: See beginning of Section H for abreviations, course numbers and coding.

NURS 1011 Nursing as a Profession 3 ch

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

Intro to the theoretical foundations of caring. Examines the relational aspects of caring in nursing practice. Introduces the learner to beginning counseling skills.

NURS 1121 Introduction to Nursing and Wellness (3ch)

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 (4ch)

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.

NURS 1136 Practicum: Wellness and Chronicity (3ch)

Complements and supplements NURS1135 and NURS1142. 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.

NURS 1142 ASP Health Assessment (4ch)

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.

NURS 1225 Nursing and Wellness 3 ch

Explores the concepts of wellness, health and illness within the framework of Primary health Care. Pre- or co-requisite: NURS 1235.

NURS 1235 Clinical Practicum: Nursing and Wellness 4 ch

Co-requisite: NURS 1225.

NURS 2041 Physical Assessment 4 ch (3C 1L)

Addresses physical and psychosocial assessment throughout the lifespan. Includes lab experiences.

NURS 2063 Concentrated Clinical Practice I 5ch (5L)

An integrative practice experience. Pre-requisites include NURS2155 and NURS2187.

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 basis legal and safety issues related to drug administration by nurse.

NURS 2135 Chronic Health Challenges 3 ch

Focuses on the impact/influences of long term health challenges on clients. Examines rehabilitative and supporting nursing practise. Pre- or co-requisite: NURS 1255.

NURS 2145 Mental Health Challenges 3 ch

Explores the experiences of persons living with psychiatric illness and examines related nursing therapeutics. Pre- or co-requisite: NURS 1235.

NURS 2155 Clinical Practicum: Chronic and Mental Health Challenges 4 ch

Co-requisite(s): NURS 2135 and NURS 2145.

NURS 2171 Young Families: Enhancing their Health (2ch)

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 Practicum: Young Families (7ch)

Using a health promotion framework, explores family processes. In partnership with clients, develops and implements strategies to support health behaviours of young families involved with childbearing and child rearing.

NURS 2177 Young Families' Health 3 ch

Focuses on promoting the health of childbearing families. Encompasses the childbearing experience. Pre- or co-requisite: NURS 2187.

NURS 2187 Clinical Practicum: Young Families' Health 4 ch

Co-requisite: NURS 2177.

NURS 2222 Clinical Practicum III (2ch)

Complements and supplements NURS 2021 (for Advanced Standing Students Only).

NURS 3014 Concepts of the Nursing Paradigm 3 ch (3C)

Introduction to core concepts of the nursing profession within a primary helath care framework. Examines nursing as a process between persons; health as the goal of nursing; and environment as context for nursing. Prerequisite to or co-requisite with other nursing courses.

NURS 3025 Conceptual Frameworks for Client Care 3 ch (3C)

Frameworks for nursing practice are explored including holistic assessments, nursing theories, evidence based practice, legal and ethical frameworks.

NURS 3031 Helping Relationships 3 ch (2C 1L W)

Explores the helping relationship within the context of nursing practice . Focuses on more advanced counseling skills. Includes lab experiences.

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

Focuses on the role of the nurse in community and public health nursing, 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, and social and physical environments. Pre- or co-requisite: NURS 3066.

NURS 3066 Clinical Practicum: Community and Population Health Nursing 4 ch

Co-requisite(s): 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. Pre or co requisite of NURS3073.

NURS 3073 Clinical Practicum: Acute Health Challenges 6 ch (6L)

Complements and supplements NURS 3072. Prerequisite: NURS3072

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-requisite: NURS3073.

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)

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/L)

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 3ch (3C)

This course examines mental health issues encountered by professionals (ie. nurses and socialworkers) with an emphasis on practice and policy implications. Students will have an opportunityto 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 theprofessional and professional interventions will be examined.

NURS 3211 Family Systems Nursing 3 ch (3C)

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 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. Prerequisite: NURS 3211 as pre- or co-requisite.

NURS 3222 Program Development for Aggregates 3 ch (3C)

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 Practicum: Program Development for Aggregates 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. Prerequisite: NURS 3222 as pre- or co-requisite.

NURS 3234 Leadership in Nursing 3 ch (3C)

Focuses on leadership and management in nursing, and explores leadership theories and roles and the forces which influence them.

NURS 3244 Research in Nursing 3 ch (3C)

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 (3ch)

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: NURS3014 (UNBF) or NURS2011 (UNBSJ).

NURS 4002 Intervention Theories 3 ch (3C)

Examination of intervention theories related to nursing practice. Discussion of strategies and practice approaches. Pre-requisites: NURS 3014, 3025, 3134, 3164, 3222, 3225, & 3234. Pre or Co-requisites: NURS 3211 & 3215.

NURS 4012 Clinical Practicum: Intervention Theories 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

From the family perspective, explores the impact of long term complex health challenges on the family. Examines the implications for nursing practice. Pre or co-requisite of NURS4123.

NURS 4121 Nursing in Complex Situations 3 ch

Explores the client's experience of complex health challenges. Examines related nursing therapeutics with an emphasis on clinical judgement and decision making. Prerequisite of NURS4123.

NURS 4123 Clinical Practicum: Nursing Families in Complex Situations 6 ch

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. Co- requisite of NURS4111 and NURS4121.

NURS 4152 Nursing Practice Elective 7 ch (7L)

A preceptored clinical experience in the area of the student's choice. Prerequisite: NURS 4175.

NURS 4165 Integrated Nursing Care 2 ch

Explores the experiences of clients living with multi-system health challenges. Focuses on nursing therapeutics with further development of independent clinical judgement and decision making. Pre- or co-requisite of NURS4175.

NURS 4175 Clinical Practicum: Integrated Nursing Care 3 ch (3L)

Co-requisite: NURS 4165.

NURS 4185 Trends and Leadership in Nursing 3 ch

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 4254* Issues in Transcultural Health 3 ch (3C)

Examines cultural influences on perceptions of health and their implications for health practices.

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 (3ch)

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 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: NURS3014 (UNBF) or NURS2011 (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:NURS3014 (UNBF) or NURS2011 (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:NURS3014 (UNBF) or NURS2011 (UNBSJ).

NURS 4812 Psych/Mental Health Nursing Practicum 3 ch

A preceptor supervised practicum for Registered Nurse students designed to complement NURS4801/2/3 and enhance the students' psych/mental health practice competencies. Prerequisites NURS3014 (UNBF) or NURS2011 (UNBSJ); NURS4801; NURS4802; NURS4803 or with permission of instructor.

NURS 4813 Psych/ Mental Health Nursing Practicum 4 ch

A preceptor supervised practicum for BN graduates designed to complement NURS4801/2/3 and enhance the students' psych/mental health practice competencies. Prerequisites NURS4801; NURS4802; NURS4803 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 each may be taken as a first course in Philosophy.

PHIL 1001 Ethics of Life and Death 3 ch (3C)

Introduces various ethical theories and examines moral problems including abortion, euthanasia and capital punishment.

PHIL 1002 The Rights of the Individual 3 ch (3C)

Introduces various ethical theories and examines moral problems including pornography, discrimination and affirmative action.

PHIL 1003 God, Mind and Freedom 3 ch (3C)

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)

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)

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)

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.

PHIL 2701 Classics in the Philosophy of Law

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

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)[W]

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 3041-9 Selected topics in Existential Philosophy 3 ch (3C)

Introduction to existential philosophy through examination of the history of its central themes in the works of some of the following philosophers: Kierkegaard, Nietzsche, Camus, Marcel, Kafka, Dostoevsky, and Tolstoy. 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 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

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

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 3174-9 Selected Topics in Philosophy of Religion 3 ch (3C)[W]

Each year a problem, or possibly two, is chosen and investigated in depth. Although investigation focuses on a specific issue, considerable time is spent on relating the results to wider concerns in philosophy of religion. Prerequisite: A course in Philosophy or permission of the instructor.

PHIL 3201-9 Selected Topics in Environmental Philosophy 3 ch (3C)

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 3633-9 Selected Topics in Phenomenology and Existential Ontology 3 ch (3C)

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

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

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 forcredit more than once. Title of topic will appear on transcript. This course replaces PHIL 3703 and PHIL 3704. Prerequisite: Permission of 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: 12 ch in Philosophy 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 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 reserved for students registered in the Science Faculty only; space is limited. Corequisite: PHYS 1045, MATH 1003, 1013 or equivalent. Students cannot receive credit for both 1040 and 1940.

PHYS 1045 Physics Laboratory (for Science Students) 4 ch (3L) [W]

Weekly exercises in practical physics, covering topics in mechanics, sound, light, electricity, atomic and nuclear physics. Laboratory for students registered in PHYS 1040. Corequisite: PHYS 1040, MATH 1003, 1013 or equivalent. Students cannot receive credit for both 1045 and 1945.

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. Corequisite: MATH 1003, 1013 or equivalent. Students cannot receive credit for both PHYS 1940 and 1040.

PHYS 1945 Physics Laboratory (for non-Science Students) 4 ch (3L) [W]

Weekly exercises in practical physics, covering topics in mechanics, sound, light, electricity, atomic and nuclear physics. Laboratory for students registered in PHYS 1940. Corequisite: PHYS 1940, MATH 1003, 1013 or equivalent. Students cannot receive credit for both 1945 and 1045.

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 3041 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 4100 Thesis Project 8 ch [W]

All Honours and Applied Physics students must undertake a thesis project under the supervision of a faculty member. The project may be commenced during the students third year of study. With departmental permission Physics Major students may enroll 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. 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 interestgroups; representation and electoral behaviour; nationalism in Canada. (Counts under Canadian Government and Politics.)

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 2603 Introduction to Europen 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 Topics in Federal Public Administration 3 ch (3C)[W]

Examines the structure and process of public administration in Canadian national government.

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]

Analyses 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.

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/ ECON 3112 The Political Economy of Russia and Ukraine 3 ch (3C)[W]

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, suchas 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/ ECON 3343 The European Union in Transition 3 ch (3C)[W]

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/ ECON 3361 Economics and Politics of Transition 3 ch (3C) [W]

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 and studies the wide political spectrum of Germany's multiparty system and focuses on its cultural and political influence over the rest of Europe.

POLS 3373 The Middle East States 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 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 Nations and Nationalism in the USSR 3 ch (3C)[W]

Deals with the breakup of the USSR from the Baltic states to the Muslim and Caucasian periphery of the former Soviet Empire.

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/ ECON 3633 International Public Law 3 ch (3C)[W]

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 the 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 coup d'etats 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/ ECON 3831 Contemporary China 3 ch (3C)[W]

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 3312/ SOCI 3312 Political Sociology 3 ch (3C)

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.

POLS 3391 Theory and Practice of Public Administration 3 ch (3C)[W]

Development of administrative institutions; modern theories of public administration; the relationship of politics to administration; control of administrative action.

POLS 3410 Survey of Political Thought 6 ch (6C)[W]

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 3443 Feminist Issues in Political Thought 3 ch (3C)

Examines critical isues 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 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]

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.

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) Level I

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) Level I

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 (LE) 3 ch (3L)

An introduction to psychology as an empirical science. Students will design, conduct, analyse and formally report on several research projects. Students must concurrently register in PSYC 2113. Students will meet in a classroom for one hour and participate in a three 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 (6 ch).

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 (LE) 3 ch (3C 1L)

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 Majors and Honours students in Psychology. Prerequisite: PSYC 2113 and PSYC 2123 or PSYC 2103 and PSYC 2903.

PSYC 3123 Introduction to Measurement Theory (LE) 3ch (2C 2L)

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 3150 Basic Research Seminar (LE) 6ch (3S,3S)

Involves active participation in several of the activities related to an empirical research project including planning and development of the 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 in Psychology during their fourth year. Prerequisite: PSYC 2113 and PSYC 2123 and two psychology Foundation courses. Permission of a faculty supervisor and the Department is required.

PSYC 3213 Language Development 3 ch (3C 1T) Level II

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 3ch (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 3ch (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 3ch (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 3ch (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 3ch (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 3ch (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 3ch (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 3ch (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) Level III

Empirically based, emphasizing behavioural analysis and control of anxiety, maladaptive interpersonal relations, addictions, health-related problems, etc. A self-control project is required.

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 3ch (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 3ch (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 3ch (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 3ch (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 3ch (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 3ch (3L)

Current issues in research in neuropsychology will be examined. Prerequisite: PSYC 3773

PSYC 4003 Topical Seminar in Psychology (O) 3ch (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) Level IV

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 6ch (LE) (3S,3S)

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. . Permission of a faculty supervisor and the Department is required.

PSYC 4203 Topical Seminar in Developmental Psychology (O) 3ch (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 4213 Development of Individuals with Disabilities 3ch (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 3ch (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) 3ch (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) 3ch (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) 3ch (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) 3ch (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) 3ch (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) 3ch (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) 3ch (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) 3ch (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

RLS 2032 Recreation Program Planning 3 ch (3C)(W)

Deals with the underlying principles of planning recreation programs, and relates these principles to a variety of recreation settings to meet the needs of different interest levels.

RLS 2042/ KIN 2002 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.

RLS 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.

RLS 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.

RLS 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.

RLS 3021 Sociology of Leisure 3 ch (3C)(W)

Examines sociological variables affecting leisure needs and interests, and program development and success. Prerequisite: RLS 2062.

RLS 3042 History of Parks and Recreation in Canada (A) 3ch (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: KIN 2002/RLS 2042 or consent of the instructor.

RLS 3051 Advanced Management of Sport and Recreation Organizations 3 ch (3C)(W)(A)

An examination of current management concepts and issues facing sport 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: KIN 2011.

RLS 3052/ KIN 3111 Recreation, Sport and the Law 3 ch (3C)(A)

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. Studies through lecture, case law and selected readings all related to recreation and sport. Prerequisite: KIN 2011.

RLS 3061 Recreation Delivery Systems 3 ch (3C)(W)

This course will examine the roles of the public, not-for-profit, and commercial sectors in the delivery of recreation and leisure services. Particular attention will be paid to identifying similarities and differences among the sectors and to the relationships that exist among them.

RLS 3062 Psychological Aspects of Leisure 3 ch (3c) W (A)

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: RLS 2062 or consent of instructor.

RLS 3072 Planning Principles and Processes for Recreation Services 3 ch (3C)(W)

Examines the planning process with particular reference to the roles of recreation administrators, politicians and citizens in planning leisure opportunities.

RLS 3100 Recreation Internship 12 ch(W)

A full-term full-time placement in a professional position in a recreation, park or tourism agency. An opportunity for the student to relate theory to practice through professional career and field experiences. Prerequisites: RLS 2032, 2052, 2062, 2302, 3061, 3072.

RLS 3101 Applications Of Research 3ch (3C)

An introduction to the basic concepts of research in the area of recreation and sport. It is designed to create a better understanding of the key concepts of both quantitative and qualitative research. Throughout the course attention will be given to topics such as the principles, concepts, terminology, design, analysis, interpretation and ethical issues of research.

RLS 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: RLS 2302 or consent of the instructor.

RLS 4081 Marketing of Recreation and Tourism Services 3 ch (3C)(W)

Deals with the application of marketing theory to issues in recreation /tourism / sports services. Recommended prerequisite: BA 2304/ ADM 2313.

RLS 4092 Senior Seminar in Recreation and Leisure Studies 3ch (3C) (W)

This seminar based course is intended as an integrating and culminating experience for senior students in the Bachelor of Recreation and Leisure Studies program. It will involve class discussions on current issues and challenges in the field of recreation and leisure studies. Students will be responsible for helping identify issues to be discussed and for preparing and presenting seminars. Prerequisite: Students must have completed 87ch of the BRLS or the BKIN (Wellness) program.

RLS 4093 Directed Studies in Recreation and Leisure I 3 ch

Provides opportunities to explore a number of special topics in recreation, leisure and tourism. Faculty approval is required prior to registration. Title of the topic will appear on the students transcript. Open only to BRLS students who have completed 24 ch of required RLS and/or KIN courses in the BRLS program. Prerequisite: 24 ch of required RLS and/or KIN courses in the BRLS program.

RLS 4094 Directed Studies in Recreation and Leisure II 3 ch

Provides opportunities to explore a number of special topics in recreation, leisure and tourism. Faculty approval is required prior to registration. Title of the topic will appear on the students transcript. Open only to BRLS students who have completed 24 ch of required RLS and/or KIN courses in the BRLS program. Prerequisite: 24 ch of required RLS and/or KIN courses in the BRLS program.

RLS 4096 Selected Topics in Recreation and Leisure Studies 3 ch

Selected topics of special interest in the areas of recreation, leisure and tourism 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.

RLS 4097 Selected Topics in Recreation and Leisure Studies 3ch

Selected topics of special interest in the areas of recreation, leisure and tourism 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 on third year and above.

RLS 4201 Entrepreneurship and Small Business in Recreation, Sport and Tourism (A) 3 ch (3C)(W)

Examines components, trends and management techniques in the development of small business in Recreation, Sport, Fitness and Tourism Services. Prerequisite: KIN 2011, or permission of instructor.

RLS 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: RLS 2302 or permission of instructor.

RLS 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: RLS 2302 or permission of instructor.

RLS 4900 Honours Research Project 6 ch (W)

Recreation and Leisure Studies honours students must complete a research (thesis) project that is approved by the faculty and supervised by a Recreation and Leisure 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 BRLS advisor prior to the end of third year to discuss project requirements and potential topics. Required of, and restricted to BRLS honours students.

RLS 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: RLS 2062, RLS 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 1011 Comparative Study of Cultures and World Religions 3 ch (M/P, S)

The learners will study and discuss ethical perspectives, spiritual traditions, and contemplative practices of various cultures, which leads them to examine and question their own understanding of self and others.

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)

The images which individuals, groups and collectives formulate and communicate affect the way people view phenomena. This module will explore the visual images and mental models that are relevant to our understanding of self, others and the knowledge we accept or value with particular emphasis on images of power.

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 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/L/S)

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 3015 Science and Religion: Understanding Through Dialogue 3ch (S)

The purpose of this course is to seek understanding through dialogue. Faculty and students will develop a deeper understanding and appreciation of the relationship between science and religion by examining certain major paradigm shifts in science and religion, and some of the philosophical beliefs and assumptions held by both which served to enhance, but sometimes also restrict, the interaction between the two. The historical and philosophical background will set the stage for examining two important contemporary issues-Beginnings and Endings and Human Genetics - and how significant light can be shed on them through 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 3035 Leadership in Theory and Practice II 3 ch (M/P C/L/S)

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 Selected Topics in Interdisciplinary Leadership 3 ch (P C/S)

Selected topics of special interest are examined. Special emphasis will be placed on current issues. Topics will be specified in advance and the title of the topic chosen will appear on the student's transcript.

RCLP 3995 Directed Studies in Interdisciplinary Leadership 3 ch (M/P S, W)

An individualized study of a topic of interest to the student, in consultation with a faculty mentor and approval of the Dean.

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 4778 Selected Topics in Interdisciplinary Leadership 3 ch (P C/S)

Selected topics of special interest are examined. Special emphasis will be placed on current issues. Topics will be specified in advance and the title of the topic chosen will appear on the student transcript.

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 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 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.

RUSS/ WLCS 1043 Russian Culture I 3 ch (3C)[W]

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/ WLCS 1053 Russian Culture II 3 ch (3C)[W]

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/ SPAN/RUSS 4043 Literature and Religion in 19th and 20th Century Russia and Spain 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.

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.

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 3ch

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 2100 The Study of Social Life 6 ch

Introduces the basic skills essential to thinking sociologically and doing sociology. Topics will normally include asking sociological questions, understanding sociological writings, using social science library and internet resources, applying sociological understanding to social processes, translating sociological insights into research strategies, preparing and evaluating sociological research papers, identifying the impact of sociologists work on social policy. Team instructed by Sociology Faculty. Required for majors and honours.

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 / POLS 331 Political Sociology 3 ch (3C)

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 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 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 organizatio

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. Prerequisite: Approval of Department.

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 5203 Honours Paper 3 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 4013 Software Project Design 3 ch (6L)(W)

A software design experience involving a medium to large group. Students prepare requirements, specification, analysis and design documents such as a team, toward a useful software product. Prerequisite: CS 3013 and completion of 120 ch in the Software Engineering program.

SWE 4023 Software Project Implementation 3ch (6L)(W)

A team software implementation experience. Using the documentation produced in SWE 4023, students implement and test the product, and provide a users' manual. In a formal presentation, the product is demonstrated to meet its requirements (validation and acceptance tests). Prerequisite: SWE 4013.

SWE 4103 Software Quality and Project Management 4ch (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 4ch (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. Prequisite: CS3013 or CMPE 3213.

SWE 4303 Performance Analysis of Computer Systems 4ch (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 Sortware Architecture 4ch (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 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.

SPAN 2204 Intermediate Spanish II 3 ch

Continuation of SPAN 2203. (See note on prerequisites.)

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 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 langugage. 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/ 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 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 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.

WLCS/ SPAN 1013 **The Culture of Spain and Latin America I** **3 ch (W)**

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/ SPAN 1014 **The Culture of Spain and Latin America II** **3 ch (3C) [w]**

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/ SPAN/RUSS 4043 **Literature and Religion in 19th and 20th Century Russia and Spain** **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.

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 1213 **Introduction to Statistics** **3 ch (3C)**

An introductory course in statistics. Probability, 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 several disciplines. 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 1213, 2043, 2253, 2263, 2264, 2593.

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 1213, 2043, 2253, 2263, 2264, 2593. Not to be taken for credit by CS, MATH or STAT majors.

STAT 2253 **Introductory Statistics For Forestry Students** **3ch(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 1213, 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 1213, 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 1213, 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 1213, 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.

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. Also STAT 1213 is strongly recommended as preparation for the sequence STAT 3083/3093.

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 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: MATH 2013.

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 1213, 2263, 2264, 2593, or 3093; and MATH 2003, 2213, or 2503. Note: Credit can be obtained for only one of STAT 3373, 4473.

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.

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 4473 Experimental Design 3 ch (3C)

Experimental design methods and theory; one way and two way classification; Latin squares; hierarchical classification models; split plot designs; incomplete blocks; response surface designs. Prerequisite: STAT 3093.

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

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 and credit in TME 3013 or permission of the Dr. J. Herbert Smith Chair.

TME 3213 Quality Management 3 ch

Designed to prepare participants for the management practises which they might expect to encounter in a progressive organization. Many of these practises involve the standardization and continuous improvement of business processes. The course explores implementation and maintenance techniques for the international standards on quality and environmental management, ISO 9000 and ISO 14000. 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. Prerequisites: 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, ie. 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. Prerequisites: 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

WLCS 1001 **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 **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/ SPAN1013 **The Culture of Spain and Latin America I** **3 ch (W)**

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/ SPAN1014 **The Culture of Spain and Latin America II** **3 ch (3C) [w]**

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/ RUSS1043 **Russian Culture I** **3 ch (3C) [W]**

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/ RUSS1053 **Russian Culture II** **3 ch (3C) [W]**

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/ GER/GS **German Culture I** **3 ch (3C) [W]**

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/ GER/GS **German Culture II** **3 ch (3C) [W]**

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 3072/ GERM/GS **Studies in Contemporary German Cinema** **3 ch**

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/ SPAN/RUSS **Literature and Religion in 19th and 20th Century Russia and Spain** **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.

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.