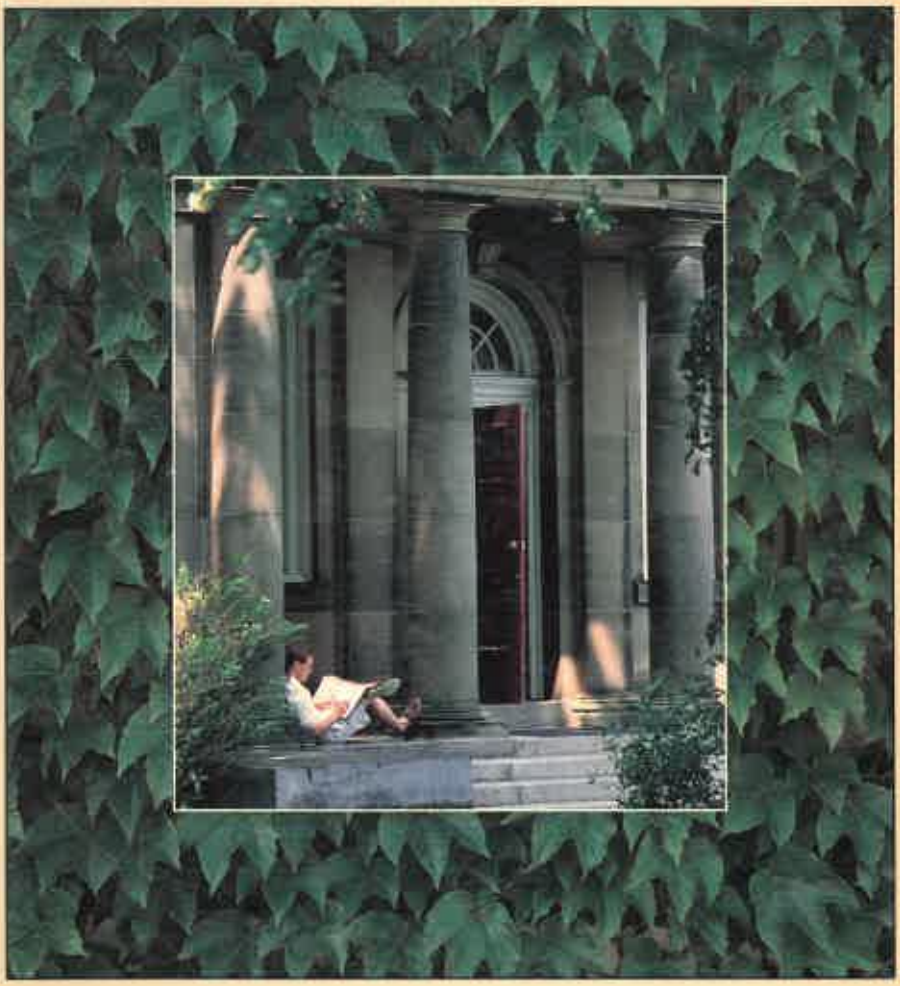
DALHOUSIE UNIVERSITY



UNDERGRADUATE CALENDAR

1991/92

DALHOUSIE
UNIVERSITY

ARTS AND SOCIAL SCIENCES

EDUCATION

SCIENCE

DENTAL HYGIENE

HEALTH PROFESSIONS

MANAGEMENT

1991/92
CALENDAR

IMPORTANT NOTICES

Students are advised that the matters dealt with in this Calendar are subject to continuing review and revision. This Calendar is printed some months before the year for which it is intended to provide guidance. Students are further advised that the content of this calendar is subject to change without notice, other than through the regular processes of Dalhousie University, 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. Additionally, students are advised that this calendar is not an all-inclusive set of rules and regulations but represents only a portion of the rules and regulations that will govern the student's relationship with the University. Other rules and regulations are contained in additional publications that are are available to the student from the registrar's office, and/or the relevant faculty, department or school.

The University reserves the right to limit enrolment in any programme. Students should be aware that enrolment in many programmes is limited and that students who are admitted to programmes at Dalhousie are normally required to pay deposits on tuition fees to confirm their acceptance of offers of admission. These deposits may be either non-refundable or refundable in part, depending on the programme in question. While the University will make every reasonable effort to offer classes as required within programmes, prospective students should note that admission to a degree or other programme does not guarantee admission to any given class, except those specified as required, within that programme. Students should select optional classes early in order to ensure that classes are taken at the most appropriate time within their schedule. In some fields of study, admission to upper level classes may require more than minimal standing in prerequisite classes.

Dalhousie University 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 Dalhousie University.

Inquiries should be directed to:

The Registrar
Dalhousie University
Halifax, Nova Scotia
Canada
B3H 4H6
Tel: (902) 494-2450
Fax: (902) 494-1630

A Statement of the Aims of Undergraduate Education at Dalhousie

Dalhousie University offers under graduate education enriched by a longstanding institutional commitment to research and to graduate and professional education. The University tries to assist all its undergraduate students to become independent thinkers and articulate communicators, knowledgeable about their chosen disciplines or professions, conversant with a reasonable body of general knowledge, and committed to learning throughout their lives.

Dalhousie assists its students to learn how to think for themselves. Students in all disciplines and professions can expect to develop skills and attitudes crucial for logical and independent thought. The faculty strives to teach students how to think, rather than what to think, and to enable them to make fair-minded enquiries in their fields of study and into the broader ethical, cultural and social issues that shape our lives. An educated person thinks carefully, reconsiders received ideas, and leads an examined life. The development of these habits of mind is the primary goal of undergraduate study.

Dalhousie assists it students to learn to express themselves, orally and in writing with clarity, precision and style. It does so, not only because communication skills permit the efficient transfer of information, but also because they make possible dialogues which lead to new ideas and to deeper appreciation of existing knowledge. Because a communal effort to exchange ideas and information is at the heart of university life, students in all disciplines and professions need opportunities to develop their skills in writing and in speaking at all levels of the undergraduate curriculum.

Dalhousie assists its students to master a combination of specialized and general knowledge. The specialized knowledge acquired by undergraduates at Dalhousie varies from discipline to discipline and even from student to student. Such knowledge should include, not only data skills, but also an understanding of the theories, structures and processes central to the discipline or profession in question, and an awareness of their practical applications and ethical consequences. Undergraduate students at Dalhousie should become familiar with a significant body of general knowledge as well. All should become acquainted with concepts central to our own culture and those of others. All should acquire basic quantitative skills and some knowledge of the principles of science and technology. All should share a sense of history and an appreciation of achievements in literature, philosophy and the arts. Such general knowledge helps us not only to confront the practical demands of work and life, but also to comprehend more fully our experience of the human condition.

Dalhousie assists its students to develop the capacity for commitment to learning throughout their lives. Their educational experiences within and outside the classroom should be rich and diverse. By providing social, cultural, recreational and other opportunities for student involvement and leadership, Dalhousie acknowledges responsibility for promoting both personal and intellectual growth.

Table of Contents

Final Dates for Receipt of Applications for Admission

Regular Session

College of Arts & Science

Foreign Students (except USA)	May 1
BEd Programme	May 1
Students entering from Canada or US	July 1

Health Professions

BSc (Nursing), Outpost and Community Health Nursing, Occupational Therapy, Physiotherapy, Pharmacy, Social Work	March 1
BSc (Nursing) for Post RN[1]	June 1
Recreation, Physical & Health Education	July 1

Management

Foreign Students (except USA)	May 1
Students entering from Canada or US	July 1

Dentistry	December 1
Dental Hygiene	February 1

Medicine

MD	November 15
Post-Graduate	December 1

Law [1]	March 1

Graduate Studies (except as below)	July 15
Marine Affairs and Law (doctoral level)	January 1
Human Comm. Disorders and Nursing	May 1
Health Ser. Admin. and Law (master's level)	May 1
Non-Canadian Students (except as below)	May 1
Oral and Maxillofacial Surgery [2]	July 1
Social Work	February 15

Winter Term

Diploma/Outpost & Community Health Nursing for RN's	October 1
BA, BSc and BCom programmes only[3]	November 15

[1] Late applications may be considered up to August 1.
[2] Of year preceeding commencement of programme.
[3] Part-time and transfer students only.

Schedule of Academic Dates 1991-92

Classes offered at Dalhousie have one of the letters "A", "B", "C" or "R" following the number. "A" classes are given in the first term of any session, "B" classes are given in the second term of any session, and "R" and "C" classes are given throughout the entire session ("R" classes carry one full credit or more, "C" classes carry less than one full credit).

1991

May

6 Level I fieldwork (second year, 4 weeks) and Level II fieldwork (third year, 8 weeks) begins, School of Occupational Therapy

8 Last day to register, Spring Session

13 Spring session begins

Outpost Nursing internship begins

17 Last day to cancel "A", "R" and "C" classes, Spring session

Last day to add "A", "C", and "R" classes, Spring session

20 Victoria Day - University closed

21-24 Spring Convocations

22 Last day to withdraw without academic penalty from "A" classes, Spring session

28 Last day to withdraw without academic penalty from "R" and "C" classes, Spring session

29 Last day to withdraw from "A" classes, Spring session

June

12 Last day to cancel registration in "B" classes, Spring session

Last day to add "B" classes, Spring session

17 Last day to withdraw from "B" classes without academic penalty, Spring session

18 Last day to withdraw from "R" and "C" classes, Spring session

21 Last day to withdraw from "B" classes, Spring session

26 Last day to register, Summer session

28 Spring session ends

July

1 Canada Day - University closed

Fieldwork Level III (8 weeks) begins, School of Occupational Therapy

2 Summer session begins

8 Last day to cancel registration in "A", "R" and "C" classes, Summer session

Last day to add "A", "R", and "C" classes, Summer session

10 Last day to apply for supplemental examinations in August or September

11 Last day to withdraw without academic penalty from "A" classes, Summer session

12 Last day to apply for supplementals, Dental Hygiene

17 Last day to withdraw without academic penalty from "R" and "C" classes, Summer session

18 Last day to withdraw from "A" classes, Summer session

31 Last day to cancel registration in "B" classes, Summer session

Last day to add "B" classes, Summer session

August

5 Halifax/Dartmouth Natal Day - University closed

6 Last day to withdraw from "B" classes without academic penalty, Summer session

Supplementals examinations begin, Dental Hygiene

7 Last day to withdraw from "R" and "C" classes, Summer session

9 Last day to withdraw from "B" classes, Summer session

15 Last day to apply to graduate in October

16 Last day of classes, Summer session

19 Classes begin, Outpost Nursing

September

2 Labour Day - University closed

3 Supplemental examinations begin

Classes begin, Outpost Nursing and Dental Hygiene

6 Last day to register, Regular session

9 Classes begin unless otherwise specified, Regular session

23 Last day to add "A", "C" and "R" classes, Regular session

Last day to cancel registration, Regular session

Last day to register with late fee

October

14 Thanksgiving Day - University closed

19 Fall Convocation

21 Last day to withdraw from "A" classes without academic penalty

November

11 Remembrance Day - University closed

12 Last day to drop "A" classes

15 Last day for undergraduates to apply for bursaries - Fall term

29 Last day of classes, Dental Hygiene

December

1 Last day to apply to graduate in February

2 Examinations begin, Dental Hygiene

5 Last day of classes

9 Examinations begin

17 Examinations end

1992

January

1 New Year's Day - University closed

6 Last day to register, second term

Classes resume, second term begins

Fieldwork (4th year) begins, School of Occupational Therapy

Internship begins, Outpost Nursing

Classes resume, Outpost Nursing

20 Last day to add "B" classes, (except fourth year, Occupational Therapy)

Last day to withdraw for "C" and "R" classes without academic penalty

Last day to cancel registration in "B" classes

February

7 Munro Day - University closed

10 Supplemental examinations begin

15 Last day to apply to graduate in May

Last day to drop "B" classes without academic penalty (except fourth year, Occupational Therapy)

17 Study break begins

21 Last day for undergraduates to apply for bursaries - Winter term

24 Classes resume

Clinical practice, 4th year, begins, School of Physiotherapy

March

6 Last day to add "B" classes, 4th year, Occupational Therapy (except 4418B)

13 Last day to withdraw from "B", "C" and "R" classes (except fourth year, Occupational Therapy)

Last day to drop 4th year Occupational Therapy "B" classes without academic penalty (except OT 4418B)

23 Fieldwork Level II (6 weeks) begins, Occupational Therapy

April

4 Examinations begin, Dental Hygiene

10 Last day of classes, Regular session

15 Examinations begin, Regular session

17 Good Friday - University closed

27 Intra-session clinical practica begin, School of Nursing

Summer clinical practicum begins in the School of Physiotherapy, third year

29 Exams end, Regular session

30 Last day to withdraw without academic penalty, three days after practicum begins, School of Physiotherapy

Third term begins, Dental Hygiene (first year)

May

4 Summer clinical orientation, second year, (4 weeks) begins, School of Physiotherapy

14-27 Spring Convocations

Definitions

The following definitions are intended to facilitate an understanding of the calendar and not to define all words and phrases used in the calendar which may have specific meanings.

Academic Dismissal: A student's required withdrawal from a programme due to unsatisfactory academic performance.

Audit Student: A student permitted to attend classes but not expected to prepare assignments, write papers, tests of examinations. Credit is not given nor is a mark awarded for classes. Classes appear on the transcript with the notation "And". Audit students must apply, select classes and register in the normal way.

Class: A unit of instruction in a particular subject identified by a name and number.

Corequisite: Requirement which must be fulfilled prior to or concurrently with the class being considered.

Course: The term "class" is used in place of the word course.

Credit: A unit by which University class work is measured. A full year class is normally worth one credit.

Exclusion: Students may not register for a class which lists, as an exclusion, a class the student is also taking or has already passed.

Full-time Students: Those registered for three full classes or more, or the equivalent of three half credit classes or more in either first or second term.

Grade Point Average (GPA): Weighted sum of the grade points earned, divided by the number of classes enrolled.

Sessional GPA: Classes taken in a single session.

Cumulative GPA: All classes taken for credit in a faculty.

Matriculation Standing: Senior Matriculation designates the level of studies attained by students who have successfully completed Grade XII in public high school in Nova Scotia or its equivalent elsewhere.

Mature Student: A person who is at least 23 years old, does not meet the usual admission requirements and has been absent from full-time high school study for at least four years.

Part-time Students: Students registered for fewer than three full-credit classes or the equivalent of three half-credit classes in either first term or second term. A full credit class is equivalent to 6 credit hours.

Prerequisite: Requirement which must be fulfilled prior to registering in a specific class.

Probation: Warning to students that their academic performance is unsatisfactory and that they will be dismissed from their programme unless their performance improves by the end of the next regular session.

Special Students: Students who are not candidates for a degree or diploma but who wish to take classes which may be allowed for credit. This is not the same as auditing a class. Special students must satisfy normal admission requirements.

Undergraduates: Students who are candidates for an undergraduate degree, diploma or certificate.

University Explorer: Students admitted under the mature students category who are not candidates for a degree.

Visiting Student: A person permitted to take classes at Dalhousie for transfer of credit to another university.

Academic sessions

Regular session:	September - April
First term:	September - December
Second term:	January - April
Spring session:	May - June
Summer session:	July - August

Dalhousie University

For over 125 years, Dalhousie University has played a crucial role in Nova Scotian higher education. Building upon a strong undergraduate base, the University has developed internationally recognized programmes of graduate and professional studies. The scope of its research is far-reaching, as is its public and community service. The range of the University's programmes, and in particular the obligations it has assumed for professional and graduate education, give it a unique role in higher education in Nova Scotia and in the Maritime region.

Dalhousie's enrolment stands at over 11,000 students. To accommodate them, Dalhousie occupies more than 60 acres in a residential area of Halifax. University facilities include buildings for teaching and research, libraries, residential housing for students, a Student Union Building, an Arts Centre for music, theatre, and an art gallery and facilities for physical recreation. The Nova Scotia Archive building, the Atlantic Regional Laboratory of the National Research Council, major provincial hospitals, and the Dr. D.J. MacKenzie Laboratories are located close to the University. Dalhousie benefits from a variety of arrangements for teaching and research collaboration with hospitals and federal and provincial research laboratories.

The University of King's College, situated adjacent to Dalhousie campus, is an affiliated institution, and its students in Arts and Science receive Dalousie degrees in the name of both institutions. By agreement with Mount Saint Vincent University students have access to various courses and services. Cooperative arrangements for engineering and computer science studies have been made with the Technical University of Nova Scotia. By arrangement with the Nova Scotia Teachers College, graduates of that institution may complete education degree requirements at Dalhousie. Cooperation in a number of academic programmes, in administrative services, and in use of library resources is provided for in working arrangements with Saint Mary's University and other institutions in Halifax. Degrees in agriculture, awarded to students of the Nova Scotia Agricultural College, are awarded by Dalhousie in cooperation with the College.

Dalhousie University is a non-denominational co-educational university. Founded in 1818, the University a a member of the Association of Universities and Colleges of Canada, the Atlantic Association of Universities, and the Association of Commonwealth Universities.

Executive and Administrative Officers

President and Vice-Chancellor
Howard C. Clark, Bsc, MSc, PhD, ScD, FRSC

Vice-Presidents
Academic and Research: Denis Stairs, BA, MA, PhD, FRSC
Finance and Administration: Bryan G. Mason, BA

Student Services: Eric A. McKee, BA, MA
External: Henry Eberhardt, AB

Associate Vice-President
Research: Robert O. Fournier, BSc, MA, PhD

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Dentistry: Kenneth Zakariasen, BA, DDS, MS, PhD
Graduate Studies: Judith Fingard, BA, MPhil, PhD
Health Professions: TBA
Law: Innis Christie, BA, LLB, LLM
Management: James D. McNiven, BA, MA, PhD
Medicine: T.J. (Jock) Murray, MD, FRCP(C)
Science: W.C. Kimmins, PhD

Henson College of Public Affairs and Continuing Education
Dean: J. Douglas Myers, BA, BEd, MA, PhD

School of Education
Director: K.C. Sullivan, BSc, BEd, MEd, PhD

College of Arts and Science
Provost: W.C. Kimmins, PhD

Administrative Officers
University Secretary and Legal Counsel: Brian C. Crocker, QC, BA, LLB
University Librarian: William F. Birdsall, BA, MA, PhD
University Registrar: Gudrun E.L. Curri, MA
Executive Director, Computer and Information Services: H.S. Peter Jones, BSc, MSc, FBCS, FIMA
Executive Director, Instructional Development and Technology: W. Alan Wright, BA, MA, PhD
Executive Director, Office of Institutional Planning and Analysis: Brian Christie, BA, MA
Director of Alumni Affairs: Elizabeth Flinn, BSc
Director of Arts Centre: Robert C. Reinholdt
Director, Athletics and Recreational Services: F.A. (Tony) Martin, BSc, MA
Director, Counselling and Psychological Services: Judith Hayashi, BA, MA
Director, Financial Services: TBA
Director, Health Services: Rosemary Gill, MD
Director of Housing and Conferences: Heather Sutherland, BSc, MEd
Director, Personnel Services: Michael J. Roughneen, CPIR, BA, MSc, FIPM
Director, Physical Plant and Planning: William Lord, BASc, PENG
Director, Public Relations: Marilyn MacDonald, BA, MA

Board of Governors

Under the University's statutes, the Board of Governors is responsible for the operation of the University. The Board consists of representatives named by the Government of Nova Scotia, the alumni, the Student Union and certain other bodies. Internal regulation of the University is the primary concern of the Senate, subject to approval of the Board of Governors.

The President and Vice-Chancellor is the Chief Executive Officer of the University, responsible to the Board of Governors and Senate for supervision of the University's administrative and academic work.

Chancellor
H. Reuben Cohen, QC, BA, LLB, LLD

Chancellor Emeritus
Lady Beaverbrook, LLD

Officers
Dr. Howard C. Clark, BSc, MSc, PhD, ScD.
Mr. George C. Piercy, Q.C., Chairperson
Ms. Peggy Weld, Vice-Chair
Mr. Allan C. Shaw, Vice-Chair
Dr. Donna M. Curry, M.D., Honorary Secretary
Ms. Lorraine Green, Honorary Treasurer

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Dr. Patricia Lane
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Mr. George W. Macdonald

Mr. Alex J. MacIntosh
Dr. Albro D. MacKeen
Mr. Donald Manson
The Hon. Jacqueline R. Matheson
Mr. Ralph M. Medjuck
Sr. Patricia Mullins
Mr. Norman H. Newman
Chief Judge Ian H.M. Palmeter
Ms. Ruth Pulsifer
Dr. Cedric E. Ritchie
Dr. Judith A. Ritchie
Ms. Patricia Roscoe
Dr. Donald C.R. Sobey
Ms. Maxine N. Tynes
Dr. Thomas C. Vinci
His Worship Mayor Ronald Wallace (ex officio)
Mr. Robert Zed
Mr. Sherman Zwicker

Secretary
Elizabeth A. Merrick

Observer for Faculty Association
Dr. David Williams (President, DFA)

Senate

The Senate consists of the President, Vice-Presidents, Deans of faculties and academic department heads, Registrar, full professors, other members of the academic staff elected from and by each faculty, six students elected by students, and certain other persons.

Subject to the general approval of the Senate, eight faculties are responsible for supervision of programmes of study, of teaching and research, and for the recommendation of candidates for degrees, diplomas, and university prizes.

Chair of Senate
Patricia A. Lane, BSc, MSc, PhD

Vice-Chair of Senate
Raymond W. Carlson, BA, MSW, PhD

Secretary of Senate
Robert N. Berard, BA, BEd, MA, PhD

Academic Degrees, Diplomas and Certificates

College of Arts and Science
Bachelor of Arts
Major 3 years, Advanced Major 4 years, Honours 4 years
Bachelor of Science
Major 3 years, Advanced Major 4 years, Honours 4 years
Diploma in Engineering
2 years
Bachelor of Education (Sequential)
1 year post BA, BSc
Bachelor of Education (Integrated)
4 years for BA or BSc with BEd, 5 years for BPE with BEd
Bachelor of Music
4 years
Bachelor of Music Education
4 years
Certificate in Costume Studies
2 years
Diploma in Costume Studies
3 years
Diploma in Meterology
1 year
Certificate in Educational Administration
minimum 1 year

Faculty of Management
Bachelor of Commerce
Major and Honours 4 years
Certificate in Public Administration
1 year

Faculty of Health Professions
Bachelor of Physical Education
4 years
Bachelor of Recreation
4 years
Bachelor of Science (Health Education)
4 years
Bachelor of Science (Kinesiology)
4 years
Bachelor of Science (Nursing)
4 years
Bachelor of Science (Nursing) with previous RN
3 years
Bachelor of Nursing (with previous RN)
3 years
Diploma in Outpost and Community Health Nursing
BN, 9 months; RN, 15 months
Bachelor of Science in Pharmacy
4 years
Residency Programme Pharmacy (post BSc Pharm)
1 year

Bachelor of Science (Physiotherapy)
3 years Physiotherapy following one year of Arts and Science or minimum 2 years post Diploma programme)
Bachelor of Science (Occupational Therapy)
3 years Occupational Therapy following one year of Arts and Science
Bachelor of Social Work
3 years Social Work study following one year general study, a wide choice permitted
Certificate in Community Health

Faculty of Dentistry
Doctor of Dental Surgery
4 years
Postgraduate Certificate in Periodontics
2 years
Diploma in Dental Hygiene
2 years Dental Hygiene following one year of Arts and Science

Faculty of Law
Bachelor of Laws
3 years
Bachelor of Laws with Master of Business Administration
4 years
Bachelor of Law with Master of Public Administration
4 years

Faculty of Medicine
Bachelor of Science (Medical)
Doctor of Medicine
4 years
Intern Year
1 year
Residencies
various programmes ranging from 2-6 years post-intern
Doctor of Medicine with Doctor of Philosophy
7 years

Faculty of Graduate Studies
Master of Arts
1 or 2 years with thesis in: Classics, Computing Science, Economics, Education, English, French, German, Health Education, History, Leisure Studies, Mathematics, Philosophy, Political Science, Psychology, and Sociology
Master of Science
1 or 2 years with thesis in: Anatomy, Biochemistry, Biology, Chemistry, Computing Science, Geology, Health Education, Human Communication Disorders (3 years) (Audiology or Speech Pathology), Kinesiology, Mathematics, Microbiology, Oceanography, Oral Surgery (4 years), Pathology, Pharmacology, Pharmacy, Physics, Physiology and Biophysics, Psychology
Doctor of Philosophy
2 or 3 years, with thesis in: Anatomy, Biochemistry, Biology, Chemistry, Classics, Economics, Education, English, French, Geology, History, Interdisciplinary Studies, Mathematics, Microbiology, Oceanography, Pharmacology, Pharmacy, Philosophy, Physics, Physiology and Biophysics, Political Science, Psychology
Doctor of Philosophy with Doctor of Medicine
(Doctor of Philosophy thesis in: Anatomy, Biology, Microbiology, Pharmacology, Physiology, Biophysics)
7 years
Doctor in the Science of Law
2 or 3 years, with thesis
Master of Arts in Teaching (French)
2 years
Master of Business Administration
2 years
Master of Business Administration with Bachelor of Laws
4 years
Master of Education
1 year
Master of Environmental Studies
1 or 2 years
Master of Health Services Administration
2 years
Master of Laws
1 year
Master of Library and Information Studies
2 years
Master of Public Administration
2 years
Master of Public Administration and Bachelor of Laws
4 years
Master of Development Economics
2 years
Master of Nursing
2 years
Master of Social Work
1 or 2 years
Diploma in Aquaculture
1 year
Diploma in Marine Affairs
1 year
Diploma in Public Administration
1 year

Special Institutes

A number of special institutes for study and research in specific fields are based at the University. Among these are:

Atlantic Institute of Biotechnology

Chief Executive Officer: W.E. MacLennan, BScA

The Atlantic Institute of Biotechnology was established in 1985 and received financial support from the Department of Industry, Science and Technology Canada. Its purpose is to assist industry in Atlantic Canada to improve biologically-based processes, and to develop new manufacturing and industrial techniques.

The Institute's main areas of specialization are in the processes of commercialization and the management of research leading directly to commercialization and sourcing of technological information for competitive improvement. The Institute is an intermediary agency for the Canadian Patent Office and offers a broad range of patenting services and advice.

Atlantic Institute of Criminology

Director: D.M. Clairmont, BA, MA, PhD

The Atlantic Institute of Criminology has been established to provide a centre for research in the areas of criminology, policing, and other concerns of the justice system. In this focus and in its contribution to the associated career development, the Institute is equivalent to those existing in other regions of the country. Scholarships for graduate students in Criminology are available.

Policy for the Atlantic Institute of Criminology is developed with the assistance of an Advisory Board comprising twelve representatives from the academic and professional community of the region.

Associate memberships are available to interested and qualified persons. Workshops and training courses provide opportunities for professional development for employees of the Criminal Justice system in the Atlantic Region.

Atlantic Region Magnetic Resonance Centre

Director: J.C.T. Kwak, BSc, MSc,PhD.
Manager: D.L. Hooper, BSc, PhD

Established in 1982 with assistance from the Natural Sciences and Engineering Research Council, the Centre is concerned with teaching and research programmes in magnetic resonance. The Centre has modern nuclear magnetic resonance (NMR) and electron spin resonance (ESR) instruments including a 360 MHz Narrow Bore Nicolet NMR instrument and a Bruker MSL 200 NMR for solid state studies.

In addition to providing well-equipped laboratories and instrumentation for resident and visiting faculty, research scientists and students, the Centre provides NMR spectra and expertise to scientists of eleven universities and research institutes in the Atlantic Region.

Atlantic Research Centre for Mental Retardation

Director: H.W. Cook, MA, PhD

Established in 1967, the Centre conducts basic biomedical research and population studies in the fields of mental retardation and human genetics. It also provides education in these fields to undergraduate and graduate students and the general public. Special tests and consultative services for the prevention and treatment of diseases causing mental retardation are provided by the Centre. The Centre's professional staff hold appointments in various departments of the Faculty of Medicine. Its work is supported by grants from agencies such as the Medical Research Council of Canada, the Department of National Health and Welfare, the Dalhousie Medical Research Foundation, the governments of the three Maritime provinces, and by private donations.

Centre for African Studies

Director: J.L. Parpart, MA, PhD

This Centre, established in 1975, coordinates instruction, publication, research and development education programmes in African Studies. Associated faculty hold appointments in departments and units concentrated in the social sciences and humanities. The Centre organises academic and informal seminars and public policy conferences on Africa and encourages interdisciplinary interaction at all levels on African subjects and issues. It offers its own interdisciplinary BA degree and cooperates with the International Development Studies programme and with the Pearson Institute and International Students Centre.

Centre for Foreign Policy Studies

Director: D. W. Middlemiss, BA, MA, PhD

Established in 1971 with the assistance of a grant from the Donner Canadian Foundation, the Centre is concerned with teaching, research and other professional activities in various aspects of foreign policy and international politics. The work of the Centre is concentrated in the following areas: Canadian Foreign Policy, Maritime and Strategic Studies, and International Political Economy and Developmental Studies. Geographical specializations include Canadian, African, Soviet, European, and American foreign policy.

The Centre is affiliated with the Department of Political Science at Dalhousie University. Centre faculty offer courses in the Department on international relations, foreign and defence policy at both undergraduate and

graduate levels. They also supervise masters and doctoral students in these fields.

Centre for International Business Studies

Director: P.J. Rosson, DipMS, MA, PhD.

The Centre was established in 1975 and is funded by External Affairs and International Trade Canada. Its purposes include the provision of specialist training in international business studies and research in international business. It carries out these functions within the administrative framework of the School of Business Administration.

Centre for Marine Geology

Director: Paul T. Robinson, BSc, PhD

The Centre for Marine Geology was founded in 1983 to promote the interdisciplinary study of the continental margins and the sea floor. The Centre draws on the faculty and resources of the Departments of Geology, Oceanography and Physics and others. The objectives of the Centre are: (1) to expand the university's leading role in international studies of the oceanic crust, (2) to participate with industry and government in the geological aspects of oil and gas development on Canada's east coast and (3) to continue research on sedimentation and the recent history of the Canadian offshore.

Dalhousie Health Law Insititute

Director: Robert G. Eigie, QC, BA, MD, FRCS(C)

The Health Law Insitute is an interdisciplinary Institute which conducts and coordinates research and teaching in the Faculties of Law and Medicine, and in Dentistry and Health Professions as well. Supported by the Donner Canadian Foundation and the Law Foundation of Nova Scotia, the Director and his Faculty Associate are cross-appointed to the Faculties of Law and Medicine. They work with an advisory board and with colleagues in those and other Faculties on grant and contract funded research, teach and coordinate the teaching of law as it applies in the broad field of health to students in Dentistry, Health Professions, Law and Medicine, supervise graduate students and conduct continuing education courses for health professionals on a contract basis. The initial focus of the Health Law Institute is on aspects of health law of particular relevance to aging.

Lester Pearson Institute for International Development

Executive Director: A. Tillett, BA, MA

LPI was founded in 1985 to promote Dalhousie's involvement in international development activities. In mid-1987, the Institute was merged with the Centre for Development Projects and, at the same time, was given responsibility for oversight of all externally financed development programmes and projects at Dalhousie. In addition to its administrative functions in the university, the major activities of the Institute include development education activities for the community, a lecture and seminar series, conferences, research, and input to public policy on Canada's role in international development. The Institute does not participate directly in academic degree programmes but does seek to advance such programmes in the field of international development and hosts the Lester B. Pearson University Chair in Development Studies. The Institute may directly undertake non-degree training activities and operate and manage international development projects.

Neuroscience Institute

Interim Director: I.A. Meinertzhagen, BSc, PhD

The Neuroscience Institute was founded in 1990 to promote and coordinate research in neuroscience, the modern interdisciplinary study of the brain and nervous systems. The development of the Institute parallels the establishment of many such institutes throughout the world and marks dramatic recent progress in understanding the workings of the brain, as signalled for example by U.S. President Bush's declaration of the 1990's as the Decade of the Brain.

Currently housed in the Life Sciences Centre, the Institute serves as an umbrella organization to foster research and training in neuroscience at Dalhousie. A major objective is to increase understanding of the functions of the nervous system in health and disease and, to this end, the Institute coordinates the activities of neuroscientists in the Faculty of Medicine and of Science, facilitating collaboration between clinical and basic scientists in the two Faculties. Some foci of current research activity include: the autonomic nervous system; development and plasticity of the nervous system; and, sensory physiology. The Institute also provides a vehicle to seek new sources of funding, and will encourage new initiatives in all areas of neuroscience research at Dalhousie. In addition, the Institute promotes and coordinates training programmes in neuroscience currently offered through constituent departments at both the undergraduate and graduate levels. Associated with the latter it will sponsor a seminar series annually.

Oceans Institute of Canada/Institut canadien des océans

Executive Director: Judith Swan, BA, LLB, LLM
Associate Director: Cynthia Lamson, BA, MS, MA, MES

The Oceans Institute of Canada/Institut canadien des océans is a federally incorporated, not-for-profit organization. The Institute, formerly the International Institute for Transportation and

Ocean Policy Studies (IITOPS), represents the amalgamation of two university-based centres devoted to ocean and marine studies, the Dalhousie Oceans Studies Programme (DOSP) and the Canadian Marine Transportation Centre (CMTC).

While the Oceans Institute is independent, it maintains an affiliation with Dalhousie University, and works cooperatively with several schools and institutes including the Law School, School for Resource and Environmental Studies, the School of Business Administration, the Marine Affairs Programme, and the Centre for Foreign Policy Studies.

The Institute is strategically located in Halifax, the centre of oceans excellence in Canada but the network of Associates from all regions of the country and around the globe make the institute a truly national and international organization.

Trace Analysis Research Centre

Director: L. Ramaley, BA, MA, PhD

With the assistance of a grant from the National Research Council, the Centre was established in 1971 to train analytical chemists and, through research, to contribute to the advancement of analytical chemistry. A major facility of the Centre is a low-power nuclear reactor (SLOWPOKE) which is available to researchers within Dalhousie and elsewhere.

Continuing Studies
Henson College of Public Affairs and Continuing Education

Note: For general information, particularly with regard to credit studies and degree programmes, students may call the Centre for Continuing Studies, 494-2375.

Henson College offers Adult and Part-time Students:

- assistance in planning credit and degree programmes
- non-credit, general interest classes
- training for managers in the private sector and for municipal administrators
- community outreach
- distance education courses in business
- and much more ...

The creation of Henson College signals Dalhousie's commitment to make itself more accessible to those who have special educational needs: those who can study only on a part-time basis; those who cannot attend classes during the working day; those who are returning to study after an absence from formal education; those seeking to improve skills and qualifications through credit, non-credit or special programmes.

Part-time and adult students are encouraged to contact Henson College in order to take advantage of the services which we can offer. In addition to pre-admission counselling on an individual basis, the College sponsors the University Exploration programme and a "Returning to Learning" orientation each September, in cooperation with Counselling Services. The Centre for Continuing Studies offers advice to those with special needs and our hours have been extended to assist those who work during the day. A variety of brochures are available, describing summer school and evening credit classes, non-credit and general interest courses, and all of the other continuing education offerings of Henson College.

Henson College is located at the corner of University Avenue and Seymour Street. The main telephone number is 494-2526.

Officers

Dean, Douglas Myers, BA, BEd, MA (Toronto), PhD (Edinburgh), Professor of Education

Advanced Management Centre
Director: Greg Trask, BComm (St. Mary's), MBA (Dal)
Associate Director: Ann O'Neill, BCom , MBA (Dal)

Centre for Continuing Studies
Director: Stephen Frick, BA (Toronto), PhD (Cornell)
Associate Director: Lloyd Fraser, BA, BEd (Mt. Allison), MEd (Dal)

Community Development and Outreach
Director: Mary Morrissey, BA (Western Ont.), MSW (Dal)

Municipal Administration Programme
Director: Jack Novack, BComm, MPA (Dal)
Associate Director: Roger MacMillan, BA, MPA (Dal)

Academic Credit Programmes

Part-time students are admitted to many of Dalhousie's credit programmes, either to work toward a degree or simply to take individual classes. Admission requirements and regulations generally are the same for all students, although special provision is made for the admission of mature persons through the University Exploration programme. For information on admission and registration procedures, degree requirements, fees, etc. see the entries elsewhere in this Calendar. For regulations concerning graduate study, consult the calendar of the Faculty of Graduate Studies.

Scholarships and Financial Aid

Certain awards and scholarships are available for part-time students who qualify. Details may be found in the appropriate section of this calendar.

Non-Credit Courses

A wide variety of non-credit courses is available in such areas as computers, language programmes, (Mini-Immersion in French, plus a variety of self-instructional programmes), the arts, law, health, social issues, career development and career change. Call the Centre for Continuing Studies at 494-2375.

Distance Education Courses

The Advanced Management Centre, in cooperation with Dalhousie's School of Business Administration, has developed a series of credit and non-credit distance education courses in over 15 areas of business administration: accounting, business law, marketing management, finance, plus many others. Call the Advanced Management Centre at 494-2410 or 494-2526.

Henson College, in cooperation with Dalhousie's School of Public Administration offers a series of credit courses by distance education leading to a certificate in Public administration for additional information call 494-8885 or 494-2526.

Transition Year Programme

In 1982, the Transition Year Programme became a department in the Faculty of Arts and Science. In 1988, it became an independent department. It is a special one-year programme designed for Black and Native students.

While preparing its members for admission to regular programmes at the beginning of their second year on campus, the Programme introduces students to the University in a variety of ways. Its curriculum, which includes a variable number of credit classes, can be adapted to individual needs and objectives. Most students take classes in Black and Native Studies, Student Skills, English and Mathematics. They -also choose a regular first-year elective that is of personal interest to them. Classroom instruction is complemented by an orientation week, special lectures, tours, workshops, field trips and counselling.

The Programme's staff are drawn from the Dalhousie University Community as well as the Nova Scotian Black and Native Communities. Guest lecturers come from all parts of the world.

Black, non-status Indian and Metis students accepted into the Programme are eligible for comprehensive bursaries during their transition year. If they successfully complete this qualifying year, they become eligible for continued partial support as long as they remain in good academic standing and progress towards a first degree.

Status Indian students attending the Programme are fully funded through the Department of Indian Affairs' "University and College Entrance Preparation Programme", or the Mainland Confederacy, or from their individual Band Counsels.

Although enrollment is limited to ensure that each student receives considerable personal attention, highly motivated Native and Black students of all ages and educational backgrounds are encouraged to apply. The TYP welcomes applications from student who did not complete high school or the courses required for university entrance, students who completed a general or mixed high school programme and those who, although they may have received low grades in any type of programme, can demonstrate intellectual potential in other ways.

The Programme has no absolute entrance requirements. Admission criteria are flexible, and the Admissions Committee considers each case comprehensively on its own merits. The candidate's overall maturity and seriousness of purpose are vitally important.

For further information or application forms, please contact:

Director, Transition Year Programme
Dalhousie University
Halifax, N.S. B3H 3J5
(902) 494-3730

Deadline for receipt of applications for the following September: May 1st.

Resources and Services

Advisory Committee on Sexual Harassment

Dalhousie University is committed to an environment free of sexual harassment. A policy and procedures exist to deal with complaints of sexual harassment at Dalhousie. If a student feels she or he may be involved in a situation of sexual harassment, or if a student is concerned about such a situation, the Sexual Harassment Advisory Committee can be consulted, confidentially, through the Sexual Harassment phone line, 422-0884. The Student Counselling Service can also provide advice.

Alumni Association

The Alumni Association is composed of over 56,000 former students and coordinates a number of programmes including homecomings, reunions, branch meetings, sports events, information lectures, a tutoring service, a Student Leadership Conference, Scholarships and Bursaries, and the Alumni Award for Teaching Excellence and the Outstanding Alumnus Award. The Association publishes the Dalhousie Alumni Magazine which is sent to all alumni and friends.

The alumni play a vital role in the University in a wide variety of ways including representation on the Board of Governors.

Athletics

Athletics and Recreational Services offers a wide range of programmes for every Dalhousie student. More than fifty clubs and intramural programmes offer fun, fitness and companionship while 13 varsity sports provide excitement for players and spectators alike. For those who prefer less competitive activities, there is a great number of fitness, leisure and aquatic instructional programmes.

Canada Employment Centre on Campus

The main function of the Employment Centre is to aid Dalhousie students in their efforts to obtain permanent, summer, or part-time employment. It is located on the fourth floor of the Student Union Building, and operates Monday through Friday from 8:00 am to 4:30 pm, 494-3537.

The Employment Centre also has useful information on resume preparation, interview techniques, and job-search skills.

Interviews for graduating students are arranged with over 80 employers who visit Dalhousie each uear (mid-October to mid-November are usually the busiest months).

Summer employment listings are received as early as November, while new part-time jobs are posted daily for both "on campus" and "off campus" locations.

Students are encouraged to visit the Employment Centre on a weekly basis throughout the school year for any type of employment assistance.

Chaplaincy at Dalhousie

The University provides facilities for chaplains appointed by various churches. There are five chaplains at Dalhousie, representing the Anglican, Baptist, Roman Catholic, Lutheran, and United Church traditions. In addition, contact ministers are designated by the Jewish, and Presbyterian traditions and can be reached through the Chaplains' Office on campus. The Chaplains' Office is located on the third floor of the Student Union Building, telephone 494-2287. Office hours are Monday to Friday 9 - 4. Appointments can be made for other convenient times. The chaplains are available at any time for emergencies. Outside office hours, chaplains may be reached by calling the SUB Enquiry Desk 494-2140.

Counselling and Psychological Services

The Counselling and Psychological Services Centre offers programmes for personal, career and educational concerns. Counselling is provided by professionally trained, Counsellors and Psychologists. Strict confidentiality is ensured. Counselling is available both individually and on a group basis. Topics covered by regularly offered group programmes include Study Skills, Career Decision Making, Exam Anxiety Reduction, Public Speaking Anxiety Reduction, Assertiveness, People Skills, Resume Writing and Job Search Skills. Information on a wide variety of careers and academic programmes is available in the Frank G. Lawson Career Information Centre. Students wishing to get a first hand view of careers they are considering entering, may contact alumni willing to discuss their career experiences through the Centre's Mentors and Models programme. Interest testing is also available to students. In addition, those individuals who have been out of school for a period of time is available on a fee for service basis.

The Counselling and Psychological Services offices and its Frank G. Lawson Career Information Centre are located on the 4th Floor of the Student Union Building. Inquire or make appointments by dropping in or calling 494-2081.

Dalhousie Arts Centre

The region's major performing arts theatre and the highly regarded Dalhousie Art Gallery, housed in the Dalhousie Arts Centre, are active places indeed.

The 1,041 seat Rebecca Cohn Auditorium presents a wide variety of programmes ranging from ballet to rock, classical music to children's performances.

The Dalhousie Art Gallery offers the public access to national and international touring

exhibitions and initiates many ambitious and exciting exhibition programmes.

Dalhousie Student Union

Every Dalhousie student is automatically a member of the Dalhousie Student Union. The Student Union is recognized by an agreement with the University Administration and by an Act of the Nova Scotia legislature as the single voice of Dalhousie students. All student activities on campus are organized through the Student Union, and the Student Union is the focus of all student representation. The business of the Student Union is conducted by a Council made up of 40 members. Every student is represented by one or more representatives of their faculty, elected within their faculty in the spring. As well, students who live in residence and international students also elect their own representatives because they are uniquely affected by certain university policies. Also on the Council are the student representatives elected to the Senate and Board of Governors.

One of the most important resources of the Student Union is the Student Union Building located on University Avenue between Seymour and LeMarchant Streets. The SUB, which is exclusively operated by the Student Union and is paid for through Student Union fees, was opened in 1968 as a centre for student activity on campus. Every student has the opportunity to take advantage of the Union's financial, physical and organizational resources. To use that opportunity you should know who represents you on Council and who are the members of the Executive. The Student Council office is located on the second floor of the SUB and is open from 8:30 a.m. to 4:30 p.m. Monday through Friday, phone number 494-1106. Council members have mail boxes located in that office. Union Executive officers also have offices in the SUB.

Housing/Residence Services

For the 55 per cent of Dalhousie University students whose homes are outside the Halifax Metropolitan area, where to live while attending university is a major question. The supply of University owned housing does not meet the demand and the vacancy rate in the various private, commercial units is very low. It is therefore very important that students planning to attend Dalhousie think well in advance about their accommodation needs. It is fair to say two things about housing for Dalhousie students: first, early application for University residence is essential and second, students seeking off-campus housing should also begin to investigate that process well in advance of the beginning of term.

The traditional style residences at Dalhousie are chiefly for undergraduate students; very few graduate spaces are allocated and in many cases students pursuing advanced degrees are not prepared to live with the exuberance of first and second year students.

The information below gives a description of A. traditional on-campus residences, B. off-campus housing owned by the university and C. the services offfered by the off-campus housing office listing service. In each case the name of the person responsible is listed and telephone number provided. For information on housing fees, the Fees section of the Calendar.

Please Note: Academic acceptance by the University, i.e., admission to a course of study, DOES NOT IN ANY WAY GUARANTEE admission to University Housing or provision of off-campus accommodation.

It is the responsibility of the individual student in all cases to make separate application for the university housing of her/his choice, or to avail him/herself of the listing services provided by the Off-Campus Housing Office.

Early application for university residences and housing is strongly recommended. Applications will be received commencing January 1. Students are encouraged to complete their applications before March 1.

A. Traditional Style On Campus Residence

Howe Hall

The centrally located men's residence on campus, Howe Hall, provides accommodation for 520 undergraduate students. The sprawling, grey ironstone complex is divided into five houses: Henderson, Smith, Bronson, Cameron and Studley. Each house has its own distinctive identity and student government. The ratio of seniors to first-year students is approximately 50/50, except in Henderson house which is predominantly for freshmen. Howe Hall is the only on-campus residence option for male students in their first year.

The houses offer both double and single rooms with the singles generally reserved for senior undergraduates and the doubles for first-year students. Facilities included two dining rooms, lounges, television rooms in each house, a canteen, games room, squash courts, weight room, study areas and laundry room.

Howe Hall is accessible to handicapped students.

Shirreff Hall

The largest women's residence on the Dalhousie campus, providing accommodation for 445 female students, is Shirreff Hall. Located in a quiet corner of the campus, it is minutes from classes, the library, Dalplex and other facilities as well as from the scenic Northwest Arm. It is divided into four sections – Old Eddy and New Eddy, with predominantly double rooms for first-year students, and Newcombe and the Annex, with single rooms reserved for senior students.

Shirreff Hall offers a dining room, an elegant library and visitors' lounge, study hall,

study area, games room, television lounges, exercise room, kitchenettes, canteen, laundry room and reception desk. Students have access to two pianos and a tennis court on the grounds.

Eliza Ritchie Hall

Opened in 1987, Eliza Ritchie Hall is the University's newest women's residence. It provides traditional residence accommodation for 84 female students in predominantly single rooms.

The three-storey building of powder blue clapboard is located close to the Dalplex and to Shirreff Hall, where students take their meals. Facilities include study rooms, a multipurpose room, reception area, laundry facilites and leisure lounges with kitchenettes.

B. Off Campus, University Owned Housing
Fenwick Place

Dalhousie's 33-storey Fenwick Place offers students the privacy and some of the independence of apartment living. Located in Halifax's south end, it is only a 15-minute walk or a short bus ride from the campus. Because Fenwick houses both single and married students, the mix of people provides a harmonious living environment.

Many of the 252 apartments in Fenwick Place are furnished to accommodate students in groups of two, three or four. Priority is given to students who apply in groups and who are currently living in a Dalhousie residence. Each of these apartments has a full kitchen and bathroom, furnished living room and dining area and a balcony. Bedrooms have desks and a mate-style bed. Heat, hot water, electricity and cable television are included in the residence fee.

Fenwick also has a number of unfurnished bachelor, one and two-bedroom apartments which are rented to married and single students. Each of these apartments has a full kitchen and bathroom. Heat, hot water and cable television are included in the rent.

Laundry facilities are available on every floor of Fenwick Place. The front desk is open 24 hours a day with staff available to provide security, information and advice to students. Fenwick is also totally accessible to handicapped students.

Glengary Apartments

Located close to the campus on Edward Street, Glengary Apartments is a four-storey brick building offering accommodation to 52 female students. Preference is given to students in second and third year and especially to those who apply in groups of four.

Glengary has 12 furnished apartments, each with space for four women. The apartments feature two single rooms, double room, kitchen, living room and bathroom. There are also four bachelor apartments which are always in high demand. Laundry facilities are located in the basement, where there is also a limited amount of storage space.

Coordinators are available for security and administrative services and also act as a resource for students who may need advice or assistance.

Co-ed Apartment Units

Dalhousie has two co-ed apartment buildings which are open to students in graduate programmes. Located on University Avenue, close to the main campus, the building includes bachelor, one and two-bedroom apartments and accommodates a total of 25 students.

Each apartment has a living area and kitchen facilities with a fridge, stove and sink, a full bathroom and ample cupboard space but is otherwise unfurnished. A laundromat is located in the neighbourhood. Heat and hot water are included in the rent.

Residence Houses

Dalhousie also has 14 residence houses, all of which were once single family homes, with their own kitchens, living rooms and bathrooms. The character of these homes has been maintained as much as possible. The houses are all on campus. Although they are generally occupied by female students in graduate programmes or professional schools, a few of the 100 spaces are reserved for undergraduates.

One of the houses is designated as a 24-hour quiet area for students who want a particularly quiet environment in which to live and study. Two of the houses are French houses, reserved for male and female students who would like to live in a French-speaking environment. A fourth house is set aside for the President's Leadership Class and is occupied by a group of ten male and female students in their first year of study. The students are selected by the President's Leadership Committee for their commitment to develop a service ethic and benefit from a cooperative living experience.

All of these houses have both single and double rooms, each with a bed, dresser, study desk, lamp and chair. Linen, cooking utensils and small appliances are not provided. Students share kitchen and living room areas which are maintained by the cleaning staff. A trained senior student acts as a house coordinator and liaison with the Dean of Women to provide administrative and resident-related services.

International Student Houses

Dalhousie reserves two special houses for international students arriving in Canada for their first year of study. Located close to the main campus, these houses consist mainly of single rooms with shared bathroom and kitchen areas. Rooms are furnished with a bed, desk, drapes and a chair as well as linen. Although cooking facilities are provided, utensils are not.

Living Off-Campus

Dalhousie's Off-Campus Housing Office assists students who do not want to live on campus or who have been unable to find a place in residence or in University apartments and houses. Located in the Student Union Building, this office is designed to help students find privately-owned accommodation.

The Off-Campus Housing Office provides centralized information on available housing in the Halifax metro area, including apartments, rooms, condos and houses. Up-to-date computerized printouts of these listings are available as well as telephones for calling landlords and material such as maps and transit schedules.

Although the housing staff cannot arrange, inspect or guarantee housing, they will do everything they can to help students find accommodation that is pleasant, inexpensive and close to campus.

Because of the low vacancy rate in Halifax, it is advised that students start looking for off-campus housing well ahead of the academic year.

General Information

- Application forms must be accompanied by an application fee and a deposit in Canadian funds, payable to Dalhousie University. Deposit amounts are listed on the application form.
- Applications to residence may be submitted prior to acceptance to the University for a course of study.
- Acceptance into an academic programme does not mean that application for a place in residence has been approved or vice versa.
- To live in any of the University-owned buildings, students must maintain full-time status at Dalhousie throughout the academic year.

For further information on living at Dalhousie, or for additional copies of the residence application form, do not hesitate to contact:

Director of Housing and Conferences
Room 122, Student Union Building
Dalhousie University
Halifax, N.S. B3H 4J2
(902) 494-3365

Dean of Women
Shirreff Hall Women's Residence
Dalhousie University
6385 South Street
Halifax, N.S. B3H 4J4
(902) 494-2577

Dean of Men
Howe Hall Men's Residence
Dalhousie University
6230 Coburg Road
Halifax, N.S. B3H 4J5
(902) 494-1054

Manager
Fenwick Place
Dalhousie University
5599 Fenwick Street
Halifax, N.S. B3H 1R2
(902) 494-2075

Instructional Development and Technology

At Dalhousie, the responsibility for co-ordinating distance education falls under the mandate of the Office of Instructional Development and Technology (located at the entrance to the Killam Library, telephone 494-1622). Working in cooperation with those departments which offer courses at a distance the office is responsible for:

- professional support in developing and planning of course offerings
- advice in the design, production, and presentation of quality instructional materials.

The University recognizes the importance of distance education as one way of discharging its responsibilites to the region, particularly in fields (for example, the Health Professions) where its programmes are unique. Distance education is especially popular with busy professionals who might not otherwise have the opportunity to upgrade their university education.

To date distance education courses have been concentrated in the Faculty of Health Professions, eg. Nursing, Physiotherapy, Occupational Therapy, Social Work. However, such courses are also available from some other departments including the School of Public Administration. Students interested in taking distance education courses from these schools should contact them directly. General enquiries should be directed to the Registrar's Office.

International Student Centre

The International Student Centre provides services and programmes for Dalhousie's students from around the world. It is a resource and activity post for international students, and is dedicated to ensuring that international students make the most of their stay in Canada.

The Centre provides information and advice on financial, legal, immigration, employment and personal matters and acts as a referral point to other services on campus. It organizes reception and orientation programmes that assist international students in adjusting to the new culture and in achieving their educational and personal goals. A variety of social, cultural and educational programmes are also held throughout the year. The Centre coordinates activities that

facilitate fostering of relationships with the university and city communities.

The Centre has a lounge where students can meet and a reading room where students can study or read international publications. For further information, contact: The Advisor, International Student Centre, Dalhousie University, Halifax, N.S., Canada, B3H 3H6 or phone (902) 494-7077.

Libraries

The Dalhousie University Library System is organized to accommodate the needs of the undergraduate teaching programmes, graduate and faculty research projects, and professional schools. The system is made up of the following components: the Killam Memorial Library - Humanities, Social Science, and Sciences, the Sir James Dunn Law Library, and the Kellogg Health Sciences Library.

As of April 1, 1990, the total Dalhousie University Library System holdings include over 1,342,000 volumes of books, bound periodicals, documents, and bound reports, 422,500 microfiche microcards, maps, and other media. Approximately 10,400 serials titles are currently received, and dead title holdings number over 6,000.

Dalhousie libraries participate in Novanet, a network which shares a single automated online catalogue of the holdings of the member libraries (Mount Saint Vincent University, Nova Scotia College of Art & Design, Saint Mary's University, Technical University of Nova Scotia, and the University College of Cape Breton). Users borrow from Novanet libraries upon presentation of their University ID card.

Ombud's Office

The Dalhousie Ombud's Office offers assistance and advice to students facing university-related financial or academic problems. The Ombud's Office can help students resolve particular grievances and also attempts to ensure that existing policies are fair and equitable. Jointly funded by the University and the Dalhousie Student Union, the Ombud can provide information and direction to students on any University-related complaint.

The Dalhousie Ombud's Office is located in the Student Union Building, Room 403. Telephone No. 494-6583.

Registrar's Office

The office is responsible for high school liaison, admissions, awards and financial aid, registration, maintenance of student records, scheduling and coordinating formal examinations, and convocation. Of greater significance to students, however, is the role played by members of the staff who provide information, advice, and assistance. They offer advice on admissions, academic regulations and appeals, and the selection of programmes. In addition, they are prepared to help students who are not quite sure what sort of assistance they are looking for, referring them as appropriate to departments for advice about specific major and honours programmes or to the office of Student Services or to specific service areas such as the Counselling Services Centre.

Among the staff are people with expertise in financial aid and budgeting who are available for consultation.

The summer advising programme for first year students in Arts and Social Sciences, Management, Engineering and Science is directed from the Registrar's Office. Prospective students may arrange a tour of the campus through this office.

The fact that the Registrar's Office is in contact with every student and every department means that it is ideally placed to provide or to guide students and prospective students to the source of the advice or assistance they need.

Student Advocacy Service

The Student Advocacy Service was established by the Dalhousie Student Union and is composed of qualified students from the University. The main purpose of the Service is to ensure that the student receive the proper information when dealing with the various administrative boards and faculties at Dalhousie. An Advocate may also be assigned to assist students with appeals or in a disciplinary hearing for an academic offence. Our goal is to make the often unpleasant experience of challenging or begin challenged by the University less intimidating.

The Advocates may be contacted through:
Student Advocacy Service
Room 404
Dalhousie Student Union Building
Telephone: (902) 494-2205

Student Clubs and Organizations

Students seeking information on clubs and societies should call the GET INVOLVED LINE 494-3527.

Extracurricular activities and organizations at Dalhousie are as varied as the students who take part in them.

Organizations range from small informal groups to large well organized ones; they can be residence-based, within faculties, or university-wide.

Some are decades old with long traditions, others arise and disappear as students' interests change.

The Student Handbook publishes a list of clubs, societies and organizations, and every fall new students are encouraged to select and participate.

Student Services

Located in Room 410 of the Student Union Building, this office provides a point of referral for any student concerns. The Vice-President is the chief Student Services officer and coordinates the activities of Athletics and Recreational Services, Black Student Advising, Student Counselling and Psychological Services, Chaplaincy, Disabled Student Advising, Health Services, Housing and Conferences, Office of the Registrar, Writing Resource Centre, International Student Centre, and the Ombud Office. Students who experience difficulties with their academic programmes or who are uncertain about educational goals, major selection, workload management, social or personal matters affecting their academic performance, inadequate study skills, or conflicts with faculty and regulations can seek the assistance of the Academic Advisors in the Vice-President's office.

University Bookstore

The Univesity Bookstore, owned and operated by Dalhousie, is a service and resource centre for the university community and the general public. The Bookstore has all required and recommended texts, reference books and supplies, as well as workbooks, self help manuals and other reference material. The general book (trade) department has on of the largest selections in the city, including classics, bestsellers, new releases, and books by Dalhousie authors.

The Health Sciences department has the largest and most complete medical book section in Atlantic Canada, with over 2000 titles in stock. Thousands of other titles are specifically ordered annually, and the department ships out books to medical personnel and hospitals throughout the region.

The Stationery department carries all necessary and supplementary stationery and supplies, including scientific and engineering items. The Campus shop carries gift items, mugs, clothing and crested wear, cards, jewellery, posters, class rings, backpacks, novelties, briefcases, and general University paraphernalia. A Special Order department is available to students and is located in the office area.

The Bookstore is situated on the lower level of the Student Union Building on University Avenue, and is open year round, Monday to Friday.

University Computing and Information Services

University Computing and Information Services (UCIS) is responsible for all centrally managed computing and communications facilities and services. These are available to faculty, staff and students for instructional, research and administrative purposes.

UCIS has four divisions. "Facilities and Operations", located in the basement of the Killam Library building, is responsible for operating and managing the central mainframe and minicomputers.

UCIS manages a Digital VAX 8800 mainframe computer which is used primarily for academic purposes, an IBM 4381 computer for administrative systems, several smaller minicomputers for Computing Science and the School of Business, and microcomputer laboratories in the Computer Centre (basement of the Killam), Engineering, English, Sociology, Law, Physics, Biology, Geology and in the Dentistry building. A wide range of computer languages and applications software is available and supported by UCIS on these systems.

Access to on and off campus computing facilities is provided by means of a campus data communications network of data switches and ethernet connections. Dalhousie is attached to the Canadian Universities network NetNorth.

University Health Services

The university operates an out-patient service, in Howe Hall, at Coburg Road and LeMarchant Street staffed by general practitioners and a psychiatrist. Further specialists' services are available in local hospitals and will be arranged through the Health Service when indicated. All information gained about a student by the Health Service is confidential and may not be released to anyone without signed permission by the student.

Appointments are made during the clinic's open hours, from 9 a.m. to 10 p.m. In the event of emergency, students should telephone the University Health Service at 494-2171 or appear at the clinic in person. The university maintains health services on a 24-hour basis with a physician on call.

All students must have medical and hospital coverage approved by the Health Service. All Nova Scotia students are covered by the Nova Scotia Medical Services Insurance. All other Canadian students must maintain coverage from their home provinces. This is especially important for residents of any province requiring payment of premiums. All non-Canadian students must be covered by medical and hospital insurance prior to registration. Details of suitable insurance may be obtained from the University Health Service prior to registration. Any student who has had a serious illness within the last 12 months, or who has any chronic medical condition, should contact and advise the Health Service, preferably with a statement from the doctor.

The cost of any medication prescribed by a physician is recoverable under a prepaid drug plan administered by the Student Union.

Writing Workshop

The Writing Workshop programme recognizes that students in all disciplines are required to write clearly to inform, persuade, or

instruct an audience in term papers, laboratory reports, essay examinations, critical reviews and more. This English language resource centre offers classes in language and writing, a tutorial service, guidelines for acceptable standard language usage, and provides information about sources for reference. For more information about the Writing Workshop, please call 494-3379.

FEES 1991 - 1992

Student Accounts Office

The Student Accounts Office is located on the basement level of the Arts & Administration building.

Address: Dalhousie University
Student Accounts (Financial Services)
Room 29
Arts & Administration Building
Halifax, Nova Scotia
B3H 4H6
Tel (902) 494-3998
Fax (902) 494-1534

Office Hours
8:30 - 4:30 Monday to Friday
(or by appointment)

NOTE: All the regulations in this section may not apply to Graduate Students. Please refer to the "Faculty of Graduate Studies" section of the Graduate Studies Calendar.

This section of the Calendar outlines the University Regulations on academic fees for both full-time and part-time students enrolled in programmes of study during the fall and winter sessions. A section on University residence and housing fees is also included. Students wishing to register for the Spring or Summer session should consult the Summer School Calendar for information on registration dates and fees. Should you have any questions regarding these regulations or on the payment of fees generally, please contact the Student Accounts Office.

All fees are subject to change by approval of the Board of Governors of Dalhousie University. An Academic Fee Schedule will be available in March. A list of miscellaneous fees is included in Appendix II on page 7.

Students should make special note of the registration deadlines contained in the calendar on pages 5 to 7. Students should also be aware that additional fees and/or interest will be charged when deadlines for payment of fees as contained herein are not met.

For the convenience of students, registration material and non-cash payments are accepted by mail. Registrations with cheques postdated to September 6, 1990 will also be accepted. Please allow sufficient time to ensure that material sent by mail is received on or before the specified dates. Please note that after August 23rd we are unable to retrieve post-dated cheques.

General Regulations

The following general regulations are applicable to all payments made to the University in respect of fees.

* Fees must be made in Canadian funds by cash or negotiable cheque.

* If payment is by cheque and returned by the bank as non negotiable, there will be an additional fee of $15.00 and the account will be considered unpaid. Furthermore, if the bank returns a cheque that was to cover the first payment of tuition, the student's registration will be cancelled and, if permitted to re-register, a late fee will apply.

* Bills for fees will not be issued. The receipt obtained from Student Accounts each time a payment is made will show the date and amount of the payment as well as the balance outstanding.

Admission Deposit

A deposit of $100.00 is required by all new students in Specified Limited Enrollment Programmes (except in Law where the required deposit is $200.00) within three weeks of receiving an offer of a place at Dalhousie. (Please refer to Appendix I on page 28 for the definition of Specified Limited Enrollment Programmes.) Further information on the regulations governing the refund of admission deposits is contained in the section below on Changes, Refunds and Withdrawals.

Foreign Students

Students registering at Dalhousie University who are not Canadian citizens or permanent residents are required to pay an additional fee referred to as a "Differential Fee" in the amount of $1700.00. There is a proportionate charge for part-time foreign students. The payment of the differential fee is payable with the first installment of fees each year.

Academic Fees

Academic fees are comprised of: (a) the University fee for tuition; and (b) an incidental fee comprised of Student Union, and Society fees.

For purposes of this section of the Calendar a full-time undergraduate student is one who is registered for the fall and winter terms for more than three full credits, or if registered for only one term, for more than three half credits. Students other than those registered in Law, Medicine, Dentistry or a graduate programme may be registered full-time in one term and part-time in the other. In addition, students registered in two degree programmes are required to pay separate academic fees for both programmes.

Registration

The final step in registration is the payment of fees. A student is considered registered only after financial arrangements have been made with Student Accounts.

All students:

- must submit to the Student Accounts Office on or before the specified registration dates the first installment of academic fees unless they are receiving a scholarship, fellowship, Canada Student Loan, a fee waiver, or their fees are paid by external organizations;
- those holding external scholarships or awards paid by or through Dalhousie University must provide at registration documentary evidence of the scholarship or award;
- those whose fees are to be paid by a government or other agency must provide a signed statement from the organization at registration;
- those whose fees are to be paid by Canada Student Loan must indicate as such on the appropriate section of the registration form. (Please note: Students registering by Canada Student Loan must negotiate the Loan or provide the letter of declination issued by Student Aid by September 23. In any event, a reinstatement fee and/or interest may be charged after September 23. Failure to comply or arrange an alternative method of payment may result in deregistration).
- those whose fees are paid by a Dalhousie University staff tuition fee waiver must present the approved waiver form and pay the Student Union, and Society Fee at registration.

The completion of the registration process shall be deemed to be an agreement by the student for the payment of the balance of fees unless written notification to withdraw is submitted in writing at the Office of the Registrar. Students withdrawing in person must attend the Office of the Registrar and the Student Accounts Office before the withdrawal process is official. Graduate and Professional students wishing to withdraw should initiate formal action to withdraw at the Office of the Dean of Graduate Studies.

Payment of Academic Fees

An Academic Fee Schedule for 1991/92 will be available in March.

The payment of academic fees will be received at the Student Accounts Office located on the basement level of the Arts & Administration building.

Fees paid by mail must be received by Student Accounts on or before the deadlines specified below in order to avoid late payment and/or delinquency charges.

The following regulations apply to the payment of academic fees. For further information on regulations regarding withdrawal of registration, please refer to the Changes, Refunds and Withdrawals section below.

i) Should students prefer to pay in two installments, the first installment is due on or before September 6 and the second installment is due January 31.
ii) Students registering for either the fall or winter terms only must pay fees on or before September 6 and January 6, respectively.
iii) Scholarships or awards paid by or through Dalhousie University will be applied to tuition and residence fees in that order.
iv) When Canada Student Loan or co-payable bursary is presented at the Student Accounts Office, any unpaid academic, residence fees and/or Temporary Loans will be deducted.
v) Fees cannot be deducted from salaries paid to students who are employed at Dalhousie University.
vi) Regrettably, subsequent to August 23, 1991 we are unable to retrieve post-dated cheques.
vii) Any payments received will first be applied to overdue accounts.

Audit Courses

Full-time students may audit classes which are related to their programmes without additional fees. In such cases, the student is required to complete the usual registration process.

A student registered to audit a class and during the session wishes to change to registration for credit must receive approval from the Registrar and pay the difference in class fees plus a transfer fee of $25.00. This must be done before the last day for withdrawal without academic penalty, as shown on pages 5 to 7 of the Calendar. The same deadline applies for a change from credit to audit.

Late Registration

Students are expected to register on or before the specified registration dates. Students wishing to register after these dates must receive the approval of the Registrar and pay a late registration fee of $50.00. This fee is payable at the time of registration and will be in addition to the first installment of fees.

Changes, Refunds and Withdrawls

Please consult Student Accounts for all Financial charges and the Office of the Registrar for Academic regulations.

A refund of fees will not be granted unless the following conditions are met.

NON-ATTENDANCE AT CLASSES DOES NOT CONSTITUTE WITHDRAWAL.

i) Written notification of withdrawal must be submitted to the Office of the Registrar.

ii) After the approval of the Registrar has been obtained, (in the case of graduate and professional school, the appropriate Dean) application for a refund or adjustment of fees should be requested from the Student Accounts Office immediately. For students withdrawing in person the withdrawal process is official on the date that application for withdrawal is made at the Student Accounts Office. Therefore, the calculation of the refundable portion of fees will be based on this date. (Retroactive withdrawals will not be permitted.)

iii) No refunds will be made for 30 days when payment has been made by personal cheque.

iv) A student who is dismissed from the University for any reason will not be entitled to a refund of fees.

v) Refunds will not be made to a student who has paid an admission deposit for a Specified Limited Enrollment Programme.

vi) In any Specified Limited Enrollment Programme (See Appendix I) the first installment of fees is not refundable except on compassionate grounds (eg. illness).

vii) Refunds will be made to the Bank for fees paid by Canada Student Loans.

viii) Refunds will be prorated on fees paid by Scholarships.

ix) A valid Dalhousie University ID must be presented in order for the student to receive a refund cheque.

Dates for Refund - Regular Session

A student withdrawing or changing a class after September 23 will be charged full incidental fees and may receive a refund of the balance on a proportional basis (See Appendices III and IV on pages 29 and 30).

A student withdrawing or changing a class in January will be charged the full first installment of fees.

A student changing from full-time to part-time status before February 1, must have the approval of the Registrar and will then be eligible for an adjustment in fees for the remainder of the session.

No refunds will be made to students withdrawing after January 31.

Dates for Refund - First Term

A student withdrawing or changing a class after September 23 will be charged full incidental fees and may receive a refund of the balance on a proportional basis as specified in Appendices III and IV on pages 29 and 30.

No refunds will be made to students withdrawing or changing a class after October 21.

Dates for Refund - Second Term

A student withdrawing or changing a class after January 17 and before February 20 will be charged full incidental fees and may receive a refund of the balance on a proportional basis as specified in Appendices III and IV on pages 29 and 30.

Delinquent Accounts

Accounts are considered delinquent when the balance of fees has not been paid by September 23 (January 31 for students registered for the winter term only). Where payment in two installments is permitted the remaining balance is due January 31.

Interest at a monthly rate set by the University will be charged on delinquent accounts for the number of days overdue.

At the time of printing the monthly rate of interest is 1.42% (17% per annum).

A student whose account is delinquent for more than 30 days will be denied University privileges including access to transcripts and records of attendance, Dalplex and the libraries. The student will be reinstated upon payment of the fees outstanding, the arrears interest and a $50.00 reinstatement fee. Students will not be permitted to register for another session until all outstanding accounts are paid in full. Subsequently, if the bank returns the cheque, the student may be de-registered.

Students whose accounts are delinquent on March 15 may not be eligible, at the sole discretion of the University, for graduation at the May convocation. For October or February graduation the dates are Sept. 1 and Jan. 1 respectively.

Accounts which become seriously delinquent may be placed on collection or further legal action may be taken against the individual. Students will be responsible for charges incurred as a result of such action.

Canada Student Loans

Students planning to pay the first installment of fees from a Canada Student Loan should apply to the Province in April or May so that funds will be available in time for registration. The University will deduct fees/charges from the loan at the time of endorsement.

Provincial Bursaries and University Scholarships

These cheques are distributed by the Student Accounts Office. Any unpaid Fees and/or Temporary Loans along with charges, if applicable, are deducted and a University cheque will be issued within one week of endorsement for any balance remaining. A valid Dalhousie University ID and Social Insurance Number must be presented in order to receive these cheques. For more information on Student Loans, Bursaries or Scholarships inquiries should be directed to the Awards Office located on the first floor of the Arts & Administration building.

Room 125. Telephone (902) 494-2416.

Income Tax Credit from Academic Fees

The amount of academic fees constituting an income tax credit is determined by Revenue Canada, Taxation. Currently, the tax credit for students is calculated by deducting the following from Academic Fees: Student Union Fees, and Society Fees. Seventeen percent (17%) of the remaining balance constitutes the tax credit.

For all eligible fees, a special income tax certificate will be available at Student Accounts annually on February 28. Replacement tax receipts will be provided within 3 weeks of the request, for an additional charge of $5.00 per receipt.

Identification Cards

All full and part-time students should obtain identification cards upon registration and payment of proper fees. If a card is lost, a fee of $12.00 is charged. Regular academic year ID cards remain valid until the beginning of the following academic year (including summer session).

Laboratory Deposits

A deposit for the use of laboratory facilities in certain departments is required. The deposit is determined and collected by these departments. Students will be charged for careless or willful damage regardless of whether or not a deposit is required.

Dalplex Recreational Fee

Membership at Dalplex for 1990-91 is available for all full-time students at Dalhousie and all part-time students at Dalhousie taking three full credit courses for $45.00 payable at registration. Membership in Dalplex for ALL other part-time students at Dalhousie may be obtained at the office of Dalplex at the prevailing rates.

Student Union Fee Distribution

Every student registered at Dalhousie is automatically a member of the Student Union and is therefore required to pay a Student Union fee as part of their registration procedure. These fees have been approved by students in referenda and, along with other revenue of the Union, are allocated each year by the Student Council in a budget.

What follows is the breakdown of how Student Union fees are spent. If you have any questions or comments please contact the Student Union Office located in Room 222 of the S.U.B., Telephone No. 494-2146.

1989 - 90 Student Union Fee
(For Information Only)

	Full-Time (3 credits or more)
General Income For Operations	$40.00
Student Health Plan Insurance	$36.00
Contributions to Capital Campaign	$15.00
Capital Payback for Student Union Building	$10.00
C K D U - FM	$ 9.00
Yearbook Fee	$ 5.00
Canadian Federation of Students' Membership	$ 4.00
Students' Union of Nova Scotia Membership	$ 3.00
Course Evaluation	$ 1.00
South African Trust Fund	$ 1.00
Public Interest Research Group	$ 4.00
TOTAL	$128.00

Appendix I

Definition of Specified Limited Enrollment Programmes

Master of Business Administration
Master of Library Service
Master of Public Administration
Bachelor of Education

All programmes in the following faculties:

Faculty of Dentistry
Faculty of Law
Faculty of Medicine
Faculty of Health Professions

Appendix II

Miscellaneous Fees - Quick Reference

Fees	Amount	Payable To
Replacement Tax Receipt	$ 5.00	Student Accounts
Late Registration	$ 50.00	Student Accounts
Returned Cheque	$ 15.00	Student Accounts
Reinstatement Fee	$ 50.00	Student Accounts
Admission Deposit	$ 100.00	Registrar
Admission Deposit - Law	$ 200.00	Registrar
Application Fee	$ 20.00	Registrar
Late Graduation Application	$ 50.00	Registrar
Letter of Permission • per class - maximum $ 50.00	$ 10.00	Registrar
Reassessment Fee	$ 10.00	Registrar
Replacement ID	$ 12.00	Registrar
Supplemental Examination	$ 25.00	Registrar
Transcript	$ 4.00	Registrar
Priority Transcript Fee	$ 10.00	Registrar
FAX Fee	$ 5.00	Registrar
Application Fee - Residence	$ 25.00	Residence

Appendix III

Fee Refunds

All Faculties (except Specified Limited Enrolment Programmes), including Graduate Studies.

Student Union: Non Refundable after Sept. 23 (Second term Jan. 6)
Dalplex Recreational Fee: Non Refundable after Sept. 23 (Second term Jan. 6)
Society Fee: Non Refundable after Sept. 23 (Second term Jan. 6)
University Fee: As follows:

Withdrawal Date	Regular Session[1]	First Term Only[2]	Second Term Only[3]	Thesis only Graduate Studies	Part Time Degree Graduate Studies	½ Credit Full Year
Up to Sept. 23	95%	95%	100%	95%	95%	95%
Sept. 24 - Oct. 21	85%	67%	100%	85%	85%	85%
Oct. 22 - Nov. 12	70%	0%	100%	70%	70%	70%
Nov. 13 - Dec. 31	50%	0%	100%	50%	50%	50%
Jan. 1 - Jan. 20	2nd Inst.	0%	95%	43%	2nd Inst.	43%
Jan. 21 - Jan. 31	2nd Inst.	0%	67%	43%	2nd Inst.	43%
Feb. 1 - Feb. 16	0%	0%	67%	0%	0%	0%
After Feb.16	0%	0%	0%	0%	0%	0%

1. Applicable to all students except those registered for one term.
2. Applicable to all students registered full-time one term (First) and part-time undergraduate students taking only "A" classes.
3. Applicable to all student registered full-time one term (Second) and part-time undergraduate students taking only "B" classes.

Appendix IV

Fee Refunds
Specified Limited Enrolment Programmes

Admission Deposit: Non Refundable (after July 1 for School of Nursing, College of Pharmacy, and School of Recreation, Physical and Health Education).
Student Union: Non Refundable after 1st day of classes (Second term Jan. 6)
Dalplex Recreational Fee: Non Refundable after Sept. 23 (Second term Jan. 6)
Society Fee: Non Refundable after 1st day of classes (Second term Jan. 6)
University Fee: As follows:

Withdrawal Date	Regular Session	First Term Only	Second Term Only	½ Credit Full Year
1st day of class to Jan. 15	2nd Inst.	0%	0%	0%
Jan. 16 - Jan. 31	2nd Inst.	0%	0%	0%
After Jan. 31	0%	0%	0%	0%

Dalhousie University
Residence Room and Board Rates
1990-1991

The residence term for Howe Hall, Shirreff Hall, Eliza Ritchie Hall, Glengary Apartments and the Women's Residence Houses covers the time period from the Wednesday in September before classes begin in the College of Arts and Science to the last regularly-scheduled examination in the College of Arts and Science to the last regularly-scheduled examination in the College of Arts and Science in April (Christmas vacation excluded).

The residence term for Fenwick Place is as follows: First semester - Labour Day to December 31, 1990; and second semester - January 1, 1991, to April 30, 1991.

NOTE: Those students wishing to stay past the end of the residence term may stay longer for a daily or weekly rate. Please contact the residence in question regarding the specific rate and the amount of notice required.

	FIRST DEPOSIT AND APP. FEE	SECOND DEPOSIT AT JULY 15	BALANCE IF PAID IN FULL BY SEPT. 30	OR	PAY IN PART BY SEPT. 30	BALANCE DUE BY JAN. 31	TOTAL (Includes $10 Service Charge)
Howe Hall							
Single Room	$125	$200	$3,955	Or	$1,990	$1,975	$4,290
Double Room	$125	$200	$3,630	Or	$1,990	$1,650	$3,965
Shirreff Hall and Eliza Ritchie Hall							
Single Room	$125	$200	$3,955	Or	$1,990	$1,975	$4,290
Double Room	$125	$200	$3,685	Or	$1,990	$1,705	$4,020
Residence Houses							
Single Room	$125	$200	$2,215	Or	$1,115	$1,110	$2,550
Double Room	$125	$200	$1,895	Or	$1,115	$ 790	$2,230
Glengary Apartments							
Single Room	$125	$200	$2,220	Or	$1,115	$1,115	$2,555
Double Room	$125	$200	$1,920	Or	$1,115	$ 815	$2,255
Bachelor Apts.	$125	$20	$3,180	Or	$1,600	$1,590	$3,515
Fenwick Place Student-Shared Apts.							
2-Person (2-Bdrm.)	$125	$200	$3,000	Or	$1,400	$1,600	$3,200
3-Person (2-Bdrm.)	$125	$200	$2,714	Or	$1,257	$1,457	$2,914
4-Person (4-Bdrm.)	$125	$200	$2,394	Or	$1,097	$1,297	$2,594
Meals Only - Special Rate for Session							
3 Meals Per Day	$1,792						
2 Meals Per Day	$1,736						

Meals - Only Plans may be purchased from the Administrative Offices at Howe Hall and Shirreff Hall.

Please note the following:
(1) The above fees will be superseded on July 1, 1991, when the 1991/1992 residence fee schedule will be published.
(2) Howe Hall, Shirreff Hall and Eliza Ritchie Hall rates include a residence council membership fee and a mandatory 21-meal plan.
(3) For all residences the prepaid deposit of $125 includes a $25 application fee which is nonrefundable.
(4) The balance paid in January includes a service charge of $10.
(5) At Fenwick Place $100 of the $125 prepaid deposit is a damage deposit. See application form for details. The $10 service charge is not applicable.
(6) The second deposit due on July 15 is a $200 nonrefundable deposit to confirm the room.

Undergraduate Awards

Scholarships, Awards, Financial Aid, & Bursaries

Office of the Registrar - Awards is responsible for:

- Undergraduate Scholarships
- University Bursaries
- University Short-Term Loans
- Canada Student Loans
- Provincial Loans & Bursaries
- Awards and Financial Aid Advice & Information
- Canada Scholarships

Undergraduate Scholarships

IMPORTANT NOTE The University is reviewing the policy governing undergraduate awards. Consequently, portions of the following statement of policy may be modified or substantially altered and may be implemented during the course of the academic year of this Calendar.

General Policy

Full Class Load

(a) Entering students to whom an entrance scholarship is awarded must undertake a full class load for the academic year immediately following the award in a designated degree or diploma programme at Dalhousie University proper. A full class load for most such designated programmes consists of not fewer than five full classes (or the equivalent), i.e. 30 credit hours distributed equally between the two terms, unless the prescribed standard credit hour load should be otherwise.

(b) Continuing regular students are asked to note: To be considered for an in-course scholarship, a student must have carried in the preceding year a full class load (five whole classes or the equivalent, i.e., 30 credit hours, or that stipulated by the designated requirements of the programme).

(c) Continuing Co-operative Programme students will be considered as are the regular students except that the prescribed period may be either a term or an academic year depending upon where a given Co-op student is within that programme at the time.

Where Scholarships Are Tenable

Dalhousie University scholarships are tenable only at Dalhousie unless the Will or Trust Deed should otherwise permit. (The University of King's College has its own scholarship programme.)

Portability of Undergraduate Scholarships

Entrance and In-course Scholarships are portable amongst the following faculties and schools for the eligible degree/diploma programmes as indicated:

College of Arts & Science:
- Bachelor of Arts
- Bachelor of Education (Integrated)
- Bachelor of Music
- Bachelor of Music Education
- Bachelor of Science
- Diploma in Engineering

Faculty of Health Professions:
- College of Pharmacy
  - Bachelor of Science in Pharmacy
- School of Nursing
  - Bachelor of Nursing
  - Bachelor of Nursing (Registered Nurses) (for in-course scholarships only)
  - Bachelor of Science in Nursing
  - Bachelor of Science in Nursing (RN) (for in-course scholarships only)
- School of Occupational Therapy
  - Bachelor of Science in Occupational Therapy (for in-course scholarships only)
- School of Physiotherapy
  - Bachelor of Science in Physiotherapy (for in-course scholarships only)
- School of Recreation, Physical and Health Education
  - Bachelor of Physical Education
  - Bachelor of Recreation
  - Bachelor of Science (Health Education)
  - Bachelor of Science (Kinesiology)
- Maritime School of Social Work
  - Bachelor of Social Work

Faculty of Management:
- School of Business Administration
  - Bachelor of Commerce

Faculty of Dentistry:
- School of Dental Hygiene
  - Diploma in Dental Hygiene (for in-course scholarships only)

When Scholarships Are Tenable

(a) Undergraduate scholarships to regular full-time students are tenable in the academic year immediately following their award.

(b) Similarly, undergraduate scholarships to Co-op students are to be taken up in the academic term or year immediately following their award.

Scholarship Payments and Rebates

(a) Payments: Dalhousie University scholarships are credited towards students' accounts first for tuition and prescribed fees, and secondly for residence fees.

(b) Rebates: The portion of such scholarship money in excess of the aforementioned charges will be refunded to the student in one portion. The normal refund time is mid-November, and the refunds are made by the Student Accounts Office.

Scholarship Duration

Undergraduate scholarships normally are tenable for one year. The reintroduction of renewable scholarships has altered this.

In 1988-89 the University adopted renewable scholarships as the norm for its regular higher value awards. The two top tiers of the four-level scholarship plan are renewable for the normal duration of the programme in which the awardee was enrolled at the time of the award. These scholarships are renewable at the same value provided that the scholar attains a competitive level of academic excellence. The bottom two levels of award are tenable for one year only.

Eligible Classes

The Undergraduate Scholarship Committee considers only those Dalhousie classes which are taken for credit in a designated degree/diploma programme during the regular academic year (or term in the Co-op programme). Summer session and correspondence classes are not considered for scholarship purposes.

Please note that classes taken at other institutions whether or not they have been undertaken with a Letter of Permission, are not eligible for scholarship assessment unless they are part of a Dalhousie University approved programme for Co-ordinated Education, International Development Studies or Women's Studies.

Excess Class Load Counted

Students who (regardless of the reason) carry in excess of the minimum "normal" full class load will be assessed on all classes.

Reduced Class Load and Retention of Scholarship

To be eligible to hold an in-course scholarship in one of the eligible programmes, a student must maintain registration in five whole classes or the equivalent.

Record of Scholarships

Awards are recorded on the academic records of the students. The University retains the right to reassign the source funding of a student's scholarship as circumstances may warrant (but there would be no reduction in the amount).

Withdrawing

If it should become necessary to discontinue studies, it is most important that students do so in a formal manner via the Office of the Registrar. Depending upon the time of withdrawal, students may have a portion of the scholarship credited to their account.

Government Notification

Holders of Dalhousie University scholarships are to note that the University is required, upon written request, to report its award winners to the respective Provincial Student Aid Authority.

Entrance Scholarships

Dalhousie University offers scholarships, the values of which range from $1000 to $5,000, to outstanding students who are admitted directly from high school to the first year of study. Depending on the value of the awards they are tenable for one or more years. Renewable Entrance Scholarships which are worth either $5000 or $3000 are tenable for the duration of the programme to a maximum of four years, provided that the holder achieves a competitive level of academic excellence. Entrance Scholarships worth $2500 or $1000 are tenable for one year.

Non-renewable scholarships for subsequent years are also available and they are described under "In-Course Scholarships." Please note that entering students who may not qualify for an entrance scholarship will be considered for an in-course scholarship upon completion of first year (provided they have carried a full course load), funds permitting.

In order that applicants for admission to the University may be considered for scholarships, it is advisable that Section 5 of the Application for Admission be completed. Entrance applicants who wish such consideration must arrange with their high school for the submission of a completed Application for Admission Form to be received by the Office of the Registrar - Admissions by 1ST MARCH.

Entrance Scholarships Adjudicated by the Awards Section

The following endowments make possible the funding of the aforementioned entrance scholarships.

Robert Bruce Scholarships: The University is a beneficiary of a bequest from the late Robert Bruce of Quebec whereby a portion of the annual income is to be used for both entrance and in-course scholarships, and for bursaries.

James and Abbie Campbell Memorial Scholarships: A bequest from the late Elsie Alma MacAlooey of Halifax made provision for the establishment of the James and Abbie Campbell

Memorial Fund. The purpose of this fund is to promote the University's music programme through scholarships in music. Academically sound students who have demonstrated competency in music will be selected by the Department for one of several James and Abbie Campbell/Department of Music Scholarships. Other music students will be selected on the basis of their overall academic standing by the Undergraduate Scholarship Committee. The fund provides in-course scholarships also.

The Dalhousie Club of New York Scholarships: A fund for this purpose, established by the Dalhousie Club of New York and placed in the hands of the Board of Governors of the University, endows several scholarships open to students entering the University in the College of Arts & Science from high school. The financial need of the candidates will also be considered. The fund provides in-course scholarships as well.

E. Ross Faulkner Scholarships: The University received from the Estate of Julia L. Faulkner a bequest to provide scholarships in memory of her husband, Dr. Ebenezer Ross Faulkner.

The Percy Bertram Jollota Scholarships: These memorial scholarships are open to students in engineering or physics in the entering year and are available in subsequent years too.

The E. John Jordan Scholarships: Under the Will of the late E. John Jordan a bequest was left to the University for the purpose of funding entrance and in-course scholarships.

Frederick A. MacMillen Scholarships: The late Frederick A. MacMillen bequeathed to Dalhousie University a sum of money, the net income therefrom to be used for scholarships. This fund has been designated for entrance scholarships.

The Hector McInnes Memorial Scholarships: In December 1937, an anonymous donor gave the University $50,000 for undergraduate scholarships as a memorial to the late Mr. McInnes.

Silvanus A. Morton Memorial Scholarship: The Silvanus A. Morton Scholarship Fund was established in 1972 to endow one or more awards totalling approximately $800. The awards are in memory of Silvanus A. Morton, Principal of the old Halifax Academy, predecessor of the Queen Elizabeth High School. The scholarship is to be awarded on the recommendation of the principal to one or more graduates of Queen Elizabeth High School upon entrance to Dalhousie University in the College of Arts & Science.

Harold Oxley Scholarship: A bequest under the late Mr. Oxley's Will makes possible the funding of a scholarship, which has been allotted to the entrance scholarship plan.

Arthur S. Payzant Scholarship: Under the Will of the late Reverend Arthur Silver Payzant a bequest was established for scholarship purposes. The University has allotted this fund to the entrance scholarship plan.

Pictou Academy Scholarship: In recognition of the common origin and close relation existing between Dalhousie University and the Pictou Academy, the University in 1917 on the occasion of the hundredth anniversary of the academy established a scholarship.

The Harold A. Renouf Scholarship: An endowment has been established to provide an annual scholarship for students entering the Bachelor of Commerce programme.

The Lois J. Robertson Scholarships: The University received a generous bequest from the Estate of the late Lois Robertson. This fund has been allocated to undergraduate scholarships.

Dr. David M. Soloan Scholarship: Under the Will of the late Dr. David M. Soloan the University received a sum of money. The Board of Governors decided that the gift be used to provide one or more entrance scholarships in the College of Arts & Science.

Joseph Duncan Stewart Scholarships: A bequest under the Will of the late Joseph Duncan Stewart has made possible the funding of undergraduate scholarships.

The J. Douglas Vair Scholarship: This scholarship is available to students entering the University for the first time from Pictou County, Queen's County, and rural Halifax County, and, failing a candidate from these areas, to a student from other areas of the Province of Nova Scotia at the discretion of the Scholarship Committee. The award shall be based on scholarship and need, making it possible for a promising student to obtain a university education. The scholarship may be continued beyond the first year to students from the three preferred areas if standing is maintained, but only if there is no first-year student eligible for the award.

The Women's Division of the Dalhousie Alumni Association Scholarships: This fund provides up to three scholarships of $1,000 each. Of the two entrance scholarships, one is named the **Margaret Florence Newcombe Scholarship**, which commemorates the 100th anniversary of the graduation of the first woman graduate of Dalhousie University in 1885. This scholarship includes a financial need component and consideration of extra curricular activities, in addition to the attainment of high academic

standing. The second scholarship is named the Ruth Skelling Murray Scholarship, in memory of a dedicated alumna of the Dalhousie Women's Division. (The third award, the Christine Irvine Scholarship, is open to in-course students.)

The Lockward Memorial Scholarships: These scholarships have been established from an endowment by the late Reginald and Anne T. Lockward of Liverpool, N.S. A number of such scholarships, each valued at $4,000 will be awarded annually; they are tenable for one year. Candidates for Lockward Memorial Scholarships must be attending, or be graduates of, a high school in Nova Scotia and be eligible for admission to the first year of an undergraduate course of study leading to a first degree at Dalhousie University. Preference will be given to students in Queen's County. High schools outside the preferred area but within Nova Scotia may each recommend one student for consideration. Students will be selected to receive Lockward Memorial Scholarships on the basis of academic standing, character and financial need. A student may not hold both a Lockward and another University scholarship simultaneously. Candidates must be recommended by the principal of their high school. Please use the regular admission form, accompanied by letters of reference. Two letters of reference from members of the community who are familiar with the student's character and activities, should be included. The deadline for receipt of nominations is 1 March. Nomination forms and letters of reference should be sent to: The Director of Awards, Office of the Registrar.

Other Entrance Scholarships

The following scholarships are administered separately from those in the previous section. Unless identified otherwise they are administered by the Office of the Registrar.

Dalhousie Alumni Association Scholarships: With a gift of $20,000 in September 1968 the Dalhousie Alumni Association established an endowment from which the net annual income would provide two major scholarships to students of particular merit. These scholarships are open to students entering the University for the first time directly from high school into a course of study leading to an undergraduate degree or diploma. For further information contact the President, Dalhousie Alumni Association, c/o The Alumni Office, Dalhousie University.

Dalhousie Alumni Leadership Scholarships: A small number of these scholarships are open to entering students who have demonstrated scholastic success in high school while maintaining a healthy extra-curricular involvement. For further information contact the Alumni Office.

The Frank R. Davis Memorial Scholarships: These scholarships are made possible by a fund established by Mrs. Davis in memory of her late husband, the Hon. Frank R. Davis, Minister of Public Health in the government of Nova Scotia and a graduate of this University. The scholarship will be awarded by the University to deserving graduates of the Bridgewater High School, on the nomination of the Supervisor of Schools and the Senior High School staff. In selecting candidates, the governing considerations will be scholastic standing, unselfishness of purpose, and interest in the common good. The fund may also be used for bursaries.

Dover Elevator Scholarship: One tuition scholarship will be awarded annually to a student entering the first year of the engineering or commerce programme. The recipient will have demonstrated high academic standing combined with a history of community involvement and leadership skills, and shown an interest in pursuing a career in business. The scholarship is renewable through second year, provided the recipient maintains a minimum Grade Point Average of 3.7.

Earl of Dalhousie Scholarships: A limited number of these scholarships are awarded to students from Africa by the Board of Governors of Dalhousie University on the recommendation of the President. These scholarships are equivalent in value to the tuition fees of the faculty in which the student is studying. Continuance of these scholarships is dependent on satisfactory performance at the University and subject to annual review. Important: Note that these tuition scholarships are awarded after arrival in Canada.

The Rowland C. Frazee Undergraduate Scholarships in Business Administration: Two scholarships of $5000 each are to be awarded annually to students entering the Bachelor of Commerce programme. Sponsored by The Royal Bank of Canada, these scholarships honour Mr. Frazee's long and distinguished career with the bank.

The A. Murray MacKay Scholarship: The North British Society has established an annual scholarship of $500 which is open to a student entering Dalhousie from Queen Elizabeth High School. The Selection Committee will consider candidates on the criteria of academic ability, financial need and leadership. The critieria are weighted equally. The late Dr. MacKay was chairman of the School Board at the time when QEH was constructed.

The W. M. Nelson Scholarship: Under the Will of the late Mr. William M. Nelson of Tatamagouche, funds have been made available to provide a scholarship to Dalhousie University

open to students attending North Colchester High School.

Dalhousie-Nova Scotia Teachers' College Scholarship: Dalhousie provides a scholarship of $500 to a graduate of the Nova Scotia Teachers' College as recommended by the principal.

Stanford Memorial Trust Scholarships: The J.D. Stanford Memorial Trust have established an endowment to provide assistance with the costs of attendance at Dalhousie University. Recipients of scholarships are to be residents of the Bequest Area.

Alexander Sinclair Scholarship: Under the Will of the late Evangeline Marion Winn, the University received an endowment for the purpose of providing scholarship awards to qualifying students from St. Mary's Municipality in the County of Guysborough, Nova Scotia. Candidates are recommended by the St. Mary's Rural High School in consultation with the Awards Office.

The I. C. Stewart Trust Fund: From the Estate of Georgie M. Stewart came a trust fund, the annual income from which is to be used for I.C. Stewart Scholarships to qualifying students from St. Mary's District in the County of Guysborough, Nova Scotia. Candidates are recommended by St. Mary's Rural High School in consultation with the Awards Office.

In-course Scholarships

All Dalhousie students in eligible programmes in the participating faculties who have successfully completed a normal full class load will automatically be considered for scholarships. The normal full class load will depend upon the requirements of specific faculties and schools. The Undergraduate Scholarship Committee decides the awardees and the amounts of money. The amount of money authorized for a scholar may be met wholly or partially by a Dalhousie University Scholarship and/or one of the named scholarships as described in the following sections. Please note that transfer students are ineligible for scholarships in the year of their transfer.

In-Course Scholarships Adjudicated by the Awards Section

(a) General

The Isabel Brown Scholarship: The scholarship was endowed in 1982 by the Brown family under the auspices of the Women's Division of the Dalhousie Alumni Association. The interest provides an annual scholarship ordinarily to a student who is entering the final undergraduate year. Note, however, that this scholarship is portable to programmes outside the list of designated undergraduate programmes as listed earlier.

Minnie F. Burbidge Scholarships: In her Will the late Minnie F. Burbidge bequeathed the residue of her estate to Dalhousie University. In 1945 the sum of $16,000 was endowed to provide undergraduate, usually in-course, scholarships.

George H. Campbell Memorial Scholarship: In 1917 Mr. and Mrs. G.S. Campbell established the George H. Campbell Scholarship Fund to provide annual scholarships in memory of their late son, George Henderson Campbell.

Marjorie F. Ellis Scholarships: The late Marjorie F. Ellis bequeathed one-half of the remainder of her estate to Dalhousie University for scholarships to worthy students.

W.L. Harper Scholarship: From the Estate of Arta Falconer Harper a bequest to the University makes possible the provision of a number of awards from the annual income.

Christine Irvine Scholarship: The Women's Division of the Dalhousie Alumni Association established this scholarship to honour the memory of a former Dean of Women.

Mackenzie Trust Scholarships: According to the Estate of Thomas George Mackenzie a Trust Fund was established for Archibald F. Mackenzie, and later bequeathed to Dalhousie University to provide (in-course) scholarships.

The Hector McInnes Memorial Scholarship: In December 1937, an anonymous donor gave the University $50,000 for undergraduate scholarships as a memorial to the late Mr. Hector McInnes.

The Lois J. Robertson Scholarship: The University received a generous bequest from the Estate of the late Lois Robertson. This fund has been allocated to undergraduate scholarships.

Joseph Duncan Stewart Scholarship: A bequest under the Will of the late Joseph Duncan Stewart has made possible the funding of undergraduate scholarships.

The John L. and Glenna B. Towse Scholarship: A bequest to the University provides for a number of in-course scholarships.

Sir William Young Scholarship: This fund was left by Sir William Young for the purpose of endowing scholarships.

(b) Arts and Science

Nathan T. Ashkins Scholarship: Each year the Nathan T. Ashkins fund provides for a scholarship to a student in Arts & Science who is beyond first year.

Robert Bruce Scholarship: Robert Bruce of Banlieue, Quebec, made a bequest to the University to establish bursaries and scholarships.

The Charles and Cecelia Zwerling Scholarship: This fund was created by members of the Zwerling family in memory of Mr. and Mrs. Charles Zwerling for scholarship beyond first year.

(c) Arts

Dr. Frederick J. Gaudet Scholarship: Dr. Gaudet bequeathed to the University in 1978 a sum of money to provide for a full tuition scholarship in Arts.

The Hyman I. Jacobson Scholarship: Under the will of the late Hyman Isaac Jacobson a bequest of $5,000 was given to the University to benefit the Humanities and Social Sciences.

The Khaki University Scholarships: From the Khaki University of Canada and the Young Men's Christian Association Memorial Scholarship Fund, the trustees of Khaki University made a gift to Dalhousie University in 1921 of $6,500 to endow scholarships.

(d) Science

The Belle Crowe Scholarships in Chemistry: A bequest by the late Belle Chisholm Crowe, formerly of Truro, and a student at the University in 1885-86, enables a number of scholarships to be offered annually. The Undergraduate Scholarship Committee and the Department of Chemistry (see also) share the net annual income equally. The former awards Belle Crowe Scholarships to students in the Honours Chemistry programme which students have qualified in the yearly competition for in-course scholarships. The scholarships are directed to the most promising students entering the third or fourth year in the Honours Chemistry programme.

The L.A. DeWolfe Memorial Scholarship: A fund has been established under the Will of the late Dr. L.A. DeWolfe to provide undergraduate scholarships in Mathematics or Science.

The Percy Bertram Jollota Scholarships: From the Estate of Jean Minerva Jollota came a bequest, the annual income of which is to be used to provide scholarships in memory of her late husband, Percy Bertram Jollota. The awardees must be engaged in studies in engineering, engineering-physics or physics.

The Carl Mushkat Memorial Scholarships: The Carl Mushkat Memorial Fund was established at Dalhousie University in 1979 as a bequest under the Will of the late Carl Mushkat. The fund provides scholarships to students in Mathematics or Science.

The Ross Stewart Smith Scholarships: A significant bequest established these memorial scholarships for students who excell in the sciences or mathematics.

The Mr. and Mrs. S.H. Solomon Scholarship in Engineering: This scholarship was made possible by Mr. and Mrs. S.H. Solomon and is to be awarded annually to a student entering the second year of Engineering.

The C.W. Stairs Memorial Scholarship: In 1960, William Stairs, Son & Morrow Limited of Halifax, on the occasion of the 150th anniversary of the firm donated $10,000 to the University to set up this fund. It provides scholarships to students in Engineering, or in related subjects, who are entering the third year of the course and who, in the opinion of the Committee, are likely after graduation to contribute to the industrial development of Canada.

(e) Other

The following scholarships are administered separately from the regular in-course ones.

Beta Sigma Phi Scholarship to Dalhousie University: The Halifax-Dartmouth City Council of Beta Sigma Phi sorority has established an endowment of $2,000 whereby the annual income will provide for a scholarship to a student studying towards a degree full-time or part-time at either the undergraduate or graduate level. The successful candidate will be selected from the following categories, listed preferentially: first, an active Member; secondly, a daughter, son or husband of an active Member; and thirdly, some other student chosen by the Undergraduate Scholarship Committee. NOTE: this scholarship requires a designated application form which must be submitted to the Awards Office by the May deadline.

George Burris Travelling Scholarship: Under the will of the late Mary Burris of Massachusetts a sum of money was bequeathed to the University to fund an annual scholarship in memory of her father. The scholarship is open to men and women who wish to undertake study in England. A designated application form is required. (Under review)

The Constance MacFarlane Scholarship: An endowment fund has been established to provide a scholarship to a deserving student in the second or subsequent year of the Honours programme in either biology or marine biology. Candidates must have completed at least one class in each of ecology and botany.

The W. Andrew MacKay Scholarship: The Dalhousie Alumni Association established an annual scholarship in honour of Dr. W. A.

MacKay, a former president of the University. The scholarship is available to a returning student who has demonstrated high academic standing (a Grade Point Average of at least 3.3) and who has shown an excellence in qualities of leadership, citizenship and sportsmanship. The award is tenable in the faculties of Arts & Social Sciences, Health Professions, Management (Commerce), and Science. Candidates are to be nominated by each Department or School in the above list. Nominations are to be received by the Office of the Registrar by 15 May. The Undergraduate Scholarship Committee will select at least three candidates for final consideration by the Alumni Office.

The Alan Pollok Scholarship: This scholarship of $750 was established by the North British Society in Halifax in memory of the Rev. Dr. Alan Pollok. The awardee will be the student, in second year in the College of Arts and Science at Dalhousie University, who stood highest in a course load of at least five full classes (or equivalent).

The George B. Robertson Phi Delta Theta Fraternity Scholarship: An endowment has been established to provide a scholarship to a student in full-time study in the junior or subsequent years at Dalhousie University. The selection of the awardee is based on several factors including a minimum Grade Point Average of 3.0, demonstrated activity in the Halifax Chapter and financial need.

The Stora Undergraduate Scholarship in Arts & Science: On the occasion of their 25th Anniversary Stora Forest Industries have established an endowment to provide one undergraduate scholarship open to students in Arts & Science. To be eligible candidates must reside in Nova Scotia, have demonstrated academic excellence and have exhibited a desire to learn. Students will be considered after one year at Dalhousie.

Departmental Scholarships

Biology

Hugh P. Bell Scholarship in Biology: In 1968 the Class of 1928 established the H.P. Bell Fund; the income therefrom is to provide one or more annual scholarships. The Biology Department each year will select the most promising honours biology student who is in Third year and that student shall hold the Hugh P. Bell Scholarship in the fourth year of the honours programme.

The Sarah M. Lawson Scholarships in Botany: At the discretion of the Chairman of the Department of Biology, the University may offer scholarships to students who have shown special ability in botany. This award is open to students at Dalhousie University or the University of King's College, and is given to support summer research projects in botany at either the undergraduate or graduate level.

Chemistry

The Belle Crowe/Department of Chemistry Scholarships: These scholarships are awarded on the basis of academic standing and demonstrated proficiency in chemistry to students in the honours programme.

The E. Walter Todd Scholarship: A bequest from the Estate of Mabel E. Todd in 1958 established a fund to provide a scholarship (and inscribed volume) in memory of her brother, E. Walter Todd, who was for many years a member of the Department.

Economics

Professor W. Russell Maxwell Memorial Scholarship: Friends and colleagues of Professor Maxwell have established a fund to provide scholarships to outstanding students entering the second, third or fourth year of the General Degree or Honours Degree programme in Economics. Preference will be given to candidates entering the fourth year of the Honours programme.

Engineering

John R. Kaye Memorial Scholarship: The Founder of this scholarship gave a benefaction of $10,000 to be invested. From the annual income therefrom, one (later more) scholarship may be awarded to a suitably well qualified Dalhousie graduate who is continuing studies in an accredited programme in engineering at the Technical University of Nova Scotia. The holder shall be a resident, native-born Nova Scotian who has completed the requirements for the Diploma in Engineering. The Selection Committee shall consider good marks, motivation, diligence, capability for making a contribution to the profession, and financial need. The amount of each scholarship shall approximate tuition fee (maximum of $1,000) in the programme the awardee is to pursue. The scholarship will be paid upon presentation of proof of registration at TUNS.

English

Allan and Lura Bevan Memorial Scholarship: Colleagues and friends of the late Allan Bevan have established a memorial scholarship fund. The scholarship selection in the first place is to be made by the Department of English to a student majoring in English either at Dalhousie or King's. In the absence of a suitable candidate from English, the selection will be made by the Department of Music.

The Archibald MacMechan Chapter/IODE Scholarship in English: In 1948 the Archibald MacMechan Chapter of the IODE gave the University a scholarship fund. This award is intended for students who have shown special ability in English and who are looking forward to further study in the field. Provided that suitable candidates apply, preference will be given to graduates who intend to study for a Master's Degree in English. Application should be made to the Chairman of the Department of English not later than 31 March.

French

The Ruth Murray Scholarship for French Studies: An endowment fund has been established to honour the memory of Mrs. Ruth Murray by providing scholarships to students in the Department of French. These scholarships are open to undergraduate students who are academically sound and who are participating in one of the following:

(a) a programme of study at the University of Aix-en-Provence, France, or

(b) an off-campus summer course in a francophone environment arranged and directed by the Department of French.

In any year when there are no students participating in these programmes, the income may be disbursed as scholarships to academically sound students majoring in French at Dalhousie.

Geology

Amoco Canada Undergraduate Scholarship in Geology: Amoco Canada Petroleum Geology Limited offers an annual scholarship of $1500 to a deserving student of outstanding merit in the Fourth and final year of an Honours BSc program with a major in geology. In addition to scholastic achievement, other criteria may include keen interest in geology, participation in University and community affairs and economic need.

Chevron Canada Resources Limited Scholarship: A scholarship of $1000 is available to a geology student who is entering the final year of that programme. Sponsored by Chevron Canada Resources Limited, the scholarship is open to that student, who in the opinion of the Department, has demonstrated outstanding merit and shown interest in oil exploration/production.

The James L. Hall Scholarship in Geology: This scholarship is awarded on the joint recommendation of the Chairmen of the Depts of Engineering and Geology, to a student who has completed his/her first year, who is planning a career in the field of Mining Geology.

C.D. Howe Scholarships in Engineering: The C.D. Howe Memorial Foundation has established an endowment for annual renewable scholarships of not less than $5,000. Open to matriculants with high academic standing from N.S. schools who are enroled full-time the Dip Eng or BSc/Dip Eng programmes. Preference is given to women.

History

The George E. Wilson Memorial Scholarship: On the occasion of the 50th anniversary of the graduation of the Class of 1930, a representative announced the establishment of a scholarship fund. The scholarships, in honour of Professor Wilson, are open to students in history.

Mathematics, Statistics & Comp.Science

The Ralph and Frances Lewis Jeffery Scholarship: From the Estate of Frances E. Jeffery came a bequest in 1979 to endow a scholarship which is to be awarded to a student who has completed the final year of an honours course in Math, and who has maintained at least a 2nd-class standing during the first 3 years of the course.

The I.P. Sharp Associates Limited Scholarship: This scholarship is awarded annually to a outstanding student in either mathematics or computing science (with some experience in software development). The scholarship includes a job offer during the summer following the award presentation. Ordinarily the scholarship will be awarded when the student has two years before graduation. The job would be for the summmer before the student's final year in the programme.

Music

The James & Abbie Campbell Mem Scholarships & the James and Abbie Campbell/Dept of Music Scholarships: The Undergraduate Scholarship Committee and the Department of Music make selections of winners for undergraduates. See entry under Entrance Scholarships.

The Honourable L.D. Currie Mem Scholarship in Music: The North British Society established this scholarship in memory of the Honourable Lauchlin D. Currie in 1971. An annual scholarship in the amount of $750 is available to a Canadian in any year of Music. The successful student, will have demonstrated competence in vocal or instrumental performance.

Halifax Ladies Morning Music Club Scholarship: The Halifax Ladies Morning Music Club sponsors an annual scholarship of $100 for a first-year student in Music at Dalhousie.

Elisabeth Meyerhof Scholarship in Music: An annual scholarship of at least $1,500 awarded to the student entering the Fourth Year of his or her undergraduate degree programme in Music who has achieved a high average in the music classes of the first three years and who in the opinion of the Department has demonstrated exceptional promise for a professional career as an instrumentalist in the performance of classical

music (including early music). If no instrumentalist qualifies, a voice student would be considered.

The Effie May Ross Scholarships in Music: An endowment fund of $25,000 was established under the Will of the late Effie May Ross. The income is to be used to establish yearly scholarships to (a) the most promising vocalist student from the Maritime Provinces or Newfoundland who requires financial assistance; and (b) on recommendation of the Senate of Dalhousie University to the most promising Maritime or Newfoundland student in the playing of the Piano, Organ, Violin or Cello who is in need of financial assistance. Scholarships range in value and in number.

The Don Wright Scholarships in Music Education: The Don Wright Charitable Foundation of Toronto established a generous endowment with which to fund these two scholarships. One scholarship is allocated to Classroom Vocal Music. Recipients of this award must fulfill the following criteria: a) be enrolled in the classes in classroom teaching methods and field experience at either the elementary or secondary level; b) be studying voice; and c) have shown outstanding teaching skills and choral techniques in the Class, Music 4460A, and in choral practice in the classroom setting, Grades Five to Nine inclusive.

A second scholarship is allocated to Instrumental Music. Recipients of this award must fulfill the following criteria: a) be enrolled in classes in instrumental technique, teaching methods and field experience as well as classroom teaching methods and field experience at either the elementary or secondary level; b) be studying a band or orchestral instrument; and c) have shown oustanding achievement in the above classes.

Spanish

Sonia Jones Scholarship in Spanish: An endowment fund of $28,000 has been established with revenues earned by Dr. Jones and her students during her tenure as Professor of Spanish at Dalhousie. The income is to be used for yearly scholarships to help outstanding students majoring in spanish who are in need of financial assistance to pursue their studies abroad in programmes approved by the University.

Health Professions

College of Pharmacy

The Burroughs Wellcome Scholarship: This scholarship of $350 is available to an undergraduate student of outstanding merit in the second-year class.

The Ralph H. Jenkins Memorial Pharmacy Scholarship: This scholarship is awarded by the Prince Edward Island Pharmaceutical Association to a student from Prince Edward Island who has achieved a high academic standing.

The Col. J.D.B.F. MacKenzie Scholarship: This scholarship of $300 is awarded by the New Brunswick Pharmaceutical Society to a student from New Brunswick who obtains the highest academic standing in the first-year classes of the Pharmacy course.

The Dr. Jessie I. MacKnight Scholarship: This scholarship of $300 is awarded by the New Brunswick Pharmaceutical Society to the student from New Brunswick who obtains the highest standing in the second-year classes of the Pharmacy course.

The New Brunswick Pharmaceutical Society Scholarship: This scholarship of $300 is awarded by the New Brunswick Pharmaceutical Society to the student from New Brunswick who obtains the highest standing in the third-year classes of the Pharmacy course.

Searle Summer Research Scholarship: This scholarship in an amount of $1,650 is made possible by funds from G.D. Searle & Co. of Canada, Limited and is to provide financial support for one undergraduate pharmacy student to take research training during the summer months under the supervision of a faculty member of the College of Pharmacy.

The Upjohn Company of Canada Scholarship: This scholarship of $500 is provided by the Upjohn Company of Canada to a student in the first-year class. An engraved plaque is also awarded to the recipient.

School of Physiotherapy

Isabel M. Jackson Scholarships: Miss Ida P. Jackson of Middleboro, Massachusetts, established this fund in memory of her sister, Isabel M. Jackson, in 1967 for the purpose of benefiting students with bursaries or scholarships. The fund's current use is the provision of scholarships to those students who have been accepted into the first physiotherapy core year from other universities. Assessment is based on the students' mid-sessional examinations at Dalhousie.

Hazel Lloyd Foundation Scholarship: The Hazel Lloyd Foundation has been established by Miss Aphra Lloyd in memory of her sister, Miss Hazel A. Lloyd (1930-1985), Associate Professor, School of Physiotherapy. Friends, associates and alumni have made additional contributions. One purpose of the Foundation is to provide financial support to final year students attending Dalhousie University School of Physiotherapy for studies that will develop physiotherapy services in geriatrics and gerontology, one of Professor Lloyd's areas of interests. Occasionally, the Foundation will

support other types of endeavours with an annual award. Written applications for the scholarship and the other types of award submitted to the School of Physiotherapy will be reviewed twice yearly (31st March and 30th September) by the administration committee of the Hazel Lloyd Foundation.

School of Recreation, Physical and Health Education

The Freda N. Wales Memorial Scholarship: This is an in-course award given to a student entering the third or fourth year of study. The student must have a commitment to pursuing a programme specializing in outdoor leadership at Dalhousie University. Selection will be based on academic achievement and professional ability. Note: A special application form, available from the Awards Office, is required.

The VIIth Pan American Wheelchair Games Scholarship: This is an in-course award given to a student entering the third or fourth year of study in the School of Recreation, Physical and Health Education. The student must be committed to pursuing study in the area of recreation and leisure for the disabled. Selection is based on academic and professional capability.

Maritime School of Social Work
Bachelor of Social Work

The M. Caroline Prince Scholarship: Under the Will of the late M. Caroline Prince the sum of $5,000 was bequeathed to the University for endowment purposes to benefit the Maritime School of Social Work. The Faculty have decided that the endowment should fund one or more scholarships to students who are engaged either in full-time or part-time study leading to the baccalaureate degree.

Management

School of Business Administration
Bachelor of Commerce Programme

(a) Scholarships through the School

Acadian Lines Limited Scholarship: Acadian Lines Limited has established a fund to provide a scholarship to a student, beyond first year, who has demonstrated superior academic performance in the preceding year(s) of the commerce programme and, who has demonstrated outstanding leadership in the University's programme of intercollegiate athletics.

The Wilfred Berman Scholarship: A scholarship is offered to the student in Commerce who at the end of the second year has attained the highest average mark in Commerce 1101, 1102, 2111. The endowment for this scholarship was provided by friends and co-religionists of the late Professor Berman.

Ernst & Young Scholarship: A scholarship of $100 will be awarded to a third-year student in Commerce who has obtained a high standing on the basis of his/her average marks for a full year's course, of which one class must be in accounting.

E.J. McConnell & Associates (Atlantic) Scholarship: A scholarship in the amount of $2000 is to be awarded annually to a student entering the Third or Fourth Year in the Commerce degree programme. The recipient will have demonstrated high academic standing and an interest in the investment field.

Ronald G. Smith Scholarship: In 1981 the Nova Scotia Power Corporation established this scholarship in recognition of the distinguished service rendered by Ronald G. Smith as a member of the Power Corporations's Board of Directors from 1959 to 1981. An amount of $400 will be awarded to a Nova Scotia student entering the fourth year of the Bachelor of Commerce programme based upon academic achievement, leadership ability and qualities of personality and character.

Touche, Ross and Company Scholarship: A scholarship of $400 will be awarded annually to a second-year student in Commerce obtaining a high standing in the course and who plans to enter articles with a practising firm of Chartered Accountants.

Woolco-Woolworth Scholarship: The F.W. Woolworth Company Limited sponsors a scholarship of $750 to the student (or students) who is (are) entering the final year of study and who has (have) demonstrated scholarship standing, leadership qualities and interest in retailing.

(b) Scholarships through the USC

Stewart Lockie Gibson Scholarship in Commerce: Several scholarships of varying amounts will be awarded annually to third- and fourth-year students of scholarship standing and good character who are proceeding to a degree in Commerce.

Samuel S. Jacobson Scholarship: Beginning in 1975 the Samuel S. Jacobson Fund has provided one or more scholarships or bursaries as determined by the selection committee. Preference is to be given to Nova Scotian students who are proceeding towards the Bachelor of Commerce degree.

The Harry Margolian Scholarships in Commerce: A bequest of the late Harry Margolian, of Yarmouth, Nova Scotia, enables one or two scholarships per year to be awarded to students

working towards degrees in Commerce. These will normally be awarded to students in their third or fourth years.

McCurdy Printing and Typesetting Limited Scholarship: The Halifax firm of McCurdy Printing and Typesetting Limited established an endowment in 1985 to provide annually for a scholarship in the School of Business Administration. The Scholarship is open to a student, beyond first year, who has distinguished himself or herself scholastically during the preceding year(s) of study in the Bachelor of Commerce programme.

School of Dental Hygiene

The Undergraduate Scholarship Committee considers dental hygiene students for scholarships from general funds.

Undergraduate Prizes, Medals, and Awards

General

Alumni Swimming Award: A fund has been established to provide awards to deserving Dalhousie University varsity swimmers. Recipients will be members of the Dalhousie Varsity Swimming Team who have demonstrated leadership and dedication to competitive swimming. They are to have completed at least one year of their academic programme and to have demonstrated above average academic ability. Two awards of equal value will be presented to varsity swimmers, one to a female and one to a male. The Selection Committee will recommend to the Undergraduate Scholarship Committee by 31st May, where appropriate, two candidates for each award. The awards will be tenable the following academic year.

The Annie L. Beer Prize: Under the will of the late Mrs. Thomas (Annie L.) Beer of Charlottetown a bequest was established at Dalhousie University. The net income from the fund provides for an prize which is to be awarded to the youngest student from Prince Edward Island who enters this University in each year. The Awards Section of the Office of the Registrar selects the winner.

Black and Gold Awards: Each year the Dalhousie Black and Gold Club funds a limited number of awards that recognize the contribution to University life that student athletes make. Candidates must be beyond first year study at Dalhousie, must have a minimum Grade Point Average of 2.0 in four whole classes (or equivalent) and must have participated on a varsity team during the previous year of study. A number of awards up to $1500 will be offered each year. For information and application forms contact the Department of Athletics, Dalplex. Completed application forms are to be returned to that Department to be received by the end of July. The Department of Athletics will forward nominations to the Selection Committee, which will make announcements through the Awards Office.

Dalhousie Student Development Awards: A limited number of awards of up to $1,500 will be offered annually. The awards are open to entering or continuing Dalhousie students. Applicants must be engaged in full-time studies, have achieved a minimum Grade Point Average of 3.0 and must have demonstrated leadership ability. Applications forms are available from the Department of Athletics or the Office of the Registrar.

Completed applications and supporting documents are to be submitted to the Director of Awards, Office of the Registrar, to be received by the end of August.

The Honourable W.H. Dennis Memorial Prizes for Literary Compositons in English: Two Prizes known as the Joseph Howe Prizes are offered each year, a first prize of $200 and a second prize of $100, for a poem or collection of poems of any length greater than about one hundred lines. Two prizes known as the James DeMille Prizes are offered each year, one of $150 for an essay, the other of $150 for a prose short story. The attention of candidates for these prizes is drawn to the following regulations adopted by the Senate to govern the awards:

1. Candidates for these prizes must be registered full-time undergraduate or graduate students at Dalhousie University.
2. (a) Three copies of each composition must be sent in by the competitor.
   (b) These compositions must be typewritten, double spaced and on one side of the paper only.
   (c) A pseudonym is to be typed at the end of each typescript and after the pseudonym a statement as to whether or not a first or second or no prize has been previously awarded to the writer.
   (d) Compositions are to be accompanied by a sealed envelope bearing the same pseudonym in typewriting to the Jury of Award for either the Joseph Howe Prize or for the James DeMille Prize, as the case may be.
   (e) The envelope shall contain in typewriting the pseudonym, the titles of the entries and the candidate's full name and address.
   (f) Candidates submitting more than one prose entry must use the same pseudonym for each; different pseudonyms may be used for prose and poetry.
3. Candidates for the DeMille Prize may submit one entry in each of the essay and short story sections.
4. The winner of a prize in the poetry contest is not debarred from competing in the prose contest, and vice versa.
5. In the poetry contest no winner of a first prize is eligible to compete again, and no winner of a second prize is eligible for a second prize in a subsequent year.
6. In the prose contest no winner of a first prize is eligible to compete again, and no winner of a second prize is eligible for a second prize in a subsequent year.
7. Entries must reach the Department of English on the designated deadline.
8. Entries are adjudicated by a panels of judges which includes a professional writer. The decision of the judges is final.
9. No prize will be awarded for any composition that does not attain to a sufficiently high standard of merit.
10. *The Dalhousie Review* will be offered the first option to publish winning compositions. A copy of each winning composition is deposited in the University archives. Contestants retain ownership of copyright.
11. Contestants are urged to retain a carbon or photostat copy of their typescript(s) since the copies cannot be returned.

The Clare Murray Fooshee Poetry Prize: One or more prizes will be awarded for the best poems, of any length, submitted by Dalhousie undergraduates. Total prize money approximates $400, which is the net income from a fund established by friends in memory of the poetess Mrs. Clare Murray Fooshee, BA (1924). Up to five poems may be submitted by each writer. Previous winners are ineligible. No award will be made unless a poem submitted is deemed to be of sufficient merit. Entries should reach the Chairman of the Department of English by 1 March.

The SLT Bruce Galloway Memorial Prize: Friends, family and shipmates of Sub-Lieutenant Bruce David Galloway, a member of the Ship's Company of H.M.C.S. Fraser and a 1983 Arts graduate of Dalhousie, have established a memorial fund. The prize is to be awarded to the student, male or female, attending Dalhousie University on the University Training Plan Men who attained the highest academic standing (not less than a passing standing) in the programme in which he or she is enrolled. A prize is to be awarded in each year in which there is a student attending Dalhousie on the University Training Plan Men who achieves a passing standing. The Awards Section of the Office of the Registrar selects the winner.

The Robert and Katherine MacDonald Award: An endowment has been established to provide an annual prize for Chinese students at Dalhousie. The recipient will be engaged in undergraduate studies and be a member of the Dal-TUNS Chinese Students' Association or its successor. The recipient will have demonstrated good academic achievement combined with leadership qualities and contribution to University life.

The Association will recommend a candidate or candidates to the Head of Student Services.

College of Arts and Science

Departmental Awards

Biochemistry

University Medal in Biochemistry: The Department of Biochemistry offers a medal to the top First Class Honours graduate in the Biochemistry programme. The awardee will be the one who has attained the high scholastic standard of the Department.

Elmer MacMillan Memorial Book Prize: This prize is awarded annually to the student who attains the highest aggregate mark for the three half-classes, Biochemistry 3200, 3300 and 3400.

Biology

The Aldous Prize: On the occasion of the retirement of Dr. John G. Aldous, friends, colleagues and students established an endowment to provide for an annual prize to be awarded for the best achievement in Biology 4401. (This entry appears here for the information of Biology students. The Fund is administered by the Department of Pharmacology in the Faculty of Medicine.)

B'nai B'rith Prize: Two prizes of $25 each, one for the student standing highest in Biology 1000 and one for the student standing highest in Biology 2000, are available each year.

David Durward Memorial Prize: This prize is to be awarded to the best student in the Physiology of Marine Animals (Biology 3071).

University Medal in Biology: The Department of Biology offers a medal to the top First Class Honours graduate in the biology programme in recognition of superior achievement therein.

University Medal in Marine Biology: The Department established this medal in 1983-84 to be awarded, where appropriate, to the student who stands highest among the First Class Honours graduates in the Marine Biology programme.

Chemistry

The John Hamilton Barrett Prize: This is the gift of his widow, Mrs. Marjorie Barrett. It is offered annually at the end of the fourth year of the course to a student who has shown exceptional ability in Chemistry or some other science.

The Canadian Society for Chemistry Silver Medal: The CSC Silver Medal is provided to each university having a chemistry department and is awarded to the student with the highest standing in chemistry and allied subjects in the penultimate year. The successful student receives a medal and a suitably inscribed certificate.

The Hugh Graeme Fraser Memorial Prize in Advanced Chemistry: This award was founded by members of the Class of 1931. The net interest will be awarded annually to that student at the end of his/her third year, who has, in the opinion of the Department, shown such aptitude for Chemistry as to merit the award.

The Society of Chemical Industry, Canadian Section, Merit Award: This award (of an engraved gold key and a subscription to Chemistry and Industry) may be made to the Honours graduate in Chemistry with the highest standing. A minimum average of 75% is required.

Undergraduate Award in Analytical Chemistry: The Division of Analytical Chemistry of the American Chemical Society offers a number of gift subscriptions to Analytical Chemistry. These awards are intended to recognize students who have completed the third undergraduate year and who have shown an aptitude for a career in analytical chemistry.

University Medal in Chemistry: The Department of Chemistry offers a medal to the top First Class Honours graduate in recognition of superior achievement in Chemistry.

Classics

University Medal in Classics: The Department of Classics offers to the top First Class Honours graduate in the classics programme a medal in recognition of superior achievement in Classics.

Economics

The Anonymous Economics Prize: This prize, consisting of a book (or books) and a sum of money, is open to the Dalhousie undergraduate who is not in the final year of study and who has shown through an essay during the second year of study of economics, the best promise of successfully applying economics to the solution of human problems as determined by the selection committee.

University Medal in Economics: The Department of Economics offers a medal to the top First Class Honours graduate in recognition of superior achievement in Economics.

Education, School of

Eric Stanley Hillis Memorial Prize: The annual net income from a bequest to the University provides a prize in memory of Eric Stanley Hillis to a student in Education as selected by the Director of the School. The prize may consist either of one or more books chosen by the student in consultation with the Director or of a sum of money.

Engineering

The Association of Professional Engineers of Nova Scotia Award: The Association of Professional Engineers of Nova Scotia provides an award which is presented each year to that student graduating in Engineering who best demonstrates promise of using outstanding abilities to serve society in an ethical manner as a Professional Engineer. The award winner will be selected by students of the graduating class in consultation with the Engineering Faculty members. The award will consist of an engraved certificate.

The Walter P. Copp Memorial Prize: In 1979 an Anonymous Donor gave the University the sum of $2,500 to establish an endowment for the purpose of funding this prize. It is awarded annually to the student graduating with the Diploma in Engineering with the highest average in Engineering classes.

The Kenneth F. Marginson Award: This prize is awarded annually to the student who achieves the highest standing in the first year of the Diploma in Engineering programme. Only students who are enrolled in University for the first time are eligible to receive this award. Presentation of the award takes place when the student enrols in the second year of the Diploma in Engineering course. This prize is funded from an endowment of $2,500 which has been established by an Anonymous Donor, in honour of Professor Kenneth F. Marginson, a former Head of the Department.

English

Paul McIsaac Memorial Prize: A memorial gift provides for an annual prize for an undergraduate student, who shows an enquiring and original mind, in the second or third year of study in the Honours or Major programme in English.

Margaret Nicoll Pond Memorial Prize in English: This prize will be awarded to the woman graduate of Dalhousie University who leads her class in English.

The University Medal in English: Each year the Department of English offers a medal to the top First Class Honours graduate in recognition of superior achievement in the programme.

French

Prix du Consulat de France: The French Consul Prize will be made upon recommendation of the Department of French, to a student graduating with Honours in French.

Prix de l'Ambassadeur de France: A prize in books, offered by the French Embassy in Ottawa, is awarded annually to the student standing highest in the advanced French class.

Prix de l'Ambassadeur de Suisse au Canada: A prize of books, the gift of the Ambassador of Switzerland in Canada, is awarded to university students who have won distinction by their work in the French language.

University Medal in French: The Department of French offers to the top First Class Honours graduate a medal in recognition of superior achievement.

Geology

The David Barlow Memorial Award: The family, friends and classmates of David Barlow established in 1984 an endowment fund from which to provide an annual prize in his memory. The Dawson Geology Club in consultation with the Departmental Chairman will select a student in Second-Year Geology who has demonstrated both a good academic record and the qualities of leadership as determined by the selecting committee.

Canadian Society of Petroleum Geologists Award: The Society sponsors an annual award consisting of a certificate and a one- year student membership to an undergraduate student who has demonstrated outstanding competence in petroleum geology or closely related fields.

G.V. Douglas Memorial Prize in Geology: In 1958-59, friends and former students of the late Professor G.V. Douglas, established a memorial fund from which the net interest would provide a prize to be awarded to an outstanding student in first-year geology.

MacEachern-Ponsford Memorial Award: Family, friends and classmates of Ian Joseph MacEachern and Mark Anthony Peter Ponsford have established a memorial fund. The purpose of the endowment is to provide an annual award from the net income to a student who has completed the second year of a programme majoring in Geology, whose academic performance is of an honours calibre and who has been an active participant in student activities. The award is to be made on the recommendation of the Chairman of the Geology Department after consultation with the Dawson Geology Club and departmental staff.

University Medal in Geology: The Department of Geology offers to the top First Class Honours graduate a medal in recognition of superior achievement.

German

Janet Gwendolyn Coade-Dessauer Memorial Prize: A prize, consisting of one or more books, will be offered to a deserving honours or graduate student in recognition of achievement in German language studies.

Prize of the Ambassador of Austria in Canada, Prize of the Ambassador of Switzerland in Canada, and the Prize of the Ambassador of Federal Republic of Germany in Canada: The Austrian, German and Swiss embassies in Canada regularly offer German language books to the Department to be awarded to Dalhousie students whose achievement in German is outstanding. Awards are made at various levels of proficiency.

University Medal in German: The Department of German offers a medal to the top First Class Honours graduate in recognition of superior achievement.

History

The Edith and Rose Goodman Prize in History: Under the Will of the late Mrs. Jeanette Goodman a bequest was made to Dalhousie University to fund a prize (or two prizes) for the highest (or the highest and second highest) standing in the class in Canadian History. The prize is awarded on the recommendation of the Department of History.

The Dr. George E. Wilson Prize in History: In 1967 a prize was established by the Class of '27, to be awarded annually to the freshman student standing highest in History 1990.

University Medal in History: To the top First Class Honours graduate the Department of History offers a medal in recogniton of superior achievement.

International Development Studies

University Medal in International Development Studies: A University Medal has been established for the student with the highest standing among those who graduate with First Class Honours.

Mathematics, Statistics and Computing Science

Bernoulli Prize: The Bernoulli Prize will be awarded annually to the student registered in the Co-op Mathematics Programme who has the best cumulative academic record, subject to the restrictions that the prize can be awarded only once to a given individual and that the winner must have performed acceptably in all work term assignments.

The Katherine M. Buttenshaw Prize: This prize, being the net interest of an endowment of $1,000, will be awarded annually to the student standing highest in the advanced Mathematics classes.

Digital Equipment of Canada Limited Award of Merit: Under the Annual Awards Programme of Digital Equipment of Canada Limited an award consisting of a Certificate of Merit and $250 cash is offered annually. The award is open to the best graduating student in Computing Science.

The Ellen McCaughin McFarlane Prize: A Fund has been established in memory of Ellen McCaughin McFarlane, Class of 1927. Initially, the Fund is to provide an annual prize to an honours mathematics student who at the end of his/her first year* in the honours programme has achieved the highest standing.
* (Normally, this would be upon the completion of the second year at Dalhousie.)

Mobil Oil Canada Award: This is an award to the student enrolled in the Computing Science major or Honours Programme, who shows the best performance in the two third-year core half-courses CS 3690 and CS 3700. The recipient will be chosen on the basis of final grades and on the recommendations of the instructors in the courses and of the Director of Computing Science. Mobil Oil Canada Limited gave the University a gift of $1,000 to endow this annual prize.

The Waverly Prize: This prize, being the net interest of an endowment of $1,000 for the purpose, will be awarded annually to student standing highest in Mathematics 1010.

The Sir William Young Gold Medal: Founded by the bequest of the late Sir William Young, this medal will be awarded on graduation to the student who stands first among those taking First Class Honours in Mathematics.

University Medal in Computing Science: In 1983-84 the Department established this medal to be awarded, where appropriate, to the student who stands highest among the First Class Honours graduates in the Computing Science programme.

University Medal in Statistics: The Department established this medal to be awarded to the student who stands highest among the First Class Honours graduates in the Statistics programme.

Medieval Studies

University Medal in Medieval Studies: The former Faculty of Arts & Science established this medal in 1983-84. It is to be awarded, where appropriate, to the top First Class Honours graduate in the interdisciplinary Medieval Studies programme.

Microbiology

University Medal in Microbiology: The Department of Microbiology offers to the top First Class Honours graduate a medal in recognition of superior achievement in the programme.

Music

James and Abbie Campbell Prize, Campbell Incentive Award: The Department of Music may from time to time award prizes to outstanding students from the James and Abbie Campbell Memorial Fund. The Campbell Incentive Award may on occasion be awarded under special circumstances.

The Beatrice Davies Music Prize: A fund has been established by members of the Dalhousie community to mark Women's Centennial Year (1985) at this University. The purpose of the fund is to provide an annual in-course prize to a female student in the Bachelor of Music or Bachelor of Music Education programme on the combined basis of high academic standing and performance ability as determined by the Department of Music. The prize is named after the first graduate in music in 1909.

University Medal in Music: The Department of Music offers a medal to the highest ranking student of the year who graduates with the equivalent of a First Class Honours degree in the Bachelor of Music programme.

Philosophy

University Medal in Philosophy: The Department of Philosophy offers a medal to the top First Class Honours graduate in recognition of superior achievement in the programme.

Physics

The Dr. William J. Archibald Prize in Physics: An annual prize will be awarded to a student who, having completed the first year, is considered by the Physics Department to be the most promising among those entering the Honours Physics programme.

The Dr. E.W. Guptill Memorial Prize: This is to be awarded to the undergraduate student who best exemplifies the qualities of Dr. E.W. Guptill in showing initiative, experimental skill, leadership and enthusiasm for Physics, thereby making an outstanding contribution to Physics in this University. This prize will not necessarily be awarded every year.

The Dr. George Henderson Prizes in Physics: Several prizes are awarded to students who have shown special aptitude in Physics.

The James Gordon MacGregor Memorial Prizes: Relatives of the late Dr. J.G. MacGregor contributed to the James Gordon MacGregor Memorial Fund which now provides awards to both undergraduates and graduates in the study of Physics. The undergraduate awards are in the form of prizes.

The Dr. A. Stanley MacKenzie Prizes in Physics: These prizes will be awarded by the Department of Physics to the most promising students in the first two years of the Honours Physics programme. The fund was established under the Will of the late Miss Mary Alice Smith.

The Burgess McKittrick Prizes in Physics: Four prizes of $100 each will be awarded to undergraduate students achieving the highest standing in each of the four classes, Physics 1000, 1100, 1300, and Physics 2110 and 2120 combined. No student may receive more than one such prize in any one year. The funds for these prizes come from the estate of F.J.A. McKittrick who graduated in 1894 with Honours in Mathematics and Mathematical Physics. He was the first Dalhousie graduate to receive the 1851 Exhibition Scholarship. The prizes are in memory of his brother, Burgess McKittrick, who was graduated in 1877.

The University Medal in Physics: The Department of Physics offers to the top First Class Honours graduate a medal in recognition of superior achievement in the Physics course.

Political Science

The James H. Aitchison Award: In 1979 colleagues of Dr. J.H. Aitchison established a fund from which an annual prize would be awarded in recognition of the best undergraduate honours essay. The fund was established to honour Professor Aitchison who was instrumental in founding the Department.

The Eric Dennis Gold Medal: Founded by Senator William Dennis and Mrs. Dennis, this medal will be awarded on graduation to the student who stands first among those taking First Class Honours in Government and Political Science.

The H.B. McCulloch Memorial Prize in Political Science: This prize will be awarded annually to the student who, among all the first and second year students registered in introductory classes in Political Science, is judged to have written the best essay in the second term.

Psychology

Brimer Memorial Prize in Psychology: The Charles J. Brimer Memorial Fund was established during 1971 in memory of the late Dr. Brimer, Acting Chairman of the Department of Psychology. The income from this fund is awarded to a third-year Honours student. Students enrolling for the Honours certificate in Psychology in the year equivalent to the fourth year of the Honours Psychology programme are also eligible for the prize. The Brimer Memorial Prize is restricted to Dalhousie Honours Psychology students and is not open to Joint Honours

students from other departments or other universities. The prize will be given to the student who shows the greatest potential as a researcher in experimental psychology.

Francis L. Stewart Memorial Prize in Psychology: A fund has been established to provide a prize to a Fourth Year honours student who shows outstanding potential as a scientist practiconer in clinical psychology.

University Medal in Neuroscience: To the top graduating student with First Class Honours in the programme the Department of Psychology offers a medal.

University Medal in Psychology: The Department of Psychology offers to the top First Class Honours graduate a medal in recognition of superior achievement.

Dr. Lilyan E. White Prize: A bequest from the Estate of Dr. Lilyan E. White established an endowment to fund a prize to an undergraduate student in Psychology. The Department has assigned the prize for use in recognizing the best performance of a student in second-year.

Russian

University Medal in Russian: The Department of Russian offers to the top First Class Honours graduate a medal in recognition of superior achievement in the programme.

Sociology and Social Anthropology

The Rev. S.H. Prince Prize in Sociology: A bequest under the will of the late Dr. S.H. Prince established a fund to provide an annual prize to be available to students at either Dalhousie or King's.

University Medal in Sociology: The Department of Sociology and Social Anthropology offers a medal to the top First Class Honours graduate in the Sociology programme in recognition of superior achievement.

Spanish

The de Carteret Memorial Prize: The de Carteret Memorial Prize is payable from the net annual income of a fund which was provided as a gift in the memory of the late Norman S. and Helier S. de Carteret and their sister, Phyllis de Carteret Nielsen. The prize is to be awarded on the recommendation of the departmental chairman to an outstanding student in the Department of Spanish.

University Medal in Spanish: The Department of Spanish offers a medal to the top First Class Honours graduate in recognition of superior achievement in the Spanish programme.

Theatre

University Medal in Theatre: The Department of Theatre offers to the top First Class Honours graduate a medal in recognition of superior achievement.

Transition Year Programme

Morris Saffron Prize: A bequest under the Will of the late Morris Saffron established an endowment to provide an annual prize to a student in the Transition Year Programme who is judged to have made the greatest academic achievement during the year.

College Awards

Note concerning top medals and prize: The Undergraduate Scholarship Committee adopted the following policy concerning the top medals and top prize, effective with the 1986-87 academic year:

> In the event of a student taking a second degree at Dalhousie, then in order to be considered for the Governor-General's Gold Medal [since replaced by the Governor General's Silver Medal, 1988], the University Silver Medal or the Avery Prize, such a student must have completed at least 12 new classes at Dalhousie in the second degree programme and in the calculation of the student's average, only these new classes will be counted. Furthermore, any disciplinary action by the Senate Discipline Committee, which action is recorded on the student's transcript, shall be deemed sufficient cause for such a student to be ineligible for the aforementioned top medals and prize.

The Avery Prize: This prize, being the net interest on the sum of $500 bequeathed for this purpose by J.F. Avery, MD, will be awarded on graduation to the student standing highest among those being graduated from the general course.

The Governor-General's Silver Medal: Offered by his Excellency the Governor-General of Canada, it will be awarded to the undergraduate student who has achieved the highest academic standing among graduates of baccalaureate programmes. This is interpreted to apply to those students in Honours programmes who are graduated with First Class Honours. (Under review)

The University Silver Medal: This medal is awarded to the student who is judged to be the leading First Class Honours graduate of the year in either the arts or the sciences, in whichever field the Governor-General's Silver Medal was not presented. (Under review, depending upon terms of Governor-General's Silver Medal)

(Please note that Commerce students are eligible for the above three awards and that such students are grouped with Arts students in the assessment process.)

Faculty of Health Professions

College of Pharmacy

The Dean George A. Burbidge Memorial Award: This prize is awarded by the Nova Scotia Pharmaceutical Society to a student completing third year, from Nova Scotia, for outstanding qualities of character and pharmaceutical ability at the College of Pharmacy.

Bristol-Myers Squibb Book Prize: A copy of a pharmacy textbook is presented annually to the student with the highest standing in the second-year classes.

Canadian Foundation of Pharmacy Past Presidents' Award: The Canadian Foundation of Pharmacy will provide an annual award of $500.00 to a pharmacy student. The criteria for selection are: scholarship, contribution to the undergraduate life of the University and the likelihood of noteworthy future contribution toward the community and the profession.

The R. Frank Chandler Award: A fund was established by Ortho Pharmaceutical (Canada) Limited in 1989 to support this Award. It will be presented to a student entering the final year of study at the College of Pharmacy. The candidate must have high qualities of character and spirit, must have well developed interpersonal skills, must show an aptitude and proficiency for the profession, must show promise of making future contributions to the profession of pharmacy.

The F.R. Clayden Prize: This prize, in the form of a book, is presented in memory of Mr. F.R. Clayden (Class of 1912) to a deserving student completing the first-year classes of the pharmacy course.

Clinical Pharmacy Award: This award of $100 is presented to a student in the fourth year therapeutics class. The student must have an aptitude for clinical pharmacy practice and must have achieved a high level of performance during the clinical clerkship.

Robert G. Crowell Memorial Pharmacy Award: This award of $1000 is open to a student who is a resident of Nova Scotia who is entering the fourth year of study at the College. The candidate must have attained a satisfactory academic standing and show promise of making future contributions to the profession of pharmacy. The Selection Committee may consider financial need in the determining of an awardee. The award, sponsored by Crowell's Pharmacy Ltd., honours its founder for his contributions to pharmacy in the province.

Robert C. Dickison Memorial Award: This award is presented to a student from New Brunswick on the basis of academic achievement, financial need and participation in student activities at the College of Pharmacy. The Award is made available through a bequest of the late Mr. Charles D. Dickison.

The Dalhousie Student Pharmacy Society Book Award: A trust fund from various donations has been established in the name of the Dalhousie Student Pharmacy Society. The interest accrued each year is used to purchase a suitable book for presentation to a student completing the first year at the College of Pharmacy. The first-year students are asked to select who has contributed in an exceptional way to the life and spirit of their class. The main factors for consideration are active participation in student affairs and a keen interest in the profession of Pharmacy.

Drug Information Award: This award, in the form of a reference book or professional journal subscription, is to be awarded to a worthy student in The Drug Information Class, Pharmacy 4900B.

J.G. Duff Pharmacy Award: This award, in the form of a medal, was established by Dr. Duff's former students and associates in recognition of his contribution and devotion to pharmaceutical education in the Maritimes. The award will be presented to a student entering the senior year for outstanding leadership and satisfactory scholastic attainment. A Senior Stick, bearing the names of the recipients, will be kept in trust by the Dalhousie Student Pharmacy Society. The recipient of the award will be selected by the student body.

The Dean J. Hamonde Cooke Award: This award of $500 is to be given annually to a student who has successfully completed one or more years of the course leading to a degree in pharmacy and who is enrolled in pharmacy at the University for the coming year. Candidates must have attained a good academic standing and must show promise of making future contributions to the profession of pharmacy. The student must be a graduate of a high school in Nova Scotia and should not be the recipient of other concurrent awards. The Selection Committee may also consider the financial need of the candidate. This award is sponsored by the Pharmacy Association of Nova Scotia.

The Charles R. Frost Award: This award of $500 is presented by Merck Frosst Canada Inc. to an undergraduate student of outstanding merit in the third-year class.

The Charles E. Frosst Medal: This medal is presented by Merck Frosst Canada Inc. to the student who achieves the highest academic standing in the third-year class.

Home Prescription Services Prize: This prize of $150 is awarded annually to the student who obtains the highest standing in Physiology 4403R. To be eligible for this prize a student must have at least a GPA of 3.0.

The Frank W. Horner Medal: This medal is awarded to the pharmacy student who has attained the highest standing in the third year dispensing class.

The William Killorn Award: This award has been established by Shoppers Drug Mart Associates and the pharmaceutical industry to pay tribute to Bill Killorn in honour of his 46 years of service to pharmacy in Atlantic Canada. The award is presented annually to a pharmacy student who, in the view of the College after consultation with the Killorn family and the pharmaceutical industry, demonstrates strong leadership skills and excels in academic and extra-curricular activities.

The Honourable John J. Kinley Pharmacy Award: In order to be considered for the award, candidates must have satisfactory academic standing and show promise of contributing to the profession. The financial need of the applicant may also be considered by the Selection Committee. The net income from an established fund will be used to provide a monetary award as well as a book.

Eli Lilly Book Award: The firm of Eli Lilly Canada Inc. provides an award for a deserving student in either first or second year pharmacy. The award consists of the sum of $150 and the current edition of Martindale's Extra Pharmacopoeia.

Dr. Jessie I. MacKnight-Miss Mona W. Fleming Award in Hospital Pharmacy: This award is administered annually to a student from New Brunswick and to a student from Nova Scotia who have completed outstanding work in the hospital portion of the practical training programme (Pharmacy 3000C) and in the third year dispensing laboratory class (Pharmacy 3100B). It is desirable that the recipients demonstrate an interest in hospital pharmacy practice.

The Donald R. MacLeod Prize: This prize of $50, offered in memory of Mr. Donald R. MacLeod, a former pharmacist of New Glasgow, Nova Scotia (Class of 1930), is awarded to the student of the first year who attains the highest academic standing in the first-year classes of the Pharmacy course. The purse of the prize is paid directly from the sponsor.

The Helen Corston Marshall Award in Pharmacy: This award is to be given annually to a student (or students) who has successfully completed one or more years of the course leading to a degree in pharmacy and who is enrolled in pharmacy at the University for the ensuing year. Candidates must have attained a satisfactory academic standing and must show promise of making future contributions to the profession of pharmacy. Financial need may be considered.

Medis Atlantic Medal: This medal is awarded annually to the student on graduation who has obtained the second highest aggregate mark during his/her four years at the College of Pharmacy.

Merck, Sharp and Dohme Pharmacy Award: This award, consisting of $500 and the books, The Merck Index and The Merck Manual, is presented to the student entering the final year who has attained the highest standing in the pharmaceutical chemistry classes.

New Brunswick Pharmaceutical Society Centennial Medal: In conjunction with its 100th anniversary of incorporation, the Society has established this commemorative medal to be presented annually to the New Brunswick student who has attained the highest aggregate mark during his/her four years at the College of Pharmacy.

Novopharm Pharmaceutics Award: This award of $500 is presented annually to the student who obtains the highest combined standings in the following classes: Physical Pharmacy (second year), Biopharmaceutics (second year) and Pharmacokinetics (third year).

The Nova Scotia Association of Certified Dispensers Prize: This prize, in the form of a book, will be awarded annually to the top student in the first year dispensing laboratory. The prize was established in 1984 with the gift of funds to provide the initial award and to set up an endowment to provide subsequent awards.

The Nova Scotia Pharmaceutical Society Centennial Awards: In conjunction with its 100th anniversary of incorporation, the Society has established two awards. Candidates will have a satisfactory academic standing and show aptitude for the profession. The financial need of the student may be considered in selecting recipients for the awards, each of which is $500.

Nova Scotia Pharmaceutical Society Memorial Award: The Society has established this award in memory of past members and friends of the Society. It is available to a qualifying student who possesses good academic standing and aptitude for the profession. The financial need of the student may be considered in selecting the recipient for

the award of $1000.

The Parke-Davis and Company Prize for Pharmacy History: A prize of $300 is presented annually to the student with the highest standing in the history portion of Pharmacy 1700B.

Parke-Davis Self-Medication Award: An award of $500 is presented by Parke-Davis Canada Inc., to recognise the pharmacy student who achieves the highest standing in course work related to over-the- counter drug products.

Practical Training Programme Prize: A prize is presented to a student completing the College of Pharmacy Practical Training Programme who has achieved a high level of performance during the programme. Assessment will be based primarily on submitted assignments.

The B. Trevoy Pugsley Memorial Pharmacy Award: This award was established by a bequest from the Estate of B. Trevoy Pugsley for an undergraduate student who has completed one or more years of the pharmacy course. The criteria for the selection of the recipient are based on academic standing, aptitude for pharmacy and qualities of character. Financial need may also be considered.

The Mrs. Vera B. Pugsley Award: This award of $500 will be presented annually to a student who has successfully completed one or more years of the course leading to a degree in pharmacy and who is enrolled in pharmacy at the University for the ensuing year. Candidates must have attained a satisfactory academic standing and must show promise of making future contributions to the profession of pharmacy.

John J. Ryan Pharmacy Administration Award: This award of $200 and a suitable memento is presented annually to the student earning the highest mark in Pharmacy 4700A. This Award was made possible through income from the John J. Ryan Fund.

Sandoz Prize in Pharmacy: This prize is presented annually to the graduating student who obtains the highest standing in fourth year pathophysiology and therapeutics class (Pharmacy 4500R). The prize consists of an engraved plaque, a cheque for $250 and a reference book.

Dr. Sawar B. Singh Prize in Anatomy: An endowment fund has been established for the purpose of providing from the net annual income a prize to the highest standing student in Anatomy 101 among Nursing and Pharmacy enrollees. The prize, consisting of a book or books to the approximate value of $100, is a memorial to Dr. Singh, a long-time member of the Department of Anatomy. The awardee will be selected by the Head of the Department.

The Leigh Semple Memorial Award: An endowment has been established to provide an annual award to a third-year pharmacy student who has demonstrated strong academic ability and involvement in student activities.

The Sister Frances dePaul Award: This award, consisting of a reference book or a subscription to *a professional journal*, is offered annually by the Nova Scotia Branch of the Canadian Society of Hospital Pharmacists and is presented to the student who attains the highest standing in the hospital pharmacy class. To be eligible for this award a student must have achieved a GPA of at least 3.0.

SmithKline Beecham Pharma Inc. Award: Two awards of $400 each will be presented annually to a student from Nova Scotia and a student from either New Brunswick or Prince Edward Island who have successfully completed one or more years of the course leading to a degree in pharmacy and who are enrolled in pharmacy at the University for the ensuing year. Candidates must have attained a satisfactory academic standing and must show promise of making future contributions to the profession of pharmacy.

University Medal in Pharmacy: This medal is awarded annually to the graduate who has obtained the highest academic standing in the pharmacy programme provided that she or he meets the requirements as set by the Faculty.

Wyeth Award of Excellence in Pharmacy Research: An Award of $200 and a certificate will be presented to a fourth year student at the College of Pharmacy who completes the best research project in a given academic year. The research will usually be completed in Pharmacy 4000R, 4010A, 4020B or 4030C, but any paper submitted by a fourth year student, which is deemed by the professor to be worthy of consideration for this Award, will be included in the competition. A committee will evaluate the research presentations in both a written and verbal form.

School of Nursing

Alumnae Award (Nursing): This award is open to graduating students in the Basic or Post-RN programmes. The recipient will have achieved a Grade Point Average of 3.0 or better and have demonstrated clinical competency in the area of medical/surgical nursing in a hospital setting.

Dalhousie Basic Degree Certificate and Dalhousie Post-RN Degree Certificate: Information concerning these certificates may be obtained from the School of Nursing.

Final-Year Degree Award: A prize is awarded to the student in the graduating class who has achieved the highest academic standing. (On account of computer space limitations the older name has been retained on the code directory. In the School of Nursing this award is known as Prize for the Highest Academic Achievement in the Undergraduate Degree Programme.)

Halifax Children's Hospital Alumnae Prize: This prize is given by the Izaak Walton Killam Hospital for Children to the student who meets the approval of the criteria as established by the School of Nursing and the Izaak Walton Killam Hospital for Children in recognition of the student's work in the paediatric sector of the community.

The Leata G. Hall Memorial Award: An award of $100 is offered annually by the Registered Nurses' Association of Nova Scotia to a student in the School of Nursing under the terms to be determined by the Director of the School.

R.M. MacDonald and R.C. Dickson Prize in Outpost Nursing: A prize is awarded for the student achieving the highest academic record in the graduating class of Outpost Nursing students.

C.V. Mosby Book Prize: This award is given in recognition of a student's high academic standing and participation in the School.

NAMATH Leadership in Nursing Practice Award: This prize is given by the Nursing Administrators of the Metro Area Teaching Hospitals to the graduating Post-RN degree student who fulfills the approved criteria as established by the School of Nursing and the Nursing Administrators of the Metro Area for innovative approaches to nursing concerns.

Recognition Award for the Undergraduate Degree Programme: This prize is awarded by H.L. Recognition Services (Hario Recognition Ltd.) to the graduating student who demonstrates continued improvement and progress during the years of study. The criteria are to be determined by the School of Nursing.

Anna Trenholm Memorial Prize: A cash award has been donated by the family of the late Anna Trenholm (Diploma in Outpost Nursing, 1970; BN 1976). The prize is to be awarded annually to the student graduating from the Outpost Nursing Programme whose achievement in clinical practice has been outstanding.

W.B. Saunders Award (Nursing): This prize is presented to the student in the graduating class who has demonstrated progressive academic achievement and general proficiency. It is a one-year subscription to Nursing Clinics of North America.

Dr. Samar B. Singh Prize in Anatomy: An endowment fund has been established for the purpose of providing from the net annual income a prize to the highest standing student in Anatomy 101 among Nursing and Pharmacy enrollees. The prize, consisting of a book or books to the approximately value of $100, is a memorial to Dr. Singh, a long-time member of the Department of Anatomy. The awardee will be selected by the Head of the Department.

The Stern Award: This prize was established to recognise the contribution of a graduating student to increased knowledge and participation of School members in an interdisciplinary international role.

University Medal in Nursing: This medal is awarded annually to the graduate who has obtained the highest academic standing in the Nursing programme provided that she (or he) meets the requirements as set by the Faculty.

School of Occupational Therapy

The Canadian Association of Occupational Therapists Book Prize: This prize is awarded annually to the graduating student with the highest academic standing in the theory of occupational therapy.

Foundation Travel Award: This award was established to recognise the founding of the School of Occupational Therapy. Presented annually to the President of the Dalhousie Occupational Therapy Student Society, the award provides funding to cover the cost of attending the annual Occupational Therapy Atlantic Conference. Funds for the award are provided by the professional organizations of occupational therapists in the four Atlantic provinces.

New Brunswick Association of Occupational Therapists Award for Achievement in Fieldwork: This prize is awarded annually to the graduating student who has shown outstanding achievement in fieldwork.

PEIOTS and PEIAOT Award: This prize is awarded annually to the graduating student with outstanding academic achievement in the Community Occupational Therapy course (OT 4406A) as well as an interest and involvement in community practice.

Nova Scotia Society of Occupational Therapists Student Society Award: This prize is awarded annually to the graduating student who has contributed most to the Occupational Therapy Student Society.

Newfoundland and Labrador Association of Occupational Therapists Book Prize: This prize is awarded annually to the student entering fourth year who achieved the highest standing in third year Therapeutic Procedures classes (OT 3305A, OT 3306A, OT 3307C and OT 3308C).

Nova Scotia Society of Occupational Therapists Book Prize: This prize is awarded annually to a student entering third year who has been selected by classmates on the basis of outstanding contribution to activities in both the School and the community, interpersonal skills and general scholarship proficiency.

Dalhousie Women's Alumni Medal: This medal is presented annually to the graduating student with the highest cumulative grade point average in the Occupational Therapy programme.

W.B. Saunders Book Prize: This prize is presented annually to the graduating student with the second highest cumulative grade point average in the Occupational Therapy programme.

Williams and Wilkins Book Prize: This prize is awarded annually to the graduating student with the highest academic standing in the final year of the programme.

C. V. Mosby Book Prize: This prize is awarded annually to the graduating student with the second highest standing in the final year of the Occupational Therapy programme.

The Sammons Award: This prize is awarded annually to the graduating student with the highest overall standing in statistics (Math 1060A), research methods (OT 4407A) and Independent Study (OT 4421R). Mr. F. Sammons gave the University a gift to be used at the discretion of the School, which decided to endow an award for a graduating student.

Sammons Research Award for Clinical Tutors: An endowment has been established to provide an annual prize to the clinical tutor who has assisted the graduating student who won the Sammons Award for their independent research project.

Class of '85 Award: This prize is awarded annually to a graduating student (as chosen by the members of the graduating class) who has made an outstanding contribution to activities of the class, School, University and community.

The Cardwell/Robinson Prize: An endowment has been established from which the net annual income will support a prize. The award is presented to a student entering fourth year who has achieved the highest standing in courses dealing with psychiatry and mental health (OT 2201B, OT 3301A and OT 3307C).

The Norma Cassidy Prize: This award is presented annually to a student entering fourth year with the highest academic standing in Therapeutic Procedures (Rehabilitative, OT 3306A).

Dalhousie Occupational Therapy Student Involvement Award: This award was established by the Occupational Therapy Student Society from a donation by the Dalhousie Student Union through their Capital Campaign pledge. The prize will be presented annually to a student entering the fourth year who shows financial need and who has been actively involved in the Occupational Therapy Student Society and other School activities. One award of $500 will be made from income generated by the endowment.

University Medal in Occupational Therapy: This medal is awarded annually to the graduate who has obtained the highest academic standing in the occupational therapy programme provided that she or he meets the requirements as set by Faculty.

School of Physiotherapy

Fourth Year

University Medal in Physiotherapy: This medal is awarded annually to the graduate who has attained the highest academic standing in the physiotherapy programme, provided that he or she meets the requirements approved by the Senate of Dalhousie University.

Canadian Physiotherapy Association Award: A certificate and first-year membership in the Canadian Physiotherapy Association constitute this annual award. It is presented to the graduating student who has achieved the highest aggregate percentage in academic and clinical physiotherapy subjects during the entire programme.

The Patricia Stanfield Covert Award in Physiotherapy: An endowment has been established to provide an annual prize to a physiotherapy student who is entering the final year of the programme. The recipient is to be nominated by classmates on the basis of extra curricular activities, interpersonal skills and scholarship proficiency.

Morris B. Kohler Award in Physiotherapy: This prize is awarded to the student in the graduating class who has demonstrated the greatest interest in the treatment of long-term rehabilitation patients, while attending the Nova Scotia Rehabilitation Centre.

Hazel Lloyd Foundation Book Prize: The Hazel Lloyd Foundation has been established by Miss Aphra Lloyd in memory of her sister, Miss Hazel A. Lloyd (1930-1985), Associate Professor, School of Physiotherapy. Friends, associates and alumni have made additional contributions. The purpose

of the Foundation is to foster interest in geriatrics and gerontology, Professor Lloyd's major areas of interest. The Hazel Lloyd Foundation will award an annual Book Prize to the student with the highest marks in PT4120A, Gerontology and Geriatrics.

Jean McAlooey Memorial Prize: This prize is awarded annually to the student in the graduating class who has demonstrated the highest clinical standing. The prize is sponsored by the New Brunswick Association of Physiotherapists.

Newfoundland and Labrador College of Physiotherapists Prize: This prize is awarded to the physiotherapy student who has attained the highest standing in Orthopaedics. It is sponsored by the Newfoundland and Labrador College of Physiotherapists.

Newfoundland and Labrador Physiotherapy Association Prize: This prize is awarded to the member of the graduating class who has attained the highest standing in Neuroscience. It is sponsored by the Newfoundland and Labrador Physiotherapy Association.

Nova Scotia College of Physiotherapists Book Prize: The College sponsors an annual cash prize for books to the third-year physiotherapy student who has demonstrated the greatest degree of leadership within her/his class during the second and third years within the School of Physiotherapy.

Nova Scotia Neurosciences Section Book Prize: The Nova Scotia Section of the Neurosciences Division of the Canadian Physiotherapy Association established a prize of $50, effective with the 1984-85 session. The prize will be presented to the fourth-year Physiotherapy student with the highest combined grade from (1) the practical exam in third-year neurology course and (2) the average grade of the third-year and fourth-year clinical neurology placement(s). The recipient will be selected by the Dalhousie Professor who is managing the neurology course.

Third Year

Nova Scotia Physiotherapy Association Prize: This prize is awarded annually to the student who shows the greatest overall improvement during the third year of the BSc Physiotherapy programme.

Second Year

Prince Edward Island Physiotherapy Association Prize: This prize is awarded annually to the student who has attained the highest academic standing in Gross Anatomy.

School of Recreation, Physical and Health Education

Beaver Foods Awards: Under the sponsorship of Beaver Foods Limited the School of Recreation, Physical and Health Education is able to offer two $1000 entrance awards to students registering in this School for the first time. Winners will be selected from applicants who possess a strong background in academic performance and potential for contributing to extra-curricular activities. Further information may be obtained from the Director of the School of Recreation, Physical and Health Education.

Anthea Bellemare Award for Excellence in Student Teaching: The School selects for this award the graduating student in the Bachelor of Physical Education/Bachelor of Education programme who has demonstrated the highest degree of performance in student teaching activities.

The E.G. Belzer Jr. Prize: In 1986 colleagues and former students of Dr. E.G. Belzer Jr. established a prize that is to be awarded to the undergraduate health education major who is adjudged to have written the best paper among those submitted to health education courses. The adjudication is held annually, at mid-April. The prize will be a book chosen by Health Education Division faculty members. The prize is also open to graduands.

Canadian Association of Sports Science Award: The CASS provides an annual medal to the School to be awarded to an outstanding student in the Bachelor of Science in Kinesiology programme. The recipient will be the graduating student who has achieved the highest cumulative Grade Point Average over the duration of her/his academic record.

Canadian Association for Health, Physical Education and Recreation Student Award: This award is presented to a second- or third-year student who has demonstrated a significant involvement in the SAPHER organization and by so doing has demonstrated a commitment to the advancement of professional principles supported by CAPHER.

The Dr. M.J. Ellis Award: This award was established to give recognition to a graduating student who demonstrated exceptional interest and ability in research in one of the four undergraduate degree programmes.

Duane Evasowitz Memorial Award: This memorial book prize is awarded to the graduand in the Recreation programme who is deemed to have an exceptional interest in and dedication to conservation and outdoor recreation.

Health Education Awards: Consisting of one-year subscriptions to a Health Education journal of the student's choice, there are two awards, one for each of years One and Two of the BSc Health Education programme. The awards are made to the student in each year who has achieved the highest GPA.

Leisure Research Congress Award: The Fifth Canadian Congress on Leisure Research set up an endowment to provide an annual award to a student who has graduated from the Bachelor of Recreation programme. The recipient will have attained a cumulative Grade Point Average of 3.0 or higher and will have demonstrated an aptitude for research related to recreation and leisure. The awardee must be planning to register in a graduate programme in Leisure Studies at Dalhousie University in the academic yeaar following receipt of the award.

The Dr. Hugh A. Noble Award: This award is given to a graduating student from one of the four undergraduate degree programmes in the School of Recreation, Physical and Health Education. The awarding is based on academic accomplishments, qualities of citizenship as shown by involvement outside the University, leadership qualities as demonstrated in activities inside the University, and an estimate of the candidate's potential for contributing to the profession.

Thomas Family Prize: The Nova Scotia Heart Foundation and the Thomas family have established an award which is open to graduating students in the Health Education programme (Bsc or MA). Candidates will have shown dedication to the field of heart health through volunteer work in community health promotion, demonstrated a commitment to a healthy lifestyle, and achieved a commendable level of academic performance.

University Medal in Recreation, Physical & Health Education: This medal is awarded annually to the graduate who has obtained the highest academic standing in the physical education programme provided that she or he meets the requirements as set by the Faculty.

The Women's Division of the Dalhousie Alumni Association RP & HE Medals: Four awards are available to students in the School of Recreation, Physical and Health Education. For the students who achieve the highest standing in each of the Bachelor of Physical Education, the Bachelor of Recreation, the Bachelor of Science in Health Education and the Bachelor of Science in Kinesiology degree, the Women's Division sponsors of a medal.

The A.J. "Sandy" Young Award: This award is open to the graduating student who makes the greatest contribution each year to the advancement of "Nova Scotia Sport Heritage". Both undergraduate and graduate students are eligible.

Maritime School of Social Work

Dalhousie University Women Alumnae Medal: The Alumnae have established a medal to be awarded annually to a graduand from the baccalaureate programme in Social Work.

Faculty of Management

School of Business Administration Commerce

The Wilfred Berman Memorial Prize: The Wilfred Berman Memorial Prize is payable from the income of a fund provided by former students of the late Professor Wilfred Berman to the student obtaining the highest mark in the class in first-year Accounting.

Commerce Alumni Association Awards: The Commerce Alumni Association sponsors four annual awards to recognize academic achievement. There is one award for each of Accounting, Finance, Management and Marketing.

The Stewart Lockie Gibson Memorial Prize: The School of Business Administration offers a prize to the graduating student in the general Bachelor of Commerce programme who has achieved the highest standing.

University Medal in Commerce: The School of Business Administration offers to the top First Class Honours graduate in the Bachelor of Commerce programme a medal. The awardee will be one who has fulfilled the high scholastic standard for this award.

School of Dental Hygiene

First-year Students

The Katie Lubetzki Memorial Prize: This is a prize of $100 cash for the student who has attained the highest grade point average in all subjects.

Halifax County Dental Society Prize: A cash award of $50 is available to the student who achieves the second highest grade point average in all subjects.

The Nova Scotia Dental Association Prize: The Association sponsors a $50 prize to the student who demonstrates the greatest proficiency in Pre-Clinical Dental Hygiene.

The Lisa VanAlphen Memorial Prize: An annual prize of $150 is available to the first year dental hygiene student who in the opinion of the selecting committee best combines sound

academic standing and professional excellence in tribute to a person of integrity and sincerity of purpose.

Academy of Dentistry for the Handicapped Award: This is an award which is available to the student(s) who has (have) demonstrated the greatest proficiency in a project concerned with the handicapped dental patient. The award consists of an associate membership in the Academy, a subscription to the Academy's journal, and a certificate. Further information and applications are available from the Academic Awards Committee.

Second-Year Students

The Katie Lubetzki Memorial Prize: This is a prize of $100 for the student who has attained the highest grade point average in all subjects. It is sponsored by the Nova Scotia Dental Hygenists Association.

Nova Scotia Dental Hygienist Association Prize: The Association sponsors an annual prize of $50 to the student who has attained the second highest grade point average in all subjects.

The Columbia Dentoform Prize: A prize consisting of a Columbia Dentoform Model is awarded to the student who has attained the highest standing in patient management and patient education.

The Nova Scotia Dental Hygienists Association Prizes: The Association sponsors prizes for the best and second best Table Clinic presentations which prizes are in the amount of $60 and $40 respectively (or half of these amounts in the case of two students working together).

Anne Rafuse Memorial Prize: There is a prize of approximately $50 for the student who is deemed to have made the greatest academic and social contribution to the class.

The Alice Hartlen Memorial Prize: This annual $50 prize is available to the dental hygiene student who has demonstrated the greatest originality and creativity in community projects in the Health Education class.

Johnson and Johnson Prize: This prize in the amount of $100 is open to a student who in the opinion of the Faculty has demonstrated proficiency and interest in Community Dentistry.

Halifax County Dental Society Prize: A cash award of $50 is available to the student who shows the greatest proficiency in clinical Dental Hygiene.

Financial Aid, Loans, and Bursaries

Government Student Loans

Addresses of Provincial Student Aid Authorities

Canada Student Loans Plan: Canadians, other than Quebec residents, are to apply for governmental assistance to the appropriate agency in that province or territory in which the applicant is a bona fide resident. The addresses for Canada Student Loan authorities of those provinces and territories participating in the Plan are listed below:

Newfoundland:
Department of Education
Student Aid Division
Thompson Student Centre
Memorial University of Nfld
St. John's, Newfoundland
A1C 5S7

Prince Edward Island:
Student Aid Office
Department of Education
PO Box 2000
Charlottetown, Prince Edward Island
C1A 7N8

Nova Scotia:
Student Aid Office
Department of Advanced Education and Job Training
P.O. Box 2290, Station M
Halifax, N.S.
B3J 3C8
(street location:
Trade Mart Building
2021 Brunswick Street at Cogswell
Halifax, N.S.)

New Brunswick:
Student Aid Programme
Department of Advanced Education and Training
PO Box 6000
Fredericton, New Brunswick
E3B 5H1

Ontario:
Financial Aid Office
Ministry of Colleges and Universities
Mowat Block, Queen's Park
Toronto, Ontario
M7A 2B4

Manitoba:
Student Aid Branch
Department of Education
Box 6
693 Taylor Avenue
Winnipeg, Manitoba
R3M 3T9

Saskatchewan:
Student Financial Assistance Branch
Department of Advanced Education
1855 Victoria Avenue
Regina, Saskatchewan
S4P 3V5

Alberta:
Students' Finance Board
Baker Centre, 10th Floor
10025 - 106 Street
Edmonton, Alberta
T5J 1G7

British Columbia:
Student Services Branch
Ministry of Advanced Education & Job Training
Parliament Buildings
Victoria, British Columbia
V8V 1X4

Yukon Territory:
Students' Financial Services Office
Department of Education
P.O. Box No. 2703
Whitehorse, Yukon Territory
Y1A 2C6

Northwest Territories:
Manager - Student Services
Department of Education
Government of the Northwest Territories
Yellowknife, Northwest Territories
X1A 2L9

The above authorities also administer provincial bursary and loan plans in conjunction with the Canada Student Loan, if applicable.

Québec:
Residents of Québec Province are to apply to:
Ministère de l'enseignement Superieure et de la Science
Direction générale de l'aide financiere aux étudiants,
1033, rue De La Chevrotière
Québec, (Québec)
G1R 5K9

Short-Term Loans

For Dalhousie Students Generally

Temporary Loans: The University has established temporary loans to assist registered Dalhousie students with certain types of short-term financial difficulty when no other reasonable resource is available. (Such loans are not made for fee payment, however.) These loans have a short interest-free period, after which interest will be charged. Refer to the reverse side of the short-term application form for further details. Application is to be made at the Office of the Registrar.

For Occupational Therapy Students

Short-Term Loans for Occupational Therapy Students for Fieldwork: Full-time students in Third Year or Fourth Year are eligible to apply for loans up to $500. The first priority is for Third-Year students who are about to undertake fieldwork 4420 A/B; the second priority is for Fourth-Year students who are about to undertake fieldwork 4421R. Students who seek such assistance are to apply at the Awards counter, Office of the Registrar, and to present a letter of support from either the Director of the School or the Fieldwork Co-ordinator of the School. Further information is available at the Awards Office or the School of Occupational Therapy.

Dalhousie Bursaries

ANNOUNCEMENT

For 1991-92 there will be a significant increase in bursary funds to benefit students attending Dalhousie. Students are urged to seek advice and/or to make early application for possible financial assistance, before financial problems become unmanageable, from the Registrar's Office - Awards.

The University will be implementing an Entrance Bursary Programme during the spring/summer of 1991, as part of the enhancement of its bursary service.

Note to All Applicants:

Application kits, for students applying after the academic year has begun, are available at the Office of the Registrar, Room 133, Arts & Administration Building, normally about mid-September. Completed application forms will be accepted at the Office from the first workday of October until the stipulated deadline.

The deadlines for the different bursary programmes will be announced with the application material.

Completed applications are batched and assessed on a comparative basis for available funds. Applicants are sent written notification of the decision.

Please note that University bursaries are restricted to Canadian citizens and permanent residents.

General Information about Bursaries

It should be noted that Canada Student Loans (with or without provincial bursaries and/or loans) are expected by provincial authorities to

meet the financial deficiencies of the students and that bursaries subsequently awarded by the University must be reported and are liable to be deducted (in part or in whole) from the amounts originally allocated under the Canada Student Loan Plan or provincial aid programme.

The University has at its disposal some funds which are selectively awarded as bursaries to students who may unexpectedly find themselves in need of financial assistance. While these bursaries are awarded primarily on the basis of demonstrable need, satisfactory academic standing is also expected. Except under exceptional circumstances, bursaries will not be awarded to students who have not availed themselves of assistance under the federal/provincial student aid programmes.

In the event that the applicant may be eligible for a restricted bursary, he/she should annotate the application.

Government Notification

Holders of Dalhousie University bursaries are to note that the University is required, upon written request, to report its award winners to the respective Provincial Student Aid Authority.

Arts & Science
Specified as to Year

First Year

Alfred George Darville Memorial Bursary: This fund provides two bursaries of $1000 each to qualifying Dalhousie students. Applicants must be matriculants of Halifax West High School, be enrolled in first-year studies in an undergraduate programme (as commonly understood), and demonstrate financial need to the satisfaction of the Selecting Body. Please note that there is an early autumn deadline for this bursary.

The John Dunlop Memorial Bursary: An endowment was established to provide bursaries in first year.

The Rev. Kenneth Mackenzie Bursary: Mrs. Harriet Mackenzie Morrison of Stornoway, Scotland, daughter of the Rev. Kenneth Mackenzie of Pictou County, bequeathed $1,000 to the university in 1887 to be used as a bursary fund. Candidates of the name of Mackenzie, MacLean, or Fraser are to be given preference.

Elizabeth McKenna Bursaries: The Elizabeth McKenna Scholarship Fund was established in 1928 for the purpose of providing what are known today as bursaries. Applicants must be bona fide residents of one of the Maritime Provinces and be entering the first year in the College of Arts & Science.

North British Society Bursaries: Eight major bursaries are open to candidates from provincial high schools who have been accepted for full-time study in the College of Arts and Science. The Selection Committee will assess candidates on the basis of the following criteria: academic achievement, extracurricular participation and demonstrated financial need. Applicants may obtain the designated application form at the Awards Office, and are to return the completed forms to this office by the May deadline. The bursaries are provided by the North British Society which for many years has been dedicated to the preservation of the Scottish tradition in Nova Scotia. The association between the Society and Dalhousie University derives in particular from the role of Scots in the foundation and development of the University during its first sesquicentennial. The following bursaries each in the amount of $500 are available: the Sir Joseph A. Chisholm Bursaries (two), the NBS Centennial 1868 Bursary (one), the NBS 1958 Bursary (one), the NBS 1963 Bursaries (two), and the NBS 1984 Bursaries (two).

Fourth Year

Prof. W. Russell Maxwell Memorial Bursaries: Any residual income remaining in the Fund after the annual scholarships have been determined may, after consultation with the Department of Economics, be used to fund one or more bursaries for deserving students entering the fourth year of the Honours programme in Economics.

Unspecified as to Year

Ernest Brehaut Memorial Bursaries: These bursaries were established by the gift of Mrs. Ernest Brehaut of Colorado Springs, USA, in memory of her husband, a distinguished graduate of Dalhousie, Harvard and Columbia. These bursaries are to be awarded by the Awards Office of the University, which will take into consideration any financial need of the applicant, to students from Prince Edward Island. Preference is to be given to relatives of the late Dr. Brehaut. The bursaries are to be continued throughout the courses of the students if they maintain creditable academic standing and show genuine need.

The Robert Bruce Bursaries: Several bursaries tenable in the third year of an Arts or Science course, will be awarded to students of promising abilities but of straitened circumstances.

James and Abbie Campbell Bursaries: Dalhousie students who are engaged in studies in one of our music programmes are eligible for consideration for a bursary from this fund.

David Andrew Dougall Memorial Bursary: The intent of this award is to encourage and assist one or more students whose academic and financial status merit consideration. The Department of Biology administers the fund.

Wilfred E. Hillis Bursary: The late Mrs. Olga Munro Hillis made provision for the establishment of the Wilfred E. Hillis Bursary Fund. The income derived therefrom is to be used as bursaries for worthy Arts and Science students who are in need of financial assistance.

Annie S. MacKenzie Class of 1911 Bursary: Under the Will of the late Emelyn L. MacKenzie the University has been given a bequest to provide bursaries in Arts & Science, Dentistry and Law. One-third of the net income is allotted to the College of Arts and Science for the purpose of funding a bursary to one or more students. The recipient must be a bona fide resident of and domiciled in the County of Victoria (as defined by the boundaries then extant in AD 1900), Nova Scotia. Character and financial need are the main criteria.

John David and Ellen Matheson Allen Endowment Fund: The bursaries to be known as John David and Ellen Matheson Allen bursaries, are in memory of John David Allen and his wife, Ellen Margaret Allen, both graduates of the Department of Education of the University. The bursaries are for students in the Arts and Science faculties and the School of Edcuation of Dalhousie University. In the selection of the recipients of the bursaries, priority is to be given to Canadian Indians and Inuit, but where no such persons apply, the bursaries are to be given to other applicants as determined by the appropriate office of the University.

The Kenneth and Lloyd McDonald Bursary: A gift of the McDonald family in 1976 makes possible the funding of an annual bursary to a deserving and needy student.

Reverend J.W.A. Nicholson Bursaries: This Fund was established in commemoration of the unselfish life of a distinguished Dalhousie graduate (BA 1897). One of his concerns was to help young people discover their talents. About half the annual income is used to assist Nova Scotia Blacks who are full-time students in the College of Arts & Science at Dalhousie, and the balance is added to the fund's capital. Awards are made at the discretion of the Awards Office.

Divinity Candidates

Dr. Alexander E. Kerr Bursary: The Alexander E. Kerr Foundation Fund was established to provide a biennial bursary of $500 to qualifying students to continue their theological studies within three years of having been graduated from Atlantic School of Theology and Dalhousie University. A Committee on Awards shall select one person from the applicants who must have been accredited candidates for the Ministry of the United Church of Canada. Each bursary shall be for one academic year. Additional information is available at Atlantic School of Theology and the Awards Office at Dalhousie University. Applications must reach the Director of Awards, Office of the Registrar by the first Monday in April. [Under review]

Robert Archibald MacDonald Bursaries: Candidates must be properly qualified students taking the Arts course in Dalhousie with a definite intention of proceeding to Theology at the Atlantic School of Theology in preparation for a ministry in the United Church of Canada. The bursaries are awarded by a committee of Dalhousie and Pine Hill representatives. First preference will be given to students from Cape Breton and then to those from Pictou Presbytery. [Under review]

R.B. and Annie J. MacLennan Bursaries: Candidates must be registered as students at Dalhousie University and must be certified as intending to pursue their studies in Theology at the Atlantic School of Theology in preparation for a ministry in the United Church of Canada. Those students who are awarded a bursary may be eligible for a renewal of the award in a succeeding year. [Under review]

The Ross Millar Bursary: Under the will of Dr. Ross Millar the sum of $10,000 was bequeathed to the Board of Governors in trust to set up a bursary to be awarded annually. It is stipulated that "Other things being equal the recipient shall be an undergraduate in Arts or Letters who is qualifying himself for the Ministry of the Presbyterian Church in Canada by taking the Arts or Letters degree at Dalhousie." The Synod of the Presbyterian Church in the Maritime Provinces will present the names of the candidates to the Awards Office, and the necessary scholastic requirements will be decided either at the matriculation examinations or by ability as shown by the sessional examinations.

Faculty of Health Professions

College of Pharmacy

Please note that the College administers the following bursaries except the one listed as University Bursaries.

Apotex Inc. Bursaries: Two bursaries of $500 each are offered annaully by Apotex Inc. for students who have completed at least one year at the College of Pharmacy. The students must have a satisfactory academic standing and demonstrate financial need.

Boehringer Ingelheim (Canada) Ltd. Bursary: This bursary of $500 is awarded to a pharmacy student entering third- or fourth- year classes who demonstrates financial need.

The Bert and Betty Collins Bursary: A fund has been established to award an annual bursary to a deserving pharmacy student from New Brunswick who demonstrates financial need and who has attained a satisfactory academic standing.

Eric Hill Bursary: This bursary of $1000 is awarded to a deserving pharmacy student, from the Maritime provinces, completing first or second year who shows financial need and whose academic achievement, promise and character are acceptable. Applications for the bursary are available from the College of Pharmacy and should be submitted by 1 May.

The Jack Kidd/ANCA Bursary: This award was established (as a scholarship until 1986-87) in 1982 to recognise 43 years of service of Mr. Jack Kidd, a pharmaceutical sales representative, with Anca Inc. It is awarded to a student from New Brunswick or Prince Edward Island who has successfully completed one or more years of the course leading to a degree in pharmacy and who is enrolled in pharmacy at the University for the ensuing year. The student must have a satisfactory academic standing and demonstrate financial need. Applications are available at the College of Pharmacy and must be submitted by 1 May.

Lawton's Drug Stores Limited Bursary: This bursary of $500 is awarded to a second, third or fourth year student from the Atlantic Provinces, who has attained a satisfactory academic standing and who demonstrates financial need. Applications are available from the College of Pharmacy and must be submitted by 1 May.

George MacDonald Bursary: This Bursary is awarded to a deserving pharmacy student, from the Atlantic Provinces who has satisfactorily completed at least one year of study at the College of Pharmacy and who demonstrates financial need.

New Brunswick Pharmaceutical Society Bursaries: The New Brunswick Pharmaceutical Society offers four bursaries to be awarded to the students from New Brunswick completing the first, second, and third years of the Pharmacy course. The amount of each bursary is $300. The bursaries are awarded on the basis of need to those students whose academic achievement, promise, and character are acceptable. Applications are available from the College of Pharmacy and must be submitted by 1 May.

The Pfizer Bursary: This bursary of $500 is awarded to a deserving student who demonstrates financial need and who has attained a satisfactory academic standing. Applications are available from the College of Pharmacy and must be submitted by 1 May.

Shoppers Drug Mart Community Pharmacy Bursaries: Shoppers Drug Mart will sponsor three bursaries of $400 each to awardees selected by the College. The selection committee will consider candidates on the basis of financial need, student involvement, academic proficiency and potential for contributing to the pharmacy profession. Normally, successful applicants will have completed the first year. Applications are available from the College of Pharmacy and must be submitted by 1 May.

University Bursaries: The University has limited funds which may be used to provide bursary assistance to qualifying students. Information about the application for financial assistance from the University may be obtained from the Office of the Registrar, Room 133, Arts & Administration Building.

School of Nursing

University Bursaries: The University has limited funds which may be used to provide bursary assistance to qualifying students. Information about and application for financial assistance from the University may be obtained from the Office of the Registrar, Room 133, Arts & Administration Building.

School of Occupational Therapy

Phyllis Kennedy Memorial Bursaries: The Phyllis Aida Daly du Fresne Kennedy Memorial Bursary Fund was established in 1983 to provide from the annual income one or more bursaries to assist a student or students in Occupational Therapy in the fourth year. The applicants must show financial need as determined by the Awards Office, must have achieved a minimum GPA of 3.0 in each of the second and third years, and must demonstrate interest in their studies and the School. The Awards Office will assess applicants' needs and forward the name(s) of candidate(s) to the School's Committee on Studies for final selection. The decision will be announced through the Awards Office.

University Bursaries: The University has limited funds which may be used to provide bursary assistance to qualifying students. Information about and application for financial assistance from the University may be obtained from the Office of the Registrar.

NOTE: OT students who need assistance with their fieldwork costs are referred to the entry on short-term loans.

School of Physiotherapy

University Bursaries: The University has limited funds which may be used to provide bursary assistance to qualifying students. For information about this financial assistance, contact the Office of the Registrar, Room 133, Arts &

Administration Building.

School of Recreation, Physical and Health Education

The Jeff Bredin Memorial Bursary: An endowment has been set up to provide bursaries to deserving students. Preference will be given to a varsity athlete at Dalhousie who has successfully completed at least one year of study at this University. In any one year the maximum award given to any student will be $1,000. Consideration is based on financial need, contribution to varsity sport and academic standing. Apply to the School of Recreation, Physical & Health Education.

Denton Hurdle Memorial Bursary: An endowment has been established to honour the memory of Denton Gordon Clifford Hurdle (B.Phys. Ed. '80) by providing a bursary to a student in the School. The student must be a Bermudian citizen and, preferably, a graduate of Warwick Academy, Bermuda. The student must have achieved an academic average of at least 80% (or the equivalent in the Bermudian School system) in the year in which application is made. The student must have demonstrated a capacity to contribute to the University community through qualities of leadership and athletic ability.

University Bursaries: The University has limited funds which may be used to provide bursary assistance to qualifying students. Information about and application for financial assistance from the University may be obtained from the Office of the Registrar, Room 133, Arts & Administration Building.

Martime School of Social Work

Hannah G. Matheson Bursaries: These bursaries are open to students enrolled in studies in the Maritime School of Social Work at either the undergraduate or graduate level.

Lloyd MacInnis Memorial Bursary: The Lloyd Y. MacInnis Memorial Award Fund was established to provide an annual bursary to a qualifying student who is continuing his or her studies at the School in the baccalaureate programme beyond first year.

Jane Wisdom Memorial Bursary: When Jane Wisdom began her caring work in Halifax shortly before the Great Explosion of 1917, she was truly a pioneer in what has come to be known as Social Work. It is in recognition of her distinguished service that Anonymous Donors in 1977 established an endowment fund whereby one or more annual bursaries to one or more deserving students would be granted to students in the baccalaureate programme of the Maritime School of Social Work at Dalhousie University.

University Bursaries: The University has limited funds which may be used to provide bursary assistance to qualifying students. Information about and application for financial assistance from the University may be obtained from the Office of the Registrar, Room 133, Arts & Administration Building.

School of Dental Hygiene

University Bursaries: The University has limited general funds which may be used to provide bursary assistance to qualifying students. Apply at the Office of the Registrar, Room 133, Arts & Administration Building.

Jennifer Wright Memorial Bursary: An endowment has been established to provide for an annual bursary to a Second-Year student who in the opinion of the selection committee has demonstrated financial need. Preference will be given to, but will not strictly be limited to, a Nova Scotian student.

Faculty of Management

School of Business Administration

Bachelor of Commerce Programme

B.J. McConnell & Associates (Atlantic) Bursary: This Company sponsors an annual bursary of $1000 to be awarded to a student in the Bachelor of Commerce programme on the basis of financial need. The recipient will have achieved satisfactory standing.

University Bursaries: The University has limited funds which may be used to provide bursary assistance to qualifying students. Information about and application for financial assistance from the University may be obtained from the Office of the Registrar, Room 133, Arts & Administraton Building.

School of Public Administration

Certificate in Public Administration Programme (Undergraduate) University Bursaries: The University has limited funds which may be used to provide bursary assistance to qualifying students. Information about and application for financial assistance from the University may be obtained from the Office of the Registrar, Room 133, Arts & Administration Building.

Unspecified or Selected Faculties

The Eva and David Ashkins Memorial Bursary: The donors established this fund for the purpose of assisting pupils who have matriculated from selected high schools to enter Dalhousie. These high schools are (first) the North Queen's Rural High School or Bridgewater High School, and (secondly) other high schools in the province of Nova Scotia. The recipient may be considered in subsequent years for further assistance.

The Birks Family Foundation Bursaries: 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 Awards Office 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.

The Jotham Blanchard Bursary: The New Glasgow Literary and Historical Society in 1912 established this bursary in memory of Jotham Blanchard. The bursary will be awarded to a student of meritorious standing who is in the sophomore year of an undergraduate programme.

George Boyd Bursary: The income from the George Boyd Trust will provide an entrance bursary. Preference is to be given to a needy student from the Sydney area.

Enid Hager Clarke Textbook Fund: A bequest from the Estate has set up an endowment from which to award bursaries to assist students from certain geographic areas of New Brunswick. Students who are domiciled in King's and Saint John counties are eligible under the terms of the bequest.

The Rebecca Cohn Bursary Fund: A gift of $4,000 by the executors of the Estate of the late Rebecca Cohn provides an endowed bursary fund for needy students.

James Smith Cumming Bursary: From the Estate of Charles Gordon Cumming came a bequest of US $10,000 to endow a bursary fund to assist needy students. Mr. Cumming expressed a preference for matriculants from Naparima College in Trinidad should such students attend Dalhousie.

Dalhousie Alumni Association Bursaries: The Alumni have established an endowment to provide bursaries for first-year undergraduate students and refugee students at Dalhousie University. Six bursaries of $500 each will be awarded annually. Four of the bursaries will be awarded to first-year undergraduates who are not in receipt of any other University awards or bursaries and who satisfy the following criteria:

i) achieved a minimum 75% average in his/her last year of high school;
ii) shown considerable extracurricular involvement and leader ship; and
iii) demonstrated financial need.

The remaining two bursaries will be awarded to refugee students sponsored by the University. If, in any year, there are no refugee students attending Dalhousie, these two awards shall be made in the same way as the other four. [Note: This fund is administered by the Alumni Office.]

Dalhousie Grants for Overseas Good Works Service: Dalhousie University offers annually a limited number of grants of $500 each to volunteers who have completed overseas good works service in the year immediately preceding registration at Dalhousie. These grants are to be credited towards fees. To be eligible the student (1) must have served overseas in one of the following organizations: Canadian Crossroads International, Canadian University Service Overseas, Dr. Jean Vanier of France, or the World University Service of Canada; and (2) must be registered for full-time study at this University. In order to be considered for one of these grants, a student should:

(1) write to the Awards Office in the summer asking to be considered for a grant for the forthcoming academic year; and
(2) arrange with the appropriate authority in the organization concerned for a letter to be sent to the Awards Office confirming completion of said overseas service to arrive at the Awards Office by mid-October.

Dalhousie Leadership Bursaries: A limited number of bursaries are available annually to students who have exhibited a record of considerable leadership achievement. Candidates must also demonstrate consistent satisfactory academic accomplishment. The Selecting Committee may consider such other matters as financial need, service to the University and the community, and character. Application forms are available at the Office of the Registrar.

Dalhousie Memorial Bursary Fund: From time to time at Dalhousie contributions have been made to the University as a memorial subscription in honour of some student or former student. Until now there has been no proper place into which these funds could be channelled. Because of these occurrences a Dalhousie Memorial Bursary Fund has been established. The existence of the fund will be commemorated by a book of remembrance to be located in a prominent place in the Killam Library. Names of persons in whose memory contributions have been made by relatives, friends, individuals or groups, to the Memorial Fund will be recorded in the book, along with the date of their birth and death. The pages would be turned on a regular basis. All money contributed to the Fund will be invested by the Board of Governors and only the investment income will be awarded. The award will be available to any full-time Dalhousie student, already registered and in attendance at classes, who can show a need for additional support. A student in straitened financial circumstances may be considered for

possible assistance by making application on the standard undergraduate bursary application form which is available from the Office of the Registrar.

All contributions to the Memorial Fund are directed through the Dalhousie Annual Fund. For further information please contact the Development Office, Dalhousie Unversity.

The Frank R. Davis Memorial Bursaries: The terms of this fund have been revised in consultation with the donor's family. Now income from this fund may be awarded on the basis of financial need. One or more bursaries may be made in consultation with the Supervisor of Schools for Bridgewater, Nova Scotia.

Annie M. Harrison Bursary: The annual income from the bequest of $5,000 from the Estate of Annie M. Harrison provides a number of bursaries.

Alice M. Haverstock Bursary: From the Estate of Gertrude H. Fox came a bequest to endow a bursary fund in the name of Alice M. Haverstock.

Frances Havergal Grant Bursaries: An endowed bursary fund was established under the Will of the late Constance Patricia Hamilton in the amount of $18,900, the income from which is to be used to assist students.

The Annette S. Hill Bursaries: The University received an endowment under the Will of the late Annette S. Hill to set up a fund, the income therefrom to be used to assist needy students.

The Neil and Jessie Matheson Bursaries: Established under the Will of Miss Margaret J. Matheson, Truro, the income from this fund provides several bursaries. Students from the rural districts of Pictou County are to be given preference.

Military District No. 6 Provost Corps Bursary: The Number 6 Provost Mutual Association established this bursary fund to assist descendants of those members of the Canadian Provost Corps who served in Military District No. 6. Applicants must fulfil the Corps' selection criteria, show satisfactory academic progress and demonstrate financial need.

The Warren Publicover Class '25 Memorial Bursary: The Warren Publicover Class '25 Memorial Fund was established in memory of Warren Publicover. The annual income from this fund is to be awarded in the form of a bursary for an individual who has successfully completed one year of university work at Dalhousie and is continuing as a full time student at this University. The bursary is to be awarded on the basis of satisfactory academic performance and demonstrated financial need, and is subject to renewal provided that the original requirements are maintained. It is a condition of the gift that applicants for this bursary need not have availed themselves of governmental funding as is usually required by the University.

3M Canada Bursary: Since 1980-81 3M Canada Inc. has sponsored an annual bursary of $500 to assist an outstanding student in commerce or science. The bursary has been assigned to entrance.

Dr. Gerald Turner Bursary: An endowment has been established to provide a bursary to assist a needy student from Cape Breton in First Year.

University Bursaries: The University has limited funds with which to provide buraries to undergraduate students. For further information contact the Office of the Registrar, Room 133, Arts & Administration Building.

Continuing Education Awards and Bursaries

Students who are engaged in part-time studies for credit are eligible to be considered for awards and financial assistance. Each of these is described briefly below.

The Frederick Thomas Parker Award for Part-Time Studies: This award will provide an appropriate and flexible means of encouraging students intending to undertake degree or diploma studies at Dalhousie on a part-time basis. The selection committee will take into account both academic performance and financial need, depending upon circumstances. Applications are available at Henson College.

Canada Student Loan for Part-Time Students: This particular federal loan is intended to help students who have a small cash-flow problem at the beginning of their studies. In order to qualify on the basis of class load for a standard academic year, a student must be planning to take not greater than the equivalent of 2.5 whole classes. The application form is available from Nova Scotia Student Aid Office, and is to be completed in part by both the Student Accounts and Awards Offices. Please note that repayment of the loan begins 30 days following the borrowing of the funds, and payment must be completed within 24 months.

Canada Student Loans Plan: Some students who are "part-time" by the University criterion are still eligible for the regular Canada Student Loan. The class-load criterion for this loan is to enrol and to maintain a class-load of not fewer than three whole classes or the equivalent. Repayment of the loan normally begins six months after the time one ceases to be a "full-time" student according to governing regulations. During the summer months

application kits will be available at the Awards Office on a pick-up basis. (These kits are available for pick-up or mail-out directly from Student Aid throughout the CSL assistance period.) Interested individuals may seek further details from the Office of the Registrar - Awards (telephone 494-2416).

Dalhousie University Bursaries: Students who are engaged in part-time studies for credit will be considered for bursaries. Application is to be made at the Office of the Registrar - Awards. Please note that University bursaries are restricted to Canadian citizens or permanent residents.

Dalhousie Temporary Loans: Students who are engaged in part-time studies for credit will be considered for temporary loans. Such loans are intended for short-term needs, and repayment begins after the expiration of a predetermined grace period. Application is to be made at the Office of the Registrar.

Academic Exchanges

Russian Language Studies at Pushkin Institute: The cultural agreement between the Canadian and Soviet Governments of November 1975 included provision for an Intensive Language Training Programme in Russian. The agreement provides that the Pushkin Institute for the Study of the Russian Language in Moscow will receive and accommodate annually, ten Canadian undergraduate students for a term of up to four months. Dalhousie University will administer the Canadian portion of the programme.

School of Recreation, Physical and Health Education Exchange Programmes: Since 1972 the School has has been involved with one-for-one exchange programmes. Currently, the following partner institutions are active in the exchange:

i) Chelsea School of Human Movement, Brighton Polytechnic, Eastbourne, United Kingdom;
ii) Frostburg State College, Frostburg, Maryland, U.S.A.
iii) State University of New York at Brockport, N.Y., U.S.A. Contact the School of Recreation, Physical and Health Education for further information.

University Regulations

General

1. The Senate is charged with the internal regulation of the University, including all matters relating to academic affairs and discipline, subject to the approval of the Governors. Within the general policies approved by Senate, academic requirements are administered by the Faculty concerned.
2. All students must agree to obey all the regulations of the University already made or to be made; in addition to the above University regulations, students must also comply with the regulations of the Faculty in which they are registered, and pay the required fees and deposits before entering any class or taking any examinations. Additionally, students are advised that this Calendar is not an all-inclusive set of rules and regulations but represents only a portion of the rules and regulations that will govern the student's relationship with the University. Other rules and regulations are contained in additional publications that are available to the student from the Registrar's Office and/or the relevant Faculty, Department or School.
3. For the purpose of admission to the University, the place of residence of a student is the place of domicile. This is normally presumed to be the place (country, province, etc.) where the parents' or guardian's home is located. That place remains unchanged unless the Registrar is satisfied that a place of residence is established elsewhere. No person under sixteen years of age is admitted to any class except by special permission of the Senate.
4. All students must report their local address while attending the University to the Office of the Registrar, on registration or as soon as possible thereafter. Subsequent changes must be reported promptly.
5. Students taking classes in another Faculty as part of an affiliated course must conform to the regulations of that Faculty with respect to these classes. It should be noted, however, that regulations pertaining to the degree programme are those of the "home" Faculty.
6. In the interests of public health in the University, students are encouraged to have a tuberculin test. This is compulsory for Dental, Dental Hygiene and Physiotherapy students. Facilities for testing are arranged by the University Health Services.
7. Except for university purposes, transcripts, official, or unofficial, will be issued only on the request of the student on payment of the required fee. A student may receive only an unofficial transcript. Official transcripts will be sent at a student's request to other universities, or to business organizations, etc. on payment of the required fee.
8. Students withdrawing voluntarily from the University should consult the individual faculty regulations and the Fees section of this Calendar.
9. When the work of a student becomes unsatisfactory, or a student's attendance is irregular without sufficient reason, the faculty concerned may require withdrawal from one or more classes, or withdrawal from the Faculty. If a student is required to withdraw from a Faculty such a student may apply to another Faculty. However, in assessing the application, previous performance will be taken into consideration.
10. Any graduating student who is unable to appear at the convocation is expected to notify the Registrar in writing prior to May 1, for Spring convocations (or October 1 for Fall convocations), giving the address to which the diploma is to be mailed. Students whose accounts are delinquent on March 15 may not be eligible, at the sole discretion of the University, for graduation at the May convocation. For October or February graduation the dates are Sept. 1 and Jan. 1 respectively.
11. Students should be aware that certain classes at the University involve required laboratory work where radioactive isotopes are present and are used by students. Since there are potential health risks associated with the improper handling of such radioactive isotopes, Dalhousie University requires that, as a condition of taking a class where radioactive isotopes are to be used, students read and agree to comply with the instructions for the safe handling of such radioactive isotopes. In the event that students do not comply with the instructions for the safe handling of radioactive isotopes, students will receive no credit for the required laboratory work unless other acceptable alternatives are arranged with the instructor. In many cases, alternate arrangements are not possible and students should consider enrolling in a different class.

Release of Information About Students

1. Disclosure to students of their own records
   (a) Students have the right to inspect their academic record. An employee of the Registrar's Office will be present during such an inspection.

(b) Students will, on submission of a signed request and payment of the appropriate fee, have the right to receive transcripts of their own academic record. These transcripts will be marked "ISSUED TO STUDENT". Students who owe monies to the University will not receive copies of their transcript.

2. **Disclosure to Faculty, Administrative Officers, and Committees of the University**
Information on students may be disclosed without the consent of the student to University officials or committees deemed to have a legitimate educational interest.

3. **Disclosure to Third Parties**

(a) The following information is considered public information and may be released without restriction:
- Name
- Period of Registration
- Certificates, Diplomas, Degrees awarded

(b) Information will be released without student consent to persons in compliance with a judicial order or subpoena or as required by federal or provincial legislation.

(c) Necessary information may be released without student consent in an emergency, if the knowledge of that information is required to protect the health or safety of the student or other persons. Such requests should be directed to the Registrar.

(d) Other than in the above situation, information on students will be released to third parties only at the written request of the student, or where the student has signed an agreement with a third party, one of the conditions of which is access to her/his record (e.g. in financial aid). This restriction applies to requests from parents, spouses, credit bureaus and police.

Intellectual Honesty

1. A University should epitomise the quest for intellectual honesty. Failure to measure up to the quest for such a standard can involve either academic offences at one end of the spectrum or substandard work warranting lowered or failing grades at the other. The seniority of the student concerned, the presence of a dishonest intent, and other circumstances may all be relevant to the seriousness with which the matter is viewed.

2. **Plagiarism or Self-Plagiarism**

Dalhousie University defines plagiarism as the presentation of the work of another author in such a way as to give one's reader reason to think it to be one's own. Plagiarism is a form of academic fraud.

Plagiarism is considered a serious academic offence which may lead to loss of credit, suspension or expulsion from the University, or even the revocation of a degree.

In its grossest form plagiarism includes the use of a paper purchased from a commercial research corporation, or prepared by any person other than the individual claiming to be the author.

Self-plagiarism is the submission of work by a person which is the same or substantially the same as work for which he or she has already received academic credit.

3. **Irregularities in the Presentation of Data from Experiments, Field Studies, etc.**

Academic research is predicated on the presentation of accurate and honestly derived data. The falsification of data in reports, theses, dissertations and other presentations is a serious academic offence, equivalent in degree to plagiarism, for which the penalties may include revocation of degrees, loss of credits or suspension or expulsion from the University.

4. **Inaccurate or Inadequate Attribution.**

The University attaches great importance to the contribution of original thought to scholarship. It attaches equal importance to the correct attribution of authorities from which facts and opinions have been derived.

The proper use of footnotes and other methods of attribution varies from discipline to discipline. Failure to abide by the standards of the discipline concerned in the preparation of essays, term papers and dissertations or theses can result, at the discretion of the instructor or faculty member involved, in lowered grades. It can also lead to the requirement that an alternative assignment be prepared. Such grading penalties can be involved even in the absence of any INTENTION to be dishonest.

Students who are in any doubt about the proper forms of citation and attribution of authorities and sources should discuss the matter in advance with the faculty member for whom they are preparing assignments. In many academic departments, written statements on matters of this kind are made available as a matter of routine or can be obtained on request.

Discipline

1. Members of the University, both students and staff, are expected to comply with the general laws of the community, within the University as well as outside it.

2. Alleged breaches of discipline relating to student activities under the supervision of the Dalhousie Student Union are dealt with by the Student Union. Alleged breaches of

discipline relating to life in the residences are dealt with by the appropriate Dean or Director of Residence in consultation with the relevant Residence Council. Senate is charged with the authority to deal with cases of alleged academic offences (as delegated to the Senate Discipline Committee), as well as with certain other offences that are incompatible with constructive participation in an academic community.

3. Examples of Academic Offenses

Plagiarism

As indicated above, plagiarism and self-plagiarism are considered serious academic offences which can lead to loss of credit and suspension from the University.

Irregularities in Presentation of Data

As defined above, the presentation of falsified data in reports, theses, dissertations and other presentations is a serious academic offence, equivalent in degree to plagiarism for which the penalties may include revocation of degrees, loss of credits, or suspension or expulsion from the University.

Irregularities in Admissions Procedures

A person who gains admission or assists any other person in gaining admission by any irregular procedure, for example, by falsifying an academic record or by forging a letter of recommendation or by impersonating any other person, commits an academic offence and is liable to a penalty (see Senate Discipline Committee).

Irregularities in Evaluation Procedures

A member of the University who attempts or who assists any other person in an attempt to obtain, by irregular procedures, academic standing in a course related to any degree, diploma or certificate programme, commits an academic offence and is liable to a penalty. Without limiting possible irregularities in evaluation procedures that may be considered by the Senate Discipline Committee, the following examples shall be considered irregular procedures:

(a) arranging for or availing oneself of the results of any personation at any examination or test, or,
(b) attempting to secure or accepting assistance from any other person at any examination or test, or,
(c) having in one's possession or using any unauthorized material during the time that one is writing any examination or test, or,
(d) without authorization procuring a copy of an examination, test or topic for an essay or paper, or,
(e) in the absence of any enabling statement by the Faculty member in charge of that course, submitting any thesis, essay, or paper for academic credit when one is not the sole author, or,
(f) without authorization submitting any thesis, essay or term paper that has been accepted in one course for academic credit in any other course in any degree, diploma or certificate programme.

4. On report of a serious breach of the law, or a serious academic offence deemed by the President, or in his or her absence by a Vice-President or the Dean of a Faculty, to affect vital University interests, a student involved may be temporarily suspended and denied admission to classes or to the University by the President, Vice-President or Dean, but any suspension shall be reported to the Senate, together with the reasons for it, without delay.
5. No refund of fees will be made to any student required to lose credit for any course taken, required to withdraw or who is suspended or dismissed from any class or any Faculty of the University.

Official Examination Regulations

1. Candidates will not be admitted to the Examination Room more than thrity minutes after the beginning of the examination. Candidates will not be permitted to leave the examination within the first thirty minutes.
2. Candidates are required to present their valid Dalhousie ID card at all examinations scheduled during the official examination periods and sign the signature list.
3. No articles such as books, papers, etc. may be taken into the examination room unless provision has been made by the examiner for reference books and materials to be allowed to the students. All books, papers, etc. not specified on the printed paper must be deposited with the invigilator. Calculators may be used at the discretion of the instructor.
4. Smoking is not permitted in the examination room.
5. Candidates may not leave their seats during an examination except with the consent of the invigilator.
6. Answers to questions must be written on the right hand pages and properly numbered. The left hand pages may be used for rough work, but no sheets may be detached.
7. Each question should be started on a separate page.
8. If more than one book is used, the total number should be marked in

the space provided above. The other books should be properly marked and placed inside the first book. All books supplied must be returned to the invigilator.

9. Candidates found communicating with one another in any way or under any pretext whatever, or having unauthorized books or papers in their possession, even if their use be not proved, shall be subject to expulsion.

10. After the first thirty minutes have elapsed, students may hand in their examination book(s) to an invigilator and quietly leave the examination room. Candidates may not leave the examination room during the last fifteen minutes of the examination.

Senate Discipline Committee

1. **Composition**

Academic Offences are dealt with by the Senate Discipline Committee, which consists of five members, three of which are members of the Senate and two of which are students.

2. **Terms of Reference**

(a) The Senate Discipline Committee is vested with original jurisdiction to consider all complaints or allegations respecting offences or irregularities of an academic nature, including those relating to admissions procedures and evaulation procedures, and to impose penalties in cases where the Committee finds an offence or irregularity has occurred.

(b) The Senate Discipline Committee shall assume jurisdiction when a complaint or allegation respecting offences or irregularities of an academic nature are brought to its attention by the Secretary of Senate.

(c) The Senate Discipline Committee, when it finds that a member of the University who is a student has committed an academic offence or irregularity may impose one or more penalties as indicated in 3. below.

(d) The Senate Discipline Committee shall report its findings and any penalty imposed to the Secretary of the Senate. The Secretary of the Senate shall forward a copy of the report to any member of the University community whom the Senate Discipline Committee has found to have committed an offence or irregularity and if the member concerned be other than a student a copy shall also be sent to the Vice-President (Academic).

(e) If the member of the University found to have committed an offence or irregularity is a student, she/he may appeal to Senate any finding or any penalty imposed by the Senate Discipline Committee by advising the Secretary of the Senate in writing within 30 days of receipt of the report by the student.

3. **Academic Penalties**

(a) loss of all credit for any academic work done during the year in which the offence occurred;

(b) suspension of rights to attend the University for a specified period;

(c) dismissal from the University;

(d) such lesser penalty as the Committee deems appropriate where mitigating circumstances exist.

Guide to Responsible Computing

In recognition of the contribution that computers can make to furthering the educational and other objectives of the University, this Guide is intended to promote the responsible and ethical use of University computing resources. It is in the best interests of the community as a whole that these resources be used in accordance with certain practices which ensure that the rights of all users are protected and the goals of the University are achieved.

This Guide applies to all computer and computer communication facilities owned, leased, operated, or contracted by the University. This includes word processing equipment, micros, mainframes, minicomputers, and associated peripherals and software, regardless of whether used for administration, research, teaching, or other purposes.

It should be noted that system administrators of various campus computing facilities and those responsible for the computer access privileges of others may promulgate regulations to control use of the facilities they regulate. System administrators are responsible for publicizing both the regulations they establish and their policies concerning the authorized and appropriate use of the publicly available equipment for which they are responsible.

Basic Principles

Individuals should use only those University computing facilities they have been authorized to use.

They should use these facilities:

a. with respect to the terms under which they were granted access to them;

b. in a way that respects the rights of other authorized users;

c. so as not to interfere with or violate the normal, appropriate use of these facilities;

d. so as not to impose unauthorized costs on the University without compensation to it.

Elaboration

1. Individuals should use only those University computing facilities they have been authorized through normal University channels to use. They should use these resources in a responsible and efficient manner consistent with the objectives underlying their authorization to use them.
2. Individuals should respect the rights of other authorized users of University computing facilities. Thus, they should respect the rights of other users to security of files, confidentiality of data, and the benefits of their own work. Users should respect the rights of others to access campus computing resources and should refrain from:
   (1) using the computer access privileges of others without their explicit approval;
   (2) accessing, copying, or modifying the files of others without their permission; and,
   (3) harassing others in any way or interfering with their legitimate use of computing facilities.
3. Individuals should respect the property rights of others by refraining from the illegal copying of programmes or data acquired by the University or other users or putting software, data files, etc. on University computers without the legal right to do so.
4. Individuals should not attempt to interfere with the normal operation of computing systems or attempt to subvert the restrictions associated with such facilities. They should obey the regulations affecting the use of any computing facility they use.

Disciplinary Actions

Reasonable suspicion of a violation of the principles or practices laid out in this Guide may result in disciplinary action. Such action will be taken through normal University channels.

Nothing in this Guide diminishes the responsibility of system administrators of computing services to take remedial action in the case of possible abuse of computing privileges. To this end, the system administrators with the approval of the President and with due regard for the right of privacy of users and the confidentiality of their data, have the right, to suspend or modify computer access privileges, examine files, passwords, accounting information, printouts, tapes, and any other material which may aid in an investigation of possible abuse. Whenever possible, the cooperation and agreement of the user will be sought in advance. Users are expected to cooperate in such investigations when requested. Failure to do so may be grounds for cancellation of computer privileges.

College of Arts and Science

Introduction

The College of Arts and Science, established in 1988, consists of the Faculty of Arts and Social Sciences, the Faculty of Science, and the School of Education. The College of Arts and Science meets to discuss matters of concern common to its units, in particular those relating to academic programmes and regulations. The Dean of Arts and Social Sciences and the Dean of Science alternate, year by year, as Provost of the College. The Provost chairs College meetings and prepares the agenda for those meetings. Administrative responsibility for what is decided in College meetings remains in the two Faculties and School of Education. There are thirteen Departments and several interdisciplinary programmes in the Faculty of Arts and Social Sciences, and eleven Departments in the Faculty of Science. The School of Education is dedicated to the professional training of schoolteachers and to the study of education as an academic discipline. There are several interdisciplinary programmes of instruction in the College, the responsibility for which is shared among members from different Departments.

The College of Arts and Science is responsible for the curriculum of Bachelor of Arts, Bachelor of Science, Bachelor of Education, Bachelor of Music and Bachelor of Music Education degree programmes, for diploma programmes in Engineering, Meteorology, and Costume Studies, and for certificate programmes in Costume Studies and Educational Administration. The College is also responsible for the establishment of regulations governing students registered in its programmes.

The College of Arts and Science consists of several groups: some 5,500 undergraduate students who typically spend three or four years in the College, nearly four hundred full-time teaching and research faculty and staff as well as a number of part-time teachers and teaching assistants, and a support staff of secretaries and technicians. The student's academic role is to learn - from teachers, from laboratory experience, from books, from other students, and from solitary contemplation. Students learn not only facts but concepts, and what is most important, they learn how to learn.

Through intellectual interaction with other members of the academic community, undergraduate students should gain the background knowledge, the ability and the appetite for independent discovery. Their acquisition of these components of liberal education is marked formally by the award of a Bachelor's degree. The academic faculty has two equally important roles: to teach the facts, concepts, and methods that the student must learn; and to contribute to the advancement of human knowledge through research and through scholarly or artistic activity.

BA and BSc degree programmes in the College are of three types: the four year or twenty credit degree with Honours; the four year or twenty credit degree with an Advanced Major; and the three year or fifteen credit degree with a Major.

Unlike the degrees granted by professional schools, the Bachelor's degrees of BA and BSc are not intended to signify that the student is qualified for a particular job. The goal of such programmes is to produce educated persons with competence in one or more subjects. Such competence includes not only factual knowledge but, more importantly, the ability to think critically, to interpret evidence, to raise significant questions, and to solve problems. A BA or a BSc degree often plays a second role as a prerequisite to a professional programme of study.

The College is particularly proud of the Honours programmes that it offers in most subjects to able and ambitious students. The BA or BSc with Honours is distinguished from the BA or BSc with Major or Advanced Major in that a higher standard of performance is expected, a greater degree of concentration of credits in one or two subjects is required, and at the conclusion of the programme each student must show a grade which is additional to those for the required twenty classes. Frequently Honours students obtain this grade by successfully completing an original research project under the supervision of a faculty member. Completion of a BA or BSc with Honours is an excellent preparation for graduate study at major universities throughout the world. Dalhousie is distinguished among Canadian universities in offering BA programmes with Honours in most subjects in which it also provides BSc Honours programmes and in providing BA and BSc degree programmes with Combined Honours in an Arts and a Science subject.

Provost of the College

W.C. Kimmins, PhD (Lond.)

NOTE: It has long been the policy of the University that a student is governed by the regulations in place at the time of initial enrollment, and that subsequent changes in regulation shall apply only if the student so elects. Major changes were introduced for the 1988-89 session. Students who wish to apply the old regulations should consult the calendar of the appropriate year.

Students entering a new degree programme in the Spring of 1991 or later will be evaluated using the 4.3 Grade Point Average (GPA) scale. The regulations that apply to these students are identified as "New in 1991". All other students will continue to be evaluated using the merit point scale until April 1995. The regulations that affect

them are identified as "Prior Regulations". Beginning in May 1995, all students' work will be assessed using the 4.3 GPA system.

College of Arts and Science Regulations

1. Definitions

For definitions of some commonly used terms, see page 9.

Within these regulations, reference to the Student Appeals Committee should be interpreted as the Student Affairs Committee in the Faculty of Arts and Social Sciences, as the Committee on Studies and Appeals in the Faculty of Science, and the Bachelor of Education Committee in the School of Education.

2. Departments of the College of Arts and Science:

Biochemistry (also in the Faculty of Medicine)
Biology
Chemistry
Classics
Comparative Religion
Economics
School of Education
Engineering
English
French
Geology
German
History
Mathematics, Statistics and Computing Science
Microbiology (also in the Faculty of Medicine)
Music
Oceanography
Philosophy
Physics
Political Science
Psychology
Russian
Sociology and Social Anthropology
Spanish
Theatre

3. Subject Grouping

The various subjects in which instruction is offered are grouped as follows:

A. Languages and Humanities: Classics, Comparative Literature, Comparative Religion, English, French, German, Greek, History, Latin, Music, Philosophy, Russian, Spanish, Theatre, and Women's Studies.

B. Social Sciences: Canadian Studies, Economics, Education, History, International Development Studies, Political Science, Psychology, Sociology and Social Anthropology, and Women's Studies.

C. Life Sciences and Physical Sciences: Biochemistry, Biology, Chemistry, Computing Science, Economics, Engineering, Geology, Mathematics, Microbiology, Neuroscience, Oceanography, Physics, Psychology, and Statistics.

In cases where a subject is listed in more than one of the groupings, A, B and C, any class taken in that subject can only be used to satisfy one of the grouping requirements. (See Regulation 11.1 below.) A second class in the same subject cannot be used to satisfy another subject grouping requirement.

4. Programmes Offered

Programmes leading to the following qualifications are offered: Bachelor of Arts, Bachelor of Science, Bachelor of Education, Bachelor of Music, Bachelor of Music Education, Diploma in Engineering, Certificate in Costume Studies, Diploma in Costume Studies, Diploma in Meteorology, and Certificate in Educational Administration.

Many of the classes offered may be taken on a special basis by persons who do not wish to study for a degree.

5. Admission Requirements

Application forms are available at the Office of the Registrar, Arts and Administration Building, Dalhousie University, Halifax, Nova Scotia B3H 4H6. Telephone: (902) 494-2450. FAX: (902) 494-1630.

5.1 Students from Nova Scotia High Schools

At least five senior level university preparatory classes should be taken in the grade XII year as follows:

(a) English.
(b) At least two of Biology, Chemistry, French, German, History, Latin, Mathematics, Physics.
(c) The remaining classes may be from those listed above or from Economics, Geography, Geology, Law, Modern World Problems, Music, Political Science, Sociology, Spanish.

For certain programmes there are additional requirements:

Bachelor of Science

- English with a grade of at least 65%
- Mathematics 441 or

equivalent with a minimum grade of 65%.

Diploma in Engineering

- English with a grade of at least 65%
- Mathematics 441 or equivalent with a minimum grade of 65%
- Chemistry
- Physics

Music and Education

- For special requirements in Music and Education, see the department entries.

A minimum average of seventy percent is normally required of all students entering the Bachelor of Arts, Bachelor of Science, and Diploma in Engineering programmes. Special consideration is given to English and Mathematics marks for all programmes. Since admission to many programmes is limited, possession of minimum requirements does not guarantee admission.

Any special or experimental classes must have been previously approved by Dalhousie if acceptance for credit for admission is to be assured.

The University does not apply criteria rigidly. Students who do not meet the above requirements, particularly those with high standing, are invited to apply and will be given consideration as special cases.

5.2 Admission from Outside Nova Scotia

Students are accepted from other provinces and countries at levels as shown below, which are considered equivalent for the purpose of admission to Nova Scotia Grade XII:

New Brunswick, Newfoundland and Labrador, Prince Edward Island, Manitoba, Saskatchewan, Alberta, British Columbia: Grade XII, with subject distribution and minimum average as for Nova Scotia.

Québec: One year at CEGEP.

Ontario: O.A.C. credit or Grade XIII.

U.S.A.: U.S.A. Grade XII, SAT or CEEB scores are required.

The United Kingdom, West Indies, West Africa: General Certificate of Education (GCE) with pass standing in at least five subjects, of which one must be English and at least two must be at the Advanced Level.

Hong Kong: GCE as for Great Britain, or University of Hong Kong Matriculation Certificate under same conditions as for GCE.

Bangladesh, India, Pakistan: Bachelor's degree with first or second-class standing from a recognized university; or in certain circumstances, first-class standing in the Intermediate examinations in Arts and Science, provided the candidate has passes at the university level in English, Mathematics, and a language other than English. Note: This standing is not sufficient for admission to the sequential BEd programme at Dalhousie.

Countries not mentioned above: Write to the Registrar's Office, Dalhousie University, Halifax, N.S. B3H 4H6, for further information.

5.3 Transfers from Colleges and other Universities

Students who have begun their post-secondary studies elsewhere, and who are in good standing, may be considered for admission. Credit for work completed may be granted, subject to the conditions given in section 13.

5.4 Transfer Credits from Dental Hygiene

Students who hold a diploma in Dental Hygiene under the present two-year programme may be admitted to a BSc or BA programme with advanced standing of five full credits for this programme. Students should consult the appropriate department for advice.

5.5 Mature Students

Students who do not meet the usual admission requirements may be considered under the mature student category provided that:

- they are at least 23 years old, and
- they have been absent from full-time high school study for at least four years.

Prospective students should submit to the appropriate Admissions Committee via the Registrar's Office an application form together with a letter outlining their work experience and other activities. High school transcripts are required; interviews may be required.

In exceptional circumstances, the Admissions Committee may agree to

admit the student directly to a degree programme if the student's background is deemed sufficient preparation for such admission. Otherwise, the appropriate Admissions Committee may admit mature students initially to the University Exploration category until they have achieved grades of C⁻ or better in at least three full-year classes (or equivalent). At that time, they are eligible to apply for admission as regular undergraduate students.

Mature students are advised to contact Henson College at (902) 494-2526 for pre- and post-admission counselling.

5.6 Proficiency in English

Applicants for admission whose native language is not English must provide evidence that they are proficient in spoken and written English (i.e. arrange that results of the English Language Test of the University of Michigan, or the Test of English as a Foreign Language (TOEFL) be sent to Dalhousie (normally with a score of at least 550)). Both of these tests are administered in various centres throughout the world. Information may be obtained by writing to the English Language Institute, Testing and Certification Service, Ann Arbor, Michigan 48104, U.S.A. or TOEFL Box 899, Princeton, New Jersey 08540, U.S.A.

Certified copies of original documents, or relevant sections of documents (e.g. calendar pages) are acceptable in lieu of originals. Certificates in languages other than English or French must be accompanied by certified translation into English or French.

5.7 January Admissions

Admission to Dalhousie is normally for classes beginning in September, and the University does not admit full-time, first year students in January. Part-time students and transfer students, however, may be admitted for classes beginning in January. The deadline for application for January admission is November 15.

6. Student Aid, Scholarships and Other Awards

See the entry in this Calendar for information on student aid, scholarships, prizes and bursaries.

7. Admission to Classes

7.1 Numbering of Classes

Classes are numbered to indicate their general level. Those in the 1000 series are introductory classes at Dalhousie. Classes in the 2000, 3000, and 4000 series are usually first available to students in the second, third, and fourth years, respectively. Often these classes have prerequisites. Some departments have minimum grade requirements for entry into classes above the 1000-level. Such requirements are listed in the calendar entries for the departments concerned.

The letter following a class number indicates the session in which the class is offered. The letters A and B denote classes given in the first and second terms respectively. The symbol A/B indicates a class may be given in the first term or in the second term. Students should consult timetables to verify whether a particular class will be offered in the A or B term in a given academic year. The letters C and R denote classes spread over both terms (i.e., given for the full academic year). An R class carries one full credit or more, and a C class less than one full credit. For the spring and the summer sessions, A denotes a class given in the first three and one half weeks, B a class given in the second three and one half weeks, and R and C classes continuing for seven weeks.

Classes with numbers below 1000 normally do not carry credit.

7.2 Academic Advice

At Dalhousie all students are offered academic advice prior to registration. First-year students, particularly those in BA and BSc programmes, may wish to consult with the Office of the Registrar, or with a faculty advisor in an academic department of particular interest. After the first year, students plan their programmes in consultation with faculty advisors in their major departments. Each student must complete a Class Selection Form, obtainable from the Office of the Registrar.

Students must complete and submit the Class Selection Form as part of the registration process.

Please note that the completion and submission of a class selection form does not constitute registration.

8. Workload

8.1 Regular Year

Five full credits per academic year shall be regarded as constituting a normal workload for a student. Written permission from the Student Appeals Committee of the appropriate Faculty or School is required if this workload is to be exceeded, or if the planned workload in any term would amount to more than the equivalent of six half-classes. In no case may the workload exceed this. Applications from students who give good reasons for wishing to take an overload, and who in the preceding year completed a full programme in good standing, will be considered. Such permission will not normally be granted to any student in the first year of study, or to any student who, in the preceding academic year, earned a sessional GPA of less than 3.0.

8.2 Spring and Summer Session

Students may normally take one full credit in a spring or summer session. Exceptions will normally be granted by the Student Appeals Committee of the appropriate Faculty or School with respect to attendance at a university which operates a trimester system or its equivalent. Students may apply in advance to increase the workload to a maximum of 2.5 credits by summer school in any one year with a maximum of 1.5 credits in any one summer session. Spring and summer credits are included in the calculation of the cumulative GPA. A sessional GPA is not calculated.

9. Registration

Registration material and detailed information will be sent to all eligible students. Students admitted late must register in person. After the Class Selection Form has been completed (see above) students may register, either in person or by mail.

A student is registered only after financial arrangements have been made at the Student Accounts Office.

The final step in registration is obtaining an ID or validating an existing ID from the Office of the Registrar.
An ID Card gives students access to many campus services and activities.

It is University Policy that every student writing an officially scheduled examination must present a current valid ID Card. Students requesting the release of funds from the Awards Office must also present their ID Cards.

10. Withdrawal and Change of Registration

10.1 Responsibility of Registered Students

Students who withdraw from the University may be entitled to refunds of fees. Withdrawals are not effective until notification is received at the Office of the Registrar.

Non-attendance does not, in itself, constitute withdrawal.

10.2 Class Changes

It is recognized that some students may wish to make changes in programmes already arranged. Class changes will normally be completed during the first two weeks of classes. (For Spring and Summer session information, see the Summer School Schedule.) No change is effective until a change form, available at the Office of the Registrar, is received by that Office.

See the schedule of academic dates for deadlines for adding and dropping classes, and the fees section of the Calendar.

11. Degree, Certificate and Diploma Requirements

11.1 Bachelor of Arts, Bachelor of Science - All Programmes

In the first year full-time students normally take five full-credit classes or equivalents.

Students are required to include, in their first ten credits, one full-credit class or two half-credit classes from each of the subject groupings on page 72. (Note: Students enroled in Honours programmes in Biochemistry, Computing Science and Microbiology need not include these credits among their first ten credits, but must include them among the 20 earned to qualify for the degree.)

Students in the first year may not take for credit more than the equivalent of three full-credit classes in a single subject from the subject groups given in section 3 on page 72.

One of the five classes chosen must be selected from a list of classes in which written work is considered frequently and in detail. These writing classes are approved by the Writing Across Curriculum Committee and are listed below:

Chemistry 1000R; Classics

1000R, 1010R, 1100R; Comparative Religion 1301R; English 1000R; German 1000R, 1050R; History 1400R, 1990R; Philosophy 1010R; Political Science 1103R; Russian 2050R; Sociology and Social Anthropology 1001R, 1050R. (The King's Foundation Year Programme also satisfies this requirement.)

In order to qualify for a BSc degree candidates are required to complete successfully at least one full University credit in Mathematics other than Mathematics 1001A/1002B and Mathematics 1110A/B. A class taken to satisfy this requirement cannot also satisfy the requirement of a class from Subject Grouping C.

Students may satisfy this requirement by passing the test which is administered by the Department of Mathematics, Statistics & Computing Science. Such students must nevertheless complete 15 or 20 credits in order to graduate.

Students should seriously consider choosing a class from a list of classes which deal with a formal subject. Classes which are recognized as formal are:

Chemistry 1000R, 1010R, 1020R, 1030R; Computing Science (all classes); Economics 1106A/B, 2222A, 2223B, 2228R; Mathematics (all classes); Philosophy 2110R, 2130A, 2140B, 2190A/B, 2660R; Physics 1000R, 1100R, 1300R; Political Science 2494R, 3495A/B.

Students should consider becoming fluent in French. BA students are required to obtain one credit from the following language classes:

Classics 1700R, 1800R; French 1000R, 1001A/2001B, 1020R, 1040R; French 1060R; German 1000R, 0R 1010R, 1050R, 1060R; Russian 1000R, 1050R; Spanish 1020R, 2000A, 2010B.

For students with advanced language skills, upper-level language classes may be substituted. Consult the Office of the Registrar if you require further information. A class taken to satisfy this requirement cannot also satisfy the requirement of a class from Subject Grouping A.

Students may satisfy this requirement by passing one of the tests administered by the language departments. Such students must nevertheless complete 15 or 20 credits in order to graduate.

BA students who choose to major in Economics, International Development Studies, Philosophy, Political Science, Psychology or Sociology and Social Anthropology may substitute for a language class at least one full class in Mathematics or Statistics, other than Mathematics 1001A/1002B or Mathematics 1100A/1120B, to meet this requirement; or they may meet it by passing the test administered by the Department of Mathematics, Statistics & Computing Science. A class taken to satisfy this requirement cannot also satisfy the requirement of a class from Subject Grouping C.

The King's Foundation Year Programme is deemed to meet the distribution requirements for Humanities - Languages and Social Sciences groupings, but students in the Programme must take a class in the Life - Physical Sciences to complete the subject grouping distribution requirements for Life Sciences and Physical Sciences.

Students who have not completed their first year but wish to enrol for further study, must first complete the first-year requirements.

11.2 Arts and Science Electives

Students may choose electives from any of the classes listed by departments offering major or honours programmes in the College of Arts and Science. In addition up to three credits may be obtained from the following:

(a) Architecture 1000R;
(b) Education Foundation Offerings (classes with numbers below 4400); classes numbered 4400 and above are not available as Arts and Science electives;
(c) Classes in Engineering and Oceanography. The restriction on Engineering electives does not apply to students in the Diploma in Engineering Programme who combine their studies with a programme leading to a BA or BSc in the College of Arts and Sciences. (See the

entry for the Department of Engineering page 245.)

(d) Classes in Music. Note: Music classes 1000R, 1001A, 1002B, 2007R, 2008R, 2010R, 2011R, 2012R, 2013R, and 2021R are available as normal electives, but other classes in Music may be taken by special permission of the Department of Music.

(e) The following approved classes from other Faculties and institutions: Commerce 1101A/B, 1102A/B, 2201A/B, 2301A/B, 2401A/B, 2601A/B, 3203A/B, 3302B, 3304A/B, 3306A/B, 3308B, 3501A/B, 4120A/B and Health Education 4412A/B.

Note: Students enrolling in elective classes must meet normal class prerequisites.

11.3 Bachelor of Arts and Bachelor of Science - Honours Programmes

Second, Third and Fourth Years: Able and ambitious students are urged to enter Honours Programmes. These programmes require a higher quality of work than is required by the other undergraduate programmes of the College (15-credit Major and 20-credit Advanced Major). There are three types of Honours programmes: concentrated, combined and unconcentrated.

For the BA, the Honours subject may be chosen from Classics, Economics, English, French, German, History, International Development Studies, Philosophy, Political Science, Russian, Social Anthropology, Sociology, Spanish, and Theatre or any of the BSc Honours subjects.

For the BSc, the Honours subject may be chosen from Biochemistry, Biology, Chemistry, Computing Science, Economics, Geology, Marine Biology, Mathematics, Microbiology, Neuroscience, Physics, Psychology and Statistics.

Applications for admission to Honours programmes must be made to the Departments concerned on forms available in Departments and at the Office of the Registrar. The Registrar may be consulted by those considering unconcentrated Honours.

Students should apply before registering for the second year. If application is made later, it may be necessary to make up some work not previously taken.

For each individual student the entire Honours programme, including elective credits, is subject to supervision and approval by the Department or Departments concerned, or in the case of unconcentrated Honours, by an interdisciplinary committee.

Honours in a concentrated programme is based on the general requirement that the 15 credits beyond the first year of study comprise:

(a) A normal requirement of nine credits beyond the 1000-level in one subject (the major subject). Students may, with the approval of the Department concerned, elect a maximum of eleven credits in this area. In this case (c) below will be reduced to two or three credits.

(b) Two credits in a minor subject satisfactory to the major Department.

(c) Four elective credits not in the major field.

(d) An additional grade (see Honours Qualifying Examination below).

Honours in a combined programme is based on the general requirement that the 15 credits beyond the first year of study comprise:

(a) A normal requirement of eleven credits beyond the 1000-level in two allied subjects, not more than seven credits being in either of them. Students may, with the approval of the Departments concerned, elect a maximum of thirteen credits in two allied subjects, not more than nine credits being in either of them. In this case the requirement in (b) below is reduced to two or three credits.

(b) Four elective credits in subjects other than the two offered to satisfy the requirement of the preceding clause.

(c) An additional grade (see Honours Qualifying Examination below).

Details of specific departmental honours programmes are given under departmental listings of Programmes of Study.

Unconcentrated Honours programmes are based on the general requirement that the 15 credits, beyond the first year of study comprise:

(a) Twelve credits beyond the 1000-level in three or more subjects. No more than five of these may be in a single subject; no less than six nor more than nine may be in two subjects.
(b) Three elective credits.
(c) For an Unconcentrated BA (Honours), at least ten credits of the twenty selected must be selected from subject groups A, B, and C listed on page 72.
(d) For an Unconcentrated BSc (Honours), at least eight credits of the twenty required must be selected from Biochemistry, Biology, Chemistry, Computing Science, Economics, Geology, Mathematics, Microbiology, Neuroscience, Physics, Psychology, and Statistics, and at least six additional credits must be selected from subject groups B and C listed on page 72.
(e) An additional grade (see Honours Qualifying Examination below).

Honours Qualifying Examination. At the conclusion of an Honours programme a student's record must show a grade which is additional to the grades for the classes taken to obtain the required twenty credits. This grade may be obtained through a comprehensive examination, the presentation of a research paper (which may be an extension of one of the classes), or such other method as may be determined by the committee or Department supervising the student's programme. The method by which this additional grade is obtained is referred to as the Honours Qualifying Examination. Departments may elect to use a pass-fail grading system for this grading examination.

For the standing required for Honours, see section 27.2.1.

11.4 Bachelor of Arts, Bachelor of Science - Advanced Major Programmes (20-credits)

Students who do not wish to attempt an Honours programme are encouraged to enter an Advanced Major programme, which also requires 20 credits but with a lesser degree of concentration in a single subject. Such students are advised to seek detailed information from the Department in which they wish to concentrate. Unlike the Honours degree, the Advanced Major degree may not provide appropriate training for consideration for admission to a one-year Master's programme.

In order to satisfy the requirements for the Advanced Major degree, at least 12 of the 20 credits must be beyond the 1000-level. A minimum of six and a maximum of nine credits beyond the 1000-level are to be in the Major, and three of them must be beyond the 2000-level.

For the BA, the Advanced Major may be chosen from Classics, Comparative Religion, Economics, English, French, German, History, International Development Studies, Philosophy, Political Science, Psychology, Russian, Sociology and Social Anthropology, or Spanish, or from any of the BSc Major subjects.

For the BSc, the Advanced Major may be chosen from Biochemistry, Biology, Chemistry, Computing Science, Economics, Geology, Marine Biology, Mathematics, Microbiology, Physics, Psychology, or Statistics.

11.5 Bachelor of Arts, Bachelor of Science - Major Programmes (15 credits)

Second and Third Years. Before registering for the second year, each student must declare an area of concentration, and obtain programme advice from a faculty advisor in the appropriate department.

Ten full credits, or the equivalent in half-credit classes, make up the course for the second and third years. These must meet the following requirements:

(a) at least seven credits shall be beyond the 1000-level.
(b) at least one credit or two half-credits shall be in each of at least two subjects other than the area of concentration.
(c) at least four and no more than eight credits beyond the 1000-level shall be in a single area of concentration (the major), and at least two of these must be beyond the 2000-level.

(d) up to four of the credits in the major subject must be selected in accordance with departmental or interdepartmental requirements.

For the BA, the area of concentration may be chosen from Classics, Comparative Religion, Economics, English, French, German, Greek, History, International Development Studies, Latin, Music, Philosophy, Political Science, Russian, Sociology and Social Anthropology, Spanish, Theatre, Women's Studies or from any of the BSc major subjects.

For the BSc the area of concentration may be chosen from Biology, Chemistry, Computing Science, Economics, Geology, Mathematics, Physics, or Psychology.

For the standing required for a BSc or BA see section 27.

Individual Programmes

In cases where students feel that their academic needs are not satisfied under the above requirements, individual programmes may be submitted to the Student Affairs Committee of the Faculty of Arts and Social Sciences or to the Curriculum Committee of the Faculty of Science or the School of Education. The Dean, or Director, shall act as advisor for such students.

11.6 Upgrading of a BA or BSc to an Honours or Advanced Major Degree

A person who holds a Dalhousie BA or BSc (15-credit) degree may apply through his/her department advisor or, for Multidisciplinary Programmes, their Coordinator, for admission to an Advanced Major or Honours programme. On completion of the required work with proper standing, a certificate will be awarded which has the effect of upgrading the degree to Advanced Major or Honours status, as appropriate.

11.7 Programmes in Co-operative Education (20 credits)

The aim of Co-op degree programmes is to enable students to combine their studies with work experience. The programmes are thus year-round, including Spring and Summer School, and will normally require from forty-eight to fifty-two months for completion.

Co-op degree programmes conform to the requirements for either the Advanced Major or Honours degrees.

The following Departments currently offer Co-op programmes: Biology, Chemistry, Mathematics, Statistics and Computing Science, and Physics. For details of these programmes, consult the Calendar entries for the Departments.

11.8 Joint Honours: Dalhousie-Mount Saint Vincent

Special arrangements exist under which students may be permitted to pursue an Honours programme jointly at Dalhousie and Mount Saint Vincent Universities. Interested applicants should consult the appropriate Department of their own university at the beginning of the second year. Prospective joint honours students must be accepted by the Honours Departments concerned at both institutions. These Departments supervise the entire programme of study of accepted applicants. Students should be aware that not all classes available for credit at Mount Saint Vincent can be given credit at Dalhousie and vice versa. In order for students to obtain a joint honours degree they must satisfy all requirements of both institutions.

11.9 Bachelor of Music and Bachelor of Music Education

For the special requirements of these degrees, see the entry for the Department of Music.

11.10 Diploma in Engineering

For details of the requirements for the diploma, see the entry for the Department of Engineering.

11.11 Bachelor of Education

Admission to this programme normally requires that the applicant holds a prior undergraduate degree, or is simultaneously enrolled for one. There is, however, an arrangement under which it is possible to obtain a BEd in association with the Nova Scotia Teachers' College as a first degree.

For details about BEd programmes, see the entry for the School of Education.

11.12 Certificate and Diploma in Costume Studies

Study for these credentials is entirely within the Department of Theatre. See the entry for that

department for detailed information.

11.13 Certificate in Educational Administration

For details about this programme, see the entry for the School of Education.

11.14 Diploma in Meteorology

Details of the requirements for this diploma may be found in the entry of the Department of Physics.

12. Counting of Classes for Two Undergraduate Degrees

Students who hold one undergraduate degree from Dalhousie and who wish to gain a second undergraduate degree must fulfil the requirements of the second degree and meet the following stipulations:

(a) Only classes that are applicable to the course for the second degree may be counted for credit.

(b) Each class carried forward must have a grade of C or higher.

(c) For the Honours degree, a minimum of eleven new classes are to be taken, in accordance with Regulation 11.3 (a) and (b) above.

For the Advanced Major (20-credit) degree, a minimum of eleven new full-credit classes, or the equivalent, must be taken. At least six of these are to be beyond the 1000-level in a new major subject, and at least three of the six must be beyond the 2000-level.

For the Major degree (15 credits), a minimum of six new full-credit classes or the equivalent, must be taken. At least four of these are to be beyond the 1000-level in a new major subject, and at least two of the four must be beyond the 2000-level. Normally, two of these classes will be in a subject other than the new major.

(d) Grade points must be earned in the new classes as required by Regulation 24 below.

13. Transfer Students

13.1 Transfer Credits

At Dalhousie transfer credits may be granted for classes which are offered by a recognized university or equivalent institution of higher learning and which are judged to be comparable to classes offered at Dalhousie and to be appropriate to a student's academic programme at Dalhousie.

Transfer credits are subject to approval of departments. Transfer credits are not normally granted for classes that are not within the scope of any Dalhousie department. Students may, however, appeal to the appropriate Assistant Dean or to the applicable Academic Studies Committee for transfer credit where they can justify the inclusion of such classes in their proposed programme. Photocopies of calendar descriptions are particularly suitable for this purpose. Such descriptions are not normally included with university transcripts and it is the student's responsibility to provide them.

To obtain a first degree or diploma, at least half of the classes, including at least half in the field of concentration, must normally be taken at Dalhousie.

13.2 No Transfer Credits

No credit will be given for any work used as the basis for admission.

No transfer credit will be granted for any class in which a final mark of less than C (or the equivalent in Dalhousie terms) was obtained.

Credits that are more than ten (10) years old may not be used to fulfill degree requirements unless a waiver is granted.

No classes taken at another institution will be counted towards fulfillment of the concentration requirement of the Bachelor's degree or the principal subject requirement of an Honours programme without specific advance approval from the department concerned at Dalhousie.

No credit will be given for any classes taken at another university while a student is inadmissible at Dalhousie.

13.3 Procedures

As soon as the student's record has been assessed the Office of the Registrar will write to the student informing her/him which credits have been awarded. The number of credits which have been approved, and which Dalhousie classes may not be taken, will be included in the letter. If more credits have been approved than can be applied to the student's programme, the student will be asked to choose the credits to be used. When transfer credits awarded on admission appear on a Dalhousie transcript, they appear as credits only; no marks are shown.

If by registration the student has not received written confirmation of transfer credits, the student should

check with the Office of the Registrar. Information, although incomplete, may be available and may be helpful in choosing Dalhousie classes.

Before selecting classes the student should consult with the appropriate Department(s) to determine how the transfer credits will fit into the student's specific academic programme at Dalhousie.

14. Advanced Placement

Students possessing advanced knowledge of a subject will be encouraged to begin their studies in that subject at a level appropriate to their knowledge, as determined by the Department concerned. However, such students must substitute for the exempted classes an equal number of other classes, not necessarily in the same subjects (i.e. they must complete at Dalhousie the full number of credits required for the particular credential being sought).

15. Part-Time Students

Part-time students are admitted to most of the programmes offered in the College. Admission requirements and regulations generally are the same for all students. Part-time students are encouraged to consult with Henson College for advice on their academic programmes and other matters (see Continuing Education).

16. Audit of Classes

Students who have been admitted to a Faculty are permitted to audit many of the classes offered. For those who are not full-time students, fees are payable as indicated under Fees. A class may not be changed from credit to audit or from audit to credit status after the last date for dropping classes without penalty (see the schedule of academic dates). In order to change from audit to credit prior to the deadline an additional fee is required. It is essential that procedures as given in section 10.2 be followed.

17. Experimental Classes

Experimental classes, on any subject or combination of subjects to which arts or sciences are relevant, and differing in conception from any of the classes regularly listed in departmental offerings, may be formed on the initiative of students or faculty members.

If formed on the initiative of students, the students concerned shall seek out faculty members to take part in the classes.

Whether formed on the initiative of students or on the initiative of faculty members, the faculty members who wish to take part must obtain the consent of their department.

The class may be of one-year length or half-year length.

A class shall be held to be formed when at least one faculty member and at least eight students have committed themselves to taking part in it for its full length.

Classes may be formed any time before the end of the second week of classes in the fall term to run the year or first half-year, or any time before the end of the second week of classes in the spring term. If they are formed long enough in advance to be announced in the Calendar, they shall be so announced, in a section describing the Experimental Programme, if they are formed later, they shall be announced (a) in the *Dalhousie Gazette*, (b) in the *Dal News*, (c) on a central bulletin board set aside for this purpose.

One faculty member taking part in each experimental class shall be designated the rapporteur of the class with responsibility for (a) advising the Curriculum Committee of the applicable Faculty or School of the formation and content of the class; (b) obtaining from the appropriate Curriculum Committee a ruling as to what requirement or requirements of distribution, concentration, and credit the class may be accepted as satisfying; (c) reporting to the Registrar on the performance of students in the class; (d) reporting to the appropriate Curriculum Committee, after the class has finished its work, on the subjects treated, the techniques of instruction, and the success of the class as an experiment in pedagogy (judged so far as possible on the basis of objective comparisons with more familiar types of classes).

Students may have five one-year length experimental classes (or some equivalent combination of these with half-year length classes) counted as satisfying class for class any of the requirements for the degree, subject to the rulings of the relevant Curriculum Committee (above) and (where relevant) to the approval of the departments.

18. Coordinated Programmes

Students may in their second and third years follow a two-year integrated programme, or two one-year integrated programmes, of study. If two one-year programmes are chosen, they may be in different departments. All such coordinated programmes have been explicitly approved by the Curriculum Committee of the relevant Faculty or School. A department or group of departments offering coordinated programmes may structure

them as it wishes, consistent with sound academic practice and subject to the following guidelines:

(a) that the equivalent of five class units constitute a normal year,
(b) that the function of each programme form part of the Calendar description of each programme,
(c) that each two-year programme permits students at least one class of their own choice in each of the second and third years,
(d) that two-year programmes normally not be exclusively in a single discipline,
(e) that the normal prerequisite for entry into a departmental one-year or two-year programme be the introductory class of the department in question, or an equivalent that the department considers acceptable, and not more than one introductory class in a related subject.

A student considering a Coordinated Programme should consult as early as possible with the departments concerned.

19. Off-Campus, Summer School, Correspondence Classes Taken at Other Universities

19.1 Off-Campus Classes

A maximum of three credits may be taken by off-campus classes, whether offered by Dalhousie or taken from another university under concurrent registration.

19.2 Spring and Summer Session

Dalhousie currently offers a Spring and a Summer session of approximately seven weeks each, in May-June and in July-August. See Regulation 8 for permitted work-load. Those interested in the Spring and Summer sessions may request a summer school schedule from the Office of Continuing Education, Henson College, Dalhousie University.

19.3 Correspondence Classes

At present correspondence classes are offered by the College of Arts and Science. Students who wish to take correspondence classes from other Faculties or institutions may apply as in 19.4 below. See the limitation referred to in 19.2 above.

19.4 Classes Taken at Other Universities on Letter of Permission

A student who wishes to take classes at other institutions while registered at Dalhousie must obtain approval in advance on a form available in the Office of the Registrar. A letter of permission will be provided if approval for the classes is given. The workload at the other institution must conform to Dalhousie's limitations. (For details, see Regulation 24.1.3).

The departments of French, German, Russian, and Spanish have special arrangements whereby up to a total of 5 full-credit classes taken at other universities may be considered as part of a student's programme at Dalhousie. (See Regulation 20).

The class fee will be paid by Dalhousie if:

(a) the student is registered and has paid fees as a full-time student at Dalhousie,
(b) the classes are approved as part of the student's programme, and
(c) the class is not part of a spring/summer school programme.

20. International Programmes

The College of Arts and Science offers a number of programmes which enable students to pursue part of their studies in a foreign-language environment. These include:

(a) One term of study at the Pushkin Institute, Moscow Pedagogical Institute, or Leningrad State University, U.S.S.R. (for details see the entry of the Russian Studies Programme).
(b) One term of study at Colegio de España, Salamanca, Spain (see the entry for the Spanish Department).
(c) Up to one full year of study in a foreign- language environment. In recent years students have studied at the Université de Provence (Aix-Marseilles) in France (consult the appropriate Language department).
(d) Up to one full year of study at a francophone university in Québec (consult the Department of French).

For details regarding classes taken at other universities see Regulation 19.4.

21. Preparation for Other Programmes

Work in the College of Arts and Science is prerequisite for various programmes in other Faculties and other

institutions. A brief summary of the academic work required for admission to certain programmes is given here. Further information may be found later in this calendar, or in the separate faculty calendars, or in the calendars of other institutions.

Graduate Studies: Able and ambitious students are encouraged to consider seriously entering a graduate programme at Dalhousie or elsewhere. The normal requirement for admission to a graduate programme is an Honours degree or the equivalent.

Architecture: Two years of work, including at least one class in mathematics, are required for entry to a programme in Architecture at the Technical University of Nova Scotia. For details, apply to the Faculty of Architecture at TUNS.

Dental Hygiene: Completion of full credit university level classes of one academic year's duration in the following: Biology, Psychology, Sociology, a writing class, and one elective. For details, see the Dental Hygiene entry in this calendar.

Dentistry: See the Dentistry, Law and Medicine calendar.

Design: Students completing one year in the College of Arts and Science at Dalhousie may be admitted into the second year of the four year programme leading to the Bachelor of Design degree in Communication Design or Environmental Design at the Nova Scotia College of Art and Design.

Education: The normal requirement for admission to the Bachelor of Education programme at Dalhousie is a BA or BSc degree with Honours. For details, please see the Education entry in this calendar.

Engineering: The Diploma in Engineering qualifies a student for entry to the Technical University of Nova Scotia to study Engineering.

Law: At least two years of work leading to one of the degrees of BA, BSc, BCom. For details, please see the Dentistry, Law and Medicine calendar.

Medicine: A BA, BSc, or BComm degree. For details, see the Dentistry, Law and Medicine calendar.

Occupational Therapy or Physiotherapy: One year of work in the College of Arts and Science, or the equivalent elsewhere, is required for admission to these two programmes. For details, see the entries in this calendar for the School of Occupational Therapy and the School of Physiotherapy.

Veterinary Medicine: Normally three years of work at Dalhousie are required for admission to the Atlantic Veterinary College of the University of Prince Edward Island. Dalhousie classes should normally include Computing Science 1400A; Mathematics 1000A/B/C and 1060A/B; one of Chemistry 1100R, 1110R, or 1200R; Chemistry 2400R; Biochemistry 2200B; one of Physics 1000R, 1100R or 1300R; English 1000R; Biology 1000R, 2030A/B, 2100A/B and 3323R; and an additional two and a half classes from the humanities and social sciences.

22. Duration of Undergraduate Studies

Students are normally required to complete their undergraduate studies within ten years of their first registration, and to comply with the regulations in force at the time of that registration. This is also the normal limit for transfer credits. However, the appeals committee of the appropriate Faculty or the School may grant permission to continue studies for a reasonable further period, subject to such conditions as the committee deems appropriate and with the stipulation that the student must meet the degree requirements in force when the extension is granted.

23. Assessment

23.1 Method

Examinations may be oral, written (closed or open book) under supervision, or take-home. To gain credit toward a degree or diploma, students must appear at all examinations, prepare such essays, exercises, reports, etc., as may be prescribed, attend the classes of their prescribed course to the satisfaction of the instructors and, in classes involving field or laboratory work, complete such work satisfactorily.

Within two weeks of the first meeting of a class, each instructor shall make available a written description of the method of evaluation to be used in the class.

23.2 Examinations and Tests

Within four weeks after the beginning of each term the department chairperson or programme coordinator must report to the Dean the method of evaluation to be used by each instructor in each class. Periods of approximately three weeks in the spring and one and one-half weeks in December are set aside for the scheduling of formal written examinations by the Registrar. Instructors wishing to have examinations scheduled by the Registrar for their classes must so inform the Registrar at the beginning

of the third week of classes in the fall and spring terms. Instructors may also arrange their own examinations at times and places of their choosing during the formal examination periods, with the understanding that in cases of conflict of examinations for an individual student, the Registrar's examination schedule takes priority. No tests or examinations covering the work of a whole term shall be held during the last two weeks of classes in the term. No tests may be held between the end of classes and the beginning of the official examination period. Students may contact the Dean's Office of the appropriate Faculty for assistance if they are scheduled for more than two examinations on the same day.

23.3 Grades

A letter-grade system is used to evaluate performance. Grades in the A range represent excellent performance, grades in the B range represent very good performance, and those in the C range represent satisfactory performance. A grade of D represents marginally acceptable performance except in programmes where a minimum grade of C is specified. See the calendar entries for specific programmes where a minimum grade of C is specified. F indicates failure. Grades in the ranges of A, B, C, D and P are passing grades. Other grades, including W, INC and F, are non-passing grades (see regulation 24). ILL (assigned for compassionate reasons or illness) is neutral. Appropriate documentation is needed for this grade (see regulation 23.8).

23.4 Submission of Grades

On completion of a class, the instructor is required to submit grades to the Registrar, such grades to be based on the instructor's evaluation of the academic performance of the students in the class in question. Christmas grades must be submitted to the Registrar in all 1000-level classes in which enrollment on October 1 exceeded 25; Christmas grades are normally submitted in other full year classes.

23.5 Incomplete

Students are expected to complete class work by the prescribed deadlines. Only in special circumstances may an instructor extend such deadlines. Incomplete work in a class must be completed within four weeks of the required date for submission of grades in that class to the Office of the Registrar.

Exceptions to this rule will normally be extended only to classes which require field work during the summer months. At present the list of these classes consists of Biology 4800A/B/C and 4900R; Music 3470C and 4470C; and Education 8490R. Students taking any of these classes in their final year should note that they will not be able to graduate at the spring convocation.

23.6 Correction of Errors in Recorded Grades

Correction of errors in the recording of a grade may be made at any time. Otherwise changes will only be made as in Regulation 23.7 below.

Students are not entitled to appeal for any grade change more than six months after the grades are sent from the Office of the Registrar.

23.7 Reassessment of a Grade

On payment of a fee, a student may appeal to the Registrar for reassessment of a grade in a class. The Registrar will direct the request to the head of the academic unit concerned, who will ensure that the reassessment is carried out and reported to the Registrar. Written applications for reassessment must be made to the Registrar within two months of the date the grade is sent from the Office of the Registrar. Students have a right to view their marked examination papers by appointment for a period of two months from the date the grades are sent to students from the Office of the Registrar.

23.8 Special Arrangements for Examinations, Tests and Assignments

At the discretion of the instructor, alternate arrangements for examinations, tests or the completion of assignments may be made for students who are ill, or in other exceptional circumstances.

Where illness is involved, a certificate from the student's physician will be required. This certificate should indicate the dates and duration of the illness, when possible should describe the impact it had on the student's ability to fulfill academic requirements, and should include any other information the physician considers relevant and appropriate. To obtain a medical certificate, students who miss examinations, tests or the completion of other assignments

institutions. A brief summary of the academic work required for admission to certain programmes is given here. Further information may be found later in this calendar, or in the separate faculty calendars, or in the calendars of other institutions.

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Dental Hygiene: Completion of full credit university level classes of one academic year's duration in the following: Biology, Psychology, Sociology, a writing class, and one elective. For details, see the Dental Hygiene entry in this calendar.

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Education: The normal requirement for admission to the Bachelor of Education programme at Dalhousie is a BA or BSc degree with Honours. For details, please see the Education entry in this calendar.

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Medicine: A BA, BSc, or BComm degree. For details, see the Dentistry, Law and Medicine calendar.

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23.1 Method

Examinations may be oral, written (closed or open book) under supervision, or take-home. To gain credit toward a degree or diploma, students must appear at all examinations, prepare such essays, exercises, reports, etc., as may be prescribed, attend the classes of their prescribed course to the satisfaction of the instructors and, in classes involving field or laboratory work, complete such work satisfactorily.

Within two weeks of the first meeting of a class, each instructor shall make available a written description of the method of evaluation to be used in the class.

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Within four weeks after the beginning of each term the department chairperson or programme coordinator must report to the Dean the method of evaluation to be used by each instructor in each class. Periods of approximately three weeks in the spring and one and one-half weeks in December are set aside for the scheduling of formal written examinations by the Registrar. Instructors wishing to have examinations scheduled by the Registrar for their classes must so inform the Registrar at the beginning

of the third week of classes in the fall and spring terms. Instructors may also arrange their own examinations at times and places of their choosing during the formal examination periods, with the understanding that in cases of conflict of examinations for an individual student, the Registrar's examination schedule takes priority. No tests or examinations covering the work of a whole term shall be held during the last two weeks of classes in the term. No tests may be held between the end of classes and the beginning of the official examination period. Students may contact the Dean's Office of the appropriate Faculty for assistance if they are scheduled for more than two examinations on the same day.

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A letter-grade system is used to evaluate performance. Grades in the A range represent excellent performance, grades in the B range represent very good performance, and those in the C range represent satisfactory performance. A grade of D represents marginally acceptable performance except in programmes where a minimum grade of C is specified. See the calendar entries for specific programmes where a minimum grade of C is specified. F indicates failure. Grades in the ranges of A, B, C, D and P are passing grades. Other grades, including W, INC and F, are non-passing grades (see regulation 24). I.L. (assigned for compassionate reasons or illness) is neutral. Appropriate documentation is needed for this grade (see regulation 23.8).

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On completion of a class, the instructor is required to submit grades to the Registrar, such grades to be based on the instructor's evaluation of the academic performance of the students in the class in question. Christmas grades must be submitted to the Registrar in all 1000-level classes in which enrollment on October 1 exceeded 25; Christmas grades are normally submitted in other full year classes.

23.5 Incomplete

Students are expected to complete class work by the prescribed deadlines. Only in special circumstances may an instructor extend such deadlines. Incomplete work in a class must be completed within four weeks of the required date for submission of grades in that class to the Office of the Registrar.

Exceptions to this rule will normally be extended only to classes which require field work during the summer months. At present the list of these classes consists of Biology 4800A/B/C and 4900R; Music 3470C and 4470C; and Education 8490R. Students taking any of these classes in their final year should note that they will not be able to graduate at the spring convocation.

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Students are not entitled to appeal for any grade change more than six months after the grades are sent from the Office of the Registrar.

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On payment of a fee, a student may appeal to the Registrar for reassessment of a grade in a class. The Registrar will direct the request to the head of the academic unit concerned, who will ensure that the reassessment is carried out and reported to the Registrar. Written applications for reassessment must be made to the Registrar within two months of the date the grade is sent from the Office of the Registrar. Students have a right to view their marked examination papers by appointment for a period of two months from the date the grades are sent to students from the Office of the Registrar.

23.8 Special Arrangements for Examinations, Tests and Assignments

At the discretion of the instructor, alternate arrangements for examinations, tests or the completion of assignments may be made for students who are ill, or in other exceptional circumstances.

Where illness is involved, a certificate from the student's physician will be required. This certificate should indicate the dates and duration of the illness, when possible should describe the impact it had on the student's ability to fulfill academic requirements, and should include any other information the physician considers relevant and appropriate. To obtain a medical certificate, students who miss examinations, tests or the completion of other assignments

should contact the University Health Services or their physician at the time they are ill and should submit a medical certificate to their instructor as soon thereafter as possible. Such certificates will not normally be accepted after a lapse of more than one week from the examination or assignment completion date.

For exceptional circumstances other than illness, appropriate documentation, depending on the situation, will be required.

Requests for alternate arrangements should be made to the instructor in all cases. The deadline for changing a grade of ILL is February 1 for "A" classes and June 1 for "R", "C" and "B" classes. Requests to change grades after these deadlines must be submitted in writing to the appeals committee of the appropriate school or faculty.

24. Academic Standing

24.1 Grade Point Average (GPA) - New in 1991

The Grade Point Average is the weighted sum of the grade points earned, divided by the number of classes in which grade points were earned, in accordance with the grade scale in 24.1.1. Classes with fewer than six credit hours earn proportional grade points (e.g. in a half-credit class, a C would yield one point).

24.1.1 Scale

Grade	Grade Points
A+	4.3
A	4.0
A-	3.7
B+	3.3
B	3.0
B-	2.7
C+	2.3
C	2.0
C-	1.7
D	1.0
F	0.0
INC (Incomplete)	0.0
W (Withdrew after deadline)	0.0
ILL (Compassionate reasons/illness)	Neutral
P (Pass for credit classes)	Neutral
T (Transfer credit on admission)	Neutral

24.1.2 Grade Points on Admission

Transfer credits on admission count as credits without grade points, i.e. they are neutral in the calculation of the GPA.

24.1.3 Grade Points on Letter of Permission

The grade earned in a class taken at another institution on a letter of permission is recorded and the appropriate Dalhousie grade points are assigned. For institutions which do not use letter grades, the Registrar's Office translates the grade into a Dalhousie grade and assigns the corresponding grade points.

24.1.4 Repeating Classes for which a Passing Grade has been Awarded

With the permission of the Department concerned, a student may repeat any class for which a passing grade has previously been awarded. The original passing grade will nevertheless remain on the transcript and a second entry will be recorded with the new grade and the notation "repeated class." No additional credit will be given for such a repeated class, but both grades will be included in the calculation of the sessional and cumulative GPA.

24.2 Merit Points - Prior Regulations

24.2.1 Scale

Merit points are awarded for each class as follows:

Grade	Merit Points
A+, A, A-	3
B+, B, B-	2
C+, C, C-	1
D	0

For merit points for transfer credits, see 24.2.2 below.

Note that although D is a passing grade, no merit points are awarded. For fractional credit classes, corresponding fractional merit points are awarded (e.g. in a half-credit class, a B would yield one point).

25. Probation - New in 1991

25.1 Students with a cumulative GPA of less than 1.7 and greater than or equal to 1.0 who have completed at least four full classes will be placed on academic probation.

25.2 Students on probation are

allowed to continue to register on probation provided that their sessional GPA is at least 1.7. Students on probation who do not achieve a sessional GPA of 1.7 will be academically dismissed.

25.3 Students who are returning from a 12-month period of academic dismissal are allowed to register on probation. They are allowed to continue to register on probation provided that their sessional GPA is at least 1.7. Students who do not achieve a sessional GPA of at least 1.7 will be dismissed academically for the second time.

25.4 Students require a cumulative GPA of 1.7 to graduate. Therefore, no one will be allowed to graduate while on probation.

26. Required Withdrawal

26.1 Academic Dismissal - New in 1991

26.1.1 Students with a cumulative GPA of less than 1.0 who have completed at least four full classes will be academically dismissed.

26.1.2 Students on probation who do not achieve a sessional GPA of 1.0 or greater will be academically dismissed.

26.1.3 Students who have been academically dismissed for the first time are allowed to register on probation after a 12-month period without having to reapply.

26.1.4 Students who have been academically dismissed for the second time will not be allowed to re-apply for at least three calendar years.

26.2 Required Withdrawal - Prior Regulations

26.2.1 Any student who has accumulated more non-passing grades than the number of merit points earned (see regulation 24.2) is required to withdraw from the Faculty or School. Merit points granted for transfer credits awarded at the time of admission to Dalhousie will not be used in this accumulation. This regulation applies once students have enrolled for four full credits after admission or readmission.

26.2.2 Students who have been required to withdraw from the College of Arts and Science may apply to the Admissions Committee of the applicable Faculty or School to be considered for readmission.

26.2.3 A student who has been required to withdraw from the College of Arts and Science for the first time will be ineligible for readmission for a period of one academic year.

26.2.4 A student who has been required to withdraw twice will be ineligible for readmission to the College as either a full-time or a part-time student. Ordinarily an appeal is allowed only if illness has seriously interrupted the student's studies and this is established by submission of a medical certificate from the physician attending the student at the time of the illness.

27. Required Standing

27.1 Required Standing - New in 1991

27.1.1 For a BA or BSc with Honours and First Class Honours

Students in the Faculty of Arts and Social Sciences who have obtained a grade of B- or better in five advanced classes, that is, classes other than electives, will be admitted to the fourth year Honours, Concentrated, Combined or Unconcentrated Honours programme.

Students in the Faculty of Science who have obtained a grade of B or better in five advanced classes, that is, classes other than electives, will be admitted to the fourth year Honours, Concentrated, Combined or Unconcentrated Honours programme. In Special Honours programs, such as Biochemistry and Microbiology, see

departmental entry.

To count towards an Honours degree each advanced class, (i.e., each class of the second, third, and fourth years, except electives) must be passed with a grade of at least C. Should a D or a C⁻ be received, it must be made good by repeating the class and achieving a C or better grade or by taking an additional advanced class (preferably in the same subject). Otherwise the student must transfer out of the Honours programme. To continue in an Honours programme and to graduate, students registered in the Faculty of Arts and Social Sciences must achieve a cumulative GPA of 2.7 or better in their advanced classes. Students registered in the Faculty of Science must achieve a cumulative GPA of 3.0 or better in their advanced classes. For first class Honours, students in both Faculties must achieve a cumulative GPA of 3.7 or better in their advanced classes.

The Honours Qualifying Examination as prescribed by the department(s) concerned must be passed. This is the additional grade referred to in regulation 11. Unless Pass-Fail grading is employed, the grade must be B⁻ or better and for first class Honours, A⁻ or better.

27.1.2 For a BA or BSc with Distinction

A cumulative GPA of at least 3.7 is required for a BA or BSc with Distinction. For the purpose of determining whether a student will receive a BA or BSc with Distinction, all classes taken while at Dalhousie, including repeated classes, and classes for which non-passing grades were obtained, are included. At least half of the classes must be completed at Dalhousie.

27.1.3 For a BA or BSc Degree

A minimum cumulative GPA of 1.7 is required for the awarding of a BA or BSc degree.

27.2 Required Standing - Prior Regulations

27.2.1 For a BA or BSc with Honours and First Class Honours

Students who have obtained a grade of B - or better in five advanced classes, that is, classes other than electives, will be admitted to the fourth Honours year.

To count towards an Honours degree each advanced class, (i.e., each class of the second, third, and fourth years, except electives) must be passed with a grade of at least C. Should a D or a C - be received, it must be made good by repeating the class and achieving a C or better grade or by taking an additional advanced class (preferably in the same subject). Otherwise the student must transfer out of the Honours programme.

In five of the advanced classes in a student's Honours programme, a grade of B or better must be achieved, and in three additional advanced classes, a grade of B - or better is required. For first class Honours, students must achieve either:

(a) grades of A or better in four advanced classes and of A - or better in four additional advanced classes, or

(b) grades of A or better in six advanced classes and of B or better in all advanced classes.

The Honours Qualifying Examination as prescribed by the department(s) concerned must be passed. This is the additional grade referred to in regulation 11. Unless Pass-Fail grading is employed, the grade must be

B - or better and for first class Honours, A - or better.

27.2.2 For a BA or BSc Degree

A minimum of twelve merit points on the fifteen credits offered is required for the awarding of a BA or BSc (Major). A minimum of sixteen merit points on the twenty credits offered is required for the awarding of a BA or BSc (Advanced Major).

27.2.3 For a BA or BSc with Distinction

At least 40 merit points are required for a BA or BSc (Major), with Distinction. This number is prorated upward if more than fifteen credits appear on the student's record. Thus, at least 53.5 merit points are required for a BA or BSc (Advanced Major), with Distinction. Again, the number is prorated upward if more than twenty credits appear on the student's record. For the purpose of determining a BA or BSc with distinction, all Dalhousie classes, including repeated classes, and classes for which non-passing grades were obtained, are included. At least 10 Dalhousie classes must be included for the BA or BSc (Major) with Distinction; at least 15 Dalhousie classes must be included for the BA or BSc (Advanced Major) with Distinction. The Committee on Studies of the appropriate Faculty or School will monitor the records of graduating students having transfer credits and will bring to the College appropriate recommendations for a degree with distinction in any case where the regulations regarding transfer credits appear to create injustice.

28. Graduation

In order to graduate students must submit a Request to Graduate to the Office of the Registrar by the deadlines indicated below:

Graduation Month	Application Deadline
February	December 1
May	February 15
October	August 15

In cases where requests can be accommodated after the deadline, a $50 fee will be charged.

29. Change from BA to BSc Programme and Vice Versa

All students who have completed all the requirements for a BSc degree have automatically completed all the requirements for a BA degree, provided they have included a language class. Similarly most students who have completed all requirements for a BA degree in a science subject will have automatically completed all requirements for a BSc degree, provided they have completed the mathematics requirement. However, students who are registered for a BSc degree and wish to be awarded a BA degree or vice versa must do so by changing their registration at the Office of the Registrar.

30. Deans' and Director's Lists

Students who have completed first, second, third or fourth year (where year is defined as the number of classes or credit hours deemed by the Faculty or School to be the normal yearly workload in the student's degree programme) and have achieved a sessional GPA of:

3.7 in the Faculty of Science; or
3.3 in the Faculty of Arts and Social Sciences; or
3.7 in the School of Education;

in the last five classes or equivalent credit hours will be placed on the Dean's or Director's List of the Faculty or School. The notation "Dean's List" or "Director's List" will appear on the student's transcript Normally, fewer than fifteen percent of students are on the Deans' and Director's Lists.

31. Appeals

Any students who believe they will suffer undue hardship from the application of any of the regulations of the College may appeal for relief to the academic appeals committee of the applicable Facult or School. Students wishing to appeal a decision based on College regulations may obtain copies of the document "How to appeal a College of Arts and Science regulation". Such appeals must be addresse in writing to the Chair of the appropriate appeals committee, c/o Office of the Registrar and must clearly state the arguments and expectations of the petitioners. An appeal from a student registered prior to 1991, arising from a

required withdrawal from the faculty for academic reasons should be addressed to the Admissions Committee of the appropriate Faculty or School.

Students who wish to appeal on matters other than those dealt with by College or Faculty regulations can obtain copies of the document "A Procedure for special Academic appeals in the College of Arts and Science".

Both documents can be obtained from the Office of the Registrar or any departmental office.

32. Changes in Regulations

In general, any change which affects a currently registered student adversely will not apply to that student. Any student suffering undue hardship from application of any of the regulations may appeal for relief to the appropriate academic appeals committee as in Section 31 above.

Faculty of Arts and Social Sciences

Introduction

The Faculty of Arts and Social Sciences was established on July 1, 1988. It consists of the Arts and Social Science Departments in the old joint Faculty of Arts and Science. In these broad categories are units that study and teach in the humanities, languages, social sciences, and the performing arts. In addition there are interdisciplinary programmes of study leading to the BA degree. The Faculty of Arts and Social Sciences (FASS), together with the Faculty of Science and the School of Education, form the College of Arts and Science.

The central role of the Faculty of Arts and Social Sciences is the education of those wishing to comprehend the heritage of the past, recognize the complexities of the present, and use that understanding to plan for the future. The undergraduate programmes of the Faculty stimulate and refine the processes of critical analysis, disciplined speculation, and artistic expression. To understand more fully the conventions, history, and traditions of one's society is to understand more about oneself. Study and teaching in the Faculty of Arts and Social Sciences frequently involves questioning and analysing why things are as they are, as well as understanding what they are. Some Departments in FASS teach and evaluate performance. The values associated with study and research in the Faculty of Arts and Social Sciences have long been recognized as central to a liberal education.

Officers of the Faculty

Location:	3rd Floor Arts & Administration Building
Telephone:	(902) 494-1440
FAX:	(902) 494-1957

Dean

R.J. Smith, BA (Natal), MA (Oxon), PhD (Natal), McCulloch Professor in English
Telephone: (902) 494-1439

Associate Dean

M.E. Binkley, BA, MA, PhD (Tor.), Associate Professor of Sociology and Social Anthropology
Telephone: (902) 494-1254

Assistant Dean (Students)

R.D. Byham, BM, MM (Ill.Wesleyan), Associate Professor of Music
Telephone: (902) 494-1440

Secretary

H.E. Morgan, BA (UBC), MA (Wash.), BLitt (Oxon), PhD (Wash.), Assistant Professor of English
Telephone: (902) 494-3384

Administrator

D.G. Miller, BCom (Acadia)
Telephone: (902) 494-1441

Departments and Programmes of the Faculty of Arts and Social Sciences

Canadian Studies
Classics
Comparative Religion
English
French
German
History
International Development Studies
Music
Philosophy
Political Science
Russian
Sociology and Social Anthropology
Spanish
Theatre
Women's Studies

Degree, Certificate and Diploma Requirements

See section 11 of the College of Arts and Science entry for information on the requirements for degrees, certificates and diplomas in the Faculty of Arts and Social Sciences.

African Studies

Location: Pearson Institute
Halifax, N.S.
Telephone: (902) 494-2142

Advisor: John Flint 494-2011

Dalhousie University offers a set of classes in different disciplines which focus on Africa. Its Centre for African Studies, established in 1975, coordinates teaching, seminar, research, community and publications programmes in African Studies. Its faculty associates hold appointments in the social sciences, humanities and professional schools. Undergraduate classes on Africa are usually available in Economics, History, International Development Studies and Political Science. Other classes with a broader Third World focus, which usually includes African content, are offered in Comparative Religion, English, Education, Health Law, and Sociology and Social Anthropology.

Students interested in Africa are encouraged to select classes from these several disciplines which concentrate on the continent. These could be included in single or combined major or honours programmes in Economics, History, International Development Studies and/or Political Science.

Ancient History

See under Classics.

Anthropology

See under Sociology and Social Anthropology.

Architecture

ARCH 1000R Introduction to Architecture: An introductory class showing architecture as a bridge between the Arts and Science providing an insight into professional architectural studies. In the first term discussion centres around some components of architectural design; in the second term, architecture in present day life. Available as an elective in the general degree programmes in Arts and Social Sciences and Science. This class is cid as TUNS.

Instructor: Staff
Format: Lecture/seminar 1 hour, practical 2 hours
Enrolment: Limited

Canadian Studies Programme

Location: Multidisciplinary House
1444 Seymour Street
Halifax, N.S.

Telephone: (902) 494-3814

Coordinator:

J.A. Wainwright - (494-3814/3384)

Faculty

R. Apostle (Sociology and Social Anthropology)
B. Bednarski (French)
M. Bradfield (Economics)
D. Cameron (Political Science)
D. Clairmont (Sociology and Social Anthropology)
M. Cross (History)
J. Elliott (Sociology and Social Anthropology)
R. Finbow (Political Science)
B. Lesser (Economics)
P. Monk (English)
I. Oore (French)
H. Runte (French)
J. Smith (Political Science)
G. Taylor (History)
A. Wainwright (English)

Aim

The purpose of the programme is to allow students to concentrate part of their work on Canadian Studies both within their major field and outside of it. For example, a student who is planning to major in a subject will take a number of classes in that subject that are designated as Canadian. The student will in addition take a number of classes that are designated as Canadian outside his or her major field.

In other words, the Canadian Studies Programme does not at present attempt to establish a new major field. It seeks to use any one of a number of departments in the Faculty of Arts and Social Sciences as a base around which a student may effectively cluster a number of classes in Canadian subjects. It is hoped that in the future an interdisciplinary seminar in Canadian Studies will be available; students in such a seminar will consider significant issues in Canadian history, politics, society, and literature and their interrelated contribution to this country's past, present, and future.

Classes

Before enroling in any of the classes listed below, students should consult with the Coordinator of Canadian Studies in the Multidisciplinary House.

In addition to the disciplines and classes listed below, there are individual Canadian content classes available from the Departments of

Comparative Religion and Music, and from the School of Education. Please consult with the appropriate Chairs.

Students who are interested in a Canadian Studies programme should plan in their first year to take an introductory class in the following subjects: English, French, History (preferably HIST 1200R if available), and in either Political Science or Sociology and Social Anthropology. (Prospective Economics majors may substitute an introductory class here).

With attention to prerequisite classes, in the second, third, and possibly fourth years of study, students, either as part of, or in addition to, fulfilling their major discipline requirements, should take:

One or more classes in English from the list below;

One or more classes in French from the list below, including FREN 2021A/FREN 2022B (Études pratiques/Practice in Language Skills -please consult the Department for appropriate section);

One or more classes in History from the list below;

One or more classes in either Political Science or Sociology and Social Anthropology from the lists below (again, an Economics major may substitute an upper-level class here).

NOTE: Classes marked * are not offered every year. Please consult the current timetable on registration to determine if these classes are offered.

ENGLISH CLASSES CROSS-LISTED WITH CANADIAN STUDIES

*ENGL 2207R Canadian Literature
*ENGL 4357R Honours Seminar in Canadian Literature

FRENCH CLASSES CROSS-LISTED WITH CANADIAN STUDIES

FREN 2021A/FREN 2022B Études pratiques/Practice in Language Skills
FREN 2203A/B Approaches du texte littéraire/Approaches to Literary Texts
*FREN 3025A/B Les Parlers acadiens: Introduction linguistique/Linguistic Introduction to Acadian Dialectology
*FREN 3900A/FREN 3901B La Littérature canadienne-française/French Canadian Literature
*FREN 3910A/B Études acadiennes/Acadian Studies
*FREN 4902A Écrivains Québecois Contemporains/Contemporary Quebec Writers
*FREN 4904A/B Écrivaines Québécoises/Quebec Women Writers

HISTORY CLASSES CROSS-LISTED WITH CANADIAN STUDIES

HIST 1200R History of Canada
*HIST 2202B Canada's Industrial Revolution, 1850-1950
HIST 2211A Social History of Canada Before 1870
HIST 2212B Social History of Canada Since 1870
HIST 2221A Rough Justice: Canadian Popular Culture to the 1890's
HIST 2222B Rough Justice: Canadian Popular Culture, 1890's to Present
HIST 2230R Canada in the 20th Century
HIST 2270R The Atlantic Provinces
*HIST 2334A/B The United States, Canada, and the World
*HIST 3220A/B Youth Culture in Canada, 1950's to 1970's
*HIST 3225A/B Crime, Punishment and the Criminal Law in Canadian Society
*HIST 3230A Labour and Community in 19th Century Canada
*HIST 3231B The Canadian Working Class: The 20th Century Experience
*HIST 3245A French Canada
*HIST 3250A Canada Within the Empire
*HIST 3255B The Age of MacDonald and Laurier
*HIST 3260B West by North: History of the Canadian West and North
*HIST 3272A/B Themes in the History of Atlantic Canada
HIST 3273A Nova Scotia: Pre-Confederation
HIST 3274B Nova Scotia: Post-Confederation
*HIST 3286A/B The Urban Experience in Canada
*HIST 3292A/B Wealth and Power in North America
*HIST 3302A/B Technology and History in North America
*HIST 3610A/B Women in Capitalist Society: The North American Experience Cross-listed in Women's Studies as *WOST 3305A/B.
*HIST 3750A/B History of Seafaring

Please note: 3000-level classes have prerequisites which apply to Canadian Studies students as well as History majors.

POLITICAL SCIENCE CLASSES CROSS-LISTED WITH CANADIAN STUDIES

POL 2200R Canadian Government and Politics
*POL 2228B Government and Business Relations
*POL 3205A Canadian Political Thought
POL 3216A Local and Regional Government
POL 3220A Intergovernmental Relationships in Canada
*POL 3224A Canadian Political Parties
*POL 3228B Interest Groups: Function and Management
*POL 3235B Regional Political Economy in Canada
*POL 3245A The Judicial System and Canadian Government
*POL 3250B Canadian Public Administration
POL 4204R Advanced Seminar in Canadian Government

POL 4240A Policy Formulation in Canada
POL 4241B Introduction to Policy Analysis

SOCIOLOGY AND SOCIAL ANTHROPOLOGY CLASSES CROSS-LISTED WITH CANADIAN STUDIES
*SSA 2110R Canadian Society

Please note that this class is not offered every year. However, there are numerous Canadian content classes in the Department. Students should consult with the Chair and then with the Coordinator of Canadian Studies.

ECONOMICS CLASSES CROSS-LISTED WITH CANADIAN STUDIES
ECON 2232R Canadian Economic History
ECON 3316B Collective Bargaining and Labour Market Policy
*ECON 3317B Poverty and Inequality
ECON 3324R Public Finance
*ECON 3326A Money and Banking
ECON 3332A/B Resource Economics
*ECON 3336B Regional Development
*ECON 3432R Regional Economics
*ECON 4000R Seminar on Economic Policy (not usually offered)
*ECON 4426B Monetary Policy
*ECON 4433B Intergovernmental Fiscal Relations

Other Economics classes that deal with Canadian issues are available. Students should consult with the Chair and with the Coordinator of Canadian Studies.

Classics

Location: 1244 LeMarchant Street
Halifax, N.S.
Telephone: (902) 494-3468

Chair
R. Friedrich (494-3468)

Undergraduate Advisor
C.J. Starnes (494-3468)

Professors Emeritus
A.H. Armstrong, MA (Cantab.), FBA
A. Doull, BA (Dal), MA (Tor.)

Professors
P. Atherton, MA (Oxon.), PhD (Liverpool)
D. Crouse, BA (Vind.), STB (Harv.), MTh (Trin.), PhD (Harv.) DD (Trin.)
R. Friedrich, Dr.phil. (Goettingen)

Associate Professors
W.J. Hankey, BA (Vind.), MA (Tor.), DPhil (Oxon.)
D.K. House, MA (Dal), PhD (Liverpool)
P.F. Kussmaul, Dr.phil (Basle), Dr.phil.habil. (Heidelberg)
C.J. Starnes, BA (Bishop's), STB (Harv.), MA (McG), PhD (Dal)

Adjunct Professors
P.J. Calkin, BA (UBC), MA, PhD (Dal)
A.M. Johnston, BA (MtA), MA, PhD (Dal)
T.E.W. Segelberg, DTh, FK (Upsala)

Classics is the study of our origins - how the Christian-European tradition to which we belong arose out of the ancient civilizations of the Mediterranean area. The fundamental ideas and beliefs of Europeans and North Americans, by which we are distinguished from Chinese, Indians, and those of other traditions, were formed in the meeting of Greek and Oriental cultures in ancient times. To understand fully our own contemporary culture, we must study its historical origins.

Such an understanding of the unique aspects of Western culture is most important in the contemporary world where all cultures have come into relation with one another.

Classics is the study of the intellectual forces that have shaped our civilization, and to understand fully the assumptions and ideas of that civilization we have to go back to their original formulation. Our literary forms, the shape of our political and social institutions, such disciplines as Philosophy, History, and many of the Natural Sciences all originated and took shape in the ancient cultures of Greece and Rome.

Classics is thus more than the study of ancient languages. Languages are not learned for themselves, but because they are necessary for the scientific study of ancient history, literature, religion, mythology and philosophy. The Classics Department at Dalhousie provides instruction both in these subjects and in ancient languages. While previous preparation in one or more ancient languages is desirable, it is nevertheless quite feasible for a student who discovers an interest in classics to begin his language studies at university.

Students of classics must learn Greek and Latin if they wish to take an honours degree or to go on to graduate studies in the field, but the Department offers a variety of classes in Greek and Roman Literature, Ancient and Medieval Philosophy, Ancient and Christian Religion, and general Classical Culture, which do not require a foreign language.

Classics is worth studying for its own sake by students who wish to obtain a better understanding of the common assumptions and beliefs of our society. This knowledge has always been regarded as pertinent to a career in politics and the higher levels of the civil service. For those who are thinking of the clergy, Classics is the most relevant preparation. Classical studies also prepare students for a life of teaching and

scholarship in several directions. Canada is responsible for its own culture, and we have great need of scholars and teachers who know about our origins. Classics is also the best preparation for the study of non-European cultures (Chinese, Indian, Islamic, etc.), and there is a growing need for specialists in these fields. For the older history of philosophy, and for the history of Christian belief until, and including, the Reformation, a knowledge of Classics is indispensable. The same may be said for Medieval Studies. Classics leads also to ancient Near Eastern Studies (Jewish, Babylonian, Egyptian, etc.) and to Archeology.

Degree Programmes

Honours Programmes

The candidate may choose between three programmes: BA with Honours in Classics (Ancient Literature), BA with Honours in Classics (Ancient History), or BA with Honours in Classics (Ancient Philosophy). In each case, it is highly desirable, but not essential, that the student begin the study of at least one of the classical languages during the first year of study. For purposes of meeting grouping requirements, Ancient History, and Ancient and Medieval Philosophy classes may be counted either as Classics credits, or as History and Philosophy credits, respectively.

To receive an Honours degree in Classics:

- Students must complete nine to eleven classes in Classics beyond the 1000 level chosen in accord with the general Faculty regulations for Honours.
- The programme must include work in either Greek or Latin Language and Literature to the 3000 level and work in the other language to an appropriate level as determined by the Undergraduate Advisor.
- The programme must be approved by the Undergraduate Advisor.
- Students must take the Honours Seminar and pass the Honours examination.

Whether the Honours degree is awarded in Ancient Literature, History or Philosophy depends on the area of the Department's offerings in which a larger part of the work is done.

Candidates for Honours and Combined Honours degrees who anticipate continuing their studies at the Graduate level in Classics should consult the calendars of the Graduate Schools of their choice concerning requirements for entry into Graduate programmes. It may be the case that additional preparation in the classical languages or in other aspects of ancient civilizations is required for entry into certain programmes.

Combined Honours

Classics may be taken as part of a combined honours programme with other disciplines. Students interested in such programmes should consult with the chairs of the respective departments.

20 Credit Advanced Major

The department offers an advanced major. For further information refer to specific regulations for this program on page 78. The Department normally requires students to take at least two language classes (in Greek and/or Latin).

BA and BSc

Of classes offered by the department, CLAS 1000R, CLAS 1010R, CLAS 1020R, CLAS 1030R and CLAS 1100R and those classes in Ancient History and Religions, and Ancient and Medieval Philosophy not having a Language prerequisite should be especially useful to students taking a bachelor's degree. All classes beyond the 1000 level are available for major and minor programs in Classics. The Department is glad to assist students in working out programmes according to their interests.

Note: The following classes satisfy the first-year writing requirements for a degree: CLAS 1000R; CLAS 1010R; CLAS 1100R.

The programmes of all students majoring or honouring in the Department must be approved by the Undergraduate Advisor.

Classes Offered

Note: Classes marked * are not offered every year. It is advisable to inquire at the Classics Department (494-3468) to determine if these classes are offered.

Note: The Introductory classes, and the more elementary classes in Ancient History and Religions, and Classical Philosophy listed below do not require knowledge of the ancient languages. However, students who plan to do advanced work in any of these areas are advised to begin study of the appropriate languages as early as possible.

CLAS 1000R Classical Literature: An introduction to classical civilization by way of the literature, read in English translations. Authors studied are Homer, the Greek Dramatists, Plato, Vergil and St. Augustine. This class meets the first year writing requirement.

Instructors:	W. Hankey/R. Friedrich/R. D. Crouse/C. J. Starnes and others.
Format:	Lecture 2 hours
Enrolment:	Limit 100 including Classics 2000R

CLAS 1010R Ancient History: An Introduction to the Cultural History of the Ancient World: The first term is devoted to a study of the major pre-classical civilizations (Sumer, Egypt, etc.) with attention paid to the art, religion and social forms of these cultures as well as their political development. In the second term the civilizations of Greece, Rome, and Israel are studied, and their issue in the Early Christian world considered. As the class is intended as an introductory one, no special preparation is expected. There is no foreign language requirement. This class fulfills the first year writing requirement.

Instructor: D. K. House
Format: Lecture 2 hours
Enrolment: Limited

CLAS 1021A Ancient Art: Greece and the Ancient Near East: Aided by slides and films, in addition to lectures and readings, this class will study the origin and development of ancient art in Greece, Mesopotamia and Egypt to the end of the Hellenistic period.

Instructor: G. Thomas (this is given at St. Mary's University)
Format: Lecture 3 hours
Enrolment: Limit 50

CLAS 1022B Ancient Art: Rome and Christian Europe: Aided by slides and films, in addition to lectures and readings, this class will study the art of Ancient Rome after the Hellenistic period and of the Christian world to the end of the 14th century.

Instructor: W. J. Hankey
Format: Lecture 3 hours
Enrolment: Limit 50

CLAS 1100R Classical Mythology: Why has the mythology of the world of classical Greece and Rome been so central a part of the artistic, intellectual and religious culture of the Western world? This course explains the origin, meaning and importance of classical mythology. During the first term, work begins with a survey of pre-classical mythology: this is explored through myths of the origin and creation of the natural world; here the early cultures of the Sumerians, the Egyptians and the Jews are studied. After a historical lecture on the origins of Indo-European mythology, attention turns to the world of Mycenean and Early Classical Greece; the works of Hesiod, and the myths of Prometheus are particularly closely considered in this section. In the New Year the understanding of the human world (community & family) through myth is the principal pre-occupation; here the Iliad of Homer, the Aeneid of Virgil (for the Romans) and the Oedipus plays of Sophocles are the texts through which the mythological consciousness is analysed. The course concludes with a consideration of why the Greeks broke away from the world of myth and began to understand nature and human culture through science and philosophy. This class fulfills the first year writing requirement.

Instructor: J. P. Atherton
Format: Lecture 2 hours
Enrolment: Limit 200 including Classics 2100R

CLAS 1700R Introductory Greek: An introduction to Classical Greek. Greek is a highly inflected language and as such presents English-speaking students with a number of challenges not found in most modern languages. This class introduces the student in a systematic way to the most common and important elements of Classical Greek grammar. The aim of the class is to bring the student by the end of the year to read connected passages from Xenophon and other Greek prose writers.

Instructor: Staff
Format: Lecture 3 hours
Enrolment: Limit 50

CLAS 1800R Introductory Latin: An introduction to Latin through the study of its basic grammar. The aim of the class is to enable students to read Latin texts with the assistance of nothing more than a Dictionary.

Instructor: C. J. Starnes
Format: Lecture 3 hours
Enrolment: Limit 75

CLAS 2000R Classical Literature: An introduction to classical civilization by way of the literature, read in English translations. Authors studied are Homer, the Greek Dramatists, Plato, Vergil and St. Augustine. This class is the same as Class 1000R and may therefore not be taken by anyone who has taken that class.

Instructors: W. Hankey/R. Friedrich/R. D. Crouse/C. J. Starnes and others.
Format: Lecture 3 hours
Enrolment: Limit 100 including Classics 1000R

CLAS 2100R Classical Mythology: Why has the mythology of the world of classical Greece and Rome been so central a part of the artistic, intellectual and religious culture of the Western world? This course explains the origin, meaning and importance of classical mythology. During the first term, work begins with a survey of pre-classical mythology: this is explored through myths of the origin and creation of the natural world; here the early cultures of the Sumerians, the Egyptians and the Jews are studied. After a historical lecture on the origins of Indo-European mythology, attention turns to the world of Mycenean and Early Classical Greece; the works of Hesiod, and the myths of Prometheus are particularly closely considered in this section. In the New Year the understanding of the human world (community & family) through myth is the principal pre-occupation; here the Iliad of Homer,

the Aeneid of Virgil (for the Romans) and the Oedipus plays of Sophocles are the texts through which the mythological consciousness is analysed. The course concludes with a consideration of why the Greeks broke away from the world of myth and began to understand nature and human culture through science and philosophy.

Instructor: J. P. Atherton
Format: Lecture 2 hours
Enrolment: Limit 200 including Classics 1100R

***CLAS 2200R Ancient History: The Ancient City:** An introduction to Ancient History through a study of the constitutions of the Greek city states (especially Athens) and of Rome. Basic texts, such as Aristotle's Athenian Constitution, are read in English translation. This class is open to first-year students. There is no foreign language requirement. This class is given alternately with Clas 2210R.

Instructor: P. F. Kussmaul
Format: Lecture 2 hours
Enrolment: Limit 50

***CLAS 2210R Roman History:** The Roman Empire and the Rise of Christianity: A continuation of the introduction to Ancient History through a study of the institutions and constitutional arrangements of the Roman Empire from the time of Augustus. The relation of the Empire to Christianity is a topic of primary interest. This class is given alternately with Clas 2200R and, like it, is open to first-year students. There is no foreign language requirement.

Instructor: P. F. Kussmaul
Format: Lecture 2 hours
Enrolment: Limit 50

CLAS 2361A/CLAS 2362B Ancient Philosophy from its Beginning to the Sixth Century AD: Proper attention is paid to the great classical philosophies of Plato and Aristotle studied in their historical context. Much emphasis is laid on the Greek philosophy of the first centuries AD and its influence on developing Christian thought. The first half considers the history from the Pre-Socratics to Plato. The second half moves from Aristotle to Plotinus.

Instructors: J. P. Atherton/W. J. Hankey
Format: Lecture 2 hours
Cross-listed: PHIL 2361A/2362B
Enrolment: Limit 50
Exclusion: CLAS 3361A/3362B

***CLAS 2501A Introduction to Classical Rhetoric:** In recent years rhetoric has attained great importance and significance for literary criticism and theory as well as for philosophy. The system of rhetoric and its terminology were developed and completed by the Greeks and Romans; therfore, Classical Rhetoric forms the basis of all modern approaches to rhetorical practice and theory. This class is intended to introduce the student to the system and to the central terms of rhetoric, as they have been developed and shaped in the relevant texts of Greek and Roman authors. All texts will be studied in English translation.

Instructor: R. Friedrich
Format: Seminar/Lecture 3 hours
Cross-listed: COMPARATIVE LITERATURE 2501A
Enrolment: Limit 25

CLAS 2700R Intermediate Greek: A continuation of CLAS 1700R and the normal second year class in Greek. The work of the class is divided equally between formal grammar sessions and the reading of Greek texts from Xenophon, Lysias and Plato. In the grammar sessions a complete and systematic review of all Greek grammar is undertaken during which the student meets the more difficult forms and constructions which are omitted in CLAS 1700R. The aim of the class is to prepare the student to read the philosophical and dramatic texts of the 5th century BC.

Instructor: Staff
Format: Seminar 3 hours
Prerequisite: CLAS 1700R or 2710R
Enrolment: Limit 25

CLAS 2710R Greek Prose: A study of Greek grammar through the reading of Greek prose authors (Xenophon, Lysias). Prerequisite: any 1000 level Classics class or equivalent.

Instructor: Staff
Format: Seminar 3 hours
Prerequisite: Any 1000 level Classics class or equivalent
Enrolment: Limit 50

CLAS 2800R A Study of Latin Prose and Poetry: CLAS 2800R is a continuation of CLAS 1800R or CLAS 2810R. A study of the poetry and prose literature of Rome through a selection of texts. Particular attention is paid to improving the students' command of the grammar and syntax of the Latin language.

Instructor: P. F. Kussmaul
Format: Seminar 2 hours
Prerequisite: CLAS 1800R or 2810R
Enrolment: Limit 25

CLAS 2810R Latin Prose: A study of Latin accidence and syntax through the reading of Roman prose authors (Caesar, Cicero).

Instructor: C. Starnes/P. Kussmaul
Format: Seminar 3 hours
Prerequisite: Any 1000 level Classics class or equivalent
Enrolment: Limit 75

***CLAS 2860R Latin Historical Texts:**
Instructors: J. P. Atherton/P. F. Kussmaul
Format: Seminar 2 hours
Prerequisite: 1800R or 2810R
Enrolment: Limit 25

***CLAS 3290R Christian Beginnings and the Early History of the Church:** Format: Seminar 2 hours
Enrolment: Limited

***CLAS 3300R Pagan and Christian Schools from Clement of Rome to Augustine:** The class considers the mutual effect of pagan and Christian intellectual, spiritual and institutional forms on one another in the first four centuries of the Common Era. In particular it treats the way in which the pagan schools and the Christian church mirror one another: the common elements and their opposed systematic relations. Students will ordinarily have some background in Ancient History and Philosophy.
Instructor: W. J. Hankey
Format: Lecture 2 hours
Enrolment: Limited

***CLAS 3370R The Augustinian Tradition:** The class considers the effect of Augustine on the philosophical and theological thought of late Antiquity and the Middle Ages. The relation to the Proclean Neoplatonism transmitted through Pseudo-Dionysius is a special concern. Texts from Dionysius, Eriugena, Anselm, Bonaventure, Aquinas and Cusanus are analysed. Students will ordinarily have begun either Greek or Latin though others may be admitted by permission.
Instructor: W. J. Hankey
Format: Lecture 2 hours
Enrolment: Limited

CLAS 3380R Medieval Philosophy: A study of the development of philosophy in the formative age of European civilization related to political, institutional, literary and theological concerns. An attempt is made to show how the legacy of classical and Christian antiquity was appropriated and reformed to constitute the ideology of medieval Christendom. The lectures are devoted mainly to the study and discussion of a few fundamental texts, beginning with Boethius' Consolation of Philosophy. Special attention is given to Anselm's Proslogion and the first few questions of Thomas Aquinas' Summa. It is the object of lectures to present the continuity of the historical development and to emphasize broad implications of the philosophical doctrines presented in the texts. In the later part attention is given to late medieval Platonism and Mysticism, to show something of the Reformation and modern philosophical and religious thought.
Instructor: R. D. Crouse
Format: Lecture 2 hours
Cross-listed: PHIL 3380R
Enrolment: Limit 50

***CLAS 3400R The Dialogues of Plato:** This seminar involves the detailed study of a group of dialogues. The choice of dialogues varies from year to year.
Instructor: D. K. House
Format: Seminar 3 hours
Enrolment: Limit 25

***CLAS 3410R St. Augustine's Confessions:** A study of the three parts of Augustine's Confessions with a view to understanding his dissatisfaction with the various positions he adopted prior to his conversion to Christianity (Part 1), the practical consequences of this conversion (Part II), and the new theoretical understanding of time, space and motion which come out of his Trinitarian exegesis of the first chapters of Genesis (Part III). This class presupposes some knowledge of the history of Ancient Philosophy, and some of Latin. This class is given alternately with CLAS 3420R.
Instructor: C. J. Starnes
Format: Seminar 2 hours
Enrolment: Limit 35

***CLAS 3420R St. Augustine's City of God:** A study of Augustine's account of the failure of the Roman Empire and of the new Christian 'city' that replaced it. The class sometimes concentrates on the entire twenty-two books of the City of God and sometimes begins with a study of earlier accounts of Rome (Aeneid), and of the relations of Rome and the church in, for example, the Apostolic Fathers, the Acts of the Martyrs and Tertullian, before turning to the first ten books of the City of God. This class is given alternately with CLAS 3410.
Instructor: C. J. Starnes
Format: Seminar 2 hours
Enrolment: Limit 35

CLAS 3470R, Reading and Research: Ancient Literature

CLAS 3480R, Reading and Research: Ancient History

CLAS 3490R, Reading and Research: Ancient Philosophy

***CLAS 3500R Aristotle:** This seminar involves the detailed study of either Aristotle's Metaphysics or De Anima or Physics or ethical and political treatises. The choice of texts varies from year to year.
Instructor: D. K. House
Format: Lecture/Seminar 2 hours
Recommended background: CLAS 2361A/2362B
Enrolment: Limit 25

CLAS 3510R Ancient and Modern Drama I: Ancient and Modern Drama is a study of Western drama from its ritual beginnings in ancient Greece

to its 20th century forms. It is presented in two parts, each forming a full credit class. However, both parts (CLAS 3510R and 3511R) are designed in such a way that they can be taken independently from one another. Ancient and Modern Drama I deals with ancient drama and theatre: their beginnings in the Dionysian ritual; the Dionysian festivals; production and stage conventions. The aim of this class is a study of Greek and Roman plays, both tragedies and comedies, by Aeschylus, Sophocles, Euripides, Aristophanes, Menander, Plautus, Terence and Seneca. This study will be accompanied by readings from Aristotle's Poetics and Horace's Art of Poetry. All texts will be studied in English translation. This class is given alternately with CLAS 3511R.
Instructor: R. Friedrich
Format: Seminar 2 hours
Recommended: CLAS 2000R
Cross-listed: Comparative Literature 3510R
Enrolment: Limit 25

***CLAS 3511R Ancient and Modern Drama II:**
Format: Seminar 2 hours
Enrolment: Limit 25

CLAS 3700R Advanced Greek: This class which reads both a prose and a poetic work is the normal third class in Greek.
Instructors: D. K. House/R. Friedrich
Format: Seminar 2 hours
Prerequisite: CLAS 2700R
Enrolment: Limit 15

***CLAS 3710R Greek Epic:**
Instructor: R. Friedrich
Format: Seminar 2 hours
Prerequisite: CLAS 2700R
Enrolment: Limit 15

***CLAS 3720R Greek Lyric:**
Instructor: Staff
Format: Seminar 2 hours
Prerequisite: CLAS 2700R
Enrolment: Limit 15

***CLAS 3730R Greek Drama: Tragedy:**
Instructor: R. Friedrich
Format: Seminar 2 hours
Prerequisite: CLAS 2700R
Enrolment: Limit 15

***CLAS 3750R Greek Authors:** Format: Seminar 2 hours
Prerequisite: CLAS 2700R
Enrolment: Limit 15

CLAS 3760R Reading and Research of Greek Texts:
Format: Seminar 2 hours
Prerequisite: CLAS 2700R
Enrolment: Limit 15

***CLAS 3780R Greek Historians:**
Format: Seminar 2 hours
Prerequisite: CLAS 2700R
Enrolment: Limit 15

CLAS 3791A/B Reading and Research:
Format: Seminar 2 hours
Prerequisite: CLAS 2700R
Enrolment: Limited

***CLAS 3800R Roman Satire:**
Instructor: P. F. Kussmaul
Format: Seminar 2 hours
Enrolment: Limit 15

CLAS 3810R A Study of Vergil: A study of the development and importance of Vergil's basic themes and ideas embodied in the Aeneid. In the first part of the class special attention is given to his early work the Bucolics, where his themes begin to appear, and their development is then followed through the relevant parts of the Georgics. The main part of the class is devoted to the reading and discussion of the chief themes of the Aeneid, especially as they illustrate Roman political, religious and social ideas which have greatly influenced our own beliefs and institutions.
Instructors: J. P. Atherton/R. Friedrich
Format: Seminar 2 hours
Prerequisite: A class in Latin at the 2000 level
Enrolment: Limit 15

CLAS 3820R Advanced Reading in Latin Literature:
Format: Seminar 2 hours
Prerequisite: CLAS 2800R
Enrolment: Limited

***CLAS 3840R Latin Philosophical Texts:** The purpose is to give students experience in reading philosophical Latin. Various authors are read from Cicero to the late Middle Ages.
Instructor: R. D. Crouse
Format: Seminar 2 hours
Prerequisite: CLAS 2800R
Enrolment: Limited

CLAS 3850R Reading and Research of Latin Texts
Format: Seminar 2 hours
Prerequisite: CLAS 2800R.
Enrolment: Limited

***CLAS 3900R The Philosophy of Aristotle:** The general scope of the Aristotelian Philosophy - the understanding of nature, the City, the aesthetic experience of humanity - is considered in relation to the argument of the Metaphysics or 'First Philosophy'. Given alternately with CLAS 3910R.
Instructor: J. P. Atherton
Format: Seminar 2 hours
Enrolment: Limit 20

*CLAS 3910R Neoplatonism: Plato and Neoplatonism: The philosophy of Plotinus and later thinkers considered as the resume of Greek Philosophy; in particular the role of Plato and other older philosophers in the formation of Neoplatonism is a principal interest. Given alternately with CLAS 3900R.
Instructor: J. P. Atherton
Format: Seminar 2 hours
Recommended: CLAS 2361A/2362B
Enrolment: Limit 29

*CLAS 4200R Ancient Practical Philosophy:
Format: Seminar 2 hours
Enrolment: Limited

*CLAS 4320R Ancient and Modern Dialectic:
Format: Seminar 2 hours
Enrolment: Limited

*CLAS 4400R Philosophy of the Church Fathers: This seminar involves the detailed study of a text, or group of texts, from one or more of the Greek or Latin Church Fathers. The choice of text varies from year to year, in relation to the needs and interests of students. Given alternately with CLAS 4450R.
Instructor: R. D. Crouse
Format: Seminar 2 hours
Enrolment: Limit 20

*CLAS 4450R Medieval Interpreters of Aristotle: The precise topic of this seminar is chosen in consultation with prospective students. For example, it might concentrate upon the interpretation of a work of Aristotle by Thomas Aquinas, or Albert the Great, or Dante. Given alternately with CLAS 4400R.
Instructor: R. D. Crouse
Format: Seminar 2 hours
Enrolment: Limit 20

CLAS 4500R Seminar on Neoplatonism: Major Neoplatonic systems, pagan and Christian, are considered from Plotinus to Cusanus.
Instructor: W. J. Hankey
Format: Seminar 2 hours
Enrolment: Limit 20

CLAS 4530R Seminar on the Roman Empire and the Rise of Christianity: Selected topics from the transition from Classical to Christian culture are studied. Particular attention is paid to the connection between religious innovation and the effect of the new beliefs on literature, art and philosophy.
Instructor: P. F. Kusamaul
Format: Seminar 2 hours
Enrolment: Limit 20

CLAS 4580R Reading and Research

CLAS 4690A/4690B Reading and Research

CLAS 4710A/4720B Special Topics

CLAS 4800R Reading and Research

CLAS 4810A/4820B Special Topics

CLAS 4850R Reading and Research

CLAS 4900R Departmental Seminar:
Format: Seminar 2 hours

CLAS 0400C Honours Seminar: In order to obtain their Honours degree, students must complete twenty credits plus the Honours Seminar and pass the exam at the end of it. This is a non-credit class which meets every two weeks. Details available from the department. Note: Students are not required to take all units of this class in one year but may spread them out over two or three years to suit their individual programmes.
Instructor: R. Friedrich et al.
Format: Seminar
Prerequisite: CLAS 2810R and CLAS 2710R
Enrolement: 10

Classes in Ancient Hebrew, Coptic, Syriac and Arabic, are sometimes available as electives at the discretion of the Department, only in relation to the needs of the particular student.

Comparative Literature

Location: Classics House
1244 LeMarchant Street
Telephone: (902) 494-3468

Chair
R. Friedrich (494-3468)

Undergraduate Advisor
H.R. Runte (494-2430)

Professors
A.R. Andrews (Theatre)
J.A. Barnstead (Russian)
S.A.M. Burns (Philosophy)
R. Friedrich (Classics)
F. Gaede (German)
R.M. Hubert (English)
S.F. Jones (Spanish)
J.M. Kirk (Spanish)
R.M. Martin (Philosophy)
H.R. Runte (French)
M.C. Sandhu (French)
H.-G. Schwarz (German)
H.S. Whittier (English)

Compartive Literature, despite its name, is not so much defined by 'comparisons' as by studies involving literary works which belong to

more than one literature and language. The idea of a national literature (English literature, French literature, Canadian literature, etc.) is of relatively recent date. It originated in the 18th century with the rise of national consciousness; yet at the same time the traditional broad unity of all literatures reasserted itself in Goethe's concept of 'world literature'. In Comparative Literature the literary work is treated in its double aspects of belonging to a national literature as well as forming part of world literature. Comparative Literature has various approaches. It implies the study of themes and motifs (e.g. Faust, myths, etc.) as they recur in literary works of different ages and literatures; of literary genres such as drama, epic or romance; of periods (e.g. Renaissance, 18th century, etc.); of authors writing in different languages but linked by influences; of the reception of the work of an author in another literature (e.g. Shakespeare in Germany). The relationships of literature to the other arts (e.g. film, the fine arts, music, etc.) may also be a subject of Comparative Literature; and last but not least, Comparative Literature forms a bridge between literature and other fields in the humanities such as philosophy, religion, and politics.

The Departments of Classics, English, French, German, Philosophy, Russian, Spanish and Theatre offer the following classes in Comparative Literature. Classes which are cross-listed may form part of an area of concentration. All lectures are given in English and works are read in English translation unless otherwise noted.

Classes Offered

Classes marked * are not offered every year. Please consult the current timetable on registration to determine if this class is offered.

***COML 2000R Introduction to Comparative Literature:** This is an introduction to the understanding of man's approach to the problems of life through the study of selected masterpieces of European literature which may include works by Dante, Chaucer, Cervantes, Shakespeare, Moliere, Goethe, and others. Note: English 1000R or Classics 2000R is acceptable as an equivalent to Comparative Literature 1000R.

COML 2011A/B The History of the Theatre from its Origins to the Renaissance: 3 hours, A. Andrews. This class is cross-listed as THTR 3011A/B.

COML 2012A/B The History of the Theatre from Renaissance to the Twentieth Century: 3 hours, A. Andrews. This class is cross-listed as THTR 3012A/B.

COML 2030R Masterpieces of Western Literature: H.S. Whittier. This class is cross-listed as ENGK 2203R.

COML 2040R The European Novel: Staff. This class is cross-listed as ENGL 2204R.

COML 2100R Classical Mythology: A. Johnston. This class is cross-listed as CLAS 2100R.

***COML 2110R Theories and Manifestations of Love in Medieval Europe:** H.R. Runte. A literary and anthropological study of major poetic, romanesque, and dramatic works by English courtly poets, French troubadours, and German Minnesaenger, with special emphasis on their relation to our time.

***COML 2120R Realism and the 18th Century English and French Novel:** H.R. Runte. Novels by such authors as Marivaux, Richardson, Prevost, Fielding, Rousseau, Diderot, Smollett, and Laclos are studied. Aspects of realism in style and structure provide the basis for comparison/contrast of the works read.

***COML 2140R Arthurian Romances:** H.R. Runte. A historical, archaeological, cultural and literary investigation of French, English, and German Arthurian texts dealing with the medieval legend of King Arthur and the Knights of the Round Table. All readings in modern English translations.

***COML 2180R Germanic and Greek Mythology:** This class is cross-listed as GER 2350R.

***COML 2370R Restoration and 18th Century Comedy:** H.R. Runte. A comparative study of English and French plays by such authors as Wycherley, Etherege, Congreve, Steele, Sheridan, Moliere, Lesage, Marivaux, Voltaire, and Beaumarchais. Critical essays on comedy are studied with a view to defining the universal, national and temporal nature of comic elements in the works read.

COML 2400R German Arts and Literature: H.-G. Schwarz. This class is cross-listed with GER 2400R.

COML 2501 Introduction to Classical Rhetoric: R. Friedrich. Cross-listed with CLAS 2501A. In recent years rhetoric has attained great importance and significance for literary criticism and theory as well as for philosophy. The system of rhetoric and its terminology were developed and completed by the Greeks and Romans; therefore Classical Rhetoric forms the basis of all modern approaches to rhetorical practice and theory. This class is intended to introduce the student to the system and to the central terms of rhetoric, as they have been developed and shaped in the relevant texts of Greek and Roman authors. All texts will be studied in English translation.

COML 2705A/B Philosophy in Literature: R.M. Martin. Cross-listed as PHIL 2700A/B.

COML 3500R The Modern Theatre: A. Andrews. This classis cross-listed as THTR 3500R.

COML 3510R Ancient and Modern Drama I: R. Friedrich. This class is cross-listed as CLAS 3510R. Given alternately with COML 3511R.

COML 3511R Ancient and Modern Drama II: R. Friedrich. This class is cross-listed as CLAS 3511R. Given alternately with COML 3510R.

COML 4900R Dramatic Theory and Criticism, and the Aesthetics of the Theatre: A. Andrews. This class is cross-listed at THTR 4900R.

Comparative Religion

Location: 6209 University Ave., 3rd floor Halifax, N.S.
Telephone: (902) 494-3579

Chair
R. Ravindra (494-3578)

Undergraduate Advisor
C.T. Sinclair-Faulkner (494-3579)

Professor
R. Ravindra, BSc, MTech (IIT), MA (Dal), MSc, PhD (Tor), Adjunct Professor of Physics

Associate Professor
C.T. Sinclair-Faulkner, BA (Tor), MTh, MA, PhD (Chic)

The University study of religion aims at an intellectual understanding of this more than intellectual reality. Religion is a phenomenon virtually universal in human society and history; some have held that it is central to the human condition. Understanding involves grasping simultaneously both the meaning of faith in the lives of participants, and the critical analysis of outside observers. Both the student wishing enhanced understanding of religion as an historical, and social and human fact, and the student who wishes to wrestle with problems arising in academic reflection concerning the relation between the personal and the objective, can find material to engage them in the classes described below.

Advanced Major
The Department is able to offer an advanced major in the 20-credit programme. For further information refer to specific regulations for the 20-credit programme on page 78.

BA Degree
Students wishing to major in Comparative Religion must successfully complete Comparative Religion 1000R or 1301R, and at least four to eight full-year classes or their equivalent in Comparative Religion beyond the 1000 level. These must include at least two from each of the groups (CREL 2001A/B, CREL 2002A/B, CREL 2003A/B) and (CREL 2011A/B, CREL 2012A/B, CREL 2013A/B). After earning at least 10 credits of any kind, students must successfully complete one class in Comparative Religion beyond the 3000 level (see "Topics in Comparative Religion"). This provides them with a broad introduction to both Eastern and Western religious life, and to the various ways in which religion may be studied. In light of their specific interests, Comparative Religion majors are encouraged to enrol in related classes offered by other Departments. Programmes should be planned in consultation with the undergraduate advisor, Dr. C.T. Sinclair-Faulkner.

Classes marked * are not offered every year. Please consult the current timetable on registration to determine which classes are being offered.

Classes Offered
First-year students are not admitted to classes beyond the 1000 level without the consent of the instructor. Classes at the 2000 level do not have prerequisites. Prerequisites for classes at the 3000 and 4000 levels are listed with each individual class below; in general, they are available only to students in their third year or above in the University.

*CREL 1000R/2000R Introduction to World Religion: This class will focus on a comparative study of Christianity and other major world religions. The first half of the class will be an introduction to the basic ideas and concerns of the world religions with an emphasis on fundamental general questions in comparative studies: What materials in different traditions are comparable? What psychological and intellectual attitudes are required for such a study? The second half is devoted to a comparative study of the Gospels and a scripture from another religion. Extra work will be required in 2000R which is not available to first-year students.
Instructor: R. Ravindra
Format: Lecture and tutorial 3 hours

*CREL 1301R Introduction to the Study of Religion: Religion is: a way of life? an encounter with God? a neurosis? the essential human trait? an epiphenomenon? The possibilities are explored by using the insights of modern social scientists, humanists and theologians to study Canadian life. This class fulfils the first-year Writing Requirement. A detailed syllabus is available from the Department of Comparative Religion.

Instructor: C.T. Sinclair-Faulkner.
Format: Lecture 2 hours, section meeting 1 hour

***CREL 2001A/B Judaism:**
Instructor: C.T. Sinclair-Faulkner
Format: Lecture and seminar 3 hours

***CREL 2002A/B Christianity:**
Instructor: C.T. Sinclair-Faulkner
Format: Lecture and seminar 3 hours

***CREL 2003A/B Islam:**
Instructor: C.T. Sinclair-Faulkner
Format: Lecture and seminar 3 hours

***CREL 2011A/B Hinduism:**
Instructor: R. Ravindra
Format: Lecture and seminar, 3 hours

***CREL 2012A/B Chinese and Japanese Religions:**
Instructor: R. Ravindra
Format: Lecture and seminar, 3 hours

***CREL 2013A/B Buddhism:**
Instructor: R. Ravindra
Format: Lecture and seminar, 3 hours

The six semester-long, 2000-level classes listed above serve variously as prerequisites to 3000-level classes. Each deals with one of the world's six major religious traditions by examining its founder(s), scriptures, history, communal forms, a key ritual and the impact of the modern world. The common text for all six classes is Nielsen et al., Religions of the World. There are no prerequisites for these classes but first-year students are not admitted without the consent of the instructor.

***CREL 2200A/B Religion and War:** Religious attitudes toward war have ranged from pacifism, through vigorous efforts to enforce limits on war's destructiveness, to outright support for specific wars. The class will examine comparatively the views of major religious traditions on war; the use of war and the warrior as religious symbols; the crisis of religious views on war in the nuclear age. It is cross-listed with Religious Studies 342.2 at Saint Mary's University.
Instructor: C.T. Sinclair-Faulkner
Format: Lecture and seminar 3 hours

***CREL 3002R Religion in Story:** When religious people seek answers to ultimate questions or try to come to grips with the mystifying phenomenon of the Holy, they turn to stories. Modern novels and short stories, particularly Canadian works, are the primary reading assignments in this class. They are set in the context of related material from the broader western culture, including the Jewish scriptures. A detailed syllabus is available from the Department of Comparative Religion.
Instructor: C.T. Sinclair-Faulkner
Format: Lecture and seminar 3 hours
Prerequisite: at least one of CREL 2001A/B, CREL 2002A/B, CREL 2003A/B or instructor's consent

***CREL 3003R Religion in Canada:** When Canadians have built cities, gone to war, founded economic empires, fallen in love, designed school systems, and elected governments, religion has often been a decisive factor. Sometimes religion has been the decisive factor. What is "religion" in Canada? In the course of this extensive historical study of life in Canada from the 16th century to the present, a variety of answers will be explored. A detailed syllabus is available from the Department of Comparative Religion.
Instructor: C.T. Sinclair-Faulkner
Format: Lecture and seminar 3 hours
Prerequisite: CREL 2001A/B or CREL 2002A/B or instructor's consent

***CREL 3006A/B Western Spirituality - Mystics:** Some have argued that the mystic's experience lies at the heart of all religions, while others see it as dangerous to what has traditionally been regarded as religion. Original accounts of Jewish, Christian, Muslim and Amerindian spiritualities are studied in their historical context in this class. A detailed syllabus is available from the Department of Comparative Religion.
Instructor: C.T. Sinclair-Faulkner
Format: Lecture and seminar 3 hours
Prerequisite: at least one of CREL 2001A/B, CREL 2002A/B, CREL 2003A/B or permission of the instructor.
Exclusion: CREL 3001R

***CREL 3007A/B Western Spirituality - Communities:** Modern persons tend to view religion as a solitary enterprise, but more often than not religious communities have taken shape around those who have had a profoundly religious experience. Original accounts of Jewish, Christian and Muslim spiritualities are studied in their historical context in this class. A detailed syllabus is available from the Department of Comparative Religion.
Instructor: C.T. Sinclair-Faulkner
Format: Lecture and seminar 3 hours
Prerequisite: at least one of CREL 2001A/B, CREL 2002A/B, CREL 2003A/B or instructor's consent
Exclusion: CREL 3001R

***CREL 3014A/B Love and Death in World Religions:** lecture and seminar, 3 hours, R. Ravindra. What are love and death? Is it possible to love in the midst of intense suffering and hatred, as in the Holocaust? How are sex and love related with each other? Why do mystics in many traditions speak of love and death together? What meaning can life have in the face of the

inevitability of death? Does individual identity come to a complete end or does one continue existence in some form, as most religions assert? What is the nature of judgment after death? Is there reincarnation?

Instructor: R. Ravindra
Format: Lecture and seminar, 3 hours
Prerequisite: a class in Comparative Religion or the instructor's consent

***CREL 3015A/B Myths, Symbols and Rites:** Myths, symbols and rites have been among the major vehicles of spiritual truths and psychological insights in all religions. After a general discussion of the nature of symbolic and mythic understanding, the focus is on some of the major myths and symbols associated with the lives and teachings of Krishna, Shiva, Gautama Buddha and Jesus Christ.

Instructor: R. Ravindra
Format: Lecture and seminar, 3 hours
Prerequisite: a class in Comparative Religion or the instructor's consent

***CREL 3531R Mystical Consciousness and Modern Science:** Yoga, Zen, Prayer of the heart, Sufism and other spiritual disciplines have gathered an enormous amount of experiential and theoretical material about human consciousness and its many levels, from the ordinary to the mystical and cosmic. The first term is devoted to understanding many levels of human consciousness based on these disciplines. The second term is devoted to a critical examination of mystical consciousness in the light of modern scientific discoveries, and of the fundamental presuppositions of modern science in the light of the universal experience and knowledge of the many levels of consciousness.

Instructor: R. Ravindra
Format: Seminar 3 hours
Prerequisite: a class in Comparative Religion or in Science (preferably both)

***CREL 3502A/B The Rise of Modern Science:** The modern world has been fundamentally altered by science and technology. In what ways? How has this come to be? This class, designed for students in the arts as well as the sciences, examines these questions by looking at the origins of modern science in the 16th and 17th centuries, its growing popularity in the 18th century and the rise of the scientific profession and science-based industry in the 19th and 20th centuries.

Instructors: J. Farley (Biology) and R. Ravindra (Comparative Religion/Physics)
Format: Lecture/tutorials 4 hours
Prerequisites: see BIOL 3402A/B

***CREL 3503A/B Nuclear Bomb: Survival and Morality:** This class, designed for students in the arts and the sciences, will study the history of atomic bomb development, the moral issues involved in the destruction of Hiroshima and Nagasaki, and the concerns about human survival raised by the proliferation of these weapons.

Instructor: R. Ravindra
Format: Seminar 3 hours
Prerequisite: CREL 3502A/B (or equivalent) or instructor's consent

***CREL 4310A/4320B Topics in Comparative Religion:** Structured as a seminar or for independent guided study depending on the interests and needs of the students and the faculty. The intention is to devote some concentrated time to a specific topic of interest (e.g., *Cults and New Religions, The Feminine in World Religions, Religious Aspects of Middle-East Politics, Tradition and Modernity*). Please consult the Department for the topic which may be discussed in any given term. This class will normally only be arranged at the request of a student who is majoring in Comparative Religion, though other students may then be admitted to the class upon application to the instructor. These classes permit the student majoring in Comparative Religion to integrate the work of many previous classes and lines of study while examining some chosen topic in the academic study of religion.

Instructor: Staff
Format: Seminar 3 hours

English

Location: 1434 Henry Street
Halifax, N.S.
Telephone: (902) 494-3384

Chair
M. Furrow (494-3411)

Undergraduate Advisor
J. Thompson (494-3384)

Professors Emeritus
J. Gray, MA (Aberd.), MA (Oxon), PhD (Montreal), FRSC, FRSA
M.M. Ross, OC, BA (UNB), MA (Tor.), PhD (Corn.), DLitt (UNB), LLD (St. Thom.), LLD (Dal.), LLD (Queen's), DLitt (Trent), DLitt (Edinburgh), DLitt (Windsor), DSL (Trinity College), FRSC
S.E. Sprott, MA, BD (Melb.), PhD (Col.)

Professors
J. Fraser, MA (Oxon), PhD (Minn.), George Munro Professor of English Literature
R.M. Huebert, BA (Sask.), MA, PhD (Pitt.)
A.R. Kennedy, BA, MA (UBC), PhD (Edinburgh)

M.A. Klug, BA (Minn.), MA (Kan. State), PhD (Ill.)
P. Monk, BA (Reading), MA (Carleton), PhD (Queen's)
R.J. Smith, BA (Natal), MA (Oxon), PhD (Natal) McCulloch Professor in English, Dean, Faculty of Arts and Social Sciences
R.R. Tetreault, BA (UBC), MA, PhD (Corn.)
D.P. Varma, MA (Patna), PhD (Leeds)
J.A. Wainwright, BA (Tor.), MA, PhD (Dal)

Associate Professors

J.R. Baxter, BA, BEd, MA, PhD (Alta.)
S.A. Cowan, BA (Montana), MA (Yale)
R. MacG. Dawson, MA (Tor.), M Litt (Oxon)
M.M. Furrow, BA (Dal), MA, MPhil, PhD (Yale)
B. Greenfield, BA (York), MA (McGill), PhD (Columbia)
V. Li, BA, MA (UBC), PhD (Cantab.)
D. McNeil, BA (Concordia), MA (UNB), PhD (McMaster)
C.J. Myers, BA (Sask.), MA, PhD (Tor.) M.I. Stone. BA (Guelph), MA, MPhil (Wat.), PhD (Tor.)
H.S. Whittier, BA (U.S. Naval Acad.), MA (New Hamp.), PhD (Yale)

Assistant Professors

L.P. Diepeveen, BA (Calvin Coll.), MA, PhD (Ill)
A. Higgins, BA (Conn.), MA (McGill), MA (Mass.), MA, PhD (Yale)
C. Luckyj, BA, MA, PhD (Tor.)
H.E. Morgan, BA (UBC), MA (Wash.), B Litt (Oxon), PhD (Wash.)
J.A. Thompson, BA (Western), MA, PhD (Tor.)

Lecturer

A. Dowdall, BA (Carleton), MA (Princeton)

Adjunct Professor

R.L. Raymond, BS (Yale), MA (Tor.)

Senior Instructor

L. Choyce, BA (Rutgers), MA (Montclair), MA (CUNY)

The study of English literature at Dalhousie is not just the study of the literature of England. Although largely concerned with the rich written heritage of the British Isles, it also includes the study of writing in Canada, the United States, parts of the English-speaking Commonwealth and, indeed, some European countries, in translation.

It ranges widely in time from early Anglo-Saxon works of the eighth century through thirteen centuries of changing ideas and language to the still-changing thoughts, feelings and expressions of our own time. The many forms that the written word may take - poetry, fiction, drama, essay, history - are read, not only for an understanding of the literary evolution that brings them to be what they are, but also for an understanding of that which is temporary and that which is more enduring.

The purpose of English studies at Dalhousie, briefly stated, is the enjoyment and understanding of the written word. Since the word is the principal link between the individual heart and mind and the rest of the world, such studies naturally touch upon philosophy, politics, religion, and the fine arts as well. At the same time, the student is required to think, and to use language with clarity, judgement and imagination.

In more detail, the goals of English studies are to perceive that reading is a source of pleasure, knowledge and wisdom, to sharpen the powers of discrimination between what is good and bad in literature and ideas, to gain some understanding of the process by which great writing is achieved and indeed to inspire students to their own best expression.

In the first year, ENGL 1000R is required of all students who wish to take further English classes. There are about twenty different sections ranging from historical surveys to more eclectic studies. To enable students to choose the one most suited to their inclinations and needs, the English Department and the Registrar's Office have an ENGL 1000R supplement which includes the aims and reading lists of each section.

Classes numbered from 2000 to 4099 are especially suited for those concentrating in English, studying it as a complement to their main area, or taking an elective, and classes beyond 4250 are designed as studies of specialized areas for Honours students. Honours classes are open to General students with permission of the Chair and the professor concerned. A supplement describing Upper-year General and Honours classes in detail is available from the English Department.

Degree Programmes

The BA with Honours in English

The Honours programme in English offers a systematic study of the major writers and trends from medieval times to our century. It is therefore of particular relevance to the student who is interested in detailed study of English as a basis of a liberal education, to the prospective high-school teacher of English who needs a comprehensive understanding of the subject, and to the student intending to proceed to the graduate study of English and to complete in one year the requirements for the MA degree.

Students intending to enter the Honours programme in Year II must consult the Department in advance to plan their classes and be formally enrolled. In the subsequent years, Honours students are encouraged to seek advice of the Department in choice of classes.

N.B. In recent years, enrollment pressures have been such that students are not admitted to

Honours until their third year. Students intending to enter Honours are thus advised to choose their second year classes from section G, and to register early in order to guarantee that they are enrolled in courses that will count towards their Honours degree.

The Honours programme consists of nine classes (in addition to ENGL 0451A) beyond ENGL 1000R. At least one class must be taken from each of the following six sections:

Section A: ENGL 4252R (recommended for third year)
Section B: ENGL 4253R, ENGL 4351R
Section C: ENGL 4251R, ENGL 4352R
Section D: ENGL 4254R, ENGL 4356R
Section E: ENGL 4354R, ENGL 4355R, ENGL 4452R, ENGL 4457R
Section F: ENGL 4357R, ENGL 4453R, ENGL4455R.

The student may choose the three remaining classes from those not already chosen in Sections B to F, or from Section G: ENGL 2200R, ENGL 2203R, ENGL 2204R, ENGL 2205R, ENGL 2211R, ENGL 2220R, ENGL 2221R, ENGL 2225R, ENGL 2226R, ENGL 2227R, ENGL 2228R, ENGL 2233R, ENGL 2234R, ENGL 3201R, ENGL 3202R, ENGL 3210R, ENGL 3216R, ENGL 3218R, ENGL 3232R, ENGL 3244R, ENGL 4001A/B, ENGL 4002A/B, ENGL 4003A/B, ENGL 4004A/B, ENGL 4005A/B, ENGL 4006A/B, ENGL 4007A/B, ENGL 4008A/B, ENGL 4009A/B, ENGL 4010A/B.

Introduction to Literary Research

ENGL 0451A, a non-credit class which meets one hour per week in the first term, is required of all Honours students and is to be taken in the first year of the Honours programme.

Honours students must meet the requirements for the General BA degree. They are advised to select a minor from one of the subjects listed under either Group A or Group B in the "Academic Programmes" section of the Calendar.

BA with Combined Honours

There are several Combined Honours programmes: English and French, English and German, English and History, English and Philosophy, English and Spanish, English and Theatre. Students interested in any of these combinations or any other that involves English and another subject should consult with the Departments concerned.

BA With Advanced Major in English

The Faculty requires that a student majoring in English in the 20-credit BA programme must successfully complete between six and nine English classes above the 1000 level. The English Department requires:

(1) two 2000 series classes in the student's second year
(2) three classes above the 2000 series (in keeping with the Faculty requirement)
(3) one full credit (two half-credit classes) in the 4000 series
(4) at least one class from each of Groups I, II, and III

In addition, the English Department strongly recommends that students take:

(1) at least two years of language study (or its equivalent) in a single language other than English
(2) at least two full elective credits above the 1000 level in a single subject area other than English
(3) at least eight full credits in English above the 1000 level

The following programme of study is recommended for English majors intending to become teachers of English at the high-school level:

ENGL 2200R Advanced Composition, or
ENGL 3201R The English Language, or
ENGL 3202R History of the English Language
ENGL 2207R Canadian Literature
ENGL 3214R Shakespeare
ENGL 2228R The Short Poem in English, or ENGL 3215R Romantic Poetry, or
ENGL 3210R Modern Poetry in English, or
ENGL 3224R Renaissance Poetry, or
ENGL 3229R Victorian Poetry.
ENGL 3220R English Drama, or ENGL 2226R Tragedy, or ENGL 2227R Comedy and Satire, or ENGL 3232R Modern Drama
ENGL 2208R English Novel to 1900, or
ENGL 3209R Modern Fiction, or ENGL 3212R British Literature of the 20th Century, or ENGL 3213R American Literature of the 20th Century

At least one class chosen from the last three groups should involve a substantial amount of literature written prior to the 20th Century.

The student in the Advanced Major programme may also choose a maximum of three more classes in English.

BA Programme

Students in the 15-credit BA programme must take from four to eight classes in English beyond the 1000 level. The Department expects all of its students to consult with faculty advisors and to form coherent programmes of study; it strongly recommends that these programmes contain at least six classes in English beyond the 1000 level.

English majors must take at least one class from each of the following groups, unless they have departmental permission to use an honours class to meet a group requirement.

GROUP I: ENGL 2207R, ENGL 3209R, ENGL 3210R, ENGL 2211R, ENGL 3212R, ENGL 3213R, ENGL 2221R, ENGL 2231R, ENGL 3232R, ENGL 2233R, 2234R.

GROUP II: ENGL 2205R, ENGL 3206R, ENGL 2208R, ENGL 3215R, ENGL 3218R, ENGL 3219R, ENGL 3224R, ENGL 3229R.

GROUP III: ENGL 2200R, ENGL 3201R, ENGL 3202R, ENGL 2203R, ENGL 2204R, ENGL 3214R, ENGL 3216R, ENGL 2220R, ENGL 2225R, ENGL 2226R, ENGL 2227R, ENGL 2228R, ENGL 3244R.

The purpose of the requirements stated above is to ensure some variety in each student's programme. The Department recommends that the student take at least one class that concentrates on poetry and one that concentrates on fiction, and at least one class from each of two different historical periods. There is, of course, more to a sound programme than variety. From the Department's offerings, students may approach the study of English literature in a number of different ways. They may choose programmes which offer a broad historical background, which focus on specific genres or which concentrate on specific historical periods such as the 19th or 20th century. There are numerous other possible combinations. In any case, students should give careful consideration to planning their programmes to meet their individual needs and interests, and should consult with their departmental advisor if they need help in doing so.

Classes numbered from 2000 to 4099 (excepting those in section G, above) are not accepted as preparation for Graduate Studies in English. Students who may desire to change to an Honours Programme or continue in Graduate Studies should arrange with their advisor and with the Chair of the Department to complete several Honours classes before graduating with a General BA. It is possible to enter a two-year MA programme on completion of a General BA degree, but only if the student has completed four or five Honours rather than General classes for the concentration and has attained at least a second-division average in them.

Classes Offered

Note: Classes marked * may not be offered every year. Please consult the current timetable on registration to determine if these classes are offered.

ENGL 1000R Introduction to Literature: Since ENGL 1000R consists of sections taught by many different instructors, statements about its objectives and approach must be confined to generalizations. All instructors of ENGL 1000R have these two broad objectives in common: (a) to involve students in the serious study of literature; (b) to involve them in the discipline of words so that they will be more critical and responsive readers and more exact and imaginative writers. The subject matter varies from section to section. Detailed syllabi of all sections are available. Practice in writing is carried on throughout the year in regular essays. Each section attends three lectures per week. In addition, the tutors attached to each session conduct small discussion groups and personal interviews with students.

Format: Lecture/discussion 3 hours
Enrolment: Limited

Classes for General Degree

Successful completion of ENGL 1000R is the prerequisite for entry into Upper-Year classes.

For a more complete description of classes and of texts, students should consult the Departmental Supplement for Upper-Year classes.

Classes in the 2000 Series

The 2000 series includes classes that emphasize genre or literary form, and those that offer broad surveys of literature. Classes in the 2000 series are open to students in their second or third year of studies who have completed ENGL 1000R.

***ENGL 2200R Advanced Composition:** An advanced class in the theory and practice of writing English prose, designed for people who already have some competence and interest in writing. The class is not a "remedial" class and not a "creative writing" class.

Format: Lecture/discussion 3 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

***ENGL 2203R Masterpieces of Western Literature:** Intensive reading of selected major works from Western literature, designed to broaden the student's outlook on literature and also to increase his familiarity with works that are not only stimulating in themselves but also comprise the basis for the development of English and other literatures.

Format: Lecture/discussion 3 hours
Prerequisite: ENGL 1000R
Enrolment: limited

***ENGL 2204R The European Novel:** An intensive study of about ten representative European novels of the last two hundred years. A considerable amount of attention is paid to the philosophical ideas which are an important feature in many of

the novels studied.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 2205R Landmarks of English Literature: This class studies works by many of the most influential British authors from Chaucer to the present century. These landmarks provide some orientation in the literary landscape, and help to make students aware of the diversity available in literary studies. The class is aimed at, but not limited to, English majors.
Format: Lecture/discussion 3-4 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 2207R Canadian Literature: This class offers an introduction to Canadian poetry and prose written in English. The aim will be to trace the development of Canadian fiction and poetry from the nineteenth century to the present through discussion of selected texts.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Cross-listed: Canadian Studies
Enrolment: Limited

*ENGL 2208R The English Novel to 1900: Based on a selection of titles by representative authors, this class is a survey of the early English novel. Attention is given to the rise of the genre as well as to the variety of forms and functions which the novel assumed or served.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 2211R Commonwealth Literature: An introduction to the literature of the British Commonwealth, emphasizing writing from Africa, Australia, the Caribbean and India. The bulk of the literature studied will be modern.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 2220R English Drama: An introduction to some of the major plays and playwrights in the history of English drama. Special emphasis is given to plays by such leading dramatists as Marlowe, Webster, Wycherley, Shaw, Pinter, and Stoppard. Some attention is paid to the principal changes in staging practices from the medieval beginnings of English drama to the recent experimental theatre. The objective of the class as a whole is to sample the richness and diversity of the English dramatic tradition.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 2221R Fictions of Development: A study of a variety of literary works (chiefly novels) which portray the crises and conflicts involved in growing up, finding a vocation, and finding oneself. Works from the nineteenth century to the present by Canadian, English and American authors are included, and special attention is given to the connections between art and autobiography, and between literature and psychology, as well as to the influence of gender differences in patterns of human development, and ways of writing about them.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Cross-listed: Women's Studies 2200R
Enrolment: Limited

*ENGL 2226R Tragedy: A study of the nature and method of tragedy in literature. Examples are taken from Greek, Shakespearean, and modern drama, as well as from poetry, and from novels.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 2227R Comedy and Satire: The comedian and the satirist are interested in both the laughable and the deplorable antics and eccentricities of human nature. This class concerns itself with their points of view, as expressed in such varied forms as stage comedy, graphic satire, the comic novel, and the humorous essay. It also considers theories of comedy and laughter in their application to a wide variety of literary types. Lectures and class discussions are augmented with play readings, films and other illustrative materials.
Format: Lecture/discussion 4 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 2228R Short Poems in English: Forms and themes in the short poem are studied by means of critical reading of poems written in English. Topics may include the following: the self in the short poem, other persons, public events, love, nature, the city, the machine, wit, myth, traditional forms, free verse, the hokku, lyric as song, spoken poetry, poetry in print, concrete poetry, and possibly other topics to suit the class.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 2231R Modern American and Canadian Novels: Six Canadian and six American novels are treated as related "pairs", with the instructors dividing their time equally between the two sections. Both sections and both instructors meet together to discuss each pair of novels, after the novels have been dealt with individually.
Format: Lecture/discussion 2 hours

Prerequisite: ENGL 1000R
Enrolment: Limited

***ENGL 2233R Science Fiction and Fantasy:** Selected works of speculative fiction are read for pleasure and studied for understanding. The study emphasizes analysis and evaluation of the works as literature. Non-majors are welcome.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

***ENGL 2234R The Short Story:** This class attempts to combine detailed consideration of a wide range of the best short stories of the last 150 years with discussion of general questions about the nature of the genre itself. As much as anything else it is a class in 'reading and writing' intended to improve reading ability and to develop the capacity to understand and interpret literature.

Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

Classes in the 3000 Series

The 3000 series includes classes that focus on periods in national literatures, that take up the descriptive and historical study of the English language itself, and that deal with the theory and history of literary study. Classes in the 3000 series are open to any student who has completed ENGL 1000R.

***ENGL 3201R The English Language:** This class, concerning the English language of today, begins with some general questions about the nature of language, and goes on to investigate the syntax, semantics, phonology, and dialects of modern English, with an ultimate interest in the stylistic analysis and comparison of short literary texts.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

***ENGL 3202R History of the English Language:** An introduction to the historical development of the English language. The growth of our "word-hoard", the evolution of word meanings, the changing patterns of speech sounds, of word forms and of syntactic structures, the distinction of dialects and literary styles are studied through analysis of selected literary texts. ENGL 3201R and ENGL 3202R are complementary classes.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

***ENGL 3206R American Literature of the Nineteenth Century:** An introduction to American literature through representative works by major writers from 1800 to 1900. Among those studied are Cooper, Hawthorne, Poe, Emerson, Melville, Whitman, Dickinson, and Twain. Both fiction and poetry are studied. Students are encouraged to discuss the works, and classes usually proceed by a combination of discussion and lecture.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: limited

***ENGL 3209R Twentieth-Century Fiction:** An introduction to the main thematic and technical trends in the modern novel. Each section has its own emphasis and choice of texts.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

***ENGL 3210R Modern Poetry in English:** A study of modern poetry in English focussing on the seminal poets Yeats, Stevens, Pound, Eliot, and Williams. Developments and trends in poetry from the 1930's to the present are also considered. For readers, beginning and more experienced, who wish to get their bearings in modern poetry.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

***ENGL 3212R British Literature of the Twentieth Century:** A survey introduction to the past seventy-five years of British fiction, drama, and poetry.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

***ENGL 3213R American Literature of the Twentieth Century:** An introduction to poetry, fiction and drama by American poets and novelists of the twentieth century.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

***ENGL 3214R Shakespeare:** An introduction to Shakespeare's career as a playwright, through discussion and interpretation of a dozen or more of his plays.
Format: Lecture/discussion 2½ hours
Prerequisite: ENGL 1000R
Enrolment: Limited

***ENGL 3215R Poetry of the Romantic Period:** An introduction to the spirit of an age and its manifestations in literary art. Examples of shorter and longer lyrics and excerpts from longer narrative and dramatic poems are drawn from the works of Blake, Wordsworth, Coleridge, Byron, Shelley, and Keats. Although devoted to the study of a period, the class begins with a general introduction to the reading of poetry.
Format: Lecture/discussion 2 hours

Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 3216R The Gothic Novel: A survey of the origins and development of The Tale of Terror and the Supernatural during the latter half of the eighteenth century and its various manifestations and influences in succeeding fiction. Students will not only chart the chief landmarks of gothic fiction but also explore the various chambers of horror-literature.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 3218R Medieval Literature: A study of selected medieval works of Northern Europe, with major emphasis upon the Arthurian legend as found in Malory. Beginning with a look at Nordic, Celtic and Frankish background materials (in translation), one goes on to focus upon late-medieval developments in saga and romance, concluding with a look at some post-medieval uses of the inherited matter in Tennyson, Morris, Lewis and Tolkien. An enriched ENGL 3218R is available for Honours credit students who have previously taken ENGL 4351R.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 3219R Chaucer and his Contemporaries: A selection from the genres of late medieval literature in English: romances, fabliaux, plays, lyrics, and legends. Some works are studied in translation; others (including Chaucer's) are read in the original Middle English.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 3224R Renaissance Poetry: An introduction to English poetry from the early sixteenth to the mid-seventeenth century, concentrating on authors whose works have exercised a continuing influence: Sidney, Shakespeare, Donne, Jonson, and Milton.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 3229R The Victorian Age: A survey of selected Victorian texts designed to deconstruct modern myths about the Victorians and to introduce students to the diversity of the Victorian Age. Works by Mill, Tennyson, Arnold, the Brownings, the Pre-Raphaelites, and Wilde demonstrate that Victorian Literature is animated by a spirit of rebellion and a zest for controversy, marked by innovation and experimentation in literary forms and subjects, and notable for both its passionate defences of individual liberty and its surprisingly modern affirmations of women's rights.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 3232 Modern Drama: An introduction to the major developments in drama from Ibsen to the present. Special attention is given to changes in dramatic style and to the growth of modern theatrical movements. The playwrights represented include Strindberg, Shaw, Pirandello, Brecht, Genet, Ionesco, Pinter, Albee, and Stoppard. A few recent Canadian plays provide a focus for discussion of contemporary trends.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

*ENGL 3244R Literary Criticism: A survey of Classical Greek and Latin theory, English critics and some pertinent European writers and trends.
Format: Lecture/discussion 2 hours
Prerequisite: ENGL 1000R
Enrolment: Limited

Classes in the 4000 Series

Classes in the 4000 series focus on more specialized topics than other classes in the major programme. They are designed for the more experienced student of literature and are open to English advanced majors in their third or fourth years. These classes will be organized as seminars and will have a lower enrolment than other major programme classes. Their specific subject matter will vary year-to-year.

*ENGL 4001A/B Studies in an Individual Author I

*ENGL 4002A/B Studies in an Individual Author II

*ENGL 4003A/B Studies in Genres I

*ENGL 4004A/B Studies in Genres II

*ENGL 4005A/B Studies in National Literatures in English I

*ENGL 4006A/B Studies in National Literatures in English II

*ENGL 4007A/B Studies in Literary History I

*ENGL 4008A/B Studies in Literary History II

*ENGL 4009A/B Studies in Literary Theory I

*ENGL 4010A/B Studies in Literary Theory II

Classes for the Honours Degree

You must have permission from the Chairperson of the Department to take classes in this category. (Tentative List)

ENGL 0451A Introduction to Literary Research: A departmental (i.e., non-university and non-credit) technical class for honours and graduate students. It is planned to acquaint the student with certain research tools in the library that are most frequently used by students of English (bibliographies, catalogues, indices, digests, journals, dictionaries, microfilms), many of which the student is unlikely to stumble upon in his/her own research.

There will be a brief introduction to the history of printing and papermaking. Students will be taken on a tour of the printing shop (Dawson Room) and occasionally guest speakers will lecture on relevant topics. Successful completion of exercises and attendance at lectures one hour a week for the first term will constitute fulfillment of requirements for the class.

Format: Lecture 1 hour, first term only

***ENGL 4251R Sixteenth-Century Prose and Poetry:** This is a class in the prose and poetry of the English Renaissance from its beginnings to the 1590s. The major writers to be studied are More, Sidney, Spenser, and Shakespeare; brief selections from Wyatt, Surrey, Elyot, Ascham, Hooker, Marlowe and a few others will also be read.

Format: Seminar 2 hours
Enrolment: Limited to Honours students in English

***ENGL 4252R Shakespeare and the Drama of His Time:** About fifteen plays by Shakespeare, some by choice of the class, are read in the context of representative plays by his earlier and later contemporaries, especially Marlowe and Jonson. Students may consult the professor for a list of plays and suggested preliminary reading.

Format: Seminar 2 hours
Enrolment: Limited to Honours students in English

***ENGL 4253R Old English:** An introduction to the Old English language (700-1100 AD), followed by a study of some of the prose and minor poems, and, in the second term, of Beowulf. Students are also introduced to some aspects of Old English art and archaeology. Some knowledge of a classical or modern European language (preferably German) is desirable, though not essential, and an understanding of traditional grammatical terminology will be helpful. This class is not recommended, except in unusual circumstances, to those who are not thoroughly fluent in modern English.

Format: Seminar 2 hours
Enrolment: Limited to Honours students in English

***ENGL 4254R Restoration and Eighteenth-Century Literature:** The emphasis is on three great satirical authors (Dryden, Pope, and Swift), on a study of Restoration drama and on major works of Samuel Johnson. Since the literature of the period is related closely to the men and manners of the age, some time is spent on the contemporary climate of opinion revealed in the works of a number of writers representative of literary, political, social, and philosophical points of view: Hobbes, Halifax, Pepys, Rochester, Butler, Addison and Steele, Mandeville and Shaftesbury.

Format: Seminar 2 hours
Enrolment: Limited to Honours students in English

***ENGL 4351R Middle English:** An introduction to the language and literature of feudal and chivalric England, with the principal emphases being upon Chaucer's poetry and upon the Arthurian story. Through readings and study, the student should gain some historical sense of the language, of the late-medieval social milieu and of the especial flourishing of literature in the late-fourteenth century.

Format: Seminar 2 hours
Enrolment: Limited to Honours students in English

***ENGL 4352R Seventeenth-Century Poetry and Prose:** A study of selected poetry and prose of the later Renaissance from the turn of the century to the Restoration. Of the poets, Donne and Milton are given special emphasis; poems by Jonson, Herbert, Vaughan, and Marvell are also studied. Prose works are by Bacon, Donne, Browne, and Milton. The study of Milton's poetry, especially Paradise Lost, occupies a major part of the second term.

Format: Seminar 2 hours
Enrolment: Limited to Honours students in English

***ENGL 4354R Nineteenth Century Novel:** The novels of the period from Scott and Austen to Hardy are studied.

Format: Seminar 2 hours
Enrolment: Limited to Honours students in English

***ENGL 4355R American Literature to 1900:** This class deals with major writers of the 19th century, as well as works from the colonial period which raise important cultural questions.

Format: Seminar 2 hours
Enrolment: Limited to Honours students in English

***ENGL 4356R The Romantic Period:** A close reading of the major poetry of Blake, Coleridge, Wordsworth, Byron, Shelley, and Keats. Attention is also given to their critical writings in prose, and

to the intellectual, cultural, and historical milieu in which they worked.
Format: Seminar 2 hours
Enrolment: Limited to Honours students in English

*ENGL 4357R Modern Canadian Literature: A study of Canadian fiction and poetry since the 1920's with emphasis on the changing form and content of Canadian writing.
Format: Seminar 2 hours
Cross-listed: Canadian Studies
Enrolment: Limited to Honours students in English

*ENGL 4360C Old Norse: A broad survey of major Old Norse prose and poetic works in translation and an introduction to the comparative study of the very close relation of the early Norse and English languages and literature.
Format: Lecture 1 hour
Prerequisite: One of ENGL 3218R, 4253R, 4351R or instructor's consent

*ENGL 4453R Twentieth-Century English Literature: Primarily for honours students and for MA students in their make-up year. Each member of the seminar writes two papers to serve as starting-points for the class discussions. There are no examinations, but regular attendance is expected in the interests of effective debate.
Format: Seminar 2 hours
Enrolment: Limited to Honours students in English

*ENGL 4455R Modern American Literature: In the first term, this class studies 20th-century American fiction. In the second term, modern American poetry is assessed. Classes are a combination of lectures and discussion.
Format: Seminar 2 hours
Enrolment: Limited to Honours students in English

*ENGL 4457R Victorian Poetry: Poems by Tennyson, Robert Browning, Elizabeth Barrett Browning, Arnold and selected Pre-Raphaelites are studied in the context of the social and political, the religious and scientific ideas current in Victorian England.
Format: Seminar 2 hours
Enrolment: Limited to Honours students in English

French

Location: 1315 LeMarchant Street
Halifax, N.S.
Telephone: (902) 494-2430

Chair
M. Bishop (494-2425)

Undergraduate Advisors
M. Bishop (494-2425)
J. Brown (494-2430)
T. Gordon (494-2430)

Professor Emeritus
P. Chavy, Agrégé des Lettres (Paris), Chevalier de la Légion d'Honneur

Professors
M. Bishop, BA, BEd (Manchester), MA (Manitoba), PhD (Kent, Canterbury)
J.W. Brown, AB (Miami), MA (Middlebury), PhD (Penn.)
B.E. Gesner, BA (Kings), BEd, MA (Dal), Dr. de 3e cycle (Toulouse, II)
W.T. Gordon, BA, MA, PhD (Tor.)
R. Kocourek, State Examination, PhD, CSc (Charles U., Prague)
H.R. Runte, MA, MPh, PhD (Kansas)
M. Sandhu, Licence ès Lettres (Montpellier), PhD (Yale)

Associate Professors
B. Bednarski, BA (London), MA (Dal), PhD (Laval)
P. De Méo, BA, MA, PhD (UCLA)
M. Myers, DUEL, Licence ès Lettres, MA, Dr. de 3e cycle (Strasbourg)
I.Z. Oore, BA (Tel-Aviv), MA (Waterloo), PhD (Western Ontario)
N. Trèves, BSc (American U., Cairo), PhD (Rice)
K. Waterson, BA (Long Island), MA (NYU), PhD (CUNY)

Assistant Professors
R.G. Bonnel, Licence (Paris), MA (Essex), Dr. de 3e cycle (Paris)
T.P. Carter, BA (Princeton), MA, PhD (Brown)

The Department of French offers students not only the opportunity to develop fluency in classes backed up by excellent laboratory and ancillary facilities, but also the possibility of studying the literature and culture of France, French Canada and the other nations of the French-speaking world, and the linguistic structure and development of French.

Classes are available for beginners and for those with a background in the language who wish to improve and maintain any or all of the

following skills: speaking, listening, reading, and writing. Other classes are specially designed for students who are interested in teaching, translation, or other areas of language study. The role of French in Canada and in the Maritimes is stressed in classes in Acadian and Québécois literature and civilization. The literature of France and French-speaking nations is brought to life in classes organized around a theme, a genre, or a historical period.

The Department of French urges students to practise the language as much as possible. The Maisons Françaises are two houses on campus in which students may live with native speakers in a francophone environment. The French Club organizes activities including films, French meals, parties and plays in which all students may participate. Exchanges with Québec and individual student travel and study are encouraged. The Department offers in some years a class off campus in a francophone environment. Please consult the Department for information and see below: Aix-en-Provence.

A BA degree in French with Honours or with Honours in French and another subject combined may lead the student to a career in education, written or oral translation, or may provide the background for careers in many fields, including radio, television, law, social work, public relations, business, diplomacy, journalism and library science. Students considering French as an area of concentration in a BA degree course are invited to discuss the matter at any time (the earlier the better) with a member of the Department. The accent is on the particular needs and aspirations of the individual. An Honours degree is normally required for access to graduate studies: MA, MAT and PhD degrees may be pursued in the Department (see the Calendar for Faculty of Graduate Studies).

Major, Advanced Major or Honours students may, with the approval of the Department of French, take up to one year of work at a University in a francophone environment and receive certain credit at Dalhousie. Scholarships are available for students selected to participate in the Dalhousie/ Aix-en-Provence Year-Abroad Programme, for Honours or Advanced Major students.

The language requirement exemption test in French will be given on the Wednesday of Registration week. Students who would like to write this test should inform the Department of French of their intention in writing two weeks before. It is to be noted that passing this language requirement exemption test does not give a credit.

Students considering a career in teaching French are encouraged to discuss their goals and programme as early as possible with Professors DeMéo or Myers.

Degree Programmes

BA with Honours in French

This programme offers systematic, comprehensive and individualized study of French language; literature, linguistics and other programme elements both within and without the classroom. It is, therefore, an option which should be considered seriously by any student who, with career or personal objectives in mind, wishes to obtain a strong background in French and by those who plan to teach or earn a graduate degree in French.

Honours students are strongly encouraged to enrich their more traditional learning experience by living in one of the Maisons Françaises and by spending at least one summer in a French- speaking area. Majors or Honours students may, with the approval of the Department, take up to one year of work at a university in a francophone environment and receive certain credit at Dalhousie. Please consult the department for information on programmes available. Please consult the Chair of the Department.

Combined Honours students should consult the Chair before proceeding to see the Honours Advisor. Following is a description of the three different kinds of Honours programmes in French and the requirement for each:

I. Concentrated Honours:
From 9-11 credits in French beyond the first year; "first year" does not necessarily mean FREN 1000-level class; it refers to any course taken in the first year of study. The following seven courses are required: FREN 2040R, FREN 2201A/2202B, FREN 3020R, FREN 3040R, FREN 3000-level full credit in literature and/or culture; and, normally, two full credits at the FREN 4000-level. An additional grade is required: either an Honours Essay or an Oral Presentation (see document entitled "French Honours Qualifying Examination" obtainable from the Honours Co-ordinator or the Departmental secretary).

II. Combined Honours:
From 11-13 credits in French and another subject; not fewer than 4 nor more than 9 may be chosen in either subject. Minimum requirements for the Combined Honours programmeme are as follows: FREN 2040R, FREN 2201A/2202B, FREN 3040R plus a minimum of one full credit in language, literature and/or culture at the 3000-level. An additional credit is required: either an Honours Essay or an Oral Presentation (see document entitled "French Honours Qualifying Examination" obtainable from the Honours Co-ordinator or the Departmental secretary).

III. Honours Certificate:

The Honours Certificate is an option for continued study open to anyone who has previously completed a BA major programme in French. Normally, it consists of five full credits of course work plus one additional credit: either an honours essay or an oral interview based on class work and for a specific topic. Requirements for the honours certificate are similar to those for the concentrated honours programme, but will vary according to individual circumstances.

BA Advanced Major Programme

Students who may not be eligible for the Honours Programme are encouraged to enter the Advanced Major degree programme in French (from 6-9 credits in French beyond the first year, of which at least 3 must be beyond the 2000-level).

The following minimum programme is required: FREN 2040R, FREN 2201A/2202B; FREN 3040R; two full credits at the 3000-level; and one full credit at the 4000-level. Notice that students wishing to change to an Honours Programme may do so, if the quality of their work justifies it. Those who might wish to do so should also take FREN 3020R (required for Honours), and consult the Chair or the Honours Advisor.

BA Major Programme

Students should consult the Chair or a Department Advisor about the choice of classes.

The following classes are required: FREN 2040R; FREN 2201A; FREN 2202B; FREN 3040R and one other full credit at the 3000-level. Normally, three full-credits are taken in the second year (and a minimum of two). Classes other than those required may be chosen freely in consultation with the Major Advisor, according to the students' desire to obtain a general knowledge of the field, or a greater concentration in specific areas such as Literature, Linguistics, French-Canadian Studies, etc.

Students wishing to change to an Honours Programme may do so during the second or third year of studies, given sufficient standing. Those wishing to do so, or to continue in Graduate Studies after obtaining a BA Major in French, should consult the Chair or the Honours Advisor.

Classes Offered

Classes marked * may not be offered every year. Please consult the current timetable on registration to determine if these classes are offered. First year classes (FREN 1000R, FREN 1001A, FREN 2000R, FREN 2001B, FREN 1020R, FREN 1040R) require a regular tutorial session in addition to the three hour weekly class.

FREN 1000R Français pour débutants/Beginners French: This class, intended for students with little or no previous instruction in French, covers a sufficient range of basic linguistic structures and high-frequency vocabulary to enable students to engage in simple, everyday communication on a variety of subjects. Classes are conducted in French as much as possible with a view to developing competence in "real-life" communication, both oral and written. Work done in the three hours of class per week is supplemented with both oral and written exercises in the Dalhousie Learning Laboratory and with reading assignments, compositions, and written exercises to be completed outside of class. Students are also introduced to significant aspects of French, French-Canadian, and other francophone cultures. Upon completion of FREN 1000R, students wishing to complete the study of basic French language structures and to increase their written and spoken fluency should enroll in FREN 2000R. Students who have completed Grade 12 French within the last two years may not register for FREN 1000R. (They should register for FREN 1020R or FREN 1040R.)

Instructor:	Staff
Format:	Lecture 3 hours, language lab 3 hours
Enrolment:	Limited to 30

FREN 1001A/FREN 2001B Français pour débutants: Niveaux I & II/Beginners French: Levels I & II: This class offers students the opportunity to do the work of FREN 1000R and FREN 2000R, normally a two-year programme, in one academic year. FREN 1001A and FREN 2001B each give one full credit. Neither is counted towards a Major in French, but completion of this work permits entry into the Major or Honours programmes. Students who have completed Grade 12 French within the last two years may not register for FREN 1001A/ FREN 2001B. (They should register for FREN 1020R or FREN 1040R).

Instructors:	E. Gesner, T.P. Carter
Format:	Lecture 5 hours, language lab 6 hours
Enrolment:	Limited to 30

FREN 1020R Révision de français oral et écrit/Spoken and Written French in Review: This is the usual first-year class for those students who have studied French throughout high school. Designed to develop proficiency in speaking and listening skills, as well as in reading and writing. Classes are taught only in French and involve much oral practice: discussions, exercises, etc. are based on a wide variety of reading and listening materials. Short written exercises and regular compositions reinforce this work. The basic structures of French are reviewed through

independent study and classroom practice. Listening comprehension assignments are done in the Learning Laboratory in the Killam Library. It is assumed that students are familiar with the basic structures of French, although it is expected that students have not full control of them. Should a student wish to take both FREN 1020R and FREN 1040R, then only one (1) full credit would be allowed. Students who have completed Grade 12 French within the last 2 years must register for either FREN 1020R or FREN 1040R.

Instructor:	Staff
Format:	Lecture 3 hours, language lab 1-2 hours
Enrolment:	Limited to 30

FREN 1040R Grammaire, vocabulaire et style/ French Grammar, Vocabulary and Style: The class is given entirely in French. Main emphasis will be on structural elements, vocabulary building and correct expression, with consistent parallel attention paid to spelling and pronunciation. The manuals will include a grammar book, and a selection of literary texts to be discussed. A variety of tests and assignments will be used, such as grammar exercises, dictations, translations and compositions.

Instructors:	R. Kocourek, D. Lawrence, I. Oore, M. Sandhu, N. Trèves
Format:	Lecture/Discussion 3 hours
Prerequisite:	Grade 12 French within the last 2 years or equivalent
Enrolment:	Limited to 30
Exclusion:	FREN 1020R

FREN 1060R Pratique de la lecture/French for Reading: Development of the ability to read contemporary French prose with ease and accuracy. Emphasis is on the acquisition of skills that facilitate reading. Students are encouraged to become familiar with the best French-English dictionaries and to use them judiciously, to learn large blocks of vocabulary by recognizing word families, and to grasp the meaning of unknown words from context wherever possible. Classroom work involves a grammar review, study and discussion of a wide variety of readings as well as correction of prepared translations and sight translations (from French to English only). FREN 1060R is given in English and is not, by itself, suitable for students who plan to major in French. It may, however, be taken by those with no prior training in French or as an additional first-year option for those taking FREN 1020R or FREN 1040R. This course satisfies the Bachelor of Arts Language Requirement.

Instructors:	K. Waterson and staff
Format:	Lecture 3 hours
Enrolment:	Limited to 30

FREN 2000R Français pour débutants: Niveau II/Beginners French: Level II: No student may enrol in FREN 2000R without having first completed FREN 1000R or without the Chair's permission. This class continues the work begun in FREN 1000R, focusing on more advanced forms of expression including the vocabulary, verb forms, and syntactic structures necessary for communication at a relatively high level of abstraction and complexity. As in FREN 1000R, all classes are conducted as much as possible in French, with additional practice provided through the Dalhousie Learning Laboratory and through regular reading and writing assignments. Reading selections drawn from the press and the literature of French-speaking cultures continue to be a regular part of the work, in the interest of deepening and enriching the students' understanding of the people whose language they are studying. (Credit awarded for FREN 2000R may not be counted towards a Major in French but the completion of this work permits entry into the Major or Honours programmes.) Students who have completed FREN 1020R and FREN 1040R are not permitted to take FREN 2000R.

Instructor:	Staff
Format:	Lecture 3 hours, language lab 3-6 hours
Enrolment:	Limited to 30

FREN 2001B: See FREN 1001A above.

Note: All classes above this level are given entirely in French.

FREN 2021A/FREN 2022B Études pratiques/Practice in Language Skills: Follows FREN 1020R or FREN 1040R or FREN 1000R/2000R. It is normally taken in the second year of study and provides the opportunity to practice and improve language skills already acquired. Sections approach language learning through different subjects (such as Acadian studies, African and Caribbean civilization, cinema, journalism, the occult, or the detective novel). All classes and assignments are entirely in French. Students must choose sections with different topics to earn credit for both A and B. However, it is not necessary to take both A and B and students may elect to study one semester only. Students should consult the current timetable, as the topics offered change each year.

Instructor:	Staff
Format:	Lecture 3 hours
Cross-listed:	Canadian Studies
Enrolment:	Limited to 30
Exclusion:	FREN 2023A, FREN 2024B, FREN 2025A, FREN 2026B

***FREN 2031A/B Interprétation/Simultaneous Translation:** Practical introduction, given in the language lab, to oral English-French and French-English translating (interpreting) with

emphasis on fluency, vocabulary building and comparative syntactico-stylistic analysis. Instructor: H. Runte.
Format: Lecture 3 hours in language lab, supplementary lab hours
Enrolment: Limited to 30

***FREN 2032A/B La phonologie et la communication orale(I)/Phonology and Oral Communication(I):** Using widely varied texts and recordings, this class studies the basic sounds (phonemes) of French, and the essential non-phonemic features of the language (rhythm, stress, intonation, etc.) It helps students master French phonemes, understand the role of non-phonemic features in oral communication and use the latter to develop self-expression and audio-comprehension.
Instructor: K. Waterson
Format: Varied particpatory activities, short lectures, language lab
Prerequisite: FREN 1020R, FREN 1040R or equivalent
Enrolment: Limited to 20
Exclusion: FREN 2030A/B

***FREN 2033A/B La phonologie et la communication orale(II)/Phonology and Oral Communication(II):** This class continues, with an increased emphasis on self-expression and communicative ability, the work of French 2032A/B.
Instructor: K. Waterson
Format: Varied participatory activities, short lectures, language lab
Prerequisite: FREN 2032A/B or FREN 2030A/B or instructor's consent
Enrolment: Limited to 20

FREN 2040R Études pratiques de stylistique/ Intermediate Composition: These classes constitute a detailed and comprehensive review of grammar by means of various exercises including dictations, translations, compositions and summaries. They involve a study of written style and manner of expression.
Instructors: R. Kocourek, D. Lawrence, I. Oore, M. Sandhu
Format: Lecture 3 hours
Enrolment: Limited to 30

***FREN 2050A/B La Structure des dictionnaires français/Structure of French Dictionaries:** This class is an introduction to the use of French and French-English dictionaries. Emphasis is on linguistic problems that are essential for dictionary users in comprehending texts and expressing ideas. Introductions to two first-rate French dictionaries will be studied. A reader of cultural or literary texts will serve as a source of questions to be raised in exercises, discussions, assignments, and tests.
Instructor: R. Kocourek
Format: Lecture 3 hours
Enrolment: Limited to 30

FREN 2201A/FREN 2202B Introduction à la littérature/ Introduction to French Literature: A survey of literature in French from the Middle Ages to the 20th Century, presenting selected works of prose, poetry and theatre from France, Quebec, Acadia and other francophone areas. Introduction to general notions of literary history and to the basic concepts involved in reading literary texts. Attention is paid to the development of both oral and written expression of ideas. FREN 2201A and FREN 2202B may be taken consecutively. Classes involve, principally, group discussion, and lecture.
Instrutors: M. Bishop, D. Lawrence, H. Runte, N. Trèves
Format: Lecture 3 hours
Enrolment: Limited to 50

***FREN 2203A/B Approches du texte littéraire/ Approaches to Literary Texts:** An introduction to the critical reading of a selection of literary texts (various genres and periods) with an emphasis on Québec literature. The close analysis of short texts will lead to discussions of the broader nature of recurring images and myths as well as central themes.
Instructor: I. Oore
Format: Lecture/discussion 3 hours
Prerequisite: FREN 1020R, FREN 1040R or FREN 2000R
Cross-listed: Canadian Studies
Enrolment: Limited to 30

FREN 3000A/B Cours supérieur de français oral/ Advanced Oral French Workshop: Class discussions and oral presentations based on themes of contemporary concern. This class may be offered on or off campus in the summer in an intensive fashion. This class is intended to build vocabulary, perfect facility of expression (fluency) and style. Reading and research are necessary for the oral presentations.
Instructor: Staff
Format: Lecture/discussion 3 hours
Prerequisite: 2000-level French class
Enrolment: Limited to 30

FREN 3020R Linguistique/Linguistics: This class will interest future linguists, literary specialists and language teachers, as well as translators and public servants concerned with bilingualism. Its main objective is to improve and refine the students' understanding of the French language and to explain the major areas of its study. Culturally interesting literary excerpts will be used to observe and to analyse linguistic problems in texts. Each student will prepare two reports on linguistic topics. Assignments based on practical problems of pronunciation, spelling, grammar, vocabulary and meaning will complement the

syllabus.
Instructor: R. Kocourek
Format: Lecture 3 hours
Prerequisite: 2000-level French class
Enrolment: Limited to 25

***FREN 3025A/B Les Parlers acadiens: Introduction linguistique/Linguistic Introduction to Acadian Dialectology:** An examination of the phonetic, morphosyntactic and lexical systems of various Acadian speech communities, with emphasis on the Acadian dialects of Nova Scotia. Frequent comparisons will be made between these dialects and both standard French and Québécois. Recorded and written materials are used.
Instructor: E. Geaner
Format: Lecture 3 hours
Prerequisite: Corequisite or permission of instructor
Corequisite: FREN 3020R
Cross-listed: Canadian Studies
Enrolment: Limited to 20

FREN 3040R Stylistique/Advanced Composition: This class develops further the skills acquired in FREN 2040R. Through a variety of exercises, students are taught to express themselves in clear, accurate, idiomatic French, and to perform a number of tasks of a practical nature: writing reports, summaries, letters, etc. A good knowledge of grammar is essential.
Instructors: M. Sandhu, D. Lawrence
Format: Lecture 3 hours
Prerequisite: FREN 2040R
Enrolment: Limited to 25

FREN 3081A/FREN 3082B Didactique du français langue seconde à l'école secondaire/Methods of Teaching French at the Secondary Level: Open only to students who have demonstrated adequate competence in French language and culture (passing a French language proficiency exam is required). Students taking this class are normally completing a BEd. Other students interested must consult the instructor. A consideration of foundations of second language teaching moves to a discussion of methodology, techniques, materials (including visual aids), and testing. Emphasis is on developing teaching strategies which enable students to use French as a tool for authentic self-expression, orally and in writing. Directed observation of experienced teachers and practice in the development of teaching skills are integral parts of the class. Evaluation is based upon class participation (microteaching, oral reports, contributions to discussions), written projects, lesson plans, and examinations.
Instructors: P. De Méo, M. Myers
Format: Lecture 3 hours
Corequisite: FREN 3081A
Enrolment: Limited to 25

***FREN 3085B Didactique du français langue seconde à l'école élémentaire et en immersion/ Methods of Teaching French in the Elementary School and Immersion:** This class focuses on specific methods and materials appropriate for the elementary-age child in the French core programme and/or immersion. Students taking this class are normally completing a BEd.
Instructor: M. Myers
Format: Lecture 3 hours

FREN 3100R Civilisation de la France/Civilization of France: An attempt, through talks, reading, discussion and slide presentations, to understand and to suggest fruitful ways of studying, from an English-speaking Canadian point of view, what is essential in French culture and outlook.
Instructors: M. Sandhu, J. Brown
Format: Lecture/discussion 3 hours
Prerequisite: 2000-level French class
Enrolment: Limited to 20

***FREN 3200A/B Appréciation de la littérature/ Literary Appreciation:** An approach to the critical reading of various periods of French literature. The class offers discussion of representative works of major writers, centering either on genre, theme, or period and involving close textual analysis. It also includes some discussion of past and current theories of literature. See department for specific details in any given year.
Instructor: M. Bishop et al
Format: Lecture/discussion 3 hours
Prerequisite: FREN 2201A/FREN 2202B
Enrolment: Limited to 20

***FREN 3250A/B Les femmes écrivains: du temps des cathédrales à celui des Editions des femmes/French Women Writers through the centuries:** A chronological survey based on the study of literary texts by French Women Writers, this class will attempt to analyze the society of the time, the way it portrayed women and their role, and the overall condition of women. Emphasis will be given each time to a special period/authors within the context of the survey. Students taking the class as a Women's Studies class may write their essays and exams in English.
Instructor: N. Trèves
Format: Lecture/discussion 3 hours
Recommended: FREN 2201A/FREN 2202B
Cross-listed: Women's Studies
Enrolment: Limited to 20

***FREN 3300A/B La littérature médiévale/ Mediaeval French Literature:** Textual analyses of selected works representing the major literary genres (epic, romance, theatre, poetry) from the chansons de geste to François Villon (most texts in modern French translations). The discussion of the origins and the development of a national French literature provide a convenient

introduction to critical approaches to literary texts.
Instructor: H. Runte
Format: Lecture/discussion 3 hours
Prerequisite: FREN 2201A/FREN 2202B
Enrolment: Limited to 20

*FREN 3400A/B La littérature du seizième siècle/16th Century French Literature: Reliving the awakening, bloom and decline of the Renaissance period in literature and language through the works of Marot, Rabelais, Du Bellay, Ronsard, Montaigne and the poets of the baroque. The century's concern with the French language provides a convenient introduction to the study of the development of modern French.
Instructor: N. Trèves
Format: Lecture/discussion 3 hours
Prerequisite: FREN 2201A/FREN 2202B
Enrolment: Limited to 20

*FREN 3500A/B La littérature du dix-septième siècle/17th-Century French Literature: This class examines representative works by three major seventeenth-century French dramatists: Corneille, Molière and Racine. It explores their vision of humanity and the world and assesses their contribution to French literature and the history of ideas.
Instructor: K. Waterson
Format: Lecture/discussion 3 hours
Prerequisite: FREN 2201A/FREN 2202B
Enrolment: Limited to 20

*FREN 3600A/B La littérature du dix-huitième siècle/18th Century French Literature: An introduction to the literature of the 18th century which includes works by such authors as Voltaire, Rousseau, Diderot and Marivaux. Each year the readings and class discussions will be centered on a different theme (for example: the hero, women, love, wealth and power).
Instructor: R. Bonnel
Format: Lecture/discussion 3 hours
Prerequisite: FREN 2201A/FREN 2202B
Enrolment: Limited to 20

*FREN 3700A/B La littérature du dix-neuvième siècle/19th Century French Literature: An introduction to the main literary movements of the 19th century: Romanticism, Realism, Symbolism. Focus is on representative authors and/or texts belonging to one or more of these trends.
Instructor: J. Brown
Format: Lecture/discussion 3 hours
Prerequisite: FREN 2201A/FREN 2202B
Enrolment: Limited to 20

*FREN 3800A/B Théâtre et poesie du vingtième siècle/ French Theatre and Poetry of the 20th Century: Poetry and Theatre, 1900-1990. Study of modern poetry from Dada and Surrealism to the work of contemporary poets such as Yves Bonnefoy, Jacques Dupin and Michel Deguy; and of modern theatre from Jarry to Beckett, Ionesco and beyond.
Instructor: M. Bishop
Format: Lecture/discussion 3 hours
Prerequisite: FREN 2201A/FREN 2202B
Enrolment: Limited to 20

*FREN 3810A/B Prose et théorie littéraire du 20e siècle/ 20th Century Prose and Literary Theory: Analysis of a broad selection of short prose by major novelists of the 20th century from Gide, Proust and Aragon but with emphasis upon the more recent work of Beckett, Sarraute, Simon, Duras, Le Clézio and Cixous. Parallel discussion will be centred upon the literary theory of critics such as Bachelard, Poulet, Starobinski, Barthes and Derrida.
Instructor: M. Bishop
Format: Lecture/discussion 3 hours
Prerequisite: FREN 2201A/FREN 2202B
Enrolment: Limited to 20

FREN 3900A/FREN 3901B La littérature canadienne française/French-Canadian Literature: In-depth study of a few major works of French-Canadian literature with emphasis on the period from 1945 to the present day. Each class deals with a specific genre (e.g. FREN 3900A Poetry, FREN 3901B Novel) and choice of genre may differ from year to year.
Instructors: B. Bednarski, I. Oore
Format: Lecture/discussion 3 hours
Prerequisite: FREN 2201A/FREN 2202B
Cross-listed: Canadian Studies
Enrolment: Limited to 20

*FREN 3910A/B Études acadiennes/Acadian Studies: Critical investigation into the historical, socio-cultural, linguistic and literary significance of past and present Acadian writing. May follow Acadian Studies (FREN 2021A/2022B).
Instructor: H. Runte
Format: Lecture/discussion 3 hours
Prerequisite: FREN 2201A/FREN 2202B
Cross-listed: Canadian Studies
Enrolment: Limited to 20

*FREN 4001A Histoire du français - Moyen Age/History of French - The Middle Ages: Advanced research into selected topics in Old and Middle French - manuscript studies; paliography; historical phonetics, morphology and syntax; the cultural-literary context of linguistic development; etc.
Instructor: H. Runte
Format: Seminar 3 hours
Prerequisite: 3000-level French class
Enrolment: Limited to 15

*FREN 4002B Histoire du français - epoque moderne/History of French - The Modern Period: Advanced research into selected topics - the emergence of a national language, the problem of

orthography, usage and the development of normative grammars, the evolution of vocabulary, epochal phenomena (Rhétoriqueurs, the Baroque, Préciosité, the Revolution, scientific French, argot), etc.
Instructor: H. Runte
Format: Seminar 3 hours
Prerequisite: 3000-level French class
Enrolment: Limited to 15

***FREN 4010A/B Grands linguistes du vingtième siècle/Great Linguists of the 20th Century:** How did French-speaking linguists of the 20th century contribute to the understanding of the language? interpretation of passages by six linguists (such as Saussure, Bally, Tesnière, Guillaume, Gougenheim, Martinet) will show how interesting questions were asked, and how new answers and methods enriched the field of language study. Class reports, discussions, assignments.
Instructor: R. Kocourek
Format: Seminar 3 hours
Prerequisite: 3000-level French class
Enrolment: Limited to 15

***FREN 4011A/B Lexicologie/Lexicology:** How can French vocabulary be studied and structured? What is its formation (derivation, composition, metaphor, borrowing, abbreviation, etc.), its meaning, its development? Class reports, discussions and lexical assignments are important components of this class.
Instructor: R. Kocourek
Format: Seminar 3 hours
Prerequisite: FREN 3020R
Enrolment: Limited to 15

***FREN 4012A/B Aspects de la structure du français/Aspects of French Structure:** Students will help select, from the many problems of French phonology, graphonomy, grammar, lexical formation and semantics, the ten subjects to be examinined in detail. Lectures and readings will be complemented by students' reports. Culturally relevant excerpts from literary masterpieces will be used for discussion and assignments.
Instructor: R. Kocourek
Format: Seminar 3 hours
Prerequisite: FREN 3020R
Enrolment: Limited to 15

***FREN 4015R Cours supérieur de version/ Advanced Translation into English:** Development of awareness of the expressive resources of French by dealing with problems and techniques of translation into English. The texts of weekly translation assignments, which account for 50% of the final grade, progress from expository and descriptive prose to poetry. Topics introduced through lectures and oral class reports include categories of translation, style, context and choice, context and meaning, ambiguity, verb systems of French and English, textual redundancy, simultaneous interpretation, and translation of metaphors. Occasionally, alternate English translations of a French text are studied for revealing contrasts. Instructor: W.T. Gordon
Format: Seminar 3 hours
Prerequisite: FREN 3020R
Enrolment: Limited to 15

***FREN 4041A/B Cours avancé de stylistique littéraire/Advanced Composition:** This class presents an in-depth study of style. The class has as a goal to teach students to express themselves with elegance and refinement.
Instructor: Staff
Format: Lecture 3 hours
Prerequisite: FREN 3040R
Enrolment: Limited to 15

***FREN 4300A/B Le roman courtois/Courtly Novels:** A close literary analysis of mediaeval French Arthurian romances. Texts in bilingual (Old French/French) editions. Instructor: H. Runte.
Format: Seminar 3 hours
Prerequisite: 3000-level French literature class
Enrolment: Limited to 15

***FREN 4301A/B La Poésie courtoise/Courtly Poetry:** A stylistic and socio-cultural study of French courtly love poetry from the 9th to the 15th centuries. Early texts in modern French translations.
Instructor: H. Runte
Format: Seminar 3 hours
Prerequisite: 3000-level French literature class
Enrolment: Limited to 15

***FREN 4400A/B Poésie de la renaissance: théorie et pratique/Renaissance Poetry: Theory and Practice:** A seminar-style study of poetic theories and practices from the Rhétoriqueurs to the Pléiade and to Malherbe.
Instructor: N. Trèves
Format: Seminar 3 hours
Prerequisite: 3000-level French literature class
Recommended: FREN 3400A/B
Enrolment: Limited to 15

***FREN 4401A/B La pensée philosophique, politique et morale de la renaissance/Philosophical, Political and Moral Thought of the Renaissance:** An in-depth study of major currents of Renaissance thought: humanism, scientific awakening, the beginning of littérature engagée, and the emergence of the moralistes and philosophes.
Instructor: N. Trèves
Format: Seminar 3 hours
Prerequisite: 3000-level French literature class
Enrolment: Limited to 15

***FREN 4500A/B L'aventure intellectuelle du grand siècle/The Intellectual Adventure of 17th-Century France:** This class examines, at an advanced level, a major writer, movement, genre or theme in 17th-century French literature. As the focus may vary frequently please consult the professor for detailed information on the topic and format.

Instructor: K. Waterson
Format: Seminar 3 hours
Prerequisite: 3000-level French literature class
Enrolment: Limited to 15

***FREN 4600A/B Le siècle des lumières: forme et philosophie/The Enlightenment: Form and Philosophy:** An in-depth study of the French Enlightenment which treats some of the longer works by major authors and introduces the student to secondary authors whose works are also of significant literary, philosophical or historical value. The study is unified by an examination of recurring philosophical ideas and literary themes important to understanding the development of new genres and styles. Please consult the professor for information on the theme treated and the works to be studied in any given semester.

Instructor: R. Bonnel
Format: Seminar 3 hours
Prerequisite: 3000-level French literature class
Enrolment: Limited to 15

***FREN 4700A La révolution romantique/The Romantic Revolution:** Romanticism is viewed primarily as a rebellious and creative force which greatly contributed to the reshaping of traditional society. The origins, main themes and trends of the movement are studied with an attempt to show Romanticism as a European movement, the impact of which was felt in fields beyond the boundaries of literature. Classes are conducted as seminars; students are required to do a great deal of personal research, to prepare exposés and to participate in class discussions. The choice of texts depends largely on the students' previous experience: they include works by Mme de Staël, Chateaubriand, Lamartine, Hugo, Vigny, G. Sand and others.

Instructor: J. Brown
Format: Seminar 3 hours
Prerequisite: 3000-level French literature class
Enrolment: Limited to 15

***FREN 4701B Le roman du dix-neuvième siècle/ The Nineteenth-Century Novel:** Intensive study of the work of a major novelist of the 19th century: e.g., Stendhal, Flaubert, Balzac, Zola; a study of his place in the development of the novel and of his contribution to the genre. The class involves a considerable amount of reading, regular reports, and exposés.

Instructor: J. Brown
Format: Seminar 3 hours
Prerequisite: 3000-level French literature class
Enrolment: Limited to 15

***FREN 4710A/B Du symbolisme au surréalisme/ From Symbolism to Surrealism:** Analysis of the evolution of French literature from the various symbolist manners of Verlaine, Rimbaud, Mallarmé, Lautréamont and Laforgue, through the period of Jarry and Dada, to the aspirations and paradoxes of Surrealism viewed, principally, through the work of Breton, Eluard, Aragon and Desnos.

Instructor: M. Bishop
Format: Seminar 3 hours
Prerequisite: 3000-level French literature class
Enrolment: Limited to 15

***FREN 4800A Le théâtre de Camus et de Claudel/The Theatre of Camus and Claudel:** In all, eight plays are studied, four from each author. The works offer a contrast in philosophical content and reveal technical problems involved in their stage presentation.

Instructor: D. Lawrence
Format: Seminar 3 hours
Prerequisite: 3000-level French literature class
Enrolment: Limited to 15

***FREN 4801B Le Nouveau Roman/Anti-novels of the 20th Century:** In this class we are mainly interested in fictional techniques: how the author creates his illusion. Each of the works selected for detailed study is important due to the author's rejection of conventional ideas regarding the form of the novel.

Instructor: D. Lawrence
Format: Seminar 3 hours
Prerequisite: 3000-level French literature class
Enrolment: Limited to 15

***FREN 4811A/FREN 4811B La poésie francophone de Perse et Char à Senghor et Césaire/Francophone Poetry from Perse and Char to Senghor and Césaire:** Discussion of the works of five or six major francophone poets of the modern period, chosen from: Perse, Reverdy, Claudel, Char, Frénaud, Senghor, Tchicaya, Césaire, Glissant, Miron and others.

Instructor: M. Bishop
Format: Seminar 3 hours
Prerequisite: 3000-level French literature class
Enrolment: Limited to 15

***FREN 4902A/FREN 4903B Écrivains québécois contemporains/ Contemporary Québec Writers:** In depth study of one or more contemporary Québec writers.

Instructors: B. Bednarski/L. Oore
Format: Seminar 2 hours
Prerequisite: 3000-level French literature class
Cross-listed: Canadian Studies
Enrolment: Limited to 15

***FREN 4904A/B Écrivaines québécoises/ Quebec Women Writers:** This class will explore the condition of women as revealed in texts by Québec women writers. In any given year different writers and time periods will be covered, and a variety of genres may be included.

Instructors:	B. Bednarski/L. Oore
Format:	Lectures/discussion 2 hours
Recommended:	FREN 2201A/2202B and at least one third-year literature class, preferably French Canadian
Cross-listed:	WOST 4250A/B; Canadian Studies
Enrolment:	Limited to 15

FREN 4994A/FREN 4995B, FREN 4996A/FREN 4997B, FREN 4998A/FREN 4999B: Recherches indépendantes/ Independent Research: May only be taken with the approval of the Chair.

Instructor:	Staff
Format:	Independent study/seminar
Prerequisite:	3000-level French literature class
Enrolment:	Limited to 5

German

Location:	1355 LeMarchant St. Halifax, N.S.
Telephone:	(902) 494-2161

Chair
H.-G. Schwarz (494-2161/2162)

Undergraduate Advisor
H.-G. Schwarz (494-2161/2162)

Professors
F.W. Gaede, PhD (Freib.) (McCulloch Professor in German)
P. Michelsen, PhD. (Gott.)
H.-G. Schwarz, MA (Munich), PhD (McG)

Associate Professor
D. Steffen, PhD (Gott.)

Assistant Professor
R.A. Spence, BA (Hons), MA, PhD (UBC)

Lecturer
G. Josenhans

Visiting Professor
K. Kanzog, Dr. phil. (Berlin), Dr. habil. (Munich), Prof. of German, University of Munich

Introduction

German, the most widely used language in Central Europe, is spoken by approximately 100 million people as their native tongue in Austria, Germany, Switzerland and some parts of Eastern Europe. The cultural, economic, and scientific role of the German-speaking countries makes the knowledge of German indispensable to the study of most academic disciplines.

The departmental programme "German Studies" is the investigation of German culture and its place in the formation of the modern world. The programme concentrates on significant aspects of the cultural tradition of the German-speaking countries. From Luther to Nietzsche, Freud, and Marx, German writers have moved men and nations to change the course of the world. The literary and intellectual development of Germany culminated around 1800 in the epoch of Classicism. The authors of this epoch (Lessing, Herder, Hegel, Goethe, Schiller) founded their writings on a thorough knowledge of the cultural tradition of Europe, especially Greek culture. As scientists, historians, and politicians they described in their literary works, problems and questions of a universal nature. They became the first historians of literature and created the discipline of aesthetics. The universality of the authors of German classicism explains their present day relevance and makes the study of German important and attractive.

Major or honours students may, with the approval of the Department of German, take up to one year (5 full credits) of work at a University in a German-speaking country and receive credit at Dalhousie. The Department has exchange arrangements with the universities of Heidelberg and Munich.

Degree Programmes

BA with Honours in German
Students considering an honours course are advised to consult the Department of German.

Combined Honours
It is possible for a student to take an honours degree combining German with another subject. Any student intending to take such a combined honours degree should consult with the two respective departments to arrange the details of such a programme.

Advanced Major
The department is able to offer a major in the 20-credit programme. For further information refer to specific regulations for the 20-credit programmes on page 78.

BA
Students concentrating on German should take a minimum of four German classes beyond the 1000 level.

Classes Offered

Note: Classes marked * are not offered every year. Please consult the timetable on registration to determine if this class is offered.

German Language Studies

Introductory Classes Offered

GER 1000R German for Beginners: GER 1000R is a seminar class for beginners only, and no previous knowledge is required. Its equivalent is two years of German in high school with a final mark of 75% or better. The class emphasizes the spoken language, and provides the student with a thorough knowledge of basic grammar. Language laboratory work and attendance of small conversation groups are required as are writing tutorials five or six times during the year. Passing this class fulfills the first year writing requirement.

Instructors: Staff
Format: Seminar 3 hours
Prerequisite: None
Enrolment: Limited to 20 per section.

GER 1010R German for Beginners: An introductory language class, using the same methods and goals as GER 1000R. This class does not fulfill the writing requirement for beginning students.

Instructors: Staff
Format: Seminar 3 hours
Prerequisite: None
Enrolment: Limited to 20 per section

GER 1050R German Reading Course for Beginners: Students acquire a knowledge of basic vocabulary and grammatical structures sufficient to understand newspapers and texts in the humanities and sciences. No previous knowledge of German is required. The class is taught in English. Attendance at writing tutorials is required five or six times during the year. For purposes of admission to advanced classes in German it is equivalent to GER 1000R. This class fulfills the writing requirement for first-year students.

Instructor: H.-G. Schwarz
Format: Seminar 3 hours
Prerequisite: None
Enrolment: Limited to 20 per section

GER 1060R German Reading Course for Beginners: An introductory reading class using the same methods and goals as GER 1050R. This class does not fulfill the writing requirement for beginning students.

Instructor: H.-G. Schwarz
Format: Seminar 3 hours
Prerequisite: None
Enrolment: Limited to 20

GER 1000R/1050R or GER 1010R/1060R Intensified German: lecture 6 hours, lab 2 hours. Either of these combinations is recommended for students who desire rapid progress in the German language.

Intermediate Classes

Intermediate classes are based on GER 1000R, high school German Grade 10, 11, 12 or an equivalent basic knowledge. A combination of GER 2000R and GER 2020R serves as an accelerated Intermediate German class and is designed for students who want to make rapid progress in the language.

GER 2000R Intermediate German: The main aim is to develop a certain degree of speaking fluency as well as reading and writing skills. Language Laboratory work is required. Small conversation classes once a week as an aid to speaking fluency are compulsory.

Instructors: G. Josenhans, E. Spence
Format: Seminar 3 hours
Prerequisite: Any of GER 1000R, 1010R, 1050R, 1060R
Enrolment: Limited to 20

***GER 2020R Exercises in Translation and Composition:** English and German texts from various periods of different types will be translated. These translations lead to the discussion of specific difficulties of grammar and construction. Students must prepare translations or compositions for each class.

Instructor: G. Josenhans.
Format: Seminar 2 hours
Prerequisite: GER 1000R, GER 1010R or equivalent
Enrolment: Limited to 20

GER 3000R Advanced German: Translations, readings, essays and discussions will promote fluency in the language on the advanced level.

Instructor: G. Josenhans
Format: Seminar 2 hours
Prerequisite: GER 2000R or equivalent
Enrolment: Limited to 20

GER 3010A Advanced Translation I: German-English: German texts of various kinds are used to deal with techniques and problems of translating from German into English. The class includes discussion of such things as translation theories, elements of style and questions of ambiguity and textual redundancy.

Instructor: E. Spence
Format: Seminar 3 hours
Prerequisite: GER 2000R or equivalent
Enrolment: Limited to 20

GER 3011B Advanced Translation II: English - German: English texts of various kinds are used to deal with the techniques and problems of

translating from English into German. The class includes discussion of such things as translation theories, elements of style and questions of ambiguity and textual redundancy.
Instructor: E. Spence
Format: Seminar 3 hours
Prerequisite: GER 2000R or equivalent
Enrolment: Limited to 20

Study of German Literature and Culture

*GER 2150R Goethe's Faust:
Instructor: H.-G. Schwarz
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: Limited to 20

GER 2200R Introduction to German Literature: A study of texts representing major periods of German Literature. Special emphasis is on the interaction between literature, society and other forms of art. The class also serves as an introduction to literary criticism. The language of instruction is English; the texts are in German.
Instructor: E. Spence
Format: Seminar 2 hours, tutorial 1 hour
Prerequisite: GER 2000R or equivalent or a reading knowledge of German
Enrolment: Limited to 20

*GER 2300R In Pursuit of Freedom from Luther to Nietzsche: A study of major modern writers with special emphasis on Hegel's Philosophy of Right. This class is taught in English and uses English translations.
Instructor: D. Steffen
Format: Seminar 2 hours
Prerequisite: A general introduction to literature, culture or philosophy
Enrolment: Limited to 20

*GER 2400R German Art and Literature: This class gives an introduction to modern German Art and Literature. Special emphasis is on the interaction between art and literature, particularly the themes and styles shared by visual and literary expression during the various epochs of modernity.

Instructor: H.-G. Schwarz
Format: Seminar 2 hours
Prerequisite: GER 2000R or equivalent
Enrolment: Limited to 20

*GER 2450R Kant and the History of German Idealism: A study of Kant's relation to modern Rationalism and Empiricism, and an inquiry into the principles of Idealism.
Instructor: D. Steffen
Format: Seminar 2 hours
Prerequisite: GER 2000R or GER 2200R or King's Foundation Year
Enrolment: Limited to 20

*GER 3050R History and Theory of the German Novel: Representative works from the Baroque Age to the 20th Century are studied and the principles of the genre discussed.
Instructor: F. Gaede
Format: Seminar 2 hours
Prerequisite: GER 2200R or GER 2400R
Enrolment: Limited to 20

*GER 3100R German Literature and Thought from Reformation to Enlightenment: A study of German literature between the16th and 18th centuries as a direct reflection of the important religious, social and philosophical developments after the Reformation and during Absolutism.
Instructor: F. Gaede
Format: Seminar 2 hours
Prerequisite: GER 2200R or GER 2400R
Enrolment: Limited to 20

*GER 3150R Goethe and the Enlightenment: A study of German literature and thought of the time which preceded and witnessed the great revolutions of the 18th.century.
Instructor: D. Steffen
Format: Seminar 2 hours
Prerequisite: GER 2200R or GER 2400R
Enrolment: Limited to 20

*GER 3200R Goethe and Romanticism: A study of Goethe, Hölderlin, Kleist, and Novalis.
Instructor: D. Steffen
Format: Seminar 2 hours
Prerequisite: GER 2200R or GER 2400R
Enrolment: Limited to 20

*GER 3240R Literature of the 19th Century: A discussion of essential literary texts which throw a critical light on the growing forces of materialism and positivism.
Instructor: F. Gaede
Format: Seminar 2 hours
Prerequisite: GER 2200R or GER 2400R
Enrolment: Limited to 20

*GER 3250R Modern German Literature: Modern authors as witnesses of the political catastrophes and social changes of our century: a study of the plays of B. Brecht and of selected prose texts of Fr. Kafka, Th. Mann and G. Grass.
Instructor: F. Gaede
Format: Seminar 2 hours
Prerequisite: GER 2200R or GER 2400R
Enrolment: Limited to 20

*GER 4100R Aesthetic Theory: An historical study of the development of literary theory.
Instructor: F. Gaede
Format: Seminar 2 hours
Prerequisite: GER 2200R or GER 2400R
Enrolment: Limited to 20

*GER 4200R Seminar on Hegel's Phenomenology of Spirit: The Phenomenology of Spirit, published in 1807, was Hegel's first major work. He intended to write an introduction to philosophy by demonstrating the necessity of the advance from the most immediate form of knowledge to absolute knowledge. To achieve this he had to write the Phenomenology as an introduction to his own philosophy.

Instructor: D. Steffen
Format: Seminar 2 hours
Prerequisite: GER 2200R or GER 2400R
Enrolment: Limited to 20

*GER 4250R Studies in German Idealism: This seminar is specifically intended for students in the advanced major and honours degree programmes. The specific content of the seminar varies from year to year, but is always related to some aspect of Idealism.

*GER 4500A Special Topics Course I: This is an intensive research seminar dealing with selected topics to be announced.

*GER 4501B Special Topics Course II: This is an intensive research seminar dealing with selected topics to be announced.

Greek

See under Classics.

History

Location: 1411 Seymour Street
Halifax, N.S.
Telephone: (902) 494-2011

Chair
G.D. Taylor (494-2011)

Undergraduate Coordinator
S. J. Brooke (494-2011)

Professor Emeritus
P.B. Waite, MA (UBC), PhD (Tor), FRSC

Professors
P. Burroughs, BA, PhD (Lond.), FR HistS
M.S. Cross, BA, MA, PhD (Tor.)
J. Fingard, BA (Dal), MPhil, PhD (Lond.), Dean, Faculty of Graduate Studies
J.E. Flint, MA (Cantab.), PhD (Lond.), FR HistS, FRSC, McCulloch Professor in History
N.G.O. Pereira, BA (Williams), MA, PhD (UC Berkeley)
L.D. Stokes, BA (Tor.), MA, PhD (Johns Hopkins)
G.D. Taylor, BA, PhD (Penn.)
M. Turner, BA, MA (Manc.), PhD (Lond.)
J.B. Webster, MA (UBC), PhD (Lond.)

Associate Professors
J.E. Crowley, AB (Princ.), MA (Mich.), PhD (Johns Hopkins)
J.T. O'Brien, BA (Wisconsin), MA, PhD (Rochester)
J.L. Parpart, BA (Brown), MA, PhD (Boston)
D.A. Sutherland, BA (MtA), MA (Dal), PhD (Tor.)
D.R. Woolf, BA (Queens), DPhil (Oxon.), FR HistS

Assistant Professors
R. Bleasdale, BA, MA, PhD (UWO)
S.J. Brooke, BA (Dal), MA (McGill), DPhil (Oxon.)
G. Hanlon, MA (Tor.), Dr.de 3e cycle (Bordeaux)
C.J. Neville, BA, MA (Carleton), PhD (Aberdeen) (Research)

Introduction

A sense of history is a primitive need felt by individuals and by groups. Just as people need to know who they are and how they arrived where they are, groups, races, classes, states and nations need a sense of their own past as part of their culture.

The academic study of history, therefore, is concerned to discover as much as possible of the reality of the past and to interpret human behaviour in its changes through time. It is a unique subject, scientific in the way it uses evidence, but still an art because the reconstruction of the past requires a disciplined imagination and an effective rhetoric for the communication of meaning.

The contemporary world is one of intensive specialization, in which the varieties of human knowledge have increased well beyond the capacity of any individual to command them all. These developments have reinforced the role of history as the foundation of a person's education, because history can never draw frontiers around itself to exclude any branch of human knowledge, although individual historians will want to select that portion of it especially relevant for them. History's field of study will always be the entirety of the human experience.

The subject of history does not have a monolithic body of knowledge. Historical understanding is a matter of interpretation, of offering explanations for events and movements which are subject to constant revision by scholars. Arguments, scepticism and controversy are thus the very stuff of history. The history student does not merely acquire a particular mass of information, but learns to think independently.

Degree Programmes

A degree in history provides an appropriate background for students planning to enter professional careers in fields such as law, education and journalism, as well as those interested in pursuing graduate study in history or related social science and humanities disciplines.

Classes in the History Department are grouped numerically in several geographical, chronological, subject and other areas: for example, Canadian, American, British, African, Medieval and Early Modern European, Modern European, Women, Science and Technology, etc. Students are strongly encouraged to select a distribution of classes from different areas in order to experience the variety and richness of history.

Students who wish to build up a greater specialization in history than the minimum requirements outlined below may do so by taking classes of an historical nature given by the Departments of Classics, Economics, Music, Philosophy, Political Science, Spanish, Theatre, etc.

Students who wish to concentrate in a particular area of history should consider acquiring the appropriate language skills, especially if they intend to pursue graduate study in it.

General and Honours BA

There are no prerequisites for entry into the programme at the 1000- and 2000-levels; however, some 2000-level classes may exclude first-year (freshman students. A first year history course is recommended for prospective majors or honours students but is not mandatory.

Students who wish to major in history in the three-year (15 credits) programme are urged to choose one or two 1000- or 2000-level history classes in their first year. They must take a minimum of four and preferably five, but no more than eight additional classes above the 1000-level, of which at least two must be beyond the 2000-level.

Students who wish to pursue the Advanced Major (four years, 20 credits) programme must complete all the requirements for the three-year degree. In addition, they must take a minimum of two classes (one at the 3000-level and preferably HIST 4500 A/B, when offered, and HIST 4985A), for a total of at least six but not more than nine classes in history, above the 1000-level.

Students who wish to pursue an Honours Degree in history must also complete all the requirements for the three-year degree. In addition, they must take two required classes (HIST 4985A, HIST 4990R) and a further number of classes, preferably at the 3000- and 4000-levels, for a total of at least nine but not more than eleven classes above the 1000-level in history. It is also possible to complete a combined Honours Degree in history and another subject, in which case the student should consult the Undergraduate or Honours Coordinators in both Departments.

The following outline presents the minimum departmental requirements for each programme and should be read in conjunction with the general requirements of the Faculty. Students who intend to major or honour in history should consult the department's undergraduate coordinator to have their plan of study approved, preferably before entering the second year.

First Year (all Majors and Honours students)
- Required Classes: none.
- Recommended Classes: at least one in history at the 1000 - or 2000 - level.
- Number of Electives: three or four.

Second Year (all Majors and Honours students)
- Required Classes: two or three in history from different groups at the 2000 - level.
- Number of Electives: two or three.

Third Year (all Majors and Honours students)
- Required Classes: two in history at the 3000 - level.
- Recommended Classes: at least one in history at the 2000 - or 3000 - level.
- Number of Electives: one or two.

Fourth Year (Advanced Majors only)
- Required Classes: two in history,one of them at the 3000 - or 4000 - level.
- Recommended Classes: HIST 4500A/B, HIST 4985A and one other in history at the 3000 - level.
- Number of Electives: two or three.

Fourth Year (Honours Students only)
- Required Classes: HIST 4985A, HIST 4990R.
- Recommended Classes: HIST 4500A/B and three in history at the 3000 - or 4000 - level.
- Number of Electives: none.

Classes Offered

Note: Classes marked * are not offered every year. Please consult the current timetable on registration to determine if these classes are offered.

HIST 1001A Medieval Europe: An introduction to the thousand years between the Barbarian invasions of the fourth, fifth and sixth centuries and the beginnings of modern Europe. Original sources in translation are used to illustrate the medieval world view. Students are acquainted briefly with a wide range of topics, political, cultural and social. Particular attention is paid to developing a basic appreciation of the richness of an age often characterised as "dark" and unknowable.

Instructor:	C.J. Neville
Format:	Lectures/tutorials 3 hours
Enrolment:	Limited to 100
Exclusion:	Former HIST 1000R students

HIST 1002A/B Renaissance to Revolution, 1500-1789: This course is designed to serve as an introduction to the major themes and events in

European history. Students will become acquainted with the importance of regional geography, and with the basic concepts and processes in social, religious, economic, political and cultural history.
Instructor: G. Hanlon
Format: Lectures 3 hours
Enrolment: Limited to 100
Exclusion: Former HIST 1000R students

HIST 1003A/B Modern Europe: From the French Revolution to the Cold War, 1789-1956: An introductory survey of the history of Europe from 1789 to 1956 Emphasis will be upon the major political and intellectual developments in France, Germany and Russia, but other national areas as well as social and economic issues will also receive some attention.
Instructors: N.G.O. Pereira
Format: Lectures 3 hours
Enrolment: Limited to 100
Exclusion: Former HIST 1000R students

HIST 1050R The Modern World: Open the morning newspaper or tune in the evening news. Crises, conflicts and controversies parade before us in a seemingly random and inexplicable fashion. Where did the problems that confront us today originate? Can an understanding of the past provide guidelines for dealing with the complex issues of the present? Historians cannot foretell the future, but they can provide perspectives that relate the events of our own time to broader trends of political, economic and social development in the modern world. This class seeks to introduce students to history as an on-going process, linking the present to the past.
Instructor: G.D. Taylor
Format: Lectures 3 hours
Enrolment: Limited to 300

HIST 1200R Canada: An Introductory Survey: An overview of the Canadian experience, from initial contact between natives and newcomers, to contemporary debate over such issues as abortion and free trade. Emphasis is placed on the theme of change and conflict in terms of the economy, society and politics.
Instructors: J. Fingard/D. Sutherland
Format: Lectures 3 hours
Cross-listed: Canadian Studies
Enrolment: Limited to 100

***HIST 1300R History of the United States:** This class surveys the broad contours of the American experience from the Jamestown settlement to the Reagan revolution. It examines the historical development in the United States of republican government, democratic society, and the constitutional conflicts decided by the Civil War. In addition to such political concerns, the class pays particular attention to the economic development of the United States, her unusual racial and ethnic patterns, and her propensity for generating and absorbing reform movements. Students attracted to third and fourth year class in the history of the United States should consider History 1300 early in their university career.
Instructor: J.T. O'Brien
Format: Lectures 3 hours
Enrolment: No Limit

HIST 1400R Europe and the Third World: Passing this class fulfills the first year writing requirement; this class is therefore an introduction to university level work and provides training in study habits, analysis of problems and essay writing by examining six "units of study" in turn. Each unit is concerned with a major phenomenon in the history of European expansion overseas and its impact on non-European peoples, ranging from 16th century America to twentieth century nationalism and decolonization. For each unit there are lectures and tutorials and students write six essays, one per month in each unit.
Instructors: J.B. Flint/J.B. Webster
Format: Lectures/tutorial 3 hours
Enrolment: Limited to 90

***HIST 2001A Early Medieval Europe:** An investigation of the period between the fourth and the twelfth centuries. Major themes of lectures and tutorials include the mingling and exchange of Roman traditions with the Barbarian cultures in the fifth and sixth centuries, the creation of the feudal states of Europe following the disintegration of the Carolingian Empire, the development of monasticism, church-state relations, the Gregorian Reform and the Investiture Contest, the rise of papal government, the twelfth-century Renaissance, peasant life and popular culture. Original sources in translation are used to familiarise students with the medieval world view.
Instructor: C.J. Neville
Format: Lectures/tutorials 3 hours
Recommended: HIST 1001A
Enrolment: limited to 80

***HIST 2002B Later Medieval Europe:** A study of the period beginning with the pontificate of the greatest of the medieval popes, Innocent III, and ending with the emergence of the early modern European states. After a preliminary introduction to the nature of medieval society at the end of the twelfth century attention is turned to a variety of themes, political, social, cultural, economic and religious. These include the Crusades, church-state relations, heresy, peasant life and peasant rebellions, political thought, varieties of medieval law, architecture and literature, and the concept of decline, or the "autumn" of the Middle Ages. Students make use of original sources in translation.
Instructor: C.J. Neville
Format: Lectures/tutorials 3 hours

Recommended: HIST 1001A or 2001A or both
Enrolment: Limited to 80

***HIST 2005A/B Renaissance and Reformation Europe, 1400-1559:** A survey of the major themes, subjects and personalities in western European history from the high Italian Renaissance to the beginnings of the Protestant Reformation in the sixteenth century. Topics to be covered include the rise of the Italian city-states, Italian humanism, the arts, the emergence of centralized monarchies in northern Europe, religious sentiment and the reform movement. Although most areas of western Europe will be dealt with, the focus will be on Italy, France and Germany.
Instructor: D.R. Woolf
Format: Lectures/discussion 3 hours
Recommended: HIST 1001A or HIST 1002A/B
Enrolment: Limited to 60
Exclusions: Former HIST 2011A and first year students

***HIST 2006A/B After Columbus: The Old World and the New, 1450-1650.** The commercial and colonial expansion of Europe into the Americas. Topics of particular interest are the relations of Europeans and indigenous peoples, the ecological consequences of colonization, the use of unfree labor, the role of technology, the establishment of settler colonies, the effect of overseas communication on European culture, and the role of colonial expansion in the development of the world economy.
Instructor: J.E. Crowley
Format: Lectures/discussion 3 hours
Recommended: HIST 1002A/B
Enrolment: Limited to 60
Exclusions: Former HIST 2010A and first-year students

***HIST 2007A/B The Atlantic World: European Empires in the Americas, 1650-1800:** The development of the European colonial societies after their initial settlement and the establishment of their staple economies in the sixteenth and seventeenth centuries. The topics of chief interest are the predominance of colonial trade in Europe's large-scale commerce, the role of the colonies in European conflicts, the renewal of exploration, the development of the colonies' internal economies, and their revolts against European rule.
Instructor: J.E. Crowley
Format: Lectures/discussion 3 hours
Recommended: HIST 1002A/B, 2006A/B
Enrolment: Limited to 60
Exclusions: Former HIST 2013B and first-year students

***HIST 2008A/B The Rise of Absolutism, 1559-1715:** A sequel to HIST 2005A/B, this class is a survey of the most important themes and topics in the history of western Europe from the mid-sixteenth century to the death of Louis XIV. Topics to be covered include: the Counter-Reformation; the Spanish hegemony; the Dutch Revolt; the Thirty Years' War; the "Crisis" of the mid-seventeenth century; the conflict between absolutist regimes and representative bodies; the beginnings of mercantilism; and the rise to world power of Louis XIV's France.
Instructor: D.R. Woolf
Format: Lectures/discussion 3 hours
Recommended: HIST1001A, 1002A/B
Enrolment: Limited to 60
Exclusions: Former Hist 2012B and first-year students

***HIST 2009A/B Enlightenment and Revolutionary Europe, 1715-1815:** A comparison of France and Britain with respect to such topics as literary culture, the growth of manufactures, the role of the state in economic and social reform, the crisis of the Old Regime and the French Revolution, as well as the Napoleonic Empire and its wars.
Instructor: J.E. Crowley
Format: Lectures/discussion 3 hours
Recommended: HIST 1002A/B, 2005A/B, 2008A/B
Enrolment: Limited to 60
Exclusions: Former HIST 2012B and first-year students

HIST 2020R Imperial and Soviet Russia: A survey of Russian history from the time of Peter the Great to the present. Emphasis is on themes of continuity in the process of modernization, as well as upon elements of discontinuity such as the Great Reforms of Alexander II, the Revolutions of 1917, the collectivization of the peasantry under Stalin, etc.
Instructor: N.G.O. Pereira
Format: Lectures/tutorials 3 hours
Recommended: HIST 1001A or HIST 1002A/B or HIST 1050R or HIST 1400R
Enrolment: Limited to 90
Exclusion: First-year students (except with permission of instructor)

***HIST 2022A/B Nineteenth Century European Intellectual History:** A select survey of the thought and teachings of major figures in European intellectual history from the time of the French Revolution through the First World War, including Schiller, Hegel, Ricardo, Tocqueville, Fourier, Darwin, Marx, Bakunin, Nietzsche, Lenin, and Freud.
Instructor: N.G.O. Pereira
Format: Lectures/tutorials 3 hours
Recommended: HIST 1001A or HIST 1002A/B or HIST 1050R or HIST 1400R
Enrolment: Limited to 60
Exclusion: First-year students (except with permission of the instructor)

HIST 2021A/B Soviet Russia: Survey of Soviet Russia from 1917 to the present. Topics discussed will include the Revolution of 1917, the Civil War and War Commission, NEP, Collectivization, the Great Purges, WWII, and the Post-Stalin era.

Format: Lecture/tutorial, 3 hrs
Instructor: Staff
Prerequisite: None
Enrolment: Limited to 40
Exclusion: HIST 2020R

***HIST 2030R Germany in the Nineteenth and Twentieth Centuries:** Selected topics in the history of Germany during the past two centuries, including the growth of nationalism and liberalism, the role of Prussia, industrialization, Bismarck and the political parties, civil-military relations, the rise, rule and destruction of Nazism, and the post-war development of the Federal and German Democratic Republics.

Instructor: L.D. Stokes
Format: Lectures/discussion 2 hours
Recommended: HIST 1001A or HIST 1002A/B or HIST 1003A/B or HIST 1050R or HIST 1400R
Enrolment: 30 students per section, up to two sections
Exclusion: First-year students

HIST 2040R Modern France, 1700-1990: The class covers the last three centuries of political, social, economic and cultural history in Europe's pre-eminent nation. More specifically we examine the transition from a traditional rural society with a precocious state, through the French Revolution and its political and social repercussions. Throughout the 19th and 20th centuries France, perhaps more than any other single nation, mirrors developments in all aspects of the contemporary Western world.

Instructor: G. Hanlon
Format: Lectures/tutorial 3 hours
Recommended: HIST 1001A or HIST 1002A/B or HIST 1003A/B
Enrolment: Limited to 60

***HIST 2060R Italy after the Renaissance:** Why does the Western world's most advanced economy and culture enter into prolonged decline after 1620? Here we deal with the theme of "decadence" from which Italy has emerged only in the last half of the 20th century. The class explores how advantages became handicaps, how governments tried to stem a decline of which they were acutely aware, of how society reacted to crisis, and the roles of ideology in fashioning responses. The class will also focus on those aspects in which there was no decline.

Instructor: G. Hanlon
Format: Lectures 3 hours
Recommended: HIST 1001A or HIST 1002A/B
Enrolment: Limited to 60

***HIST 2062A/B Italy from the Risorgimento to Fascism, 1848-1945:** Selected topics in the history of nineteenth and twentieth century Italy, including the role of Piedmont in the creation of the national state, regionalism and modernization, the political weaknesses of liberal Italy, and the origins, rule and fall of the Fascist regime.

Instructor: L.D. Stokes
Format: Lectures/discussion 2 hours
Recommended: HIST 1001A or HIST 1002A/B or HIST 1003A/B or HIST 1050R or HIST 1400R
Enrolment: 30 students per section, up to 2 sections
Exclusion: First-year students

***HIST 2081R Twentieth Century Europe in Literature, Art and Film:** A survey of contemporary European history that employs representative works of literature, art, architecture and film as well as traditional published records and monographic accounts to introduce students to major events of the twentieth century: the two world wars, the Russian Revolution, the political systems of Italian Fascism, German Nazism and Soviet Communism, the Holocaust and others.

Instructor: L.D. Stokes
Format: Lectures/discussion 3 hours (audio-visual facilities as needed)
Recommended: HIST 1001A or HIST 1002A/B or HIST 1003A/B or HIST 1050R or HIST 1400R
Enrolment: 30 students per section, up to two sections
Exclusion: First-year students

***HIST 2101A Medieval England:** This class examines some of the major social, political, economic and cultural themes in English history from the departure of the Roman legions in the fifth century to the Wars of the Roses in the fifteenth. Major topics of study include the development and maturation of the English church, the impact of the Norman Conquest on Anglo-Saxon government and society, the development of the common law system, English monasticism, constitutional struggles in the later medieval period, war with France and Scotland. In an effort to understand and appreciate more fully the culture of medieval England detailed consideration is given to contemporary sources, in translation.

Instructor: C.J. Neville
Format: Lectures/tutorials 3 hours
Recommended: HIST 1001A or HIST 2001A or HIST 2002B
Enrolment: Limited to 80

HIST 2104A/B England under the Tudors, 1485-1603: An introduction to the major events, personalities and developments in the political, social and economic history of sixteenth-century England. Issues to be studied include: the

formation of a national state; the beginnings of inflation; the Reformation and dissolution of the monasteries; the mid-Tudor "crisis"; and the achievements of the Elizabethan age.
Instructor: D.R. Woolf
Format: Lectures/tutorials 3 hours
Recommended: HIST 1001A/B or HIST 1002A/B
Enrolment: Limited to 60
Exclusions: HIST 2102B, HIST 2103R, and first-year students

HIST 2105A/B England under the Stuarts, 1603-1688: This sequel to HIST 2104A/B studies the principal events of the seventeenth-century English history, with reference to developments in Scotland and Ireland. Among the topics to be discussed: the character of Stuart kingship; the crisis of the aristocracy; the fear of catholicism at home and abroad; the causes and course of the civil war 1642-49; the importance of parliament; the Cromwellian Regime; the Restoration; and the Revolution of 1688.
Instructor: D.R. Woolf
Format: Lectures/tutorials 3 hours
Recommended: HIST 1001A/B or HIST 1002A/B
Enrolment: Limited to 60
Exclusions: HIST 2102B, HIST 2103R, and first-year students

HIST 2111A Modern Britain to 1884: A survey of the political, economic and social development of Britain from the Seven Years War to the mid-Victorian era. Among the topics considered are the impact of foreign revolutions and wars on domestic politics, the industrial revolution and the evangelical revival, the nature of social classes and movements of popular protest.
Instructor: S. Brooke
Format: Lectures/tutorials 3 hours
Enrolment: Limited to 60

HIST 2112B Modern Britain from 1884 to the Present: A survey of the political, economic and social development of Britain from the mid-Victorian era to the present. Among the topics considered are the fortunes of the country's major political parties, the experience of Britain in two world wars, the growth of the welfare state and Britain's decline as an industrial and world power.
Instructor: S. Brooke
Format: Lectures/tutorials 3 hours
Recommended: HIST 2111A
Enrolment: Limited to 60

HIST 2131A The Rise of the British Empire: A survey of British expansion overseas from Tudor times to the heyday of British imperialism before World War I. Among the themes considered are the motives and character of British imperialism, changing British attitudes and policies towards the empire, colonization and conquests and contacts with non-European peoples.
Instructors: P. Burroughs/J. Flint
Format: Lectures/tutorials 3 hours
Recommended: HIST 1400R
Enrolment: Limited to 60

HIST 2132B The Fall of the British Empire: A survey of the decline of British imperialism and international commitments since the First World War. Among the themes considered are the impact of global war on the empire, the transformation of empire into commonwealth, colonial revolts and independence movements, decolonization and the legacy of imperialism at home and abroad.
Instructors: P. Burroughs/J. Flint
Format: Lectures/tutorials 3 hours
Recommended: HIST 1400R, 2131A
Enrolment: Limited to 60

***HIST 2151A/B Scotland from the Late Middle Ages to Culloden:** A survey of major themes in Scottish history from the fifteenth century to the Jacobean era. After a general introduction to Scotland's geographical and cultural inheritance, students will proceed to a review of such topics as crown-magnate relations in the late Middle Ages, religious life in pre-Reformation Scotland, the coming of the Reformation, the evolution of the Reformed Kirk, Highlanders vs. Lowlanders, the problem of the Borders, the unions of 1603 and 1707, education and poor law in early modern Scotland, the Scottish Revolution, and the Jacobite rebellions. Tutorial discussions will be based on prepared readings. Throughout the class emphasis will be placed on recent re-interpretations of traditionally held views with respect to these so-called "dark ages" in Scottish history.
Instructor: C.J. Neville
Format: Lectures/tutorials 3 hours
Enrolment: Limited to 60

***HIST 2152A/B Scotland since 1745:** A survey of major themes in the history of "North Britain" from the last Jacobite rebellion of 1745 to the present. Topics to be dealt with include the Scottish Enlightenment, the Age of Improvement, radicalism and repression, the Clearances and emigration to North America, agitation for parliamentary reform, Scottish Chartism, Walter Scott and Scottish Romanticism, Scottish cities in the Victorian era, Scottish socialism, Scotland in the Depression, the Second World War, the ascendancy of Labour, Scottish nationalism, North Sea oil, and the legacy of underdevelopment.
Instructor: D.A. Sutherland
Format: Lectures/tutorials, 3 hours
Enrolment: Limited to 60

***HIST 2202B Canada's Industrial Revolutions, 1850-1950:** A study of Canada's transition from a pre-industrial society to a leading industrial nation. Principal themes for discussion include urbanization, the rise of the factory and mass

production, the impact on home and family, the revolution in transportation and communications, weapons development, and patterns of consumption. Special attention is given to the role of technology.
Instructor: R. Bleasdale
Format: Lectures/tutorials 3 hours
Recommended: HIST 1200R or equivalent introductory class in Canadian history
Enrolment: Limited to 60
Cross-listed: Canadian Studies

HIST 2211A Social History of Canada before 1870: This class examines the social history of pre-Confederation Canada through such topics as social control, violence and protest, women and domestic life, regionalism and marginal peoples, and the transformation of the economy.
Instructor: M.S. Cross
Format: Lecture/tutorial 2 hours (evening)
Enrolment: Limited to 60
Cross-listed: Canadian Studies
Exclusion: Former HIST 2210R students

HIST 2212B Social History of Canada Since 1870: This session surveys the development of Canadian society from Confederation to the present. Among the themes considered are social classes, the role of women, how people worked and how they lived, conflicts such as rioting and rebellions, and specific case studies such as Indian-white relations, the Winnipeg general strike and the troubles of industrial Cape Breton.
Instructor: M.S. Cross
Format: Lecture/tutorial 2 hours (evening)
Enrolment: Limited to 60
Cross-listed: Canadian Studies
Exclusion: Former HIST 2210R students

HIST 2221A Rough Justice: Order, Disorder and Canadian Popular Culture to the 1890s: This class investigates the character of popular culture, the diversions, recreations and forms of community control engaged in by Canadians, and the attempts by authorities and the law to bring order to the culture. Topics range widely over the broad scope of popular culture, from sports, drinking and prostitution to religious organisation. Study of the mechanisms and institutions for imposing order includes the criminal law, industrial discipline, and more respectable forms of cultural activity.
Instructors: R. Bleasdale/M. Cross
Format: Lectures/tutorials 3 hours
Enrolment: Limited to 60
Cross-listed: Canadian Studies
Exclusions: Former HIST 3241A, HIST 3242B, HIST 3280A, HIST 3281B students

HIST 2222B Rough Justice: Order, Disorder and Canadian Popular Culture, 1890s to the Present: This class continues the study of Canadian popular culture described in HIST2221A, from the turn of the century to the present.
Instructors: R. Bleasdale/M. Cross
Format: Lectures/tutorials 3 hours
Enrolment: Limited to 60
Cross-listed: Canadian Studies
Exclusions: Former HIST 3241A, HIST 3242B, HIST 3280A, HIST 3281B

HIST 2230R Canada in the Twentieth Century: A survey of the roots of contemporary Canada, which studies the origins of our current issues and problems by focussing on Canadian political developments, as well as on economic and social structures, French-English relations and provincial and regional disparities.
Instructors: R. Bleasdale/ Staff
Format: Lectures/tutorials 3 hours
Enrolment: Limited to 60
Cross-listed: Canadian Studies
Recommended: HIST 1200R or an equivalent introductory class in Canadian history

HIST 2270R The Atlantic Provinces: survey of Maritime and Newfoundland history from the beginnings of European penetration to the "triumph of Canadianization." Attention is given to the interaction of environment and culture which has given rise to a durable but nevertheless vulnerable regional character. The class seeks to define internal patterns of social change and social conflict while simultaneously placing regional development within a broader national and international context.
Instructors: J. Fingard/D. Sutherland
Recommended: HIST 1200R or an equivalent introductory class in Canadian history
Cross-listed: Canadian Studies
Enrolment: Limited to 60

***HIST 2331A/B Colonial and Revolutionary America, 1600-1800:** Early American history from the British invasion of North America through the establishment of settler colonies to the imperial crisis and its republican outcome.
Instructor: J. Crowley
Format: Lectures 3 hours
Recommended: HIST 1300R
Enrolment: Limited to 60

***HIST 2332A/B Nineteenth Century America:** In 1800 slightly more than 5 million persons lived in the United States, farmed for a living, and owned land, but by 1900 a majority of the country's 76 million inhabitants neither owned nor farmed their own lands. Clearly much changed in nineteenth century America: the nation's western boundary

shifted from the Mississippi to the Pacific; cities and factories altered her landscape; her slave system, the world's largest, was destroyed in the first great industrial war of our time; and by 1900 she was the most powerful industrial producer on the globe. The nature and consequences of these and other major developments are the subjects considered in this class.

Instructor: J.T. O'Brien
Format: Lectures/tutorials 3 hours
Recommended: HIST 1300R
Enrolment: Limited to 60
Exclusion: Former HIST 2330R and first year students.

***HIST 2333A/B Twentieth Century America:** This class traces the political and economic history of the United States from the turn of the century to the Reagan era. Particular emphasis is placed on broad trends of change in those years: the growth of large private and public bureaucracies and their impact on traditional values; the continuing influence of racial and ethnic divisions on American politics; the role of the media on political organizations and practices; and the growing interconnections of foreign policy, military commitments and economic resources in the years since the Second World War.

Instructor: G.D. Taylor
Format: Lectures/discussion 3 hours
Recommended: HIST 1300R or a similar survey class in U.S. history
Enrolment: Limited to 60
Exclusion: Former HIST 2330R students

***HIST 2334A/B The United States, Canada and the World:** As neighbours, interlinked by geography, economic patterns and (to some extent) common political and cultural traditions, Canada and the United States have had a close though not always smooth relationship over the past two hundred years. But that relationship has often been shaped by broader changes in international political, military and economic affairs, and - particularly in the twentieth century - U.S. foreign policies that affect Canada are determined by events and concerns far removed from North American shores. This class traces the history of Canadian-American relations in the context of these broader trends in United States foreign policy, and global political and economic developments.

Instructor: G.D. Taylor
Format: Lectures/discussion 3 hours
Recommended: A survey class in U.S. or Canadian History
Enrolment: Limited to 60
Cross-listed: Canadian Studies
Exclusions: Former HIST 3330R, HIST 3331A and HIST 3331B students

***HIST 2335A/B Modern American Culture:** Hollywood, Super Bowl, Babe Ruth, Fred Astaire, the Blues, Scarlett O'Hara, hot dogs, West Side Story, Maltese Falcon, Stevie Wonder: do any of these terms or names sound familiar? It's likely you know about all or most of them, and it is also likely that millions around the world know them too. For good or ill, American popular culture has had a worldwide impact. This class will explore in an historical fashion the development of several different forms (such as sports, movies, festivals, drama, jazz, R & B music) of American popular culture. Readings and discussions will be supplemented by films, fiction, and music.

Instructor: J.T. O'Brien
Format: Lectures/tutorials 3 hours
Recommended: HIST1300R
Enrolment: Limited to 60
Exclusion: First-year students

***HIST 2370A/B Age of Imperialism 1870-1970:** Deals with the last hundred years of the activities of the imperial powers, their impact on the world, their rivalries among themselves and the resistance they provoked on every continent. Different forms of conquest are discussed and illustrated, the shifting power balance among the imperial powers is traced, and the growth of national resistance movements and their ideologies investigated. The class gives particular emphasis to the United States as the most important imperial power of the period, to its role in Latin America and to the ideologies which inform resistance movements.

Instructor: M. Turner
Format: Lectures/discussion 3 hours
Enrolment: Limited to 60

***HIST 2381A/B Latin America: Underdevelopment and Revolution:** Outlines key developments in Latin America from the independence wars to the present - the growth of nationalism, the impact of British and American capital and the development of the anti-imperialist struggle - in relation to Argentina, Brazil, Chile, Peru, Central America and Cuba.

Instructor: M. Turner
Format: Lectures/discussion 3 hours
Enrolment: Limited to 60
Exclusion: Former HIST 2380 and HIST 2382B students

***HIST 2410A/B Tropical Africa Before 1800:** A study of some of the major themes of African pro-colonial history through an examination of the interim politics and development of African states and societies in tropical Africa. It will focus on the impact of immigration, slavery and Islamic penetration on African society.

Instructor: J. Webster
Format: Lecture/tutorial 3 hours
Enrolment: Limited to 60
Recommended: HIST 1400R

***HIST 2421A/B Colonial Africa:** Examines the history of Africa from the period of European colonial rule (1884) to the emergence of independent African states in the 1960s. The class will analyze the material basis of colonial society; culture, class and social change during the colonial period; issues around changing gender roles; and the nationalist struggle and decolonization.

Instructor: J.L. Parpart
Format: Lectures/tutorials 3 hours
Recommended: HIST 1400R
Enrolment: Limited to 60

***HIST 2422A/B Independent Africa:** A study of Africa from the early 1960s to the present. The class will examine neo-colonial myths and realities, class, party and state in Africa, economic development and underdevelopment, and the quest for national stability during the current crisis. The class will look at the impact of structural adjustment on women's and men's lives and the current struggles in Southern Africa.

Instructor: J.L. Parpart
Format: Lectures/tutorials 3 hours
Recommended: HIST 1400R
Enrolment: Limited to 60

HIST 2501A/B The Middle East to the First World War: Begins with the historical geography and the linguistic and cultural divisions of the region. Examines the emergence of Islam, its basic doctrines, and the Islamic view of politics and history. With this background concentration is then on the nineteenth century, looking at the impact of European influences, the problem of "reform" in the Turkish and Iranian empires, the British occupation of Egypt, revolutions of the early twentieth century, the origins of Zionism and the impact of the First World War.

Instructor: J.E. Flint
Format: Lectures/discussion 3 hours
Prerequisite: Completion of first year university
Recommended: HIST 1400R
Enrolment: Limited to 60
Exclusion: First-year students

HIST 2502A/B The Middle East since the First World War: Begins with the impact of British and French imperial designs after 1918, the Balfour Declaration on Palestine, the creation of new Arab states and the Republic of Turkey. This leads to an examination of secular reform <u>versus</u> Islamic traditionalism, Arab nationalism, rise of the oil industry and the impact of the Second World War, the emergence of the State of Israel, the revolutions in Egypt and Iraq, the rise of OPEC, the fall of the monarchy in Iran and the nature of Khomeini's Islamic Revolution.

Instructor: J.E. Flint
Format: Lectures/discussion 3 hours
Prerequisite: HIST 2501A/B
Enrolment: Limited to 60
Exclusion: First-year students

***HIST 2800R History of India:** This class will examine the period from the late 18th century and the beginnings of British rule to the present day. The principal themes include: religion and social structure over two centuries of profound political and economic change; the modernization of the Indian economy; the rise of nationalism and national political organizations; and India's place in the world affairs.

Instructor: Staff
Format: Lectures/discussion 3 hours
Recommended: HIST 1400R
Enrolment: Limited to 60
Exclusion: HIST 2801A/B

***HIST 2995A/B History of Modern Medicine, 1800-1950:** This class examines the state of medicine in 1800, 1850, 1900 and 1950, and the transition of American and Canadian medicine from a low status, ineffective, poorly trained group of competing sects to what it is today. For each of the four periods the emphasis is on medical training, the diagnostic and therapeutic capabilities of physicians, their views on disease etiology, their attempts to control the size and quality of the profession and to prohibit the entry of women, and the scientific background to their views.

Instructors: J. Farley
Format: Lectures/discussion 3 hours
Enrolment: Limited to 60
Exclusion: Former HIST 2295A/B students
Crosslisted: BIOL 3404A

***HIST 3001A/B Medieval Civilization:** Each year one or more particular topics are chosen, broad enough to be used as central themes in the context of which medieval civilization may be closely examined; for instance, monasticism, universities, peasants and popular culture. Such topics are studied in some depth, where possible using original sources in translation, and recent periodical literature and/or monographs. Students master the basic work in certain areas, but are also encouraged to develop particular topics more thoroughly . Class discussions are used to unravel contentious or difficult aspects. Students are expected to contribute to such discussions and to write one or two well argued and documented papers. Some prior knowledge of medieval European history is essential.

Instructor: C.J. Neville
Format: Seminar 2 hours
Prerequisite: HIST 2001A or HIST 2002B or HIST 2101A
Recommended: HIST 1001A
Enrolment: Limited to 15
Exclusions: Former HIST 3000R and HIST 3002B students

***HIST 3002A/B The Medieval Church:** This class does not attempt to provide a chronological survey of the development of the Western church, but is an advanced seminar dealing with topics which have no strict chronological limits. Subjects of study include monasticism, heresy, education and the universities, town and cathedral, lay-clerical conflict, and "popular" concepts of religion. Each year one or more topics are examined in detail, with the help of original documents in translation, and using recent periodical literature and/or monographs. Students prepare and present one or two well-researched papers, and class discussions are used to explore related materials and readings in greater depth. Some prior knowledge of medieval European history is essential.

Instructor:	C.J. Neville
Format:	Seminar 2 hours
Prerequisites:	HIST 2001A or HIST 2002B or HIST 2101A
Recommended:	HIST 1001A
Enrolment:	Limited to 15
Exclusions:	Former HIST 3021A and 3022B students

***HIST 3003A/B England in the Later Middle Ages:** Beginning around the reign of Edward I (1272-1307), attention is given to political, institutional, religious and social aspects of English history prior to the Tudors. This period includes the deposition of two reigning monarchs, the Scottish Wars of Independence, the Hundred Years' War, the Black Death, Wycliffite heresy and the Lollards, and the so-called "Wars of the Roses". It is therefore of exceptional interest and variety. Each year one or more topics of study are chosen for detailed consideration, where possible making use of original sources (in translation), and with the help of recent periodical literature. Class discussions are used to explore particularly difficult or controversial questions, and all students write one or two well argued and documented papers. Some knowledge of English medieval history is essential.

Instructor:	C.J. Neville
Format:	Seminar 2 hours
Prerequisite:	HIST 2101A
Recommended:	HIST 1001A or HIST 2001A or HIST 2002B
Enrolment:	Limited to 15
Exclusions:	Former HIST 3009A, HIST 3007B and HIST 3010R students

***HIST 3004A/B Crime and Society in Post-Conquest England:** This class explores the development of the criminal law in England between 1066 and 1500. After some introductory lectures by the instructor on the legacy of Anglo-Saxon legal notions and the creation of the royal system of justice known as the "eyre", attention is given to a study of the development of a more sophisticated hierarchy of courts: the local tribunals presided over by justices of the peace and sheriffs, itinerant sessions headed by the justices of assize, and the central court of King's Bench. The origins and elaboration of particular offences, including treason, felony (murder, rape, arson, burglary and larceny) and trespass are examined. Emphasis is placed on the social aspects of crime in medieval England, and extensive use is made of recent periodical literature dealing with crime and its effect in this period.

Instructor:	C.J. Neville
Format:	Seminar 2 hours
Prerequisite:	HIST 2101A or HIST 2001A or HIST 2002B
Recommended:	HIST 1010A, HIST 2104A
Enrolment:	Limited to 15
Exclusions:	Former HIST 3009A, HIST 3007B and HIST 3010R students

***HIST 3005A/B The Early Modern Mind: European Thought and Culture, 1450-1700:** The purpose of this class is to provide students who have an interest and some background in early modern European history with more advanced study of the major issues and themes in European cultural history from the advent of printing to the dawn of the Enlightenment. Students will discuss writings by seminal authors such as Bacon, Montaigne, Bayle and Descartes, in addition to secondary works. The emphasis throughout will be not only on "high culture" but also on its relationship to society as a whole and to popular customs and rituals. Topics to be discussed include the impact of print, utopian thought, the witch craze, urbanization and civic consciousness, the writing of history, aspects of the scientific revolution, and the growth of religious toleration and scepticism.

Instructor:	D.R. Woolf
Format:	Seminar 2 hours
Prerequisite:	One class in medieval or early modern European history
Recommended:	HIST 2005A/B, HIST 2006A/B, HIST 2008A/B
Enrolment:	Limited to 16
Exclusion:	Former HIST 3011B students

***HIST 3007A/B Pre-industrial European Society, 1650-1800:** The transition from traditional to modern society in Europe, including such topics as peasant society and the commercialization of agriculture, the relations of elite and popular culture, the development of a consumer society, demography and family life, and the liberal critique of privilege.

Instructor:	J.B. Crowley
Format:	Seminar 2 hours
Prerequisite:	One 2000-level class in early modern European history.
Enrolment:	Limited to 20

***HIST 3040R Culture and Behaviours in early modern France, 1550-1750:** This class explores the characteristics and complexities of elite and popular culture between the wars of religion and the Enlightenment. Emphasis is placed on the traditional universe of Early Modern civilization and the process it underwent in a variety of domains: religion, education, sociability, deviance, social organization, etc.

Instructor:	G. Hanlon
Format:	Seminar 2 hours
Prerequisite:	Any European Medieval or Early Modern history or literature
Enrolment:	Limited to 25

***HIST 3051R Fascist and National Socialist Movements in Europe, 1900-1945:** The origins, ideologies, social composition, leadership, rise to power and rule of the two principal fascist and national socialist movements, those of Mussolini's Italy and Hitler's Germany, as well as similar phenomena in other European countries between the world wars, are studied comparatively to distinguish them from Soviet communism and other varieties of authoritarianism and totalitarianism.

Instructor:	L.D. Stokes
Format:	Seminar 2 hours
Prerequisite:	One 2000-level class in European or modern British history
Recommended:	HIST 2030R, HIST 2062A/B, HIST 2081R, HIST 2020R, HIST 2022A/B, HIST 2040R
Enrolment:	Limited to 20
Exclusion:	Former HIST 3051A/B

***HIST 3052R Europe and World War Two:** Selected topics on the origins, course and aftermath of the Second World War as this involved Europe, including Nazi foreign and occupation policies, strategic and political decision-making by the Allied and Axis powers, national resistance movements, and the wartime origins of the Cold War.

Instructor:	L.D. Stokes
Format:	Seminar 2 hours
Prerequisite:	One 2000-level class in European or modern British history
Recommended:	HIST 2030R, HIST 2062A/B, HIST 2081R, HIST 2020R, HIST 2040R
Enrolment:	Limited to 20
Exclusion:	Former HIST 2052A/B or HIST 3052A/B students

***HIST 3055R The Holocaust: The Destruction of the Jews of Europe, 1933-1945:** The destruction of most of European Jewry by Nazism and its helpers during the Second World War is studied in the context of centuries-old religious anti-semitism, nineteenth century Jewish emancipation and the emergence of racist ideology, the political and social situation of Jews in eastern and western Europe after World War I, "legal" and bureaucratic persecution of German Jews culminating in mass killing at Auschwitz and other death camps, the response of bystander nations to the perpetration of genocide, and finally the creation of the state of Israel in relation to the Holocaust.

Instructor:	L.D. Stokes
Format:	Seminar 2 hours
Prerequisite:	One 2000-level class in European or modern British history
Recommended:	HIST 2030R, HIST 2062A/B, HIST 2501A/B, HIST 2502A/B, HIST 2020R, HIST 2040R
Enrolment:	Limited to 20
Exclusion:	Former HIST 1990R (section 07) students

***HIST 3072A The Rise of Modern Science:** The modern world has been fundamentally altered by science and technology. In what ways? How has this come to be? This class, designed for students in the Arts as well as in the Sciences, examines these questions by looking at the origins of modern science in the sixteenth and seventeenth centuries, its growing popularity in the eighteenth century, and the rise of the scientific profession and science-based industry in the nineteenth and twentieth centuries.

Instructors:	J. Farley (Biology)/R. Ravindra (Comparative Religion)
Format:	Lectures/tutorials 3 hours
Enrolment:	No Limit
Cross-listings:	BIOL 3402A, PHYS 3402A, COMPREL 3502A

***HIST 3090A Soviet Society:** Some basic institutions of Soviet society are considered in their historical context, with special attention to the role of the Party and Marxism-Leninism, official culture and literature, the workings of the economy, and social stratification.

Instructor:	N.G.O. Pereira
Format:	Seminar 2 hours
Prerequisite:	Reading knowledge of Russian (at least two years of language study) and some Russian history
Recommended:	RUSS 1000R, RUSS 2000R
Enrolment:	Limited to 20

***HIST 3092A Soviet Topics:** Topics to be studied and researched will vary from year to year. They may include the sources of Bolshevism/Leninism, the doctrine of peaceful coexistence, the position of national minorities, the role of literature (official and samizdat) and the press, the Cult of Personality, Khrushchev's "Thaw", Glasnost and Perestroika.

Instructor:	N.G.O. Pereira
Format:	Seminar 2 hours

Prerequisite: One 2000-level class in history
Recommended: HIST 2020R, HIST 2022B, HIST 2030R, HIST 2040R, HIST 2062A/B
Enrolment: Limited to 18

***HIST 3105A/B The English Civil War: Society, Religion and Politics, 1603-1660:** An advanced class on one of the most tumultuous and eventful periods in British history, that leading up to and including civil war and revolution 1642 to 1660. Select primary sources will be used in addition to secondary works. Topics to be studied include the social structure of early Stuart England; the Church and its critics; foreign policy; radical politics; the military course of the war; religious sectarianism; and the impact of the war and its aftermath on the populace.
Instructor: D.R. Woolf
Format: Seminar 2 hours
Prerequisite: Any second year class in British history
Enrolment: Limited to 20
Exclusion: The former History 3104R
Recommended: HIST 2105A/B, HIST 2106A/B; HIST 2005A; HIST 2008B

***HIST 3106A/B England in the Age of Industrial Revolution:** This class examines in some depth major themes in English history from the reign of George III through the Victorian era, including the British response to revolutions in America and France, the Napoleonic wars, the movement for Parliamentary reform, and the growth of industrialization.
Instructor: P. Burroughs
Format: Seminar 2 hours
Prerequisite: One 2000-level class in English history
Recommended: HIST 2111A/2112B, HIST 2131A/2132B
Enrolment: Limited to 20

***HIST 3112A/B England, 1867-1914:** This class examines in some depth major themes in English history from the Great Reform Act through the outbreak of World War I, including the rise of the Labour movement, women's emancipation, controversies over censorship, tariff policies, imperialism and competition with Germany.
Instructor: S. Brooke
Format: 2 hours
Prerequisite: One 2000-level class in English history.
Recommended: HIST 211A/2112B, HIST 2131A/2132B, HIST 3106A/B
Enrolment: Limited to 25

***HIST 3113A Britain in the Age of the First World War, 1914-39:** This seminar class examines in depth major themes in modern British history from the first World War to the outbreak of the second, including the experience and impact of war, the problem of Ireland, the rise of labour, women's struggles, the great depression and the appeasement of the dictators in the 1930s.
Instructor: S. Brooke
Format: Seminar 2 hours
Prerequisite: A 2000-level class or instructor's permission
Recommended: HIST 2111A/2112B, HIST 2131A/2132B, HIST 3106A/B, HIST 3112A/B
Enrolment: Limited to 30

***HIST 3114B Britain from the Second World War to Thatcher, 1939-1979:** This class examines in depth major themes in British history from the outbreak of the Second Warld War to the emergence of the 'Thatcher Phenomenon', including the war experience, the post-war labour governments and the welfare state, the affluence of the 1950s and 1960s, Suez, the immigrant experience, and social and economic decline in the 1970s, ending with the election of Margaret Thatcher in 1979.
Instructor: S. Brooke
Format: Seminar 2 hours
Prerequisite: A second year history course or instructor's permission
Recommended: HIST 2111A/2112B, HIST 2131A/2132B, HIST 3106A/B, HIST 3112A/B, HIST 3113A
Enrolment: Limited to 30

***HIST 3115A Socialism and Working-Class Politics in Britain, 1880's-1980's:** The last century in Britain has witnessed two intertwined developments: the full participation of the working-class in politics and the rise to power of a socialist party, the Labour party. This class will cover three aspects of that history: the development of working-class culture and politics (in particular through the union movement); the shaping of socialist ideology in Britain; and the emergence and development of the Labour party. It will embrace social, economic, and intellectual history, covering such topics as the "New Unionism" of the 1880's, working-class culture in Britain; the General Strike; the Labour governments of 1945-51, and, throughout, the arguments over ideology.
Instructor: S.J. Brooke
Format: Seminar 2 hours
Prerequisite: One 2000-level class in English history
Enrolment: Limited to 30
Recommended: HIST 2111A or HIST 2112B

***HIST 3220A/B Youth Culture in Canada, 1950's to 1970's:** The 1950's and 1960's were decades of often startling social change throughout North America in general and Canada in particular. This class will attempt to understand these changes and their impact on our society. The primary focus of the investigation is the popular

youth culture of the time, the culture of "sex, drugs and rock n' roll." The class will look at economic and social factors underlying youth culture, at some of the major thinkers who influenced it (such as Marshall McLuhan and Herbert Marcuse), and the responses of authority to youth culture.

Instructor: M.S. Cross
Format: Seminar 2 hours or lecture/tutorial 3 hours
Prerequisite: One previous history class
Recommended: HIST 2220R
Cross-listed: Canadian Studies
Enrolment: Limited to 40

***HIST 3225A/B Crime, Punishment and the Criminal Law in Canadian Society:** This class examines crime and the criminal law as they relate to broader changes within society and the economy of New France, British North America, and Canada. Moving from the nineteenth century through to the 1980's, it analyses the shifting patterns of crime; the changing definitions of crime and punishment; the social, economic, political, and ideological significance of the criminal law; and the influence of Britian, the United States, and France on legal developments.

Instructor: R. Bleasdale
Format: Seminar 2 hours
Prerequisite: One previous history class
Recommended: HIST 2221A and HIST 2222B
Cross-listed: Canadian Studies
Enrolment: Limited to 20

***HIST 3230A Labour and Community in Nineteenth-Century Canada:** The experience of Canadian workers during the transition to an industrial capitalist society. Topics include pre-industrial work patterns, new forms of discipline and the employment relationship, varieties of collective protest and organization, and changes in the structure of the family and community.

Instructor: R. Bleasdale
Format: Seminar 2 hours
Prerequisite: One previous history class
Cross-listed: Canadian Studies
Enrolment: No Limit

***HIST 3231B The Canadian Working Class: The Twentieth Century Experience:** The development of the Canadian working-class movement from 1896 to the present. Topics include the degradation of work, the question of international unions, labour in politics, women and trade unions, the role of the state in industrial relations, and working-class culture in mass society.

Instructor: R. Bleasdale
Format: Seminar 2 hours
Prerequisite: One previous history class
Cross-listed: Canadian Studies
Enrolment: No Limit

***HIST 3245A French Canada:** Given in English for English-speaking students, this class traces the development of French-Canadian society through the study of political and social developments. While the emphasis is on developments in Quebec, French-Canadians in the Maritimes, Ontario and the West will also be studied.

Instructors: Staff
Format: Seminar 2 hours
Prerequisite: One class in history
Enrolment: Limited to 25
Cross-listed: Canadian Studies
Exclusion: Former HIST 2240A students

***HIST 3250A Canada Within the Empire:** An examination of the political, commercial and cultural relations of Canada with Britain from conquest to nationhood, the changing attitudes of Canadians and Englishmen to the developing empire and to the United States, and the interplay of imperial policies and colonial conditions.

Instructor: P. Burroughs
Format: Seminar 2 hours
Prerequisite: One class in Canadian, British Imperial or modern British history.
Cross-listed: Canadian Studies
Enrolment: Limited to 15

***HIST 3255B The Age of MacDonald and Laurier:** A seminar comprehending the society and politics of Canada from Confederation to the First World War. Themes of particular importance are imperialism, nationalism, and racism; the clash of nationalism; the opening of new frontiers; politics and ideology.

Instructor: Staff
Format: Seminar 2 hours
Prerequisite: A survey of Canadian history
Cross-listed: Canadian Studies
Enrolment: No Limit

***HIST 3260B West by North: History of the Canadian West and North:** This seminar will explore the history of social and political developments in the Canadian West and North.

Instructors: Staff
Format: Seminar 2 hours
Prerequisite: One class in history
Enrolment: Limited to 25
Cross-listed: Canadian Studies
Exclusion: Former HIST 2250A/B students

***HIST 3272A/B Themes in the History of Atlantic Canada:** This class provides students an opportunity to broaden their knowledge of historical trends in the region through archival research based on specific selected themes, which vary from year to year.

Instructor: Staff
Prerequisite: One class in Canadian history
Cross-listed: Canadian Studies
Enrolment: Limited to 15

HIST 3273A Nova Scotia: Pre-Confederation: An exploration of character and circumstances in the history of provincial society, from the era of European "invasion" to the debate over entry into British American union.

Instructors: D. Sutherland/J. Fingard
Format: Seminar 2 hours
Prerequisite: One class in History
Enrolment: Limited to 25
Cross-listed: Canadian Studies
Exclusion: Former HIST 3270R

HIST 3274B Nova Scotia: Post-Confederation: An exploration of the transformation of provincial society in response to the onset of Canadianization and industrialization.

Instructors: D. Sutherland/J. Fingard
Format: Seminar 2 hours
Prerequisite: One class in history
Recommended: HIST 3273A
Enrolment: Limited 25
Cross-listed: Canadian Studies
Exclusion: Former HIST 3270R

***HIST 3286A/B The Urban Experience in Canada:** The rise of the city stands as one of the most crucial changes to have taken place in our collective past. This class explores the reasons for and the impact of urbanization within Canada. Emphasis is on developments from the mid nineteenth century to the present.

Instructor: D. Sutherland
Format: Seminar 2 hours/week
Prerequisite: One class in history
Cross-listed: Canadian Studies
Enrolment: Limited to 25

***HIST 3292A/B Wealth and Power in North America:** Business enterprises have played a major role in shaping the social and political as well as economic development of the United States and Canada over the past two hundred years - perhaps more so than in most other modern nations. This class explores the growth and significance of business in the history of these two countries. Among the topics covered are: entrepreneurship, technical innovation and economic growth; the rise of big business and management organization; the convoluted and controversial linkages of business and government; and the emergence of multinational enterprises and their impact on Canadian-American relations.

Instructor: G.D. Taylor
Format: Seminar 2 hours
Prerequisite: One class in Canadian or U.S. history, or an appropriate class in a related discipline.
Recommended: A survey class in U.S. or Canadian history
Enrolment: Limited to 30
Cross-listed: Canadian Studies
Exclusion: Former HIST 3291A and HIST 3291B

***HIST 3302A/B Technology and History in North America:** The effects of technology on our lives are ever-present, from debates over acid rain and nuclear reactors to promises of a glowing future for Canada through "high-tech" enterprises and supercomputers. The continuing impact of technical innovation has been a central feature of the history of Canada and the United States, going back even to the period before the Industrial Revolution of the nineteenth century. The harnessing of science and technology to industrial and military uses in our own time has fuelled both rapid economic growth and controversies over the benefits and costs of technological changes for the household, the workplace, the environment, politics and society in North America.

Instructor: G.D. Taylor
Format: Seminar 2 hours
Prerequisite: One class in Canadian or U.S. history, or an appropriate class in a related discipline.
Recommended: A survey class in U.S. or Canadian history
Cross-listed: Canadian Studies
Enrolment: Limited to 30

***HIST 3341A/B The American Revolution:** Topics of particular interest are the popularization of politics, the social conflicts related to neutralism and Loyalism, the development of a national political economy and constitutional tradition, and the cultural changes associated with republican government and egalitarian ideology.

Instructor: J.E. Crowley
Format: Seminar 2 hours
Prerequisite: One 2000-level class in U.S. history, or HIST 2131A/B
Enrolment: Limited to 20

***HIST 3350A/B Family and Community in North America, 1600-1900:** The family in North American society, from when the family was a model for social relations to the time when it was idealized as a private refuge. Among the topics considered are the role of the family in rural and urban communities, the demographic transition from high fertility and mortality, the reduction of the family's economic and educational autonomy, the role of ideology in shaping sex roles and childbearing; and the relations of family and community according to ethnic group, class and economic setting.

Instructor: J.E. Crowley
Format: Seminar 2 hours
Prerequisite: One second-year class in American or Canadian history
Recommended: A class in the sociology or social anthropology of the family
Cross-listed: Women's Studies 3300A/B
Enrolment: Limited to 20

***HIST 3360A/B Enslavement and Emancipation: Afro-Americans in the U.S. South to 1900:** This class examines slavery as a system of racial subordination and economic exploitation. Attention is given to the social, familial, and cultural life of the slaves, the role of slavery in shaping southern nationalism and national racial beliefs, and to reconstruction after the Civil War.
Instructor: J.T. O'Brien
Format: Seminar 2 hours
Prerequisite: HIST 1300R or one second-year U.S. history class
Recommended: HIST 2332A/B
Enrolment: Limited to 25

***HIST 3361A/B The American Civil War and Reconstruction:** The Civil War, occasioned by the formation of the Southern Confederacy and the Union government's refusal to recognize the existence of a separate southern nation, was a pivotal moment in the history of the United States. This class will examine the causes of the war, the forces behind slave emancipation, the military fortunes of the two combatants, and the efforts undertaken by the victorious society, to alter the polity of the defeated South.
Instructor: J.T. O'Brien
Format: Seminar 2 hours
Prerequisite: HIST 1300R or second-year U.S. history class
Recommended: HIST 2332A/B
Enrolment: Limited to 25

***HIST 3366A/B Industry, Unionism, and Workingmen in the United States, 1873-1940:** America's rise to industrial pre-eminence shot forward after the Civil War. By 1900 she had the most productive industrial economy in the world, as well as one of the world's bloodiest labour histories. The growth of unions, however, proceeded much more slowly. Indeed, unionization of mass production industries was not achieved until late in the 1930s with the spread of the CIO and the revitalization of the AFL. This class examines the fitful history of American unions from the beginning of the depression of the 1870s to the end of the Great Depression of the 1930s.
Instructor: J.T. O'Brien
Format: Seminar 2 hours
Prerequisite: HIST 1300R or one second-year U.S. history class
Recommended: HIST 2332A/B, HIST 2333A/B, HIST 2334A/B
Enrolment: Limited to 25

***HIST 3368A/B From Roosevelt to Reagan: The United States since 1929:** This class examines in depth some of the major features of American political and economic history in the period since the Great Depression. Some of the major themes covered are: the rise and fall of the new Deal coalition; the impact of the media on politics; the emergence of the "Imperial Presidency" and conflicts with Congress; the "military-industrial complex" and the growth of the Sunbelt; and controversies over the relationship between government and business in the context of global economic competition.
Instructor: G.D. Taylor
Format: Seminar 2 hours
Prerequisite: HIST 1300R or an equivalent introductory class in U.S. History
Recommended: Any 2000-level class in U.S. history
Enrolment: Limited to 30

***HIST 3370A/B Marxism in the Third World:** Revolutionary movements in the twentieth century characteristically use Marxist ideology. This class outlines characteristically used Marxist thought and investigates its uses by revolutionary movements and societies outside Europe. Case studies will be drawn from Latin America, Asia and Africa.
Instructor: M. Turner
Format: Seminar 2 hours
Prerequisite: One previous class in history
Enrolment: Limited to 20

***HIST 3380A/B Chattel Slaves and Wage Slaves:** Plantation production in the last three hundred years has depended on various forms of labour, slave, contract and wage, sometimes working in conjunction. This class will investigate the interaction of economic and technical change on the workers' legal status and on the forms of labour protest and methods of control used throughout the history of plantations. Studies will focus on the Caribbean and comparisons will be made with adjacent areas of the Americas.
Instructor: M. Turner
Format: Seminar 2 hours
Prerequisite: One second-year Arts class
Enrolment: Limited to 20

***HIST 3390A/B The Caribbean: Underdevelopment and Revolution:** Caribbean wealth and Caribbean revolutions have made the islands a focus of imperial rivalries for more than three centuries. This class deals with the impact of twentieth century imperialism and the emergence of nationalism and socialism. Particular attention is paid to Cuba.
Instructor: M. Turner
Format: Seminar 2 hours
Prerequisite: One second-year Arts class
Enrolment: Limited to 20

***HIST 3440A/B African History from Oral Tradition:** For students who have a keen interest in African history, the class concentrates upon a restricted geographic area and considers myths of origin, allegory and symbolism in oral traditions, how political leaders become national deities through ancestor worship and how feminist

movements of the past have been handled by male chroniclers.
Instructor: J. Webster
Format: Seminar, 2 hours
Prerequisite: Any 2000-level class on African history
Recommended: HIST 2410A/B
Enrolment: No limit

*HIST 3451A/B South Africa to 1860: Examines the history of South Africa before the coming of the mineral revolution. Themes include the nature of Khoi and San societies, the expansion of Bantu-speakers, Dutch settlement and administration of the Cape area, the rise of the Zulu, Shaka's empire and the mfecane, the British takeover from the Dutch, the impact of the humanitarian movement and the Great Trek, African states and kingdoms in the nineteenth century and the formation of the Boer Republics.
Instructor: Staff
Format: Seminar, 2 hours
Prerequisite: HIST 2131A/2132B, HIST 2421A/B, HIST 2422A/B or permission of instructor.
Enrolment: Limited to 20
Exclusion: Former HIST 3450R students

*HIST 3452A/B South Africa since 1860: The class examines not only the changes in race relations and politics, but also the effects of mining and other industries on rural and urban societies after the discoveries of diamonds and gold. Themes will include British policies and the "imperial factor", the growth of Afrikaner and African nationalism, the Boer War and unification, the development of apartheid and South Africa's relations with the wider world.
Instructor: Staff
Format: Seminar, 2 hours
Prerequisite: HIST 2421A/B, HIST 2422A/B, HIST 3451A/B, HIST 3461A/B, HIST 3462A/B
Recommended: HIST 3451A/B, HIST 2131A, HIST 2132B
Enrolment: Limited to 20
Exclusion: Former HIST 3450R students

*HIST 3461A/B Women and Development in Africa: This class examines the economic, political and social roles of African women from precolonial to modern times. It analyzes women not as objects, but as actors who participate in the political and economic processes which affect their lives. The class will examine development and feminist theory in the light of recent debates over women and development issues.
Instructor: J.L. Parpart
Format: Seminar 2 hours
Prerequisite: A core class in either International Development Studies or Women's Studies or a class on Africa in the History Department or permission of the instructor.
Cross-listed: Women's Studies 3310A/B
Enrolment: Limited to 20

*HIST 3462A/B Distortion or Development: African History: An examination of economic change in tropical Africa, with particular attention to the question of economic development and underdevelopment. From the premercantilist period to the current crisis.
Instructor: J. Parpart
Format: Seminar 2 hours
Prerequisite: HIST 2422A/B
Enrolment: Limited to 25

*HIST 3610A/B Women in Capitalist Society: the North American Experience: An examination of the impact of industrialization and urbanization on "woman's sphere" in society and of the emergence of various strains of feminism in the nineteenth and twentieth centuries.
Instructor: Judith Fingard
Format: Seminar 2 hours
Prerequisite: One class in Canadian or American history or in Women's Studies.
Cross-listed: Women's Studies 3305A/B, Canadian Studies
Enrolment: Limited to 25

*HIST 3612A/B Women in Socialist Countries: Investigates the progress made towards the achievement of equal status for women in societies dedicated in principle to equality for all. Case studies will range from Cuba to China.
Instructor: M. Turner
Format: Seminar, 3 hours
Prerequisite: One second-year Arts class
Cross-listed: Women's Studies 3330A/B
Enrolment: Limited to 20

*HIST 3750A/B History of Seafaring: An examination of our maritime heritage with the cooperation of the staff of the Maritime Museum of the Atlantic. Within the context of these overlapping periods - the age of discovery, the age of sail, and the age of steam - the focus is on the development of merchant and naval fleets; the roles of the state, capital, and labour; and the features of seafaring culture. Special emphasis is given to the shipping industries and maritime traditions of this region.
Instructor: J. Fingard
Format: Lecture/Discussion 2 hours
Prerequisite: One class in history or permission of the instructor
Cross-listed: Canadian Studies
Enrolment: No Limit

HIST 4500A/B Advanced Major Seminar in History: This seminar is specifically intended for students in the Advanced Major and Honours degree programmes in History. The specific

content of the seminar varies from year to year, but generally involves examination of a subject in history in some depth, and may include an historiographical, comparative or interdisciplinary dimension.

Instructor: Staff
Format: Seminar 2 hours
Prerequisite: Completion of all requirements for the 15-credit B.A. degree in History.
Enrolment: No Limit

HIST 4985A/B The Varieties of History: Historiography in the Twentieth Century: This class, intended for Honours and Advanced Major students in History, will begin with a brief survey of the writing of history from the Middle Ages to the nineteenth century, and then proceed to an examination of the major schools, approaches, and sub-disciplines within the historical profession in the twentieth century. Topics to be covered include the following: the nature of historical knowledge, historical "relativism", Marxism, the "Annales" school, oral history, psychohistory, quantitative history, Feminism and others. No background in statistics is required. Classes will meet weekly to discuss assigned readings and each student will investigate an historian or historical school of his/her choice for a term paper.

Instructor: D.R. Woolf
Format: Seminar 2 hours
Prerequisite: Required for all fourth-year Honours students in history and open to suitably qualified Advanced Major and third-year students by permission of the instructor.
Recommended: A class in modern intellectual history or PHIL 2540R
Enrolment: Limited to 16

HIST 4990R Honours Essay in History: All history Honours students and those in combined Honours programmes in which history is their principal subject must write a substantial essay on a topic to be chosen in consultation with the undergraduate coordinator and an individual faculty supervisor.

Instructor: Staff
Format: Honours Essay
Prerequisite: Completion of all requirements for the 15-credit major in History, admission into the Honours Programme.
Enrolment: No Limit

Humanistic Studies in Science

Attention is drawn to the following classes, offered in several departments. All of these classes are concerned with the humanistic aspects of scientific thought and its development.

Classes marked * are not offered every year. Please consult the timetable on registration to determine if these classes are offered.

History of the Sciences

***Biology 3402A/Physics 3402A/History 3072A, Comparative Religion 3502A, The Rise of Modern Science:** J. Farley (Biology and History), R. Ravindra (Physics, Comparative Religion).

***Biology 3403A/B A History of Biology:** J. Farley.

***History 2295A/B The History of Modern Medicine:** J. Farley.

***History 3075A/B History of Tropical Medicine:** Farley.

Biology 4664B/Oceanography 5331B, History of Oceanography: E.L. Mills.

Psychology 4580 History of Psychology: J.W. Clark.

Philosophy of the Sciences

***Philosophy 2410A Philosophy of Psychology:** T. Tomkow.
***Philosophy 2420B Philosophy of Biology:** R. Campbell.

Biology 3410B Man in Nature: K.E. von Maltzahn.

***Comparative Religion 3531 Mystical Consciousness and Modern Science:** R. Ravindra.

***Comparative Religion 3503A/B Nuclear Bombs Survival and Morality:** R. Ravindra.

International Development Studies

Location: Multidisciplinary Centre
1444 Seymour Street
Halifax, N.S.
Telephone: (902) 494-3814

Coordinator:
Dr. A.M. Sinclair (494-2026/3814)

Undergraduate Advisor:
Dr. J.H. Barkow (494-6593);
then consult Coordinator

Emeritus Professors
K.A. Heard, (Political Science)
P. Ruderman, (Health Administration)

Faculty
J.H. Barkow (Sociology and Social Anthropology)
M.B. Binkley (Sociology and Social Anthropology)
Associate Dean, Faculty of Arts and Social Sciences
A. Dowdall (English)
J. Flint (History)
A. Hanson (Resource and Environmental Studies)
J.B. Holloway (Spanish)
F.B. Huber (Economics)
N.W. Jabbra (Sociology and Social Anthropology)(on leave)
L. Kasdan (Sociology and Social Anthropology)
J.M. Kirk (Spanish)
B. Lesser (Economics)
T.J. Li (Sociology and Social Anthropology)
V. Li (English)
D.F. Luke (Political Science) (on leave 1991-92)
J.J. Mangalam (Sociology and Social Anthropology)
R. Mann Borgese (International Ocean Institute)
R.I. McAllister (Economics)
L. McIntyre (Community Health and Epidemiology)
A. O'Malley, Adjunct (Sociology, SMU)
J.L. Parpart (History)
R. Ravindra (Comparative Religion)
T.M. Shaw (Political Science)
A.M. Sinclair (Economics)
C.T. Sinclair-Faulkner (Comparative Religion)
K. Sullivan (Education)
A.D. Tillett (Lester Pearson Institute)
M. Turner (History) (on leave 1991)
H. Veltmeyer, Adjunct (Sociology, SMU)
J.B. Webster (History)
M. Welton (Education)

Introduction

"The interest in preserving peace and abolishing hunger needs no further reasoning. But the interest in mutual survival must also be linked to the overriding issues of energy and the environment and the risk of self-destruction. ...there are growing mutual interests.... development in the South also serves people in the North." - Brandt Commission, North-South: a Programme for Survival, page 20.

Changes in the international system including those in the Third World increasingly affect us all. In association with Saint Mary's University, Dalhousie offers an interdisciplinary programme in International Development Studies. This intercampus, interdisciplinary, international degree programme focuses on comparative examples of and explanations for change - economic, environmental, strategic, social and political - in the Third World. In its major and honours degree programmes it brings together a set of established Dalhousie disciplinary offerings in this growing field and combines them with three new intercampus classes - one for each year of study - in International Development Studies. These are designed to juxtapose and integrate empirical and conceptual materials drawn from several disciplinary and theoretical traditions represented in the field to provide a coherent yet diverse introduction to the contemporary world of development.

The concentrations within IDS at Dalhousie are Africa, Comparative Religion, Economics, History, Latin America, Political Science, Sociology & Social Anthropology, and Spanish; at Saint Mary's University the foci are Anthropology, Asia, History, Latin America, Political Science, and Sociology. Aside from general enlightenment about other societies and Canada's relations with them, IDS is intended to provide undergraduates with a good grounding in interdisciplinary international studies to prepare them for subsequent more specialised or professional graduate training. The first generation of IDS major and honours students has proceeded to such masters programmes or employment with official or non-governmental aid agencies in Canada or the Third World. The parallel student organisation on both campuses - The International Development Association - organises a series of events each year, including seminars, displays and socials.

For a full listing of Saint Mary's University faculty and classes in IDS, please consult the current Saint Mary's University academic calendar. IDS core and other classes are usually available each summer through the "Halifax Summer School in International Development". Halifax is the Maritime regional centre for official and non-governmental organisations active in international development and the IDS programme encourages links with them, especially in terms of development education, international exchanges and data resources; for example, in addition to university and city libraries there are resource collections at Deveric downtown and at the International Education Centre at Saint Mary's

University. The latter publishes a monthly International Network listing of metro events on the Third World. Finally, the resources of the Lester B. Pearson Institute for International Development at Dalhousie University are available to IDS students.

Degree Programmes

The Regulations for the major (regular and advanced) or honours BA degree in International Development Studies require:

(1) Completion of appropriate first-year classes in at least two of the major participating social science or humanities disciplines (that is, Comparative Religion, CREL 1000R, CREL 2000R; Economics, ECON 1100R, History, HIST 1050R, HIST 1400R; Political Science, POL 1100R, POL 1103R, POL 1501R; Sociology and Social Anthropology, SSA 1000R, SSA 1050R, SSA 1100R; or Spanish, SPAN 1100A/B, SPAN 1110A/B).

(2) For the honours degree, at least nine and no more than eleven International Development Studies classes from the following approved list (see regulation 11.4), of which:
   a) three must be IDS 2000R, IDS 3000R and IDS 4010R;
   b) a minimum of two classes in at least two established disciplines within International Development Studies;
   c) at least five must be at the 3000 level or above;
   d) class selection must be approved by one of the programme coordinators.

(3) For the 20-credit advanced major, at least six and no more than nine from the following approved list (see regulation 11.3), of which:
   a) three must be IDS 2000R, IDS 3000R and IDS 4010R (the last without the honours essay requirement);
   b) a minimum of two classes in at least two established disciplines within International Development Studies;
   c) at least three must be at the 3000 level or above;
   d) at least one class each from the three groups, Humanities, Social Sciences, and Life and Physical Sciences, listed at the beginning of the calendar;
   e) a language class from among those listed in the Regulations at the beginning of the calendar, normally French or Spanish.

(4) For the 15-credit major, at least four and no more than eight International Development Studies classes from the following approved list (see regulation 11.1), of which:
   a) two must be IDS 2000R and IDS 3000R;
   b) a minimum of one class in at least two established disciplines within International Development Studies;
   c) at least two must be at the 3000 level or above.

All IDS students are encouraged to acquire competence in statistics, methods, and languages through appropriate classes as relevant to their degree, focus and career.

The International Development Studies degree at Dalhousie is administered by a programme committee consisting of one faculty member from each major department with a substantial teaching or research interest in the field chaired by the coordinator. A joint Dalhousie-Saint Mary's University International Development Studies Committee organises the joint IDS offerings.

Classes Offered at Dalhousie University

Descriptions of International Development Studies Core Classes

IDS 2000R Introduction to Development Studies: This class will introduce students to the scope and nature of international development studies. Its main emphasis will be on various theories of social change in the Third World and on the lines of research associated with these theories. Students will review the contributions that various disciplines have made to international development studies and examine ways in which these complement and compete with each other in the explanation of changing conditions and societies in less developed countries. Normally offered also in summer.

Format:	lectures and tutorials
Prerequisites:	Two first year classes as indicated above under (1)
Enrolment:	Limited to 60

IDS 3000R Seminar in Development Studies: In this class students will begin to apply some of the theoretical perspectives and analytical tools of development studies to a selected problem of development in one particular region of the world: selected regions include Southern Africa, Tropical Africa, North Africa and the Middle East, South-East Asia, South Asia, the Caribbean and Latin America. Political and policy implications of case studies will be discussed. Presentations of student work will be preceded by presentations by faculty associated with the international development studies programme. Normally offered also in summer.

Format:	Seminar
Prerequisites:	IDS 2000R
Enrolment:	Limited

IDS 3100A/3101B Special Topics in International Development Studies: staff. A half-year reading class on a particular aspect of international development taught only by special arrangement between individual IDS major or honours students and individual instructors associated with the programme. Available in summers as well as regular sessions.

Format: Individual tutorial
Prerequisites: IDS 2000R

IDS 3200C International Development Studies Through Canada World Youth: structured tutorial before and after Canadian World Youth (CWY) assignments. This class is intended for CWY participants who wish to earn academic credit related to their work in the Third World. It consists of predeparture tutorials and post-return paper preparation based on an agreed research topic. IDS faculty will attend CWY orientations. CWY registrants will receive supervised readings in development studies, and directions for field observations. They will be required to keep a journal of their observations and to prepare a research proposal for which they will collect materials while in the Third World. On returning to Canada they will communicate regularly with their advisor as they prepare a brief report on their field experience and an original research paper for evaluation.

Format: Individual tutorial with selected IDS faculty
Prerequisite: None, although high school/university global studies is desirable
Enrolment: Limited to current CWY participants
N.B.: Consult Dr. H. Veltmeyer, Sociology Department, Saint Mary's University, for details about this class.

IDS 4010 Honours Essay Practicum in International Development Studies: Advanced seminar in theory and methodology leading to preparation and defence of honours essay.

Format: Seminar
Prerequisites: IDS 2000R and IDS 3000R
Enrolment: Limited to IDS honours, advanced major, and qualifying year students

IDS 4001A/IDS 4002B/IDS 4003C and IDS 4100R Special Topics in International Development Studies: (see IDS 3100A/IDS 3101B)
Prerequisite: IDS 3000R

IDS 4210R Gender and Development: The class will discuss the subject of gender and development in developing countries and in Canada. It aims to help students develop their theoretical understanding, research skills, and policy analysis in this new field of study. It will focus on issues such as education, work, health, the role of the state, and empowerment. Students taking the class at the graduate level will be expected to attain a higher level of achievement and may be required to do additional assignments.
Format: Seminar.

Prerequisite: IDS 3000R or equivalent
Enrolment: Limited to 25 students
Cross-listing: SMU-IDS 622.1,623.2 & SOC 422.1, 423.2

Listing of International Development Studies Approved Disciplinary Classes (See respective disciplinary sections of the calendar for class descriptions and prerequisites. Note: Classes marked * are not offered every year. Please consult the current tiemtable on registration to determine if these classes are offered. Note that some classes may require permission of the instructor).

Biology
*BIOL 4650B Resource Systems and Economic Development

Comparative Religion
*CREL 2001A/B Judaism
*CREL 2002A/B Christianity
*CREL 2003A/B Islam
*CREL 2011A/B Hinduism
*CREL 2012A/B Chinese and Japanese Religions
*CREL 2013A/B Buddhism
*CREL 3014A/B Love and Death in World Religions
*CREL 3015A/B Myths, Symbols and Rites
*CREL 3531R Mystical Consciousness and Modern Science
*CREL 3502A/B The Rise of Modern Science

Economics
*ECON 2238A Industrial Revolution in Europe
*ECON 2239B European Economy in Historical Perspective
*ECON 2241A/B Comparative Economic Systems: National Economics
ECON 2250R Applied Development Economics
*ECON 3317B Poverty and Inequality
*ECON 3330A/B International Trade
ECON 3333A/B Theories of Economic Development
*ECON 3336B Regional Development
ECON 3350A/B Social Cost Benefit Analysis
*ECON 3432R Regional Economics
*ECON 4431A/B International Payments

English
*ENGL 2211R Commonwealth Literature

Geology
GEOL 2410B Environmental and Resource Geology

Health Services Administration
MHSA 6370B International Health

History
HIST 2131A The Rise of the British Empire
HIST 2132B The Fall of the British Empire
*HIST 2334A/B The United States, Canada and the World
*HIST 2370A/B Age of Imperialism 1870-1970
*HIST 2381A/B Latin America: Underdevelopment and Revolution
*HIST 2421A/B Colonial Africa
*HIST 2422A/B Independent Africa
*HIST 2501A/B The Middle East to the First World War
*HIST 2502A/B The Middle East Since the First World War
*HIST 3390A/B The Caribbean: Underdevelopment and Revolution
*HIST 3440 A/B African History from Oral Tradition
*HIST 3451A/B South Africa to 1860
*HIST 3452A/B South Africa since 1860
*HIST 3461A/B Women and Development in Africa
*HIST 3612A/B Women in Socialist Countries

Political Science
POL 2300R Comparative Politics
POL 2500R World Politics
*POL 3302A/B Comparative Development Administration
POL 3303A/B Human Rights and Politics
POL 3315A/B African Politics
POL 3340A/B Approaches to Development
*POL 3360A/B Politics in Latin America
POL 3531A/B The UN in World Politics
POL 3535A/B The New International Division of Labour
POL 3540A Foreign Policies of African States
POL 3544A/B Political Economy of Southern Africa
*POL 3585B Politics of the Environment
*POL 3590R The Politics of the Sea

Sociology and Social Anthropology
*SSA 2100R Ecology and Culture
*SSA 2190R Gender Roles in Cross-Cultural Perspective
*SSA 2370A/B Peoples and Cultures of the World I
*SSA 2380A/B Peoples and Cultures of the World II
*SSA 2390R Social Anthropology of the Middle East
*SSA 2400R Medicine and Health Across Cultures
*SSA 2600R Food and Nutrition Across Cultures
*SSA 3060A/B Social Change and Development
*SSA 3205R Ethnicity, Nationalism, and Race
*SSA 3210R Continuity and Change in Rural Societies
*SSA 3230A/B Psychological Anthropology

Spanish
*SPAN 2069A/B Central America to 1979
*SPAN 2070A/B Area Studies on Mexico and Central America
*SPAN 2109A/B Cuba from Colonial Times to 1961
*SPAN 2110A/B The Cuban Cultural Revolution
*SPAN 2130A/B Latin American Dictators in the Novel
*SPAN 2210A/B The Novel of the Mexican Revolution
*SPAN 2230A/B Contemporary Latin American Prose, Part I
*SPAN 2240A/B Contemporary Latin American Prose, Part II
*SPAN 3070A/B Contemporary Latin American History

Classes Offered at St. Mary's University

N.B. A 300-level class at SMU is 2000-level at Dalhousie, 400-level is 3000 and 500 is 4000. A full year class is designated by .0; a Fall half class by .1; and a Winter half class by .2.

IDS 320.0 Development Studies Through Canada World Youth
IDS 420.1(.2) Special Topics
IDS 421.1(.2) Special Topics
IDS 422.0 Special Topics
IDS 450.0 Directed Studies
IDS 451.0 Directed Studies
IDS 452.1(.2) Directed Studies
IDS 455.1(.2) Directed Studies
IDS 470.1(.2) Environment & Development
IDS 500.0 Honours Essay
IDS 510.0 Seminar in International Development
IDS 520.1(.2) Research Methodology
IDS 530.1(.2) Contemporary Development Planning
ANT 201.0 Women: A Cultural Perspective
ANT 300.0 Culture and Society
ANT 310.0 Applied Anthropology: Culture, Change and Development
ANT 315.0 Peasant Society and Culture
ANT 320.0 World Ethnography
ANT 325.0 Ethnology: Oceania
ANT 335.0 Psychological Anthropology
ASN 410.2 Special Topics on Japan
*ECO 310.1(.2) Development Economics
ECO 312.1(.2) History of Economic Thought
ECO 313.1(.2) International Finance
ECO 315.1(.2) Comparative Economic Systems
ECO 323.1(.2) Soviet-Type Economies
ECO 410.1(.2) Issues in Economic Development
ECO 414.1(.2) International Trade
FIN 476.1(.2) International Financial Management
GEO 302.0 Geography of World Affairs
GEO 330.1(.2) Geography of China
GEO 370.0 Geography of Southeast Asia
HIS 209.0 East Asia
HIS 316.0 Africa in the 19th Century, Intrusion and Conquest

HIS 317.0 Africa in the 20th Century, Colonialism and Independence
HIS 322.0 South Africa
HIS 323.0 China Before 1800
HIS 341.0 China and Japan in the 20th Century
HIS 342.0 China in Revolution 1840 to Present
HIS 375.0 Modern Latin America
HIS 380.0 Latin America in the 20th Century
*HIS 385.0 The Third World Since 1500
HIS 391.0 East Asia and the West
HIS 511.0 Modern East Asia, Selected Problems in Modernization
MGT 488.1(.2) International Business Management
MKT 375.1(.2) International Marketing
PHI 325.1(.2) Ethical Issues in International Development
POL 305.0 International Relations
POL 322.1(.2) Politics of International Trade
*POL 340.0 The Politics of the Developing Areas
POL 341.0 Government and Politics in East Asia
POL 418.0 International Law
POL 553.0 International Studies Seminar
REL 312.1(.2) Jesus and Liberation
REL 341.1(.2) Political Theology: East and West
REL 347.1(.2) Ecology and Religion
SOC 319.0 Reform and Revolution in Latin America
SOC 331.1(.2) Modernization and Aging
SOC 333.0 Social Movements
SOC 380.0 Third World Urbanization
*SOC 385.1(.2) Problems of Development
*SOC 386.1(.2) Sociology of Developing Societies
SOC 387.1(.2) Women and Development
SOC 403.0 Revolution and Change: A Case Study: Cuba
SOC 417.0 Religious Movements
SOC 420.0 Comparative Regional Development
SOC 422.1 Gender and Development: Theory and Method
SOC 423.2 Gender and Development: Policy Issues
SOC 425.0 Corporate Power and the World Economy
SOC 429.0 Rural Society

- Core Classes in specific disciplines which should be taken before others in these disciplines.

Latin

See under Classics.

Linguistics

Various departments offer classes in linguistics or in some aspect of linguistic study in the broad sense: Classics (several classes in Greek and Latin),English (*ENGL 3201R The English Language, *ENGL 3202R History of the English Language, ENGL 4253R Old English, ENGL 4351R Middle English),French (*FREN 2050A/B Structure of French Dictionaries, *FREN 3020R Linguistics, *FREN 3025A/B Linguistic Introduction to Acadian Dialectology, *FREN 4010A/B Great Linguists of the 20th Century, FREN 4001A and FREN 4002B History of the French Language, *FREN 4015R Advanced Translation into English, *FREN 4011A/B Lexicology, *FREN 4012A/B The Structure of French: Comparisons with English),German (various classes), Philosophy (PHIL 3300A/B Philosophy of Language, *PHIL 4510A/B Topics in the Philosophy of Language, and other relevant classes in logic and on the work of Frege, Russell or Wittgenstein, for example.), Psychology (2190 Language and the Brain, 3150 Introduction to Hearing and Speech Mechanisms, 3190 Psychology of Language), Russian (RUSS 4000R The Structure of Contemporary Standard Russian, RUSS 4950A/B, RUSS 4960A/B, RUSS 4990R Russian Special Topics), Sociology and Social Anthropology (*SSA 3080R Linguistics and Anthropology). Further information about these classes will be found under the departmental listing. It should be noted that some of the classes listed may not be offered in the current year.

Medieval Studies

The period commonly called the Middle Ages (approximately AD 400-1500) offers a unique opportunity to study Western culture as a whole. Indeed, any attempt to study a part of this period in isolation leads to a conviction that such an investigation can never be satisfying and that the walls between disciplines must be broken down and the literature seen in relation to the philosophy, the philosophy in relation to the history, and the history in relation to the languages. No matter what the vernacular tongue of any geographical area, there was one common language throughout Europe and one church, and the study of these leads inevitably to a consideration of palaeography, art, architecture and music.

The field is a very large one and could become a fascinating and rewarding area for certain types of students - those who like to immerse themselves in their work and who feel that university studies need not involve storing knowledge in separate pigeon holes because their language classes have nothing in common with the social sciences they are required to take. The regulations for the Honours degree permit a structured programme to be set up in Medieval Studies which cuts across traditional departmental lines while allowing considerale freedom in choice of classes. This programme is suspended.

Music

Location: Dalhousie Arts Centre, 5th floor
University Ave.
Halifax, N.S.
Telephone: (902) 494-2418

Chair
W.H. Kemp (494-1142)

Student Advisors
Ray Byham (494-2418) - Years III-IV, BMus
D. Farrell (494-2418) - Years I-II
P. Perron (494-2418) - MusEd

Professor
W.H. Kemp, MusBac, MusM (Tor.), AM (Harv.), DPhil (Oxon.) (Theory and History)

Associate Professors
R.D. Byham, BM, MM (Ill. Wesleyan), (History and Keyboard Skills), Assistant Dean (Students)
F. Djokic, BMus, MMus (Juilliard), (Violin)
D.M. Farrell, BA (St. Norbert Coll.), MMus, PhD (Wisc.), (Theory and Composition)
B. Gonnella-Welch, Dipl of Art (Dundee Coll. of Art), LRAM (Royal Academy Lond.), (Voice)
J. Morris, BA (DePauw), (Voice)
P.A. Perron, BMus (McG), MMusEd (Holy Names College), (Music Education)
D.F. Schroeder, AMus, BA, MA (Western Ontario), PhD (Cantab.), (Theory and History)
L. Stodola, BMus (Chic.), MMus (Juilliard), (Piano)
J.S. Tirle, BS (Kent State), MM, DMA (Wisc.), (Theory and Composition) C. van Feggelen, (Guitar and Lute)
D.F. Wilson, BFA (Carn. Inst. Tech.), MMus (Roch.), PhD (Case W.R.), (History)

Senior Instructor
T. Zonneveld, Dipl. (Teach.), Dipl. (School Mus.), Dipl. (Performance), (Royal Conservatory, The Hague), (Piano)

Part-Time Faculty
N. Babineau (mus.ed. string studies)
T. Hill, MA (Calif., Davis), (mus.ed. band studies)

D. MacDonald, BMusEd (Dal), Dipl Mus (Paris) MMA (McGill) (organ and church music)
D. Palmer (jazz studies)

Applied Skills Instructors
Flute: P. Creighton; E. DuBois, BMus (Rochester), MMus (Emporia State)
Oboe: Suzane Lemieux
Clarinet: J. Rapson
Bassoon: I. Rothwell
Recorder: P. Evans
Saxophone: D. Palmer
Horn: M. Lee
Trumpet: J. Stern, BMus, MMus (New England Conservatory)
Trombone and Tuba: H. Schoales
Cello: S. Walt
String Bass: L. Turofsky, BMus (Tor.)
Percussion: J. Faraday
Harpsichord: TBA

Staff Piano
Accompanist: H. Murray, B.A. Hons. Mus., L.R.C.T. (Tor.) A.R.C.C.O
Technician: F. Haines

The resources of the Music Department provide a thorough discipline to those whose demonstrated talent and specific pre-university training qualify them for specialization in music studies. Certain classes and ensembles are available to the non-specialist student who wishes to increase both musical awareness as a listener and involvement as a performer.

In the Bachelor of Music Programme, the Department offers training to the prospective professional musician: performer, composer, theorist, historian or critic. Future teachers instructing in the elementary and secondary school classroom are provided with methods, skills and field experience in the Bachelor of Music Education Programme. In our society today there are many vocations in which a working knowledge of various aspects of music is a desirable part: librarianship, media programming and production, arts management, recreational and therapeutic work, to name only a few. A carefully chosen BA (General) or combined Honours programme could furnish a basic equipment for further studies in preparation for such professions. The truly contemporary listener, too, must acquire style-specific tools, if there is to be an informed response to the musical experience.

Thus the University's Music Department is ready to serve many needs within a general standard of excellence. Crafts and skills, history, practice and appreciation are presented in studies flexible enough to be useful to each student's identity as a musical person.

Classes for Non-Majors
Classes offered as arts electives for non-majors are as follows:

MUS 1000R Listening to Music
MUS 1001A Materials of Music
MUS 1002B Introductory Music Theory
MUS 2007R Guitar and Lute MUS 2008R Modern Guitar
MUS 2087R Electronic and Experimental Music
*MUS 2011R History of Opera
*MUS 2012R Music and Psychology
*MUS 2013R The Evolution of Jazz
*MUS 2021R Music and Literature

Note: Classes marked * are not offered every year. Please consult the current timetable on registration to determine if this class is offered.

Degree Programmes in Music

Admission

Students wishing to enrol in a degree programme offered by the Department of Music must fulfill the following admission requirements:

(a) satisfy the requirements for admission to the Faculty of Arts and Social Sciences

(b) demonstrate their proficiency as instrumental or vocal performers in an audition-interview

(c) demonstrate knowledge of the basic rudiments of music theory (equivalent to Grade II Theory of the Royal Conservatory of Music of Toronto) and aural dictation: each assessed by written diagnostic tests as part of the audition-interview.

Applicants will be notified in writing as to their acceptance into one of the programmes in music. Applicants who, in the estimation of the Auditioning Committee, show considerable musical talent but are in need of more emphasis on preparatory skills will be required to take some foundational classes. Applicants with severe background deficiencies will be advised to prepare again through private instruction before reapplying.

When making application for admission to the University, prospective music students should request the supplementary application form for the Department of Music.

Application to the Department should be received by the end of February; audition procedures should be completed by March 31 to ensure admission and scholarship considerations. Any subsequent applications should be made no later than June 1 and will be subject to enrolment quotas. All audition procedures should be completed by June 30. Late applications may be considered at the discretion of the Department, but no auditions will be given after August 25.

Students wishing to transfer from another institution into the Second or Third Year of their chosen Music programme must take validation examinations in history, theory, aural and keyboard skills, and their applied major instrument before transfer of credits can be considered. Failure to pass an examination will necessitate enrolment in the appropriate First or Second Year class. Validation examinations must be written at the same time as the audition-interview. Transfer applications are subject to the deadlines stated in the preceding paragraph.

Note: All students entering the First and Second Years of Music Studies are required to register in the Bachelor of Music programme.

Upon successful completion of the two-year core curriculum, students may either proceed to the Third Year of the BMus or transfer to the BMusEd or BMusEd/BEd programmes.

Foundational Classes

These offerings are designed for certain prospective music majors who, in the opinion of the faculty, are in need of a more prolonged exposure to non-major levels of performance, music literature, and skills in musicianship. Students admitted at this level are considered in the University Exploration category, and may take a maximum of three credit classes.

Curriculum

MUS 0070C Foundational Aural Perception (non-credit)
MUS 0071C Foundational Keyboard Skills (non-credit)
MUS 0100R Foundational Applied Skills (non-credit)
MUS 1000R Listening to Music
MUS 1001A Materials of Music
MUS 1002B Introduction to College Music Theory
1 Music Ensemble (non-credit)
Required Writing Class (from another department - see list of writing classes, page 70)

Special Notes:

1. Music classes MUS 1000R, MUS 1001A, and MUS 1002B, although credit classes, may not be counted toward the BMus, BMusEd, or BA degree with a major in Music; however, they may be counted as electives in other BA or BSc Degree Programmes.
2. All students registered in the Foundational Classes shall not enrol in the First Year Classes of the Bachelor of Music Core Curriculum until all prerequisites for those classes are completed.

Standard for Foundational Classes

Note: The foundational music classes and the required writing class must be taken in the same academic year.

Minimum grades:

MUS 0070C C+
MUS 0071C C+
MUS 0100R B
MUS 1000R C
MUS 1001A C
MUS 1002B C
Writing Class C
Each Elective C

Bachelor of Music (BMus)

The BMus is a four-year programme with sixteen out of twenty classes in music. Upon successful completion of the second year, students

may choose to concentrate in performance, music history and literature, or composition.

Common Curriculum
First Year: MUS 1000-level Applied Skills; MUS 1350A History of Music I (Introduction); MUS 1351B History of Music II (Baroque); MUS 1201A Theory I, first term; MUS 1202B Theory I, second term; MUS 1270C Aural Perception I; MUS 1271C Keyboard Skills I; and an Arts and Social Sciences or Science Elective, one full credit (Writing Class Elective).
Second Year: MUS 2000-level Applied Skills; MUS 2350A History of Music III (Classic); MUS 2351B History of Music IV (Romantic); MUS 2201C Theory II; MUS 2160C Conducting; MUS 2270C Aural Perception II; MUS 2271C Keyboard Skills II; and an Arts and Social Sciences or Science Elective, one full credit.

Concentration in Performance
Third Year: MUS-3000 level Applied Skills; MUS 3350A History of Music V (Medieval and Renaissance); MUS 3351B History of Music VI (Contemporary Music); MUS 3280C Counterpoint; MUS 3282C Orchestration; MUS 3199C Recital; Music Elective, one half credit; and an Arts and Social Sciences or Science Elective, one full credit.
Fourth Year: MUS 4000-level Applied Skills; MUS 4199C Area Graduation Requirement (Recital); MUS 4280C Advanced Harmony and Counterpoint; MUS 4281C Form and Analysis; Music Elective, 1½ credits; and an Arts and Social Sciences or Science Elective, one full credit.
Note: Church Music Option - Organ majors may complete a curriculum in church music by successful achievement in the following classes taken in the Third and Fourth Years: MUS 4271C, MUS 4370C, MUS 4198C, and PT 2105 offered at the Atlantic School of Theology and taken through letter of permission.

Concentration in Composition
Third Year: MUS 3000-level Applied Skills; MUS 3350A History of Music V (Medieval and Renaissance); MUS 3351B History of Music VI (Contemporary Music); MUS 3280C Counterpoint; MUS 3282C Orchestration; MUS 3210R Composition; and an Arts and Social Sciences or Science Elective, one full credit.
Fourth Year: MUS-4000 level Applied Skills; MUS 4280C Advanced Harmony and Counterpoint; MUS 4281C Form and Analysis; MUS 4210R Composition; MUS 4299C Area Graduation Requirement (Composition); Music Elective, one half credit; and an Arts and Social Sciences or Science Elective, one full credit.

Concentration in History and Literature
Third Year: MUS 3000-level Applied Skills; MUS 3350A History of Music V (Medieval and Renaissance); MUS 3351B History of Music VI (Contemporary Music); MUS 3280C Counterpoint; MUS 3282C Orchestration; MUS 3310R Music in Canada; and an Arts and Social Sciences or Science Elective, one full credit.
Fourth Year: MUS 4000-level Applied Skills; MUS 4280C Advanced Harmony and Counterpoint; MUS 4281C Form and Analysis; MUS 4368A & MUS 4369B Special Studies; MUS 4399C Area Graduation Requirement (Thesis); Music Elective, one half credit; and an Arts and Social Sciences or Science Elective, one full credit.

Standards

All students wishing to enter third year required Music classes other than MUS 3350A and MUS 3351B in the BMus programme must successfully complete their MUS 2000-level Applied Skills and MUS 2201C, MUS 2270C and MUS 2271C and achieve an overall average of B⁻ in the music classes of the first and second years, including a minimum standing of C in each of MUS 1201A, MUS 1202B and MUS 2201C, and a minimum of B⁻ in each of their MUS 2000-level Applied Skills, MUS 1270C and MUS 2270C. Students failing to demonstrate the required standards in MUS 2270C must repeat the class, but, with the permission of the Department, those with an otherwise satisfactory academic achievement may do so concurrently with their third year curriculum, within the five full classes or as an approved overload.

Students wishing to enter the concentration in performance must achieve an average of B⁺ in their MUS 1000- and MUS 2000-level Applied Skills; in history and literature, an average of B⁺ in MUS 1350A, MUS 1351B, MUS 2350A and MUS 2351B and demonstrate acceptable writing ability; in composition, submit one or more original pieces for assessment by the composition faculty.

Students in the BMus programme must maintain a minimum standing of B⁻ in each of the music classes of the third and fourth years.

Students who at the end of the third year have not obtained at least five credits of B or better in their music classes above the 1000 level will not be admitted to the fourth year without the explicit recommendation of the Department and the prior approval of the Committee on Studies.

Students must achieve a minimum standing of C in each of their Arts and Social Sciences or Science electives.

Bachelor of Music Education (BMusEd)

The BMusEd programmes combine instrumental or vocal instruction; theoretical, aural and keyboard skills; historical knowledge; and the methods and repertoires needed by the music teacher in the elementary and secondary school classroom. Observation and field experience in classroom settings constitute an important part of

the programmes. Students will choose between curricula in Classroom Music or Instrumental Music.

Common Curriculum
First Year: MUS 1000 level Applied Skills; MUS 1350A History of Music I (Introduction); MUS 1351B History of Music II (Baroque); MUS 1201A Theory I, first term; MUS 1202B Theory I, second term; MUS 1270C Aural Perception; MUS 1271C Keyboard Skills; and an Arts and Social Sciences or Science Elective, one full credit (Writing Class Elective).
Second Year: MUS 2000-level Applied Skills; MUS 2201C Theory II; MUS 2270C Aural Perception II; MUS 2271C Keyboard Skills II; MUS 2350A History of Music III (Classic); MUS 2351B History of Music IV (Romantic); MUS 2160C Conducting; and Education, equivalent of one full class.

Classroom Music
Third Year: MUS 3000-level Applied Skills; MUS 3400R Elementary Methods; MUS 3470C Field Experience; MUS 3161C Advanced Choral Technique; MUS 3350A History of Music V (Medieval and Renaissance); MUS 3351B History of Music VI (Contemporary Music); and Education, equivalent of one full class.
Fourth Year: MUS 4000-level Applied Skills; MUS 4400C Secondary Methods; MUS 4470C Field Experience; MUS 4482A Choral Arranging; Education, equivalent of one class; and the equivalent of one and one-half full credit electives in Music, Music Education, or Arts and Social Sciences or Science.

Instrumental Music
Third Year: MUS 3000-level Applied Skills; MUS 3350A History of Music V (Medieval and Renaissance); MUS 3351B History of Music VI (Contemporary Music); Either MUS 3480C Band Instruments or MUS 3481C String Instruments; Education, equivalent of one full class; MUS 3400R Elementary Methods; and MUS 3470C Elementary Field Experience.
Fourth Year: MUS 4000-level Applied Skills; MUS 4400C Secondary Classroom Teaching Methods; MUS 4470C Secondary Classroom Field Experience; MUS 3282C Orchestration; MUS 4480C Band Instruments II; Either MUS 4481C Band Methods and Field Experience or MUS 4483C String Methods and Field Experience; one-half credit elective in Music or Music Education; and Education, equivalent of one full class.

Bachelor of Music Education/Bachelor of Education

The BMusEd/BEd is a five-year integrated programme combining training in Classroom Music or Instrumental Music (as described in the BMusEd degree) with additional training in either elementary classroom teaching or a second teachable subject appropriate for secondary school. The programme includes methods and field experience classes in both Music and in the second teaching area. The BMusEd/BEd programme leads to certification by the Nova Scotia Department of Education. For details of the BMusEd/BEd students must consult with the Department's Music Education Programmer.

Standards

All students wishing to enter third year required Music classes other than MUS 3350A and MUS 3351B in either the BMusEd or BMusEd/BEd programme, must successfully complete their MUS 2000-level Applied Skill, MUS 2201C, MUS 2270C and MUS 2271C and achieve an overall average of B⁻ in the music classes of the first and second years, including a minimum standing of C in each of MUS 1201A, MUS 1202B and MUS 2201C, and a minimum of B⁻ in each of their MUS 2000-level Applied Skills, MUS 1270C and MUS 2270C. Students failing to demonstrate the required standard in MUS 2270C must repeat the class, but, with the permission of the Department, those with an otherwise satisfactory academic achievement may do so concurrently with their third year curriculum, within the five full classes or as an approved overload.

In order to qualify for the award of a BMusEd or BMusEd/BEd degree, candidates must have obtained a minimum overall average of B in their music and music education classes above the 2000 level and maintain a minimum average of B in both their education and teachable subject Arts and Social Sciences or Science classes.

With special permission, a student in the BMusEd or BMusEd/BEd programme may give a graduation recital instead of a final jury exam.

Teacher Certification in Music

A student possessing an appropriate undergraduate degree in Music from a recognized university may enrol in a selected group of six full classes which may lead to certification by the Nova Scotia Department of Education.

In an audition- interview, an applicant must pass a written exam in theory, a keyboard proficiency test and an ear training exam (sight-singing and dictation) equal to the final examination standards in MUS 2201C (Theory II), MUS 2271C (Keyboard Skills) and MUS 2270C (Aural Perception II). Failure to demonstrate satisfactory standards in any of these areas will require the student to enrol in the appropriate class(es) in addition to the six classes listed below. The applicant must also demonstrate basic musicianship in his or her chosen performance idiom. All examinations must be taken at the time of the audition-interview. All audition procedures should be completed by June 30; no audition will be held after August 25.

The programme of study shall be formulated in a personal interview with a designated member of the music education faculty of the university's Department of Music and approved by the Department's Committee on Studies.

The programme will normally include:

Music
MUS 3400R Elementary Music Methods
MUS 3470C Elementary Music Field Experience
MUS 4400C Secondary Music Methods
MUS 4470C Secondary Music Field Experience
Elective in Music or Music Education (one half credit)

Education
Special Education (One full credit)
Educational Foundations (Two full credits including a half class in each of Sociology, Philosophy, History, Psychology of Education.)

Since the normal maximum number of classes that may be taken in any academic year is 5, students are advised to take the remaining full credit (usually two half-classes in education) in summer school prior to or following the actual year of study. Students are cautioned to consult the School of Education for the prospective availability of required education classes in summer school and to note the regular summer school tuition costs apply to those classes.

Standards

To complete successfully the programme of study, the candidate must obtain a minimum overall average of B in his/her music and music education classes above the 2000 level, and a minimum average of B in the Education classes.

Bachelor of Arts (Major in Music)

The BA (General) with a major in music is a three year programme, subject to the regulations described in the section Arts and Science: General Faculty Regulations (Item 3) and Degree Programmes (Item 5). Students are required to complete MUS 1350A, MUS 1351B, MUS 1201A and MUS 1202B, MUS 1270C, MUS 1271C and their MUS 1000 level Applied Skills before entering the third year. Other classes, to a maximum total of 6 full credit classes, may be selected in consultation with the Department to suit a student's individual needs and interests. Music Education classes are not considered applicable to this degree. Students in the BA (General) programme enroled in Applied Skills classes are required to pass jury examinations.

Students wishing to transfer from another institution into this programme may be required to enrol in an Applied Skills Class at the First-Year level, depending upon the standard of their performance proficiency demonstrated in the audition-interview.

Classes Offered

Studies in Music History

MUS 1350A History of Music I: An introductory survey of music of the Classical and Romantic periods. Available to non-music majors with permission of the instructor.
Instructor: D. Wilson
Format: Lecture 3 hours
Prerequisite: A basic knowledge of musical notation and terminology equivalent to Grade II Conservatory standards.

MUS 1351B History of Music II: A study of the history of the music of the Baroque period (c. 1600-1750) with an emphasis on the development of style and performance practices.
Instructor: D. Wilson
Format: Lecture 3 hours
Prerequisite: MUS 1350A
Co-requisites: MUS 1202B, MUS 1270C, MUS 1271C

MUS 2350A History of Music III: A detailed study of music from the second half of the 18th and early 19th centuries.
Instructor: D. Schroeder
Format: Lecture 3 hours
Prerequisites: MUS 1202B, MUS 1350A
Co-requisite: MUS 2201C

MUS 2351B History of Music IV: A detailed study of music from the 19th and early 20th centuries.
Instructor: D. Schroeder
Format: Lecture 3 hours
Prerequisites: MUS 1202B, MUS 1350
Co-requisite: MUS 2201C

***MUS 3310R Music in Canada:** An historical survey of music in Canada with emphasis on the socio-economic factors essential to the successful transplantation and growth of European musical culture in Canada. The class gains practical experience in research skills as they pertain to the specialized area of Canadian music. Students must prepare research and analytical reports on both historical and contemporary topics.
Instructor: W.H. Kemp
Format: Lecture 3 hours
Prerequisite: Permission of the Department

***MUS 3311R History of Opera:** An historical and analytical survey of operatic compositions from 1600 to the present day; opera as drama; changing tastes in operatic productions; operetta and musical comedy.
Instructor: Staff
Format: Lecture 3 hours
Prerequisite: Permission of the Department

***MUS 3312R Music and Psychology:** The interrelationship of music and psychology, as it relates to and informs the listener, student, educator and professional musician. Topics include a) the perception of tones as a foundation for the appreciation of musical experiences, music as passing time and as information; b) musical taste and aesthetics from a psychological point of view; c) the social psychology of music; d) theories of learning and of behaviour as appropriate to musical training and performance; e) the diagnostic and evaluative testing of musical aptitude and ability; f) the function of music in therapy and in special education. A rudimentary knowledge of musical notation is a prerequisite to this study; no previous classes in Psychology are necessary.
Instructor: W.H. Kemp
Format: Lecture 3 hours
Prerequisite: Permission of the Department

***MUS 3313R The Evolution of Jazz:** A survey of the historical and social background of jazz and its musicians. The evolution of jazz styles is illustrated in live performances as well as on recordings. A knowledge of musical notation is not a prerequisite to this class.
Instructor: D. Palmer
Format: Lecture 3 hours

MUS 3350A History of Music V: A detailed study of the development of Western music in the Medieval and Renaissance periods with an emphasis on the development of style and performance practices.
Instructor: D. Wilson
Format: Lecture 3 hours
Prerequisites: MUS 1202B, MUS 1350A, or permission of the Department

MUS 3351B History of Music VI: The main trends in 20th century "serious" music, with particular emphasis on "new" musical practices.
Instructor: S. Tittle
Format: Lecture 3 hours
Prerequisite: MUS 1350A, MUS 2351B

MUS 3361A History of Dance: The class will explore the development of dance from the Basse dances of the Middle Ages, through the birth of ballet to the dances of today; it will include an introduction to dance notation as well as the practical and theoretical aspects of historical dance.
Instructor: P. Richards
Format: Lecture 2 hours

***MUS 3370C Performance Practice:** The principles of performance practice in 18th and 19th-century music will be discussed in the context of treatises, contemporary accounts, manuscripts and early editions. Areas to be covered include instruments, ornamentation, dance-related music, and problems of interpreting expression markings.
Instructor: D. Schroeder
Format: Seminar 2 hours
Prerequisites: MUS 1350A, MUS 1351B, MUS 2350A, MUS 2351B

MUS 4366A & MUS 4366B
Topics in Music
This is an intensive study of selected topics to be announced.
Instructor: Staff
Format: Seminar 2-3 hours
Prerequisites: MUS 1350A, MUS 1351B, MUS 2350A, MUS 2351B

MUS 4367A & MUS 4367B
Topics in Music History
This is an intensive study of selected topics to be announced.
Instructor: Staff
Format: Seminar 2-3 hours
Prerequisites: Mus 1350A, MUS 1351B, MUS 2350A, MUS 2351B.

MUS 4368A & MUS 4369B Special Studies: Individually directed research and writing under the supervision of an appropriate member of the Department.
Instructor: Staff
Prerequisites: MUS 2350A, MUS 2351B, MUS 3350A and MUS 3351B

Studies in Music Literature

Study in depth of the history and repertoire of specific performance idioms.

***MUS 3352A Chamber Music, to 1800:**
Format: lecture 3 hours
Instructor: Staff

***MUS 3353B Chamber Music, 19th and 20th Centuries:**
Format: lecture 3 hours
Instructor: Staff

***MUS 3354A Keyboard Music to 1750:**
Format: lecture 3 hours
Instructor: R. Byham

***MUS 3355B Piano Literature, 19th and 20th Centuries:**
Format: lecture 3 hours
Instructor: R. Byham

***MUS 4370C The Organ and its Literature:**
Format: lecture 2 hours
Instructor: D. MacDonald

MUS 4399C Area Graduation Requirement (Thesis)

Theory and Related Skills

MUS 0070C Foundational Aural Perception: Designed for students with no experience in sight-singing or dictation, or for students needing extra and intensive exposure to these skills; may not be taken without co-related classes MUS 0071C, MUS 1001A, and MUS 1002B. Includes scales, modes, two-part (duet) reading, elementary dictation. A non-credit class.
Instructor: Staff
Format: Lab 2 hours

MUS 0071C Foundational Keyboard Skills: Designed for students with no experience in using the keyboard as a proficiency tool. Includes work in basic harmonization, cadences, introductory improvisation, scale building. Not a class in piano lessons or piano repertoire. May not be taken without MUS 1001A, MUS 1002B, and MUS 0070C. A non-credit class.
Instructor: R. Byham
Format: Lab 2 hours

MUS 1001A Materials of Music: An introduction to University music studies for prospective music majors recommended by audition to foundational level classes in music: also open to non-majors. A knowledge of music reading and rudiments is presumed. Extensive work in rudiments applied to all aspects of music learning; the phenomenon of the tonic-melodic, harmonic and formal; modes, pentatonic scale formation, dissonances, 2-part writing to encompass these; non-tonal formations; acoustics. Note: auditioned students will be advised to take a year of private studies if their preparedness falls below the introductory level.
Instructor: D.M. Farrell
Format: Lecture 2 hours

MUS 1002B Introductory Music Theory: Also open to non-majors. Rhythm and phrase structures, "musica ficta" and elementary modulation in two- and three-part writing. Comparison of tonality, atonality, modality, and chromatic tonality, exploration of chord building triadic and otherwise, simple (bar) chording; elementary diatonic harmony previewing the start of MUS 1201A; four-part writing as an immediate transition to MUS 1202B.
Instructor: D.M. Farrell
Format: Lecture 2 hours
Prerequisite: MUS 1001A

MUS 1201A & MUS 1202B Music Theory I: Thorough knowledge of musical rudiments is presumed. The class MUS 1201A begins with a survey of musical phenomena in general, subsequently of tonal music in particular. The material in this survey is immediately applied to two- and three-part writing, stressing both the harmonic and contrapuntal dimensions. In the second term, MUS 1202B (prerequisite MUS 1201A), there is a concentration upon a complete grounding in the traditional four-part writing skills. This culminates in the study of the dominant seventh and elementary modulation.
Instructor: S. Tittle
Format: Lecture 3 hours
Prerequisites: Permission of the Department, plus Royal Conservatory of Toronto Grade II Theory equivalent or MUS 1001A/MUS 1002B
Co-requisites: MUS 1270C, MUS 1271C

MUS 1270C Aural Perception I: A class designed to correlate with MUS 1201A and MUS 1202B. Melodic, harmonic, rhythmic, textural and stylistic factors are visualized, performed and dictated systematically. Lab work in ear-training and sight-singing is done three times per week. Each student is a member of a small working section.
Instructor: T. Zonneveld
Format: Lab 3 hours
Prerequisite: Permission of the Department; MUS 0070C or equivalent
Co-requisites: MUS 1201A & MUS 1202B, MUS 1271C

MUS 1271C Keyboard Skills I: The development of basic skills in sight reading, score reading and harmonized accompaniment at the keyboard.
Instructor: R. Byham
Format: Lab 2 hours
Prerequisite: Permission of Department; MUS 0071C or equivalent

MUS 2201C Music Theory II: A continuation of Theory I, covering the study of complex modulation, altered chords and chromatic harmony. Emphasis is placed upon concepts of functional tonality by means of both written exercises in four-part harmony and analysis of Classic and Romantic compositions.
Instructor: D. Schroeder
Format: Lecture 2 hours
Prerequisites: MUS 1201A & MUS 1202B, MUS 1270C, MUS 1271C
Co-requisites: MUS 2270C, MUS 2271C

MUS 2270C Aural Perception II: This class provides further practice in melodic and harmonic dictation and sight-singing; it correlates with MUS 2201C. A special component deals with solmization skills in sight reading.
Instructor: L. Stodola
Format: Lab 2 hours
Prerequisites: MUS 1201A & MUS 1202B, MUS 1270C, MUS 1271C
Co-requisites: MUS 2201C, MUS 2271C

MUS 2271C Keyboard Skills II: A continuation of MUS 1271C.
Instructor: R. Byham
Format: Lab 2 hours
Prerequisites: MUS 1201A & MUS 1202B, MUS 1270C, MUS 1271C
Co-requisites: MUS 2201C, MUS 2270C

***MUS 3270C Aural Perception III:** Advanced sight-singing and dictation. Singing music of all periods on solfa syllables and letter names with emphasis on contemporary music. Dictation of modulating excerpts in four-part chorales. Chromaticism, modality, whole-tone and contemporary music are studied along with musical examples of more rhythmic complexity. Also included: singing and dictation of atonal compositions, advanced chords, sing and play exercises.
Instructor: P. Perron
Format: Lab 2 hours
Prerequisites: MUS 2201C, MUS 2270C, MUS 2271C

MUS 3280C Counterpoint: Prerequisite: MUS 2201C. The development of skills in polyphonic architecture in two- and three-voice 16th century contrapuntal style using canonic techniques. An introduction to 18th century counterpoint: Inventions, canons, and fugal expositions, etc.
Instructor: D. Farrell
Format: Lecture 2 hours
Prerequisite: MUS 2201C

MUS 3282C Orchestration: A survey of the development of the orchestra and the orchestral instruments with an introduction to acoustics. Technique in the deployment of instrumental combinations is emphasized through practical exercises in scoring for a medium-sized orchestra common in the 20th century.
Instructor: S. Tittle
Format: Lecture 2 hours
Prerequisite: MUS 2201C

MUS 4280C Advanced Harmony and Counterpoint: The application of acquired harmonic and contrapuntal technique to various instrumental and vocal textures and forms; chorale prelude and fugue.
Instructor: W. Kemp
Format: Lecture 2 hours
Prerequisites: MUS 2201C and MUS 3280C

MUS 4281C Form and Analysis: Analytic study of the form and content of selected compositions in various styles and idioms.
Instructor: W. Kemp
Format: Lecture 2 hours
Prerequisites: MUS 2201C, MUS 2350C, MUS 2351B and MUS 3280C

Composition

MUS 2287R Electronic and Experimental Music: Introduction to the experimental Sound Studio. Recording, mixing, and tape manipulation techniques; analysis and composition of tape music; voltage control concepts, synthesizer theory and practice. Composition and live performance with electronics; group improvisation with both studio and personal resources. Design and execution of live performance situations which may include verbal, visual and other theatrical elements.
Instructor: S. Tittle
Format: Lab 3 hours
Prerequisite: Interview with Instructor

MUS 3210R, MUS 4210R Composition I, II: Particular works are analyzed to serve as a springboard for original composition by the student. Students' works are evaluated in small group discussions and in individual tutorial sessions.
Instructor: S. Tittle, D.M. Farrell
Prerequisites: Permission of the Department, an interview with the instructor, and the submission of a folio of original compositions for assessment by the composition faculty.

***MUS 4271C Bass Continuo, Service Playing and Accompaniment:** This class is designed to teach elementary principles of basso continuo and realization of figured bass as well as the practical study of the role of the organ in worship. Students will gain experience in continuo playing through ensemble participation. Topics for study in service playing include solo and anthem accompaniment, hymn playing, and examination of various forms of service music.
Instructor: Staff
Format: Lab 2 hours
Prerequisite: Departmental consent and an interview with the instructor

MUS 4282A Choral Arranging: See MUS 4482A, Music Education.
Instructor: D.M. Farrell
Format: Lecture 2 hours

MUS 4299C Area Graduation Requirement (Composition)

Performance

Note: The various levels of applied study indicate the year of study in the Department and are not intended solely as an indication of relative standard. Term gradings are based upon progress as well as upon the actual performing standard displayed in the jury examination.

Classes offered in all band and orchestral instruments, guitar and lute, piano, organ,

harpsichord, recorder, voice. Normally all students receive a one hour weekly individual lesson in their major performance idiom. In addition to the one-hour lesson, and appropriate to the idiom, group instruction in technique and repertoire may be a required part of all sequences of Applied Skills classes.

Applied Skills classes are designated as follows:
MUS 1101R, MUS 2101R, MUS 3101R, MUS 4101R: Voice I, II, III, IV
MUS 1102R, MUS 2102R, MUS 3102R, MUS 4102R: Guitar I, II, III, IV
MUS 1103R, MUS 2103R, MUS 3103R, MUS 4103R: Piano I, II, III, IV
MUS 1104R, MUS 2104R, MUS 3104R, MUS 4104R: Organ I, II, III, IV
MUS 1105R, MUS 2105R, MUS 3105R, MUS 4105R: Violin I, II, III, IV
MUS 1106R, MUS 2106R, MUS 3106R, MUS 4106R: Viola I, II, III, IV
MUS 1107R, MUS 2107R, MUS 3107R, MUS 4107R: Cello I, II, III, IV
MUS 1108R, MUS 2108R, MUS 3108R, MUS 4108R: Double Bass I, II, III, IV
MUS 1109R, MUS 2109R, MUS 3109R, MUS 4109R: Flute I, II, III, IV
MUS 1110R, MUS 2110R, MUS 3110R, MUS 4110R: Oboe I, II, III, IV
MUS 1111R, MUS 2111R, MUS 3111R, MUS 4111R: Clarinet I, II, III, IV
MUS 1112R, MUS 2112R, MUS 3112R, MUS 4112R: Bassoon I, II, III, IV
MUS 1113R, MUS 2113R, MUS 3113R, MUS 4113R: Saxophone I, II, III, IV
MUS 1114R, MUS 2114R, MUS 3114R, MUS 4114R: French Horn I, II, III, IV
MUS 1115R, MUS 2115R, MUS 3115R, MUS 4115R: Trumpet I, II, III, IV
MUS 1116R, MUS 2116R, MUS 3116R, MUS 4116R: Trombone I, II, III, IV
MUS 1117R, MUS 2117R, MUS 3117R, MUS 4117R: Tuba I, II, III, IV
MUS 1118R, MUS 2118R, MUS 3118R, MUS 4118R: Percussion I, II, III, IV
MUS 1119R, MUS 2119R, MUS 3119R, MUS 4119R: Lute I, II, III, IV
MUS 1120R, MUS 2120R, MUS 3120R, MUS 4120R: Harpsichord I, II, III, IV
MUS 1121R, MUS 2121R, MUS 3121R, MUS 4121R: Recorder I, II, III, IV

MUS 4150R Advanced Applied Skill: By special permission of the Department a student may enrol in a fifth year of an applied skill, subject to enrolment quotas and budget.

MUS 0100R Foundational Applied Skills: By special recommendation some music majors may be advised by the Auditioning Committee to begin individual lessons at a level prerequisite to 1000-level Applied Skills classes.

MUS 2160C Conducting:
Instructor: P. Djokic
Format: Lab 2 hours
Co-requisites: MUS 2201C, MUS 2270C, MUS 2271C

MUS 3161C Advanced Choral Techniques: Study of the distinctive features of conducting choral ensembles with emphasis on rehearsal technique, score preparation, interpretation and group methods of building vocal tone. Practical experience in conducting. Usually offered every second year.
Instructor: D. Wilson
Format: Lab 2 hours
Prerequisites: MUS 2201C, MUS 2270C, MUS 2271C, MUS 2260C

MUS 4198C Church Music Internship: This class is reserved for students in the Fourth Year of the BMus Organ and Church Music Programme. Under the guidance of the liturgical and musical staff of the Atlantic School of Theology, students will prepare and perform Services pertaining to the principal church denominations. In the second term, students will be assigned to a minimum of three representative city churches, for observation and practice of the Service, supervised by the Department in collaboration with the city church musicians and clergy participating in the programme.
Instructor: D. MacDonald, Staff Coordinator
Prerequisite: Permission of the Department

MUS 3199C Recital: Required of all third year Bachelor of Music students whose concentration is in Performance.

MUS 4199C Area Graduation Requirement (Recital)

Music Education

Prerequisites for all classes: permission of the Department, and an interview with the designated member of the Music Education faculty.

Core Classes

MUS 3400R Elementary Classroom Teaching Methods: An introduction to the development of a music programme at the elementary level. Emphasis is on how to teach song materials, movement and creativity, reading and writing skills and what to listen for in music. The educational philosophies of Kodaly and Orff are examined in some detail. Solmization, hand signs, rhythm names and body co-ordination are some of the skills to be developed.
Instructor: P. Perron
Format: Lecture 3 hours

MUS 3470C Elementary Classroom Field Experience: Students must spend a minimum of 100 hours in various elementary schools during the school year practice teaching (75%) and observing master teachers (25%). This consists of one morning per week during the university year and a three week period in April-May.
Instructor: P. Perron

MUS 3480C Band Instruments: A practical introduction to the principal band instruments. Group instruction is offered in flute, oboe or bassoon, saxophone, trumpet or French horn, trombone and tuba, and percussion. This class normally is restricted to students majoring in wind, brass or percussion instruments.
Instructor: J. Stern, Staff Coordinator
Format: Lab 2 hours

MUS 3481C String Instruments: A practical introduction in group lessons to the instruments of the string orchestra. This class normally is restricted to students majoring in a string instrument.
Instructor: N. Babineau, Staff Coordinator
Format: Lab 2 hours

MUS 4400C Secondary Classroom Teaching Methods: An introduction to the development of a music programme at the secondary level. Emphasis is on how to teach a general music class exploring the use of song materials, music theory, movement and creativity and listening skills.
Instructor: P. Perron
Format: Lecture 1 1/2 hours

MUS 4470C Secondary Classroom Field Experience: Students must spend a minimum of 100 hours in various secondary school classrooms during the school year practice teaching (75%) and observing master teachers (25%). This consists of one morning per week during the university year and a three week period in April-May.
Instructor: P. Perron

MUS 4480C Band Instruments II: A continuation of MUS 3480C.
Instructor: J. Stern, Staff Coordinator
Format: Lab 2 hours

MUS 4481C Band Methods and Field Experience: A survey of the literature for band, band methods for schools and purchase and maintenance of band instruments; supervised band leadership practice in the school setting.
Instructor: T. Hill
Format: Lab 2 hours
Prerequisite: MUS 3460A

MUS 4483C String Methods and Field Experience: A survey of literature and string methods for schools and purchase and maintenance of string instruments; supervised string teaching practice in the school setting.
Instructor: N. Babineau
Format: Lab 2 hours
Prerequisites: MUS 3481C or permission

MUS 4490A/B Orff Method and Practice, Level One, Basic: An introduction to Carl Orff's Music for Children designed for the elementary school classroom teacher and music specialists; the material is also suitable for those using music in the pre-school, recreational or studio setting. Emphasis is on how to apply the four principal elements of the Orff approach - speech, movement, rhythm and melody - to the teaching of basic musical concepts (beat, rhythm, simple metre, pentatonic scale, fundamental Bourdon, phrasing, form and notation). Creative procedures and teaching methods are explored using song, Orff instruments and the recorder.
Instructor: Staff
Format: Lecture and Practicum
Prerequisite: Permission of the Department

MUS 4491A/B Orff Method and Practice Level Two, Intermediate: A continuation of MUS 4490A/B at the intermediate level. Emphasis is on the acquisition and practice of procedures and methods of the Orff approach using increasingly developed musical materials and constructs (complete scale repertoire, melodic formuation, harmonic relationships and chordal formations, cross-rhythms and irregular metres, rondo and antiphony). Advanced training is given in instrumental technique (recorder, hand drum, mallets, etc.). The Orff approach is applied to ways of musically interpreting and improvising children's speech, recitation, poetry, and drama.
Instructor: Staff
Format: Lecture and Practicum
Prerequisite: MUS 4490A/B or a similar class in Basic Orff; an interview with the Department.

Electives

MUS 4462A Guitar in the Classroom: Introductory guitar instruction including vocal/choral accompanying methods and techniques for the school classroom setting, tablature reading and finger-style playing, development of skills in a variety of accompaniment and rhythmic figurations. Practical applications will be available in MUS 3470C/4470C.
Instructor: C. van Feggelen
Format: Lab 2 hours

MUS 4471A/B/C Field Projects: Under supervision, students design a project that results in an in-depth study of the theoretical and practical aspects of a particular area of music education. The project entails library research as well as working with specialists in the field.

MUS 4482A Choral Arranging: Arranging for the school choral ensemble.
Instructor: D. Farrell
Format: Lecture 2 hours
Prerequisite: MUS 3282C

Classes Available to Non-Majors

MUS 1000R Listening to Music: Designed for the interested listener who desires to acquire an informed response to musical experiences. A knowledge of musical notation and terminology is not a prerequisite except for Foundational Music students assigned to this class.

The class includes a survey of the evolution of music from primitive cultures to the modern age; music in contemporary society; music in non-Western civilizations; music and image; music and the related arts; the art and psychology of listening.
Instructor: W.H. Kemp
Format: Lecture 3 hours

MUS 2007R Guitar and Lute: For students with a serious interest in classical guitar and lute playing and for whom it is not possible to provide individual instruction. Basic playing technique and the history of fretted instruments.
Instructor: C. van Feggelen
Format: Lab 2 hours
Prerequisite: Personal interview with Instructor

MUS 2008R Modern Guitar: A class for students with a serious interest in preparing for studio guitar playing and including jazz, folk, rock and accompanying idioms. Class instruction and ensemble playing in improvisation, score reading, chording and arranging.
Instructor: C. van Feggelen
Format: Lab 2 hours
Prerequisite: Interview with Instructor

***MUS 2021R Music and Literature Since the Enlightenment:** An interdisciplinary class open to students not majoring in Music. There is no prerequisite. The discussion of music in this class assumes little or no musical background and literary works will be read in translation. About twelve major works (or smaller groups of works) will be considered. About half of these will focus on how different media can converge or digress on the same subject. Most of the remaining works will be large symphonic works which owe a clear debt to specific literary works or more general literary influences.
Instructor: D. Schroeder
Format: Lecture 2 hours

The following classes, previously described, are also available:

MUS 1001A Materials of Music
MUS 1002B Introductory Music Theory
MUS 2087R, MUS 2287R Electronic and Experimental Music
*MUS 2011R, *MUS 3311R History of Opera
*MUS 2012R, *MUS 3312R Music and Psychology
*MUS 2013R, *MUS 3313R The Evolution of Jazz

Ensembles

Participation in both large and small ensembles is required of all students whose major field of study is music in each of the years of the degree programmes. Details of specific participation requirements are available in the Department of Music.

Membership in the various ensembles is open to the University and the community by audition.

Following is a list of the ensembles sponsored by the Department of Music:

MUS Dalhousie Chorale (W.H. Kemp): I. 0151, II. 0251, III. 0351, IV. 0451, V. 0551, Found. 0051.

MUS Dalhousie Chamber Choir (W.H. Kemp): I. 0152, II. 0252, III. 0352, IV. 0452, V. 0552, Found. 0052.

MUS Dalhousie Community Concert Band (E. Fralick): I. 0153, II. 0253, III. 0353, IV. 0453, V. 0553, Found. 0053.

MUS Dalhousie Chamber Orchestra (P. Djokic): I. 0154, II. 0254, III. 0354, IV. 0454, V. 0554, Found. 0054

MUS Dalhousie Jazz Band (D. Palmer): I. 0155, II. 0255, III. 0355, IV. 0455, V. 0555, Found. 0055.

MUS Dalhousie Brass Ensemble (Staff): I. 0156, II. 0256, III. 0356, IV, 0456, V. 0556. Found. 0056.

MUS Dalhousie Musica Antiqua (D. Wilson): I. 0157, II. 0257, III. 0357, IV. 0457, V. 0557, Found.0057.

MUS Dalhousie Percussion Ensemble (J. Faraday): I. 0158, II. 0258, III. 0358, IV. 0458, V. 0558, Found. 0058.

MUS Dalhousie Opera Workshop (J. Morris): I. 0159, II. 0259, III. 0359, IV. 0459, V. 0559, Found. 0059.
MUS Guitar Ensemble (C. van Feggelen): I. 0160, II. 0260, III. 0360, IV. 0460, V. 0560, Found. 0060

MUS Small Ensembles (staff coaches): I. 0161, II. 0261, III. 0361, IV. 0461, V. 0561, Found. 0061.

MUS Accompanying: I. 0162, II. 0262, III. 0362, IV. 0462, V. 0562, Found. 0062.

MUS Chebucto Orchestra (by invitation, and Department permission): I. 0163, II. 0263, III. 0363, IV. 0463, V. 0563, Found. 0063.

MUS Nova Scotia Youth Orchestra (by invitation, and Department permission): I. 0164, II. 0264, III. 0364, IV. 0464, V. 0564, Found. 0064.

MUS Scotia Wind Ensemble (by invitation, and Department permission): I. 0165, II. 0265, III. 0365, IV. 0465, V. 0565, Found. 0065.

Philosophy

Location: 1400 Henry Street
Halifax, N.S.
Telephone: (902) 494-3810

Chair
S.A.M. Burns (494-3811)

Undergraduate Advisors
N.C. Brett (494-3811)
S.A.M. Burns (494-3811)
S. Sherwin (494-3810)
T. Tomkow (494-3811)

Emeritus Professor
D. Braybrooke, BA (Harv.), MA, PhD (Corn.), FRSC

Professors
S.A.M. Burns, BA (Acad.), MA (Alta.), PhD (Lond.)
R.M. Campbell, BA (Harv.), PhD (Corn.)
W.F. Hare, BA (Lond.), MA (Leic.), PhD (Tor.), (Major appointment in Education Dept.)
R.M. Martin, BA (Col.), MA, PhD (Mich.)
R.P. Puccetti, BA (Ill.), MA (Tor.), Docteur de l'Université de Paris (Sorbonne)
P.K. Schotch, PhD (Waterloo)
S.B. Sherwin, BA (York), PhD (Stanford)

Associate Professors
N.C. Brett, BA (New Hampshire), MA, PhD (Waterloo)
D. MacIntosh, BA (Queens), MA (Waterloo), PhD (Tor.)
T. Tomkow, BA (SFU), PhD (Cantab.)
T. Vinci, BA (Tor.), MA, PhD (Pitts.)

Adjunct Professors
M. Fry, BA (Vind.), MA (Dal), BLitt (Oxon.), DCL (Vind.)
A. Kernohan, SB (MIT), MSc (Tor.), MA (Dal), PhD (Tor.)

Visiting Professors
W. Barthelemy, BA (Wright), MA (Man.), PhD (Waterloo)
S. Wein, PhD (Waterloo)

Beginning in Philosophy

There are many different ways of beginning in philosophy. The Dalhousie Philosophy Department offers three sorts of classes for beginners: (1) general survey introductions, which will give you a taste of a variety of questions and answers; (2) introductions to special areas; (3) logic, which is the study of the theory and techniques of good reasoning. Students wishing to major in philosophy are encouraged to begin with Introduction to Philosophy (either PHIL 1000R or 1010R or 2040A or 2050B) in which a wide range of philosophical issues is discussed. But any student in any year may begin philosophy with a class that has no prerequisites. These include the 1000-level classes and many of the classes at the 2000-level. Any of these classes provides the student with a good introduction to philosophical thinking. Choose the class that best suits your interests - it's not necessary to start with a general survey. Some 2000-level classes have prerequisites which can be met either by a philosophy class or a class in another relevant discipline. The King's College Foundation Year satisfies the requirement of a previous philosophy class. Classes at the 3000-level and beyond usually have further requirements. See the class descriptions below.

Degree Programmes

BA with Honours in Philosophy

Students wishing to specialize in philosophy should take an honours degree, the normal preparation for graduate study in philosophy. An honours degree will include an honours qualifying essay and the equivalent of at least ten full-year classes in philosophy, including: (a) at least two half-year classes (or the equivalent) in "Logic;" (b) at least two half-year classes (or the equivalent) in "History of Philosophy;" (c) at least six half-year classes (or the equivalent) at the 3000-level or above; (d) at least two half-year classes (or the equivalent) at the 4000-level. Students should contact the department for instructions regarding the honours qualifying essay.

BA with Advanced Major in Philosophy

In their final fifteen classes, students must include at least six full-year classes in philosophy beyond the 1000-level (two half-year classes may be substituted for a full-year class) including: (a) at least one "Logic" class (half or full-year);

(b) at least one full-year "History of Philosophy" class (or two half-year classes); (c) at least three full-year classes (or equivalent in half-year classes) at the 3000-level or above.

BA with Major in Philosophy

In their second and third years, students must take at least four full-year classes in philosophy beyond the 1000-level (two half-year classes may be substituted for a full-year class) including: (a) at least one "Logic" class (half or full-year); (b) at least one "History of Philosophy" class (half or full-year); (c) at least two full-year classes or four half-year classes at the 3000-level or above. All students planning to take a general degree in philosophy should first talk to an undergraduate advisor in the department.

Note: Two half-year classes at a certain level or in a certain area are considered the equivalent of one full-year class at that level or in that area. In the class descriptions to follow, "one class" unqualified will mean "one full-year class or two half-year classes." Also note that only classes whose titles begin with "Logic" or "History of Philosophy" may be used to satisfy the logic and history of philosophy requirements for a BA with major or honours in philosophy.

Classes Offered

Note: Many classes are listed as being Exclusionary to one another. This means that students may not take both classes so designated. The class numbers designate classes which, prior to 1984-85, were numbered without the last digit (zero), e.g., the present class PHIL 2130R was previously called Philosophy 213. The prerequisite and exclusionary designations below should be interpreted accordingly. Detailed descriptions are available from the department on request.
Note: Classes marked * may not be offered every year. Please consult the current timetable on registration to determine if these classes are offered.

1000-Level

PHIL 1000R Introduction to Philosophy: An introduction to a variety of philosophical problems, such as the relation of mind to body, freedom of the will, the foundation of morality, the existence of God, the nature of personal identity, and the possibility of knowledge based on reason and experience. Sections differ somewhat in approach and requirements. Consult the department to find out which ones especially suit you. This class does not satisfy the Faculty Writing Requirement.
Instructor: Staff.
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 100
Exclusion: PHIL 1010R, PHIL 1020R, PHIL 2000R, PHIL 2040A and PHIL 2050B

PHIL 1010R Introduction to Philosophy: See description for PHIL 1000R. This class does satisfy the Faculty Writing Requirement.
Instructor: Staff
Format: Lecture/discussion 2-3 hours
Prerequisite: None
Enrolment: 50
Exclusion: PHIL 1000R, PHIL 1020R, PHIL 2000R, PHIL 2040A and PHIL 2050B

PHIL 1090A/B How to Win an Argument: This class is devoted to developing the practical skills involved in evaluating reasoning and producing convincing arguments. Note this class does not count toward satisfying the logic requirement for the major or honours programme.
Instructor: T. Tomkow
Format: Lecture/discussion 2 hours
Prerequisite: None, for first year students only.
Enrolment: 100
Exclusion: PHIL 2150A/B

PHIL 1100A/B Legal Thinking: Examination of controversial legal cases leading to increased understanding of the nature of law and the techniques of practical moral reasoning.
Instructor: N. Brett
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 100
Exclusion: None

***PHIL 1111R Logic: Elementary Symbolic Logic:** An introduction to an artifical language constructed so as to make the operations of reasoning more precise. Meets logic requirement for majors only if taken in first year.
Instructors: P. Schotch, R. Martin
Format: Lecture/discussion 2-3 hours
Prerequisite: None
Enrolment: 100
Exclusion: PHIL 1112A/B, PHIL 2110R and PHIL 2130A

***PHIL 1112A/B Logic: Elementary Symbolic Logic:** An abbreviated version of PHIL 1111R. Meets logic requirement for majors only if taken in first year.
Instructors: P. Schotch, R. Martin
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 100
Exclusion: PHIL 1111R, PHIL 2110R and PHIL 2130A

2000-Level

***PHIL 2030R Death and the Mind:** An enquiry into the nature of death, the possibility of survival, immortality and reincarnation and the relevance of belief in an afterlife to the way we live our lives.

Instructor: R.P. Puccetti
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 50
Exclusion: None

***PHIL 2040A/2050B Introduction to Philosophy I and II:** See description for PHIL 1000R above. A student may take either or both half-year classes. Neither class satisfies the Faculty Writing Requirement.

Instructor: Staff
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 100
Exclusion: PHIL 1000R, PHIL 1010R, PHIL 1020R and PHIL 2000R

PHIL 2070R Ethics and Politics: This class, formerly known as Justice, Law and Morality (Concepts Version), is complementary to PHIL 2270R (Politics and Ethics). Hobbes is the only author treated in both classes. The class may be taken for credit before, after, or concurrently with the other class. Either class satisfies the minimum requirement in political philosophy for an Honours degree in Political Science. In the first term, the natural law view of justice, expressed by St. Thomas confronts the savage realism of Hobbes' Leviathan. The concept of justice has had a mixed career since Hobbes' time. In Locke's and Hume's doctrines it is narrowly tied to the defence of property. Sometimes, as with the utilitarianism of Bentham and Mill, it has appeared redundant, and Marx held that it would be superseded. In our own time, a major effort has been made by John Rawls to restore justice to the central place in ethics. His theory is considered at length at the end of the second term, after examining Lon Fuller's equally contemporary account of the moral dimensions of law.

Instructor: Staff
Format: Discussion 2-3 hours
Prerequisite: None, one year of university work in Arts and Social Sciences is recommended as preparation, though first-year students can succeed.
Enrolment: 70
Exclusion: PHIL 2070R under its old title, Justice, Law & Morality: Concepts Version
Cross-Listed: POL 2401R

***PHIL 2080R Ethics in the World of Business:** Business practices are sometimes in accord with moral principles, sometimes at odds with them. Where in business is it easiest to be scrupulous? Where is it hardest? Could things be changed for the better, and, if so, what would be involved?

Instructor: Staff
Format: Lecture/discussion 2-3 hours
Prerequisite: None
Enrolment: 70
Exclusion: None

PHIL 2081A/B/C Ethics in the World of Business: See description for 2080R.

Instructor: Staff
Format: Lecture/discussion 2-3 hours
Prerequisite: None
Enrolment: 70
Exclusion: None

***PHIL 2100A/B Logic and Knowledge:** An introduction to logic, theory of knowledge, and some basic concepts used in contemporary philosophy, through the use of the notion of "possible worlds".

Instructor: R.M. Martin
Format: Lecture
Prerequisite: None
Enrolment: No limit
Exclusion: None

PHIL 2130A Logic: Deduction: A systematic introduction to the operations of formal deductive logic. The same topics are covered as in PHIL 1111R, but at a quicker pace, with considerable attention devoted to the relation between artificial and natural language and to the philosophical problems that arise from the study of reasoning. No previous study of logic is presupposed.

Instructor: P.K. Schotch
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 50
Exclusion: PHIL 1111R, PHIL 1112A/B and PHIL 2110R

PHIL 2140B Logic: Logical Theory I: An introduction to metalogic, with special attention to the soundness and completeness of formal systems, and to the philosophical evaluation of non-classical logics.

Instructor: P. Schotch
Format: Lecture/discussion 2 hours
Prerequisite: PHIL 1111R, PHIL 1112A/B or PHIL 2130A
Enrolment: 50
Exclusion: None

PHIL 2160A/B Philosophical Issues of Feminism: An examination of various approaches to feminism, and of practical and theoretical issues associated with feminism, such as abortion, pornography, sexual harassment, and economic equality.

Instructor: S. Sherwin
Format: Lecture/discussion 3 hours

Prerequisite: None
Enrolment: 70
Exclusion: None
Cross-Listed: Women's Studies 2500A/B

PHIL 2175A Introduction to Philosophy of Education: A lecture/discussion class dealing with a broad range of philosophical questions about education including the use of slogans, multiculturalism, teacher education, and the role of the teacher. Students may also take PHIL 2180B.
Instructor: W. Hare
Format: Lecture/discussion 2 hours
Prerequisite: Not open to first year students
Enrolment: 14
Exclusion: none
Cross-Listed: EDUC 4221A

PHIL 2180B Issues in Philosophy of Education: An introductory level, lecture/discussion class dealing with some fundamental issues in philosophy of education, including indoctrination, open-mindedness and bias-free teaching. Open to students who have taken PHIL 2175A or EDUC 4221A.
Instructor: W. Hare
Format: Lecture/discussion 2 hours
Exclusion: Not open to first-year students
Enrolment: 14
Cross-Listed: EDUC 4222B

***PHIL 2200R Philosophy of Religion:** An introduction to the philosophy of religion, examining such questions as: Why is religion so difficult to define? Is it rational to believe in a divine being? Can religious experiences be validated?
Instructor: R. Puccetti
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 70
Exclusion: None

***PHIL 2260A/B Philosophy of Art:** Examines questions such as: What is art? Can judgements of artistic value be rational and objective? Can fear of fictional objects be real fear? Can music be a language?
Instructor: S.A.M. Burns
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 70
Exclusion: None

PHIL 2270R Politics and Ethics: This class, formerly known as Justice, Law and Morality Regimes Version), is complementary to PHIL 2700R. Hobbes is the only author treated in both classes. The class may be taken for credit before, after, or concurrently with the other class. Either class satisfies the minimum requirement in political philosophy for an Honours degree in Political Science.

Why, and under what conditions, ought human beings to accept a state with coercive powers expressed in laws and otherwise? What are the proper ends of political association, and how can these be morally justified? What is a just regime? What is the best (or at least the least bad) regime? These are perennial questions addressed by the great political thinkers, and it is to answers put forward by Plato, Aristotle, Machiavelli, Hobbes, Rousseau, Burke, Tocqueville and others that we turn in this class.
Instructor: B.L. Crowley
Format: Lecture 2 hours
Prerequisite: None, one year of university work in Arts and Social Sciences is recommended as preparation, though first-year students can succeed.
Enrolment: 60
Exclusion: PHIL 2270R under its old title, Justice, Law, & Morality: Regimes Version
Cross-Listed: POL 2400R

PHIL 2350A/B and *PHIL 2370A/B History of Philosophy: Ancient Philosophy I and II: The beginnings of Western philosophy are studied in the writings of pre-Socratics, Plato, Aristotle, and their successors.
Instructors: T. Vinci, S.A.M. Burns
Format: Lecture/discussion 3 hours
Prerequisite: One previous class in philosophy
Enrolment: 30
Exclusion: None

***PHIL 2361A/2362B Classical and Early Christian Philosophy:** Special attention is given to Plato and Aristotle, and to the Greek philosophy of the first centuries A.D., and its influence on developing Christian thought.
Instructors: W.J. Hankey, J.P. Atherton
Format: Lecture/discussion 2 hours
Prerequisite: Permission of the instructor
Enrolment: Not limited
Exclusion: None
Cross-Listed: CLAS 2361A/2362B

PHIL 2380R Medieval Philosophy: Anselm, Aquinas, Ockham, some XIII Century Augustinians and Averroists and late Medieval mystics are studied most closely; attention is given to related political, literary, and theological concerns.
Instructor: R. Crouse
Format: Lecture/discussion 2 hours
Prerequisite: Permission of the instructor
Enrolment: Not limited
Cross-Listed: CLAS 3380R

***PHIL 2410A/B Philosophy of Psychology:** An examination of philosophical issues arising from the scientific study of the mind.

Instructor: T. Tomkow
Format: Lecture/discussion 2 hours
Prerequisite: One previous class in philosophy or psychology
Enrolment: 70
Exclusion: None

***PHIL 2540A/B Philosophy of History:** Can the study of history be scientific? Are there any historical laws? Is history working toward some discernible goal?
Instructor: Staff
Format: Lecture/discussion 2 hours
Prerequisite: One previous class in philosophy or history
Enrolment: 70
Exclusion: None

PHIL 2550A/B Marxist Theory and Its Upshot in the Modern World: Marxist theory combines themes of Hegelian philosophy with the economics of the British classical school. The class will consider how the mature works of Marx and Engels express this combination. It will then trace the fate of the combination in diverse attempts to fit it to circumstances, in Western Europe and in Russia, that Marx did not foresee. Finally it will ask how far any of these versions of Marxism is relevant to the current epoch.
Instructor: Staff
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 70
Exclusion: None
Cross-Listed: POL 2455B

PHIL 2610A/B History of Philosophy: The Rationalists: The philosophy of Descartes, Spinoza, and Leibniz.
Instructors: D. MacIntosh, S.A.M. Burns
Format: Lecture/discussion 3 hours
Prerequisite: One previous class in philosophy
Enrolment: 40
Exclusion: None

PHIL 2620A/B History of Philosophy: The Empiricists: The philosophy of Locke, Berkeley, and Hume, with an introduction to Kant.
Instructors: S.A.M. Burns, T. Vinci, D. MacIntosh
Format: Lecture/discussion 3 hours
Prerequisite: One previous class in philosophy
Enrolment: 40
Exclusion: None

***PHIL 2660A/B Logic: Understanding Scientific Reasoning:** An introduction to the principles of scientific prediction and rational choice. The class examines the workings of chance, or probability, and the theory of games.
Instructor: Staff
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 70
Exclusion: None

***PHIL 2700R Philosophy in Literature:** A study of some philosophical themes in modern literature. All readings will be literary works.
Instructor: R.M. Martin
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 70
Exclusion: PHIL 2705A/B and COML 2705A/B
Cross-Listed: COML 2705A/B

***PHIL 2705A/B Philosophy in Literature:** See description for PHIL 2700R.
Instructor: R.M. Martin
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 70
Exclusion: PHIL 2700R and COML 2705A/B
Cross-Listed: COML 2705A/B

PHIL 2710A/B Existentialism: A general introduction to existentialist themes and authors including Kierkegaard, Nietzsche, Sartre, and Camus.
Instructor: N. Brett
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 50
Exclusion: PHIL 2170R

PHIL 2800R Ethics and Health Care: (formerly Ethics & Medicine): Modern health care generates moral problems which cannot be settled on the basis of medical knowledge alone but need to be considered in the light of moral philosophy. Among the problems to be considered in this class are: euthanasia, informed consent, confidentiality, paternalism, coercion, abortion, and the allocation of scarce resources.
Instructor: S. Sherwin
Format: Lecture/discussion 2 hours
Prerequisite: None
Enrolment: 80
Exclusion: None

3000-Level

PHIL 3051A/B Theory of Knowledge: A study of fundamental issues in the theory of knowledge. The class examines Skepticism, Rationalism, and Empiricism, and investigates the nature of knowledge, belief, meaning, evidence, and truth. Questions are raised about perception and memory and their relation to knowledge as well as questions about our knowledge of ourselves and other people. Attention is given to ancient and modern authors.
Instructors: T. Vinci, D. MacIntosh
Format: Lecture/discussion 3 hours

Prerequisite: PHIL 2610A/B, PHIL 2620A/B or permission of the instructor
Enrolment: 30
Exclusion: PHIL 3050R

***PHIL 3060A/B Logic: Logical Theory II:** Devoted primarily to the study of formal semantics and its relation to symbolic language.
Instructor: P. Schotch
Format: Lecture/discussion 2 hours
Prerequisite: PHIL 2130, PHIL 2140 or permission of the instructor
Enrolment: 25
Exclusion: None

PHIL 3100R Ethics: A systematic study of the foundation of morality, including readings from Kant, Foundation of the Metaphysics of Morals; Hume, A Treatise of Human Nature; and Rawls, A Theory of Justice.
Instructor: R. Campbell
Format: Lecture/discussion 3 hours
Prerequisite: 2 previous classes in philosophy, preferably classes in history of philosophy and logic
Enrolment: 30
Exclusion: PHIL 3105A/B

***PHIL 3105A/B/C Ethics:** An abbreviated version of PHIL 3100R.
Instructor: N. Brett
Format: Lecture/discussion 2-3 hours
Prerequisite: 2 previous classes in philosophy, preferably classes in history of philosophy and logic
Enrolment: 30
Exclusion: PHIL 3100R

PHIL 3170A/B Theories of Feminism: A study of the theoretic underpinning of the major feminist theories in critical comparision, concentrating on the ideological disputes and the implications for traditional approaches to social and political thought.
Instructor: S. Sherwin
Format: Seminar 2 hours
Prerequisite: 2 previous classes in Philosophy or Women's Studies
Enrolment: 25
Exclusion: None
Cross-Listed: Women's Studies 3500A/B

***PHIL 3211A/B Philosophy of Law:** Is coercion central to the concept of law? How are law and morality related? These and other issues relating to the analysis and evaluation of law will be dealt with in a way that utilizes specific statues and cases, e.g. the Narcotics Control Act and the Morgentaler Case.
Instructor: N. Brett.
Format: Lecture/discussion 2 hours
Prerequisite: One previous class in philosophy
Enrolment: 25

PHIL 3300A/B Philosophy of Language: What does it mean to say that the elements of language have meaning?
Instructors: R. Martin, D. MacIntosh
Format: Lecture/discussion 2 hours
Prerequisite: Two previous classes in philosophy including one logic class, half- or full-year
Enrolment: 30
Exclusion: None

PHIL 3420A/B Philosophy of Biology: The class begins with a general introduction to the philosophy of science, focusing on the often conflicting criteria for evaluating scientific theories. The relative importance of successful novel predictions, consistency, simplicity, scope, and fruitfulness are assessed in relation to the current status of Darwinian evolutionary theory. In considering the competing views of Popper, Hempel, Kuhn, Lakatos, and Giere, emphasis will be placed on the logic of scientific reasoning and the question whether there can be objectivity and progress in science. The class then turns to issues surrounding the role of teleology in current biological thought: the interpretation and significance of biological functions, the debate about whether genes are the fundamental units of natural selection, and the alleged reduction of modern genetics to physics and chemistry. Finally, the class considers the implications of human sociobiology for matters of traditional philosophical concern: the possibility of biological determinism, the origins of morality, and the reliability of cognitive functions.
Instructor: R. Campbell
Format: Lecture/discussion 2 hours
Prerequisite: One previous class in philosophy or biology
Enrolment: 70
Exclusion: PHIL 2420A/B
Cross-Listed: BIOL 3580A/B

***PHIL 3440A/B Philosophy of Mind:** A systematic study of the mind-body problem and/or theories of personal identity.
Instructor: T. Tomko
Format: Lecture/discussion 2 hours
Prerequisite: Two previous classes in philosophy
Enrolment: 30
Exclusion: PHIL 4460A/B

***PHIL 3460A/B Mind and Brain:** An interdisciplinary approach, combining philosophical analysis and neuroscientific data to study current controversies about the relation between brain function and conscious experience, such as why consciousness evolved and how it is organized in the normal human brain, and whether the mental can be construed as itself physical.
Instructor: R. Puccetti
Format: Lecture/discussion 2 hours

Prerequisite: Two previous classes in philosophy
Enrolment: 30
Exclusion: None

***PHIL 3520A/B Philosophy of Social Science:** An examination of philosophical questions about the presupposition, aims, and methods of the social sciences, for example, whether the quantitative methods of the natural sciences are appropriate in the social sciences.
Instructor: Staff
Format: Lecture/discussion 2 hours
Prerequisite: One previous class in philosophy, political science, economics, or sociology and social anthropology
Enrolment: 15
Exclusion: PHIL 351A/B and PHIL 2510A/B
Cross-Listed: POL 3496A/B

PHIL 3530A/B Freedom, Action, and Responsibility: An investigation of the nature of action, seeking criteria for individuating, describing, and explaining actions. Topics may include the roles of volitions, intentions, motives, and reasons in actions; responsibility for actions and the concept of free actions.
Instructors: P. Schotch, D. MacIntosh
Format: Lecture/discussion 2 hours
Prerequisite: Two previous classes in philosophy
Enrolment: 30
Exclusion: PHIL 4450R, PHIL 4530A/B

***PHIL 3630A/B History of Philosophy: Kant:** Special attention will be paid to Kant's metaphysics.
Instructor: T. Vinci
Format: Lecture/discussion 2 hours
Prerequisite: PHIL 2610A/B or PHIL 2620A/B or permission of the instructor
Enrolment: 30
Exclusion: None

***PHIL 3640A/B History of Philosophy: Twentieth-Century Philosophy:** The Twentieth Century has been a period of revolutionary change in Anglophone philosophy. This class surveys the most influential figures, including Frege, Russell, Wittgenstein, and Quine.
Instructor: D. MacIntosh
Format: Lecture/discussion 2 hours
Prerequisite: One previous class in the history of philosophy or permission of the instructor
Enrolment: 30
Exclusion: None

***PHIL 3670A/B Philosophy of Science:** Induction, probability, and explanation are studied with special attention to the nature of scientific theories. No scientific background is presupposed.
Instructor: D. MacIntosh
Format: Lecture/discussion
Prerequisite: At least two previous classes in philosophy, including one half- or full-year logic class such as PHIL 2660A/B
Enrolment: 30
Exclusion: None

PHIL 3720R Phenomenology of Literature: The class will examine how philosophical and literary works function in terms of their uses of language, presentation of ideas, and articulation of experience. What is the difference between literature and philosophy? How can literature increase one's understanding of the real world? Readings will include both literature and philosophy.
Instructor: M. Fry
Format: Lecture/discusion
Prerequisite: A class in history of philosophy or permission of instructor. Previous study of literature is desirable
Enrolment: 10
Exclusion: None

***PHIL 3851A/B Metaphysics:** A study of topics such as the nature of substance and change, body and mind, cause and effect, and the concept of existence.
Instructor: T. Tomkow
Format: Lecture/discussion
Prerequisite: Two previous philosophy classes including at least one half- or full-year logic class
Enrolment: 30
Exclusion: PHIL 3850R

***PHIL 3900A/B Logic: Logic and Philosophical Analysis:** This class will examine the application of logical theory to philosophical problems and issues in the philosophy of logic. Topics in this area include: reference and definite descriptions, problems of intensionality, relativized identity and sortals, bivalence and the sorites paradoxes, logicism and set theoretic paradoxes, trans-world identity, paradoxes of confirmation, counterfactual is, multivalued logic, quantum logic, Arrow's theorem, analyticity and the a priori, negative existentials.
Instructor: Staff
Format: Lecture/discussion
Prerequisite: Two previous philosophy classes including one half- or full-year class in modern symbolic logic
Enrolment: 30
Exclusion: None

4000-Level

Note: Classes at this level are intended for advanced undergraduates with a strong background in philosophy. No specific prerequisites are listed, but it is assumed that normally a student will have already taken

relevant classes at the 3000-level. Classes with titles beginning "Topics in . . ." have no description, since the selection of topics and instructor is determined after the time of calendar preparation. The format for these classes is seminar, 2 hours, and enrolment is limited to 15. Interested students should consult the department for up-to-date information.

*PHIL. 4055A/B Topics in Epistemology

*PHIL. 4070A/B Topics in Philosophical Psychology

*PHIL. 4080A/B Topics in Logical Theory

*PHIL 4115A/B Topics in Ethics I

*PHIL. 4120A/B Theory of Rational Decision: A study of foundational problems in contemporary theory of rational decision, drawing on work by philosophers, psychologists, economists and mathematicians. Instructor:R. Campbell

*PHIL 4125 A/B Topics in Ethics II

*PHIL. 4190A/B Topics in the History of Philosophy I

*PHIL 4191A/B Topics in the History of Philosophy II

*PHIL. 4192A/B Topics in the History of Philosophy III

*PHIL. 4200A/B Topics in Normative Theory

*PHIL 4215A/B Topics in the Philosophy of Law

*PHIL. 4220A/B Contemporary Philosophical Issues: Intensive study of a few topics which are currently being debated and may fall outside of or cut across standard classification of areas of interest. Examples are: artifical intelligence, probability, sociobiology, causal theories, reduction.
Instructor: Staff

*PHIL 4430A/B Game Theory as a Foundation for Ethics and Politics: The most innovative recent work in ethical theory has applied the theory of games to the perennial problem of the social contract. To what extent can any organized society to which people freely adhere be represented as constituted by rules arrived at by rational agents trying each to arrive at the best bargain about rules with the other agents present? These rules can be regarded simultaneously as the foundation of political organization and as elementary rules of ethics, and a study of this topic forms the basis of the class.
Instructor: Staff
Format: Seminar
Prerequisite: Permission of the instructor
Exclusion: None
Cross-Listed: POL 4485A/B and ECON 4447A/B

*PHIL 4470A/B Utilitarianism, Classical Liberalism, and Democracy: The study of two beliefs characteristic of classical liberalism: that good government is strictly limited government, and that there is no standard for social policy beyond the combination of personal preferences.
Instructor: Staff
Format: Seminar
Prerequisite: Permission of the instructor
Exclusion: None
Cross-Listed: POL 4479A/B and ECON 4446A/B

*PHIL 4480A/B Social Choice Theory: Arrow's theorem brings together the theory of voting and welfare economics, seemingly leading both (and the theory of democracy as well) to ruin. This class will consider how to cope with the problem. Cross-listed in Economics and Political Science.
Instructor: Staff
Format: Seminar
Prerequisite: Permission of the instructor
Exclusion: None
Cross-Listed: POL 4480A/B and ECON 4448A/B

*PHIL 4500 A/B Topics in Feminist Philosophy: In this class we shall explore some of the current research in a focused area of feminist philosophy, such as feminist ethics, feminist epistemology, feminist philosophy of science, or postmodern feminism.
Instructor: S. Sherwi
Format: seminar, 2 hrs
Prerequisite: strong background in philosophy or feminist theory (normally including at least one previous class in feminist philosophy or instructor's consent)
Enrolment: 25
Cross-listing: WOST 4500A/B

*PHIL 4510A/B Topics in the Philosophy of Language
*PHIL 4600A/B Philosophy of Religion
*PHIL 4680A/B Topics in the Philosophy of Science
*PHIL 4855A/B Topics in Metaphysics

PHIL 4940A/B, 4960A/B, 4980A/B & 4950R, 4970R, 4990R. Directed Reading: Consult department for details. In special cases, classes to suit individual interests can be developed jointly by a student and an instructor.
Instructor: Staff
Prerequisite: Permission of instructor

Political Science

Location: Arts and Administration Building, 3rd Floor
Halifax, N.S.
Telephone: (902) 494-2396

Undergraduate Advisors
Brian Lee Crowley - Undergraduate (494-6628)
Herman Bakvis - Honours (494-6627)

Chair
R. Boardman (494-2392)

Professors Emeritus
J.H. Aitchison, BA, BEd (Sask.), BSc (Lond.), PhD (Tor.)
J.M. Beck, BA (Acadia), MA, PhD (Tor.), LLD (Dal), LLD (St. FX), LLD (RMC), FRSC
E.M. Borgese, OC, Dip. Mus. (Zurich), LHD (Mt. St. V.)
D. Braybrooke, BA (Harv.), MA, PhD (Corn.), FRSC

Professors
P.C. Aucoin, BA (SMU), MA (Dal), PhD (Queen's)
H. Bakvis, BA (Queen's), MA, PhD (UBC)
R. Boardman, BSc, PhD (Lond.)
D.M. Cameron, BA (Queen's), MA, MPhil, PhD (Tor.)
J.G. Eayrs, OC, BA (Tor.), AM, PhD (Col.), FRSC (Eric Dennis Memorial Professor of Government and Political Science)
T.M. Shaw, BA (Sussex), MA (East Africa, Prin.), PhD (Prin.)
D.W. Stairs, BA (Dal), MA (Oxon.), PhD (Tor.) FRSC Vice-President, Academic and Research
G.R. Winham, BA (Bowdoin), Dip. in Int. Law (Manc.), PhD (N.Car.)

Associate Professors
D.L. Luke, BSc, MSc, PhD (London)
D.W. Middlemiss, BA, MA, PhD (Tor.), (Director, Centre for Foreign Policy Studies).
J. Smith, BA (McM), MA, PhD (Dal)

Assistant Professors
B.L. Crowley, BA (McGill), MSc, Ph.D (London)
R.G. Finbow, BA (Dal), MA (York), PhD (London)
A. Heard, BA (Dal), MSc (Lond.), PhD (Toronto) Research

What is Political Science?

Politics has been described as "Who Gets What, When, How, Why" in society. The study of politics, or Political Science is one of the oldest academic disciplines known to humankind. In Ancient Greece political philosophers concerned themselves with creating a good society, and balancing justice with order. Today Political Scientists still study these matters, but the discipline has grown to encompass many aspects of government, such as parliaments, electoral processes and constitutions; or external relations, including issues of war, peace and poverty.

Political Science is important to society because, in an age of complex government, an educated citizenry is the best safeguard for democracy. Political Science is valuable for individuals who want to know more about the values, laws, institutions and policy mechanisms that govern their lives in society, and as well, the differences between their system of government and those in other countries. Beyond this, Political Science is an especially useful preparation for students who wish to pursue careers in teaching, law, public service or business.

Dalhousie University's approach to Political Science is a blend of traditional and modern analysis. The Department offers work in classical political philosophers; and most classes emphasize government structure and policy making, including domestic public administration and foreign policy. Other classes deal with political behaviour such as public opinion or interest group activity. Classes in modern research methods, including quantitative analysis, are also offered.

The admission requirements for Political Science are listed under the Faculty of Arts and Social Sciences. There are no additional requirements for Political Science beyond those of the Faculty.

Students majoring in Political Science are encouraged to seek advice from Professor Brian Lee Crowley, Co-Coordinator of Major Programmes in developing a programme of studies. Students taking an Honours Degree should seek advice from Professor Herman Bakvis, Honours Coordinator. Professor David Cameron is the Coordinator of Graduate Studies.

For General Interest

Students who have not yet decided on a major, or are looking for an elective in Political Science, are advised to take one of the Introductory classes. These are POL 1100R (various sections), POL 1103R (which fulfills the the writing class requirement), and POL 1501R. There are no prerequisites for these classes. Each also fulfills the introductory class requirement for Major, Advanced Major, and Honours programmes in Political Science.

Degree Programmes

Students concentrating in Political Science may take a major programme, advanced major, or honours programme. The degree requirements are spelled out in University and Faculty Regulations, and in department regulations outlined below. The specific classes to be taken in each individual programme are chosen in consultation with the

relevant faculty adviser from the Department. Undergraduate programmes may emphasize one of the sub-fields of Political Science (Canadian Government and Politics, Comparative Government and Politics, Political Theory and Methodology, and International Politics and Foreign Policy) or may consist of a general selection of classes from the Department's offerings.

Honours Programme

An honours programme normally consists of a first-year level class and not less than nine nor more than eleven additional classes in Political Science. Although nine to eleven classes represents the range allowed under the general university regulations, the Department recommends quite strongly that the normal honours programme consist of nine classes past the first-year class, including the honours essay. The intent of this recommendation is to encourage our honours students to take supporting class work in related disciplines.

For the purpose of the honours programme the Department has designated six second-year classes as honours core classes. Five of these core classes represent the political science sub-fields of Canadian politics, comparative politics, political philosophy (two classes) and international politics and the fifth represents the methodological basis for each of the sub-fields. The six core classes by area are as follows:

Canadian politics: POL 2200R Canadian Government and Politics

Comparative politics: POL 2300R Comparative Politics

Political philosophy: POL 2400R Politics and Ethics or POL 2401R Ethics and Politics.

International politics: POL 2500R World Politics

Methodology: POL 2494R Introduction to Political Inquiry

An honours programme in political science includes:

i) at least three core classes, of which one must be POL 2494R Introduction to Political Inquiry, and another must be either POL 2400R or POL 2401R;
ii) at least four advanced classes at the third and/or fourth year level, including the honours essay.

The core class requirements are designed (1) to give breadth to the honours programme, (2) to provide all honours students with a grounding in the normative questions of the discipline as well as the foundations of empirical inquiry, and (3) to expose prospective honours students to the various sub-fields that may be chosen for emphasis in individual programmes.

Overall, these requirements leave a minimum of two optional credits, which may be taken at the second, third or fourth-year levels.

In the exceptional case of students who have delayed their decision to enroll in an honours programme until late in their third year, or who have decided at the end of their general programme to pursue an Honours Certificate, third-year or higher level classes may be substituted on occasion for one or more of the core classes. Such substitutions, however, must reflect the same distribution of areas within the discipline as is represented by the core-class requirements, and they must have the approval of the Honours Supervisor. Students who think they may eventually pursue an honours degree or certificate are strongly advised to complete their core-class requirements as early in their undergraduate careers as possible.

The honours essay is counted as one credit. It is prepared during the fourth year under the supervision of a faculty member. The essay shows the student's ability to develop a systematic argument with reference to pertinent literature and other such data or analytical materials as may be appropriate. The credit number for the honours essay is POL 4600R. Informal arrangements are usually made for honours students in the last year to meet with some regularity to discuss and ultimately present the work represented in their essay.

Combined Honours

Several of the more common combined honours programmes are: Political Science and Philosophy; Political Science and History; Political Science and Economics; Political Science and Sociology; and Political Science and International Development Studies. Students interested in taking any of these combined honours programmes or in discussing other possible programmes should consult initially with the Honours Supervisor.

Advanced Major Programme

Students wishing to complete a 20-credit B.A. Programme with an Advanced Major in Political Science should plan to <u>include the following classes among the first 10 of the 20 credits</u> required for the Advanced Major degree:

1) English 1000R, or Kings Foundation Year Programme;
2) the equivalent of one full-year class in a second language, normally French;
3) the equivalent of one full-year class selected from the Life and Physical Science group specified in the Faculty calendar;
4) the equivalent of one-half credit in quantitative analysis or research methods, in consultation with the Department adviser (e.g., Math/Stats 1060A/B, or a research methods class from any of the social science departments, including Political

Science);

5) POL 1100R, or POL 1103R, or POL 1501R and the equivalent of two other full-year classes in Political Science, both at the 2000-level;
6) the equivalent of one full-year introductory-level class in each of at least two of the following subjects: Economics, History, Philosophy, Sociology and Social Anthropology, and Psychology;
7) and the remaining 1½ credits as electives.

The remaining 10 credits must be chosen in consultation with the Department's Coordinator of Major Programmes, and should reflect a concentration on one of the following four fields: Canadian Politics; Comparative Politics; International Relations; or Political Philosophy.

The equivalent of at least four of these remaining 10 classes must be in Political Science; of these, at least three must be beyond the 2000-level. Other classes will be selected as appropriate to the field of concentration from the disciplines of Classics, Economics, History, Philosophy, Sociology and Social Anthropology, and Psychology. With Department approval, additional classes in a second language (normally French) may also be taken.

Major Programme

In order to meet the requirements of a major programme, a student must take at least four, but not more than eight, classes in political science in addition to an introductory class. All major students should take at least two full classes from among the second-year level offerings and these classes should be selected from at least two sub-fields. A minimum of two additional full classes should be taken from third-year level offerings.

Summer School Classes

The Department normally offers one of the introductory classes and at least one second-year class in the summer sessions. For details, see the University's summer school calendar.

Classes Offered

Class descriptions are listed under five headings:

1) Introductory
2) Canadian Government and Politics
3) Comparative Government and Politics
4) Political Theory and Methodology
5) International Politics and Foreign Policy

The first digit of each class number thus indicates year, or level, of class. Except for 1000-level classes, the second digit denotes the sub-field within which the class is listed.

No student may take more than one first-year class but some second-year classes require no prerequisite. The prerequisites listed with each class are intended to show the sort of preparation the instructor anticipates. A student will usually take one second-year class in a field before taking a 3000-level class in the same field. Students without the appropriate 2000-level may obtain admission to 3000-level classes only with special permission of the instructors of those classes.

Classes marked * are not offered every year. Please note that some classes listed may not be offered in 1991-92. Classes listed as "A/B" may be taught in either the first or second term. For final listings check with the Department office or the current timetable on registration.

(1) Introductory

There are usually two or three sections of POL 1100R, each a full-year class taught by a different instructor. The topics vary a little from section to section and from year to year. POL 1103R has a content similar to POL 1100R. In addition, POL 1501R focuses on international politics and foreign policy.

POL 1100R Section 1, Introduction to Government and Politics: Designed to develop a basic understanding of government and politics in liberal democratic states, but with the major emphasis on Canada, the class examines the concept of democratic government, the role and structure of governmental institutions, political mechanisms and processes, concepts and ideologies, and comparisons with alternative regimes.

Instructor:	D.M. Cameron
Format:	Lecture 3 hours
Prerequisites:	None
Enrolment:	No Limit

POL 1100R Section 2, Introduction to Government and Politics: This class introduces the basic institutions of government, the processes of politics and the social environment which influences them. Different ideologies and competing interpretations of democratic government are discussed in the second term. The nature and distribution of political power will be a principal theme, as students are helped to understand the fundamental debates within the discipline.

Instructor:	Staff
Format:	Lecture 3 hours
Prerequisites:	None
Enrolment:	Limited to 120

POL 1103R Introduction to Government and Politics: The approach and format in POL 1103 is similar to that in POL 1100R above. This class is also designed, however, to serve as the Department's designated Writing Class.

Instructor: Staff
Format: Lecture 3 hours
Prerequisites: none
Enrolment: Limited to 60

POL 1501R Introduction to International Politics and Foreign Policy: To provide a framework for analysis and understanding of contemporary international events, this class deals with the variety of "actors" in world politics (principally but not exclusively states), and examines some concepts in the field. POL 1501R is recommended for students planning to take POL 2500R (World Politics) in their second year.
Instructor: J. Bayrs
Format: Lecture 3 hours
Prerequisites: None
Exclusion: POL 1101R
Enrolment: Limited to 60

(2) Canadian

POL 2200R Canadian Government and Politics: The class examines the Confederation debate, 1864-67, and the constitution of the new federation, the British North America Act. It studies the Act's development via constitutional amendment and the practice of judicial review. The review of the Canada Act, 1982, completes this section of the class. In the second section, the class deals with governmental institutions, the Crown, cabinet government and Parliament. The third and final section covers elections, the electoral system and political parties.
Instructor: J. Smith
Format: Lecture 3 hours
Prerequisites: Introductory Political Science class or instructor's permission.
Cross-listed: Canadian Studies
Enrolment: Limited to 80

***POL 2228B Government-Business Relations in Canada:** The aim of this class is to explore the interaction between business and government in Canada and, more generally, the role of government in economic life. The objectives are to introduce students to the policy instruments deployed by governments to promote and regulate business activities in a market economy, the political values and interests which pertain to such promotion and regulation, and the manner in which the private sector seeks to affect the formulation and implementation of government policy. The class is of interest to Commerce and other students not majoring in political science since many of the topics are approached with a view to their practical importance.
Instructor: H. Bakvis
Format: Lecture & Discussion 2 hours
Prerequisites: Introductory Political Science or Economic class, Commerce students beyond the 1st year, or Instructor's permission.
Cross-listed: Canadian Studies
Enrolment: Limited to 60

***POL 3205A Canadian Political Thought:** (Not offered in 1991-92.)

POL 3206A/B Constitutional Issues in Canadian Politics: These are political issues that possess an important constitutional dimension. They include judicial review and the role of the Supreme Court of Canada, constitutional amendment, the representation formula, the Charter of Rights and Freedoms, language rights and the Crown.
Instructor: J. Smith
Format: Seminar 2 hours
Prerequisite: POL 2200R
Enrolment: Limited to 25

POL 3216A Local and Regional Government: The unique character of municipal government is examined in terms of its historical evolution and present structure and operation. Special attention is given to city government and to recent reforms at the regional and metropolitan level.
Instructor: D.M. Cameron
Format: Lecture & Discussion 3 hours
Prerequisite: POL 2200R or equivalent
Cross-listed: Canadian Studies
Enrolment: Limited to 25

POL 3220A/B Intergovernmental Relations in Canada: The territorial division of political power and the relations that have developed between governments are considered, with emphasis on the impact on policy outcomes.
Instructor: H. Bakvis
Format: Seminar 2 hours
Prerequisite: POL 2200R or instructor's permission
Cross-listed: Canadian Studies
Enrolment: Limited to 25

***POL 3224A/B Canadian Political Parties:** The Canadian party system, viewed as an integral part of the entire political system, presents a number of interesting questions for exploration, such as the alleged fickleness of voters, the role of party leaders, and the manner in which parties contribute to Canadian democracy. The particular themes emphasised will vary from year to year.
Instructor: H. Bakvis
Format: Lecture & Discussion 3 hours
Prerequisite: POL 2200R or instructor's permission. Students will find it helpful to have some background in statistics or methodology, such as POL 2494R.
Cross-listed: Canadian Studies
Enrolment: Limited to 25

***POL 3228B Interest Groups: Function and Management:** This class will attempt a systematic examination of the function and management of interest groups in Canada and, to a lesser extent, other western countries. It will begin by considering the functions such groups perform for their supporters on the one hand and, on the other, the role they play in (1) maintaining political systems; (2) securing and modifying public policy, and (3) implementing programmes. It will explore the ways in which their structures and behaviour patterns vary according to the resources of the groups themselves, the nature of their concerns and the demands of the political/bureaucratic systems in which they operate. An important feature of the class will be a discussion of the internal management of groups. This discussion will include a review of how membership is secured and retained how group resources are obtained and applied; the role of professional staff in developing group positions and in interacting between the interest group and government officials. In conclusion the class will examine the role of interest groups in policy processes and the relationship between that role and the prospects for democracy in western politics.

Instructor:	Staff
Format:	Seminar 2 hours
Prerequisite:	POL 2200R or instructor's permission
Cross-listed:	Canadian Studies
Enrolment:	Limited to 25

***POL 3235A/B Regional Political Economy in Canada:** The class surveys the interaction between politics and economics in Canada with emphasis on the question of regional development. It will canvass competing explanations for differences in economic development among Canada's regions with special emphasis on Maritime economic problems, highlighting both the political sources of regional disparities and continuing efforts to rectify them. Distinctive Western, Quebec and Ontario concerns will also be covered. Seminars, for graduates and senior undergraduates, will feature student presentations and research projects.

Instructor:	R. Finbow
Format:	Seminar 2 hours
Prerequisites:	Open to graduate students and senior undergraduates, who have completed classes on Canadian politics, or permission of the instructor.
Cross-listed:	Canadian Studies
Enrolment:	Limited to 25

***POL 3245B The Judicial System and Canadian Government:** This class provides an overview of the regulation of Canadian society through its legal system. The general theme to be pursued is the political importance of the judicial system and the rules it enforces in establishing the fundamental order of Canadian society. A combination of lectures and discussions based on student presentations provide the forum to examine the structure of Canada's court system, the process of judicial adjudication and enforcement, and the bodies of law enforced. Among the topics to be studied are the jurisdictions of the various levels of courts, the appointment of judges, the role of judges, as adjudicators and policy-makers, the role of juries in enforcing the law, the independence of the judiciary, and bases of judicial reasoning. Attention will also focus on the general policy thrusts of criminal law, family law, as well as the laws of contracts and torts.

Instructor:	A. Heard
Format:	Lectures and Seminars, 2 hours
Prerequisites:	POL 2200R or permission of instructor
Cross-listed:	Canadian Studies
Enrolment:	Limited to 25

***POL 3250B Canadian Public Administration:** (Not offered in 1991-92.)

POL 4204R Advanced Seminar in Canadian Government: The focus of the class is on the institutions and processes of parliamentary government and the federal system of government in Canada. Topics in the first term include responsible government; party government; electoral system; legislative processes; senate; cabinet; pressure groups; crown corporations and regulatory agencies; accountability; charter of rights; media. Topics in the second term include the ideas of interstate and intrastate federalism; judicial interpretation and the Supreme Court; executive federalism; federal-provincial fiscal arrangements; the 1982 constitutional amendments; the Meech Lake Accord and its consequences.

Instructor:	P. Aucoin (First term) and D.M. Cameron (Second term).
Format:	Seminar 2 hours
Prerequisite:	Open to Honours students in their fourth year and to graduate students.
Cross-listed:	Canadian Studies
Enrolment:	Limited to 15

POL 4240A Policy Formulation in Canada: A comprehensive examination of the three critical questions in the study of policy formulation in Canada: 1) The function of the state; 2) The question of why governments develop policies; and 3) The means by which governments authoritatively develop policies. The discussion links these variables with a macro level analysis of the scholarly approach to decision-making. The emergence of tension resulting from the development of superindustrial society and from regionalism in the Canadian community provides

policy problems on which the general theoretical analysis is hinged.

Instructor: P. Brown
Format: Seminar 2 hours
Prerequisite: Open to Honours students in their fourth year and to graduate students.
Cross-listed: Canadian Studies
Enrolment: Limited to 15

POL 4241B Introduction to Policy Analysis: This class examines four aspects of policy analysis: (1) The role of the analyst in modern government; (2) The analyst's working environment; (3) Techniques used in carrying out research and preparing position papers; (4) and the analyst's responsibilities to government and to the public in determining what information should reach decision-makers.

Instructor: A.P. Pross
Format: Seminar 2 hours
Prerequisite: POL 4240A or instructor's permission
Cross-listed: Canadian Studies
Enrolment: Limited to 15

(3) Comparative

POL 2300R Comparative Politics: The methodology and scope of comparative politics including an analysis of institutions and behaviour is examined through general overviews and more detailed studies of selected Western liberal democratic, Communist and Third World countries. Topics include presidential and parliamentary regimes; theories of the state; political culture, ethnicity and nationalism; and policy outcomes.

Instructor: Staff
Format: Lecture 3 hours
Prerequisites: Introductory political science class or instructors' permission
Enrolment: Limited to 60

***POL 2306A/B West European Politics:** An introduction to politics in selected countries of Western Europe, and in the European Community.

Instructor: Staff
Format: Lecture 2 hours
Prerequisite: Introductory political science class or instructors' permission.
Enrolment: Limited to 60

***POL 2307A/B Politics in Eastern Europe:** (Not offered in 1991-92.)

***POL 2327A/B Women in Western Political Thought:** The role of women in political life has been vilified, praised or ignored by major thinkers. Pertinent texts will be read along with interpretations by modern feminists in order to assess why the formal political enfranchisement of women has not resulted in greater substantial equality.

Instructor: Staff
Format: Lecture and discussion 2 hours
Prerequisite: None
Cross-listed: Women's Studies 2600A/B
Enrolment: Limited to 45

***POL 2370R U.S. Government and Politics:** The class provides a survey of American political institutions, public policies, and public participation in politics. The presidency, Congress and bureaucracy are examined along with the interplay of private interest groups and the role of political parties. Class assignments allow students to pursue individual interests in American politics or public policy.

Instructor: J. Smith
Format: Lecture & discussion 3 hours
Prerequisite: Introductory political science class or instructor's permission.
Enrolment: Limited to 40

***POL 3302A/B Comparative Development Administration:** Some analytical and normative issues of public administration in developing countries are examined including the scope of development administration as a sub-field of public administration; public sector organisation and management including public services, public enterprises, decentralisation and rural development, financial systems, human resource management, aspects of state economic management with Japanese and South Korean case studies; and institutional aspects of aid administration with CIDA and World Bank cases.

Instructor: D. Luke
Format: Seminar 2 hours
Prerequisite: POL 2300R or equivalent or instructor's permission
Cross-listed: MPA 6780A International Development Administration.
Enrolment: Limited to 25

***POL 3303A Human Rights and Politics:** Issues arising from the claim to rights and from alleged infractions of rights which continue to arouse a great deal of public contraversy within individual states and also within the international community are examined by type and by the bases of the claims to such rights. The approach is comparative, and students undertake case studies relating to the general topics.

Instructor: A. Heard
Format: Lecture & discussion 2 hours
Prerequisite: POL 1100R or POL 1103R, and, preferably, POL 2300R or POL 2400R or POL 2401R; or with the permission of the instructor.
Enrolment: Limited to 20

*POL 3304A/B Comparative Federalism: A seminar class which examines the theory and practice of federalism within a comparative framework. The actual federations discussed depends in part on student interest but usually includes both established federal nations and those moving in that direction.

Instructor: H. Bakvis
Format: Seminar 2 hours
Prerequisite: POL 2200R or POL 2300R or instructor's permission
Enrolment: Limited to 25

POL 3315A/B African Politics: The diversity of states, politics, economy and society in post-colonial sub-Saharan African is examined in this seminar. Topics include theoretical approaches, economic framework, governmental regimes, structural adjustments, civil society, and intra-regional political economies, and selected aspects of policy such as economic reform, political liberalisation, women and development, drought and ecology, AIDS and health.

Instructor: Staff
Format: Seminar 2 hours
Prerequisite: POL 2300R or equivalent or instructor's permission
Enrolment: Limited to 25

POL 3340A/B Approaches to Development: A survey of theories of and policies about change, dependence, underdevelopment, and inequalities. Particular emphasis on modernisation and materialist modes of analysis, and on orthodox and radical strategies of development. Topics treated include social contradictions (e.g., class, race and ethnicity), debt, structural adjustment, (de)industrialisation, self-reliance, human development, gender, technology, civil society, informal sectors, authoritarianism and ecology.

Instructor: Staff
Format: Discussion and Seminar 2 hours
Prerequisite: POL 2500R or POL 2300R, or International Development Studies 2000A/2001B, or instructor's permission.
Enrolment: Limited to 25

*POL 3360A/B Politics in Latin America: Latin America is an area in which public attention is rapidly growing. This course seeks to analyze the fundamental institutions and policies which have fashioned its development (and underdevelopment). Specific case histories will be examined to show the "unrevolutionary" nature of society and political structures, as well as the exceptions (Cuba and Nicaragua). Among other topics, the role of militarism, the Doctrine of National Security, the abuse of human rights, the changing role of the Church, external involvement, the revolutionary tradition, and the structure of government, will be studied. The objective of the course is to provide a basic grasp of the central elements which have determined (and continued to determine) its troubled political life.

Instructor: J. Kirk
Format: Seminar 2 hours
Prerequisite: POL 2300R or instructors permission
Enrolment: Limited to 25

POL 4301A/B Comparative Theory: This class examines two levels of theory utilised in the study of politics in different nations: 1) the major paradigms or approaches to political analysis, notably debates over methodology and knowledge, the nature of the state, etc.; 2) selected theoretical tools used to analyze specific elements of the political process, notably interest group and media influence, political culture and socialization, electoral and revolutionary regime change, political development and economic dependency, etc. The list of topics is subject to revision depending on the students backgrounds and interests.

Instructor: R. Finbow
Format: Seminar 2 hours
Prerequisite: Open only to graduate and fourth year honours students who have completed classes in Comparative politics; permission of the instructor required.
Enrolment: Limited to 15

(4) Theory and Methodology

POL 2400R Politics and Ethics: This class, formerly known as Justice, Law and Morality (Regimes Version), is complementary to POL 2401R (Ethics and Politics). Hobbes is the only author treated in both classes. The class may be taken for credit before, after, or concurrently with the other class. Either class satisfies the minimum requirement in political philosophy for an Honours degree in Political Science.

Why, and under what conditions, ought human beings to accept a state with coercive powers expressed in laws and otherwise? What are the proper ends of political association, and how can these be morally justified? What is a just regime? What is the best (or the least bad) regime? These are perennial questions addressed by the great political thinkers, and it is to answers put forward by Plato, Aristotle, Machiavelli, Hobbes, Rousseau, Burke, Tocqueville and others that we turn in this class.

Instructor: B.L. Crowley
Format: Lecture 2 hours
Prerequisite: None. One year of university work in Arts and Social Sciences is recommended as preparation, though first year students can succeed.
Cross-listed: PHIL 2270R
Enrolment: Limited to 60

POL 2401R Ethics and Politics: This class, formerly known as Justice, Law and Morality (Concepts Version), is complementary to POL 2400R (Politics and Ethics). Hobbes is the only author treated in both classes. The class may be taken for credit before, after, or concurrently with the other class. Either class satisfies the minimum requirement in political philosophy for an Honours degree in Political Science. In the first term, the natural law view of justice, expressed by St. Thomas confronts the savage realism of Hobbes' Leviathan. The concept of justice has had a mixed career since Hobbes' time. In Locke's and Hume's doctrines it is narrowly tied to the defence of property. Sometimes, as with the utilitarianism of Bentham and Mill, it has appeared redundant, and Marx held that it would be superseded. In our own time, a major effort has been made by John Rawls to restore justice to the central place in ethics. His theory is considered at length at the end of the second term, after examining Lon Fuller's equally contemporary account of the moral dimensions of law.

Instructor: Staff
Format: Discussion 2-3 hours
Prerequisite: None. One year of university work in Arts and Social Sciences is recommended as preparation, though first year students can succeed.
Cross-listed: PHIL 2070R
Enrolment: Limited to 60

***POL 2455A/B Marxist Theory and Its Upshot in the Modern World:** (Not offered in 1991-92.)

POL 2494R Introduction to Political Inquiry: A variety of methods employed in contemporary political analysis to explain political events are analysed critically, including consideration of the general question of the requirements of explanation in political science. Causal explanation and problems in the development and verification of social scientific theory are emphasized. A particular substantive issue unifies discussion of the various methods of explanation and a research project in that issue permits the use of some of the tools of analysis discussed in connection with social scientific theory.

Instructor: Staff
Format: Lecture and Discussion 3 hours
Prerequisite: Introductory Political Science class or instructor's permission.
Enrolment: Limited to 45

***POL 3430A/B The Political Philosophy of Plato:** (Not offered in 1991-92.)

POL 3431A/B The Political Imagination in Literature: After having looked at how the study of literature both complements and supplements the social scientific approach to understanding politics, the seminar will analyse the implicit and explicit treatment of a number of political themes in a list of works by both modern and classical novelists and playwrights ranging from Sophocles, Shakespeare and Dickens to Brecht, Sartre and Naipaul.

Instructor: B.L. Crowley
Format: Seminar 2 hours
Prerequisite: POL 2400R or POL 2401R, or instructor's permission
Enrolment: Limited to 25

***POL 3435A Machiavellian Politics:** This seminar explores Machiavelli's contributions to modern politics and political science.

Instructor: B.L. Crowley
Format: Seminar 2 hours
Prerequisite: POL 2400R or 2401R, or instructor's permission
Enrolment: Limited to 25

***POL 3438A/B Rousseau:** (Not offered in 1991-92).

Cross-listed: Philosophy 3438A/B

***POL 3496A/B Philosophy of Social Science:** This class identifies three sides of social science-naturalistic, iterpretive, critical. It will consider how inquiries on the critical side reduce to a mixture of activities on the other two. It will then explore relations bewtween naturalistic and interpretive theories.

Instructor: Staff
Format: Discussion 2 hours
Prerequisite: A class in social science or a class in philosophy. Several classes in social science and at least one in philosophy are recommended as preparation.
Enrolment: Limited to 25

POL 4479B Classical Liberalism: Nobel Prize winning economic and social philosopher F.A. Hayek is perhaps the most influential modern exponent of a number of the key doctrines of classical liberalism. Using Hayek's Law, Legislation and Liberty as a basic text, we will critically examine his ideas (and his critics') on subjects such as epistemology, economics, politics, coercion, social justice and liberty.

Instructor: B.L. Crowley
Format: Seminar 2 hours
Prerequisite: Normally, classes in philosophy or political science or economics: consult instructor.
Cross-listed: PHIL 4470B/5470B and ECON 4460B/5470B
Enrolment: Limited to 15

(5) International

POL 2500R World Politics: A continuation of POL 1501R, this class examines techniques of statecraft, surveys the "assults" upon order, justice

and well-being of which the actors of world politics are capable, and explores the available "constraints" upon such actions afforded by international systems and methods.

Instructor: J.G. Eayrs
Format: Lecture and discussion 2 hours
Prerequisite: Recommended for students who have taken POL 1501R in their first year, but open to others with an introductory political science class or instructor's permission.
Enrolment: Limited to 60

POL 3531A/B The United Nations in World Politics: The evolution of the United Nations from its early concentration on problems of collective security, through the period of preventive diplomacy and anti-colonialism, to its present role as a forum for the aspirations and demands of the Less Developed Countries is reviewed. The more distant future, and the continuing relevance of the United Nations in world politics, and how its role and objectives should be determined, are considered.

Instructor: T. Shaw
Format: Seminar 2 hours
Prerequisite: Class in international politics or instructor's permission
Enrolment: Limited to 25

POL 3535A/B The New International Division of Labour: This seminar provides an overview of the global political economy in the current post-Bretton Woods and -Cold War period. It treats the New International Division of Labour/Power from several theoretical and political perspectives, from comparative foreign policy to feminism. Issues addressed include the Newly Idustrialising Countries, the Middle Powers and the Fourth World; new functionalism; popular participation; and alternative futures.

Instructor: T. Shaw
Format: Seminar 2 hours
Prerequisite: Class in international politics or instructor's permission.
Enrolment: Limited to 25

***POL 3537R Management and Conservation of Marine Resources:** This is an intensive programme on the problems of managing the multiple uses of the Exclusive Economic Zone. It covers the New Law of the Sea and its many implications for politics and management, the social, economic and technical aspects of managing living resources, non-living resources, shipping, ports and harbours, coastal management and the protection of the environment; national legislation and required institutional infrastructure, regional cooperation and cooperation with international institutions.

Instructor: E.M. Borgese
Format: Seminar 2 hours
Prerequisite: Class in international politics or instructor's consent. Offered in summer only, consult instructor.
Enrolment: Limited to 25

***POL 3540A Foreign Policies of African States:** (not offered in 1991-92).

POL 3544A/B Political Economy of Southern Africa: An introduction to the comparative politics, economic structures and international relations of Southern Africa, which provides a study of regional political economy with both empirical and theoretical signifiance. The primary focus is on regional conflict and change, especially on transformation and reaction, given the contemporary global context.

Instructor: T. Shaw
Format: Lecture and seminar 2 hours
Prerequisite: Class in international politics or instructor's permission.
Enrolment: Limited to 25

POL 3570R Canadian Foreign Policy: The seminar examines post-World War II Canadian foreign policy in three parts: (1) a detailed analysis of major policy developments, using the case-study approach; (2) an investigation of selected recurrent and contemporary themes, issues, and problems, and (3) an investigation of the general factors that may help to "explain" the form and content of Canadian foreign policy, with particular reference to the institutions and processes through which policy decisions are made. The primary emphasis is on politico-security issues, although other subjects are also considered.

Instructor: D. Stairs
Format: Seminar 2 hours
Prerequisite: A class in international politics, Canadian politics, or Canadian history in the 20th century, or instructor's consent. Restricted to students in their 3rd or 4th years.
Enrolment: Limited to 20

POL 3571R Strategy and Canadian Defence Policy: This seminar examines post-World War II Canadian defence policy in three parts: 1. An analysis of important cases of policy development. 2. An investigation of certain persistent themes and current issues (e.g., Canada-U.S. defence relations; defence funding; weapons procurement; the role of women in the forces; civil-military relations, etc.) 3. An assessment of the major determinants of policy and prescriptions for the future.

Instructor: D. Middlemiss
Format: Seminar 2 hours
Prerequisite: Class in international politics or instructor's permission
Enrolment: Limited to 25

*POL 3572R American Foreign Policy: (Not offered in 1991-92.) Why Americans make the kind of foreign policy they do and the decision process and relevant methodologies for examining decision strategy are examined. Students develop and ability to explain foreign policy decisions of the United States.
Instructor: G. Winham
Format: Seminar 2 hrs
Prerequisite: Course in international politics, US politics or history, or instructor's consent
Enrolment: limited to 25
Exclusion: POL 3574R

*POL 3574A/B American Foreign Policy: (Not offered in 1991-92.) This class is similar to POL3572R but covers topics in less detail.
Instructor: G. Winham
Format: Seminar 2 hrs
Prerequisite: Course in international politics, US politics or history, or instructor's consent
Enrolment: limited to 25
Exclusion: POL 3572R

POL 3575B Nuclear Weapons and Arms Control in World Politics: The seminar examines the technological, doctrinal, and political aspects of the nuclear weapons "problem" and the arms control "solution". It also assesses the fate of contemporary nuclear arms control efforts.
Instructor: D.W. Middlemiss
Format: Seminar 2 hours
Prerequisite: Class in international relations or defence policy, or with instructor's permission.
Enrolment: Limited to 25

POL 3585B Politics of the Environment: Environmental issues have become increasingly important on international agendas. In this class, political analysis of these questions is grounded in a global ecological perspective. The topics for discussion include acid rain and other problems in the relations between advanced industrialized countries; the role of international institutions and international law in promoting environmental conservation; the environmental dimension of international development; and the politics of the transnational environmental movement.
Instructor: R. Boardman
Format: Seminar 2 hours
Prerequisite: A class in international politics or foreign policy, or instructor's permission.
Enrolment: Limited to 25

POL 3590R The Politics of the Sea: The major issues involved in the Law of the Sea, the differing interests of different countries, the developing legal framework, and the political process of the on-going negotiations are covered.
Instructor: Staff
Format: Seminar 2 hours
Prerequisite: Preference is given to graduate students, although mature students from other relevant disciplines are welcome.
Enrolment: Limited to 25

*POL 3596A Theories of War and Peace: (Not offered in 1991-92.) This class examines critically a broad range of theories of the causes, persistence, and termination of war.
Instructor: Staff
Format: Seminar 2 hours
Prerequisite: Class in international politics or instructor's permission
Enrolment: Limited to 25

POL 4520R Theories of International Relations: A survey of the discipline of international relations. Topics include the role of theory, structure and operation of the international system, balance of power, international economics and problems of dependence, war and problems of international security, international organization and the nation-state.
Instructor: Staff
Format: Seminar 2 hours
Prerequisite: Limited to graduate students and 4th year Honours students with previous work in international relations, or with instructor's permission.
Enrolment: Limited to 15

POL 3601R Readings in Political Science: A full-year reading class, taught only by special arrangement between individual students and individual instructors.
Instuctor: Staff

POL 3602A Readings in Political Science: A first-term reading class, taught only by special arrangement between individual students and individual instructors.
Instructor: Staff

POL 3603B Readings in Political Science: A second-term reading class, taught only by special arrangement between individual students and individual instructors.
Instructor: Staff

POL 4600R Honours Essay: Restricted to Honours students in their 4th year.
Instructor: Staff

Russian

Location: 1376 LeMarchant Street
Halifax, N.S.
Telephone: (902) 494-3679

Chair
J.A. Barnstead (494-3679)

Undergraduate Advisor
J.A. Barnstead (494-3679)

Professor
Y.Y. Glazov, PhD (Oriental Inst.), F, (Moscow)

Associate Professor
I. Vitins, BA (Mich), PhD (Calif.)

Assistant Professor
J.A. Barnstead, BA (Oakland), AM (Harv.)

Introduction

The Russian Department offers classes in Russian language, literature, and culture. Since the Soviet Union plays a crucial role in today's world and makes important contributions in a wide variety of scientific, technical, and humanistic fields, knowledge of its linguistic and cultural backgrounds can prove advantageous in many areas of study. Glasnost' and perestroika have significantly widened opportunities for using Russian in business, law, science, and government.

In the language classes emphasis is placed on gaining a thorough grasp of Russian grammar combined with practical competence in speaking, reading, and writing. Sections are small and intensive. Classroom work is supplemented by computer-assisted language learning programmes and audio-visual materials at the Learning Laboratory.

Study of Russian literature begins with a general survey intended for first or second year students, followed by monograph, period, and genre classes. Literature classes are generally offered in both English and Russian in order to give as many students as possible from other disciplines the opportunity to become acquainted with this important part of Russian life.

Classes in Russian culture and civilization are intended to introduce students to art, architecture, music, religion, and other areas of Russian life which are necessary to understand the language and literature. Films, guest speakers, and evenings of Russian poetry are scheduled periodically. The Dalhousie Association of Russian Students organizes a variety of events throughout the year.

Major or honours students may, with the approval of the Department of Russian, take up to one year (5 full credits) of work at a University in the Soviet Union and receive credit at Dalhousie. Qualified students are urged to participate in the Russian Studies Programme, founded by Dalhousie, which enables Canadian students to study for a semester at Leningrad State University, the Moscow Pedagogical Institute, or the Moscow Pushkin Institute.

Degree Programmes

Classes in the Russian Department are open to students either (1) as electives in any degree programme; or (2) as constituents of a major or honours degree in Russian; or (3) with classes in another discipline forming part of a combined honours degree.

Classes Offered

Classes in Language

RUSS 1000R Elementary Russian: For students who have little or no previous knowledge of the Russian language. Equal emphasis is placed on developing oral and reading skills with a sound grammatical basis.
Format: Instruction/drill 5 hours
Prerequisite: None
Enrolment: 25/section

RUSS 2000R Intermediate Russian: A continuation of RUSS 1000R. Oral and reading skills and a further knowledge of grammar are developed through study and discussion of Russian texts.
Format: Instruction/drill 5 hours
Prerequisite: Russian 1000R or equivalent
Enrolment: 25/section

RUSS 3000R Advanced Russian: Conducted in Russian. Following a thorough review, this class concentrates on expanding all aspects of the student's knowledge of Russian grammar. Texts are read extensively and intensively. Discussion and compositions are based on the assigned readings.
Format: Lecture and discussion 5 hours
Prerequisite: Russian 2000R or equivalent
Enrolment: 25

RUSS 3010T Grammar: (See listing under Russian Studies Programme.)

RUSS 3030T Conversation: (See listing under Russian Studies Programme.)

RUSS 3050B Vocabulary Building, Translation, Reading: (See listing under Russian Studies Programme.)

RUSS 3100A Intensive Russian Grammar: (See listing under Russian Studies Programme). (This is a six-credit class).

RUSS 4000R The Structure of Contemporary Standard Russian: Required for honours candidates. Conducted in Russian. Systematic study of the structure of Russian: analysis of special problems in phonology, morphology, syntax, and stylistics. Tailored to the individual needs of the student, with emphasis on practical applications of linguistic insights.

Format: Lecture and discussion 3 hours
Prerequisite: Russian 3000R or permission of the instructor
Enrolment: Unlimited

Classes in Literature and Culture

Note: Classes marked * are not offered every year. Please consult the current timetable on registration to determine if these classes are offered.

***RUSS 2020A/B Nineteenth Century Russian Literature and Culture:** Conducted in English. The class traces developments in classical Russian literature, as well as in the Russian arts: painting, sculpture, theatre, and music. Religious and secular ideas of 19th century Russia are also discussed.

Format: Lecture and discussion 2 hours
Prerequisite: None
Enrolment: 35

RUSS 2050R Survey of Russian Literature: Conducted in English with section in Russian for majors. Required for majors and honours candidates. This class satisfies the university writing requirement. An overview of the history of Russian literature, from its Byzantine roots to the present day. The first semester includes works by Pushkin, Lermontov, Gogol', Turgenev, Dostoevsky, and Tolstoy, among others; the second begins with Chekhov and Gorkii and ends with an examination of the current literary scene.

Format: Lecture and discussion 3 hours
Prerequisite: None
Enrolment: 30

***RUSS 2070A/B Russian Literature and Culture after Stalin's Death:** Conducted in English. The literary, cultural, and political history of Russia after Stalin's death in 1953. Among the major issues considered are the significance of Stalin's death, the "Thaw" and de-Stalinization, Pasternak, Solzhenitsyn, Nadezhda Mandelstam and Sakharov. Revival of the intelligentsia and religious trends. Relationships of Russia and the West. Official and non-official culture.

Format: Lecture and discussion 2 hours
Prerequisite: None
Enrolment: 25

***RUSS 2100A/B Pushkin and his Age:** Conducted in English with section in Russian for majors. A close study of the poetry and prose of Russia's greatest poet, and other writers of the "Golden Age of Russian Poetry." Works to be read will include the major narrative poems, Eugene Onegin, the "Little Tragedies," Boris Godunov, The Belkin Tales, as well as the poetry of Baratynskii, Batiushkov, Del'vig, and Yazykov. No knowledge of Russian is required.

Format: Lecture and discussion
Prerequisite: None
Enrolment: Unlimited

***Russian 2190R Survey of Russian Theatre:** Conducted in English with a section in Russian for majors. An overview of Russian writing for the theatre, with emphasis on the nineteenth and twentieth centuries. The first semester examines plays by Pushkin, Griboedov, Gogol', Ostrovsky, Turgenev, and Sukhovo-Kobylin; the second semester includes Chekhov, Gorkii, Andreev, Bulgakov, Shvarts, Aitmatov and one current play.

Format: Lecture and discussion 2 hours
Prerequisite: None
Enrolment: 25

***RUSS 2240A/B Theories of Literature:** Conducted in English. This class surveys Russian thought about literature from mediaeval times to the end of the nineteenth century, then concentrates on a more detailed study of twentieth century theories. Emphasis is on the complex interrelationships of modern Russian theories of literature with their Western counterparts, e.g. Formalism and American "New Criticism". Topics treated include Formalism, early Marxist criticism, Socialist Realism, post-Stalin Marxist criticism, Structuralism, and the Tartu School of semiotics. Student discussions and papers apply the principles of a given school to practical criticism of works of their choice, demonstrating the strengths and weaknesses of each theory.

Format: Lecture and discussion 2 hours
Prerequisite: None
Enrolment: Unlimited

***RUSS 2340A/B Russian Modernism:** Conducted in English. A study of trends in literature and the arts at the turn of the century. Known as "The Silver Age", this is one of the most innovative and dynamic periods in Russian culture.

Format: Lecture and discussion 2 hours
Prerequisite: Russian 2050R or equivalent
Enrolment: 20

***RUSS 2500A/B Tolstoy:** Conducted in English. An introduction to the work of this enigmatic spiritual giant of Russian literature; the impact of his philosophy and writing on world literature and thought. Reading includes War and Peace, Anna Karenina, and Resurrection.

Format: Lecture and discussion 3 hours
Prerequisite: None
Enrolment: 25

***RUSS 2520A/B Chekhov and Turgenev:** Conducted in English. Close analysis and discussion of the major works of Turgenev, sensitive portrayer of socio-political and psychological issues of the second half of the nineteenth century in Russia, and Chekhov, unequaled short-story writer and radical innovator in modern theatre.
Format: Lecture and discussion 3 hours
Prerequisite: None
Enrolment: 25

***RUSS 2600A/B Russian Satire and Humour:** Conducted in English. Russian satirical and humorous literature written within the last two centuries. Russian satire and humour have made a great contribution to the world's treasures in this genre. Students read masterpieces by Gogol (Dead Souls) and Dostoevsky (The Devils). Lectures cover some of the immortal comedies of Russian literature and the early humorous stories of Chekhov. For the period after the 1917 Revolution stories by Soviet satirists, including Zoshchenko and Bulgakov, are discussed as well.
Format: Lecture and discussion 2 hours
Prerequisite: None
Enrolment: 25

***RUSS 2750A/B Dostoevsky and the Russian Idea:** Conducted in English. Dostoevsky's novels are of the highest importance in understanding the fate of Russia and the thoughts of other great Russian authors and thinkers. Crime and Punishment and The Brothers Karamazov are taken as the basis for discussion. The works of I. Turgenev and Lev Tolstoy are discussed together with the ideas of such great Russian philosophers, V. Solovyev and N. Berdyaev.
Format: Lecture and discussion 2 hours
Prerequisite: None
Enrolment: 30

***RUSS 2760A/B Dostoevsky and Western Literature:** Conducted in English. With all his love for Russia, Dostoevsky treasured the West and its literature. It is impossible to understand Dostoevsky and his main novels, including The Idiot and The Devils, without Hamlet by Shakespeare, Don Quixote by Cervantes, Faust by Goethe, some plays by F. Schiller, etc. The class traces the influence of Western ideas on Dostoevsky and his influence on such Western thinkers as Nietzsche and Freud.
Format: Lecture and discussion 2 hours
Prerequisite: None
Enrolment: 30

RUSS 3090A Soviet Society Today: (See listing under Russian Studies Programme.)

RUSS 3120A Intensive Russian Prose and Poetry: (See listing under Russian Studies Programme.)

***RUSS 3250A/B Literature of Revolution - The 1920s in Russian Literature:** Conducted in English. A study of experiment and submission during one of the most exciting, diverse, and frustrating periods in Russian letters. "Socialist realism" was not yet official doctrine; innovation in literature was tolerated. Writers openly pondered the role of the individual and culture in the new collective society. Close reading and discussion of texts by Pasternak, Babel, Zamyatin, Olesha, Pilnyak, Zoshchenko, and Bulgakov.
Format: Lecture and discussion 2 hours
Prerequisite: None
Enrolment: 25

***RUSS 3270A/B The Russian "Heroine":** Conducted in English. The strong spiritual and moral force which Russian women have exerted on their society is richly reflected in literature. The class focusses on the portrayal of several literary heroines and discusses their impact on both the literary imagination and society. Their number includes Pushkin's Tatyana, Dostoevsky's Sonya Marmeladova and Nastasya Filippovna, Tolstoy's Anna Karenina, Gorky's Mother and Bulgakov's Margarita.
Format: Lecture and discussion 2 hours
Prerequisite: None
Enrolment: 25

***RUSS 3330A/B The Russian Short Story:** Conducted in English. On the basis of ten to twelve Russian masterpieces in the short story genre, students have a chance to trace the development in this field from Pushkin and Gogol, through Turgenev, Tolstoy, Dostoevsky to the best short stories of post-revolutionary writers, including I. Babel, M. Zoshchenko, B. Pilnyak, A. Platonov.
Format: Lecture and discussion 2 hours
Prerequisite: None
Enrolment: 25

***RUSS 3500A/B Gogol and his Tradition:** Author of "Overcoat;" "Nose," Taras Bulba, Dead Souls, Gogol has been proclaimed "a pathological liar and honest anatomist of the soul, jejune jokester and tragic poet, realist and fantast". An in-depth study of this major writer and his impact on the work of Dostoevsky, Kafka, Bely and Bulgakov.
Format: Lecture and discussion 3 hours
Prerequisite: None
Enrolment: 25

RUSS 4300R Russian Poetry: Conducted in Russian. Required for honours candidates. A combination of an introduction to the theory of poetry with close analysis of masterpieces of nineteenth and twentieth century Russian poetry chosen to fit the interests of the individual student.
Format: Lecture and discussion
Prerequisite: Permission of the instructor
Enrolment: Unlimited

RUSS 4950A/B, RUSS 4960A/B, RUSS 4990R Russian Special Topics: Conducted in Russian. Offers the student an opportunity to work with an advisor in researching subjects which are not regularly taught in the Department. Past topics have included Old Church Slavonic, the historical phonology and morphology of Russian, and Russian symbolism. Students who wish to register for a specific programme should consult the chair of the Department.
Prequisite: Permission of the Instructor

Russian Studies Programme

Coordinator
John A. Barnstead (494-3679)

Participating Faculty
Yuri Gizov (Professor of Russian)
Norman Pereira (Professor of History)
Ieva Vitins (Associate Professor of Russian)
John A. Barnstead (Assistant Professor of Russian)

Introduction
The Russian Studies Programme, the first one of its kind in Canada, is a special inter-disciplinary programme of instruction which allows Dalhousie students (as well as students from other Canadian universities) to undertake intensive study of the Russian language, both here and in the Soviet Union. In order to participate, students must be able to demonstrate competence in the Russian language equivalent to two years of university classes (at Dalhousie these are RUSS 1000R and RUSS 2000R) with a mark of "B" or better. The duration of the programme is one academic year, the first half of which is at Dalhousie, the University of Alberta, or some other Canadian university, the second half of which is at the Pushkin Institute in Moscow, the Moscow Pedagogical University, or Leningrad State University. Enquiries and applications should be addressed to the Administrator of the Programme.

Classes at Dalhousie, September to December

RUSS 3090A Soviet Society Today: Conducted in Russian.
Instructor: N.G.O. Pereira
Cross-listed: HIST 3090A

RUSS 3100S Intensive Russian Grammar: Conducted in Russian. Approximately one-half of class time is devoted to grammar and reading. The remaining time is devoted to conversation and pronunciation. The class meets for five two-hour sessions each week. There is one written composition per week of 2-3 pages. The instructor works closely with individual students. This is a six-credit class.
Instructor: Soviet language specialist
Format: lecture 10 hours

RUSS 3120S Russian Prose and Poetry: Conducted in Russian. The students read, translate and critically interpret representative works of the nineteenth and twentieth centuries. Original texts are supplied with vocabularies and grammatical notes. This is a six-credit class.
Instructor: Staff
Format: lecture and discussion 5 hours

Classes at the Pushkin Institute, Moscow Pedagogical Institute, or Leningrad State University, February to June

RUSS 3010T Grammar: Intensive study of the finer points of Russian grammar. Topics include verbs of motion, aspect, impersonal constructions, government and agreement, and other themes. This is a six-credit class.

RUSS 3030T Conversation: Systematic development of conversational ability on everyday themes: transport, city services, theatre, sport, shopping, the library, the Soviet educational system, the structure of the Soviet government, etc. This is a six-credit class.

RUSS 3050B Vocabulary Building, Translation, Reading: Extensive study of Russian lexicon and/or work in translation; analysis of journalistic and literary texts. This is a three-credit class.

Sociology and Social Anthropology

Location: South-East Corner of South and Seymour Streets
Halifax, N.S.
Telephone: (902) 494-6593

Chair
R.A. Apostle (494-2069)

Undergraduate Advisor
J.G. Morgan (494-6756)

Professors
R.A. Apostle, BA (Simon Fraser), MA, PhD (U Calif)
J.H. Barkow, AB (Brooklyn), AM, PhD (Chi)
D.H. Clairmont, BA, MA (McM), PhD (Wash U)
H.V. Gamberg, BA (Brandeis), A.M., PhD (Princ)
R.C. Kaill, BA (Dal), BD, MA (Tor), PhD (McG)
L. Kasdan, MA, PhD (Chi)
J.J. Mangalam, BSc, MSc (Panjab), PhD (Cornell)

Associate Professors
M.R. Binkley, BA, MA, PhD (Tor) Associate Dean of the Faculty of Arts and Social Sciences
P.M. Butler, BA, MA, PhD (Tor)
D.H. Elliott, BA (Yale), PhD (Pitt)
J.L. Elliott, BA (Wells), MA (Kan.), PhD (Pitt)
N.W. Jabbra, BA (U Calif at Santa Barbara), MA (Ind), PhD (Catholic) (on leave)
V.P. Miller, BA (U California at Berkeley), MA, PhD (U Calif at Davis)
J.G. Morgan, BA (Nott), MA (McM), DPhil (Oxon)
C.J. Murphy BA (St. F.X.), MA (Dal), PhD (Tor)
J. Stolzman, BA (Ore), MS (Fla), PhD (Ore)
V. Thiessen, BA (Man), MA, PhD (Wis)

Assistant Professors
F.G. Clark, BA, MA (McM), PhD (UBC)
T.J. Li, BA, PhD (Cantab) (Research)
S. Pollock, BN (Man), BA, PhD (Warwick)

Adjunct Professors
J. Benoit, BA, MA (Guelph), PhD (Hopkins)
D. Findlay, BA, BSW, MA, PhD (McMaster)
B. Keddy, BScN (MSVU), MA (Dal), PhD (Dal), RN
D. Looker, BA (Carleton), MA (Waterloo), PhD (McMaster)
B. Raymond, MA (U California at Berkeley), PhD (Chi)
S. Shaw, BPE (Dal), MSc (Dal), PhD (Carleton)

Research Associate
A.F. Davis, BA (St. Mary's), MA (Man), PhD (Tor)

Introduction

Social Anthropology and Sociology are related and overlapping disciplines. Although in some universities they are found in separate departments, this Department and many of its classes blur the distinction between them and emphasize the areas of overlap. The Department is committed to a programme which stresses the areas of convergence between the two disciplines.

Sociology

As a social science, sociology seeks to apply the scientific method to human behaviour. In doing so, it makes two assumptions, that human social life exhibits regularity and recurrent patterns, and that people are essentially social animals. The sociological enterprise focuses upon social relationships, social institutions, and processes of social change. No single approach to these complex phenomena has been found adequate. As a result, a wide range of explanatory models and perspectives has evolved.

Sociology provides a context within which students learn to think critically about their social environment; become aware of the impact of social forces on their lives and the lives of others; and develop skills of analysis useful in understanding and managing their social environment. Many students find a sociology major helpful in preparing for social work, nursing, personnel management, and other occupations dealing directly with people. A well-trained sociologist will be acquainted with overlapping areas in Social Anthropology.

Social Anthropology

Anthropology is a diverse discipline whose branches study the human species in all of its physical, cultural, and linguistic diversity in both space and time. It consists of four sub-disciplines: Archaeology, Linguistics, Physical Anthropology, and Social Anthropology. The major focus is upon classes in Social Anthropology, although classes in other areas may be offered.

Social Anthropology is a strongly comparative field, which is concerned with the complete range of human societies in all historical and geographic settings. In the past, emphasis in Social Anthropology was on non-industrial and small-scale societies, but in recent years attention has been paid to industrial and industrializing societies and to the various groups that comprise them. Social Anthropology aims at generalizations by comparing structures and processes in major institutions within societies (kinship, political, economic, and religious) as well as between societies.A well-trained social anthropologist will be acquainted with overlapping areas in Sociology.

Career Options

Career possibilities in sociology and social anthropology include research and other positions in government, industry, or university, and teaching at the high school or university levels.

Degree Programmes

The department offers a major and an advanced major in Sociology and Social Anthropology leading to the BA degree. It offers honours BA degrees in Sociology and in Social Anthropology.

Honours BA Programme

An Honours degree is normally the required preparation for graduate study in Sociology and Social Anthropology. Students interested in honours programmes should consult the Department's Undergraduate advisor, Dr. J.G. Morgan, as early in their course of studies as possible.

Students may choose to register in an honours programme either in Sociology or in Social Anthropology. At least nine classes, and no more than eleven classes, beyond the introductory level must be taken in the area of concentration. Each programme consists of several required classes (see below), other classes selected according to the student's interests in consultation with the Undergraduate Advisor, and an honours thesis paper. Students with the honours concentration Sociology may not declare Social Anthropology as their minor subject; students with the honours concentration Social Anthropology may not declare Sociology as their minor subject. (See College of Arts and Science Regulations 11.5 for general information and requirements).

Required Classes for Honours Degrees

Social Anthropology Programme

SSA 2010A Introduction to Social Research, SSA 2011B Research Design, SSA 2250A/B Introduction to Social Anthropological Theory, at least one credit (or at least two half credits) in a geographical area class(es) (SSA 2370A/B People and Cultures of the World I, SSA 2380A/B People and Cultures of the World II, SSA 2350A/B Native Peoples of Canada, SSA 2360A/B Native Peoples of the United States, SSA 2390R Social Anthropology of the Middle East, SSA 3185A/B Issues in the Study of Native Peoples of North America), SSA 3415A Social Statistics, SSA 4000R Seminar in Social Anthropology, and SSA 4590R Honours Seminar in Social Anthropology (two credits).

Sociology Programme

SSA 2010A Introduction to Social Research, SSA 2011B Research Design, SSA 2240A/B Introduction to Sociological Theory, SSA 3115B Research Methods, SSA 3415A Social Statistics, SSA 3401A History of Sociological Thought, SSA 3405B Contemporary Sociological Theory, and SSA 4500R Honours Seminar in Sociology.

The honours thesis paper is produced for the class SSA 4500R (Sociology) or SSA 4590R (Social Anthropology). This fulfills the College of Arts and Science Honours Qualifying Examination requirement.

Combined and Unconcentrated Honours

Combined honours programmes can be arranged between Sociology or Social Anthropology and some other appropriate discipline. Combined honours in Sociology and Social Anthropology, however, is not possible. Students wishing to arrange combined or unconcentrated honours programmes are advised to seek the counsel of the departments involved as early as possible.

Advanced Major

For information see the Undergraduate Advisor.

BA Degree

Students enrolled in the BA (i.e., three-year) degree programme must take at least four and no more than eight classes beyond the introductory level in Sociology and Social Anthropology. Depending on their interests, they may take mainly sociology classes or mainly anthropology classes, or they may combine the disciplines.

Required Classes

- Introductory Level: Either SSA 1000R, SSA 1050R, SSA 1100R, or SSA 1200R.
- Theory: Either SSA 2240A/B or SSA 2250A/B.
- Research Methods: SSA 2010A is required. SSA 2011B is recommended.
- Two full credits in classes beyond the 2000 level in Sociology and Social Anthropology.

Suggested Class Structure

Year I: SSA 1000R, SSA 1050R, SSA 1100R, or SSA 1200R; at least one introductory class in Economics, Political Science, Psychology, History or Biology; and three other classes chosen from fields other than Sociology and Social Anthropology.
N.B. One class must satisfy the writing requirement (College of Arts and Science Regulations 11.1.a).

Year II: SSA 2010A, SSA 2011B, and SSA 2240 A/B or SSA 2250 A/B; 1½ - 2 other classes in Sociology and Social Anthropology; and two electives.

Year III: Two classes at the 3000 level in Sociology and Social Anthropology; one other class in Sociology and Social Anthropology; and two electives. N.B. One class of the 15 credits must satisfy the language requirement (College of Arts and Science Regulations 11.1.a) or the requirment may be met as specified in the Regulations.

Canadian Studies Programme

The Department is cooperating with several other departments in offering a Canadian Studies Programme. Interested students should contact Professor P. Clark.

International Development Studies

The Department is cooperating with several other departments and with Saint Mary's University in offering a BA and Honours BA in International Development Studies. Interested students should contact Professor J. Barkow.

Women's Studies Programme

The department is cooperating with several other departments in the Women's Studies Programme. Interested students should contact Professor Scarlet Pollock.

Classes Offered

Please Note:

- No student may receive credit for more than one introductory level class (SSA 1000R, SSA 1050R, SSA 1100R, SSA 1200R) in Sociology and Social Anthropology.
- All students (whether Sociology and Social Anthropology majors or not) must have SSA 1000R, or SSA 1050R, or SSA 1100R, or SSA 1200R as a prerequisite for any class at the 2000 or higher levels, or obtain permission from each instructor involved. There may also be additional prerequisites required. No student may receive credit for more than one introductory level class (SSA SSA 1000R, SSA 1050R, SSA 1100R, or SSA 1200R) in Sociology and Social Anthropology.
- The Foundation Year Programme of the University of King's College is an acceptable alternative to Sociology and Social Anthropology introductory classes for prerequisite purposes.
- SSA 1050R fulfills the first-year writing requirement.
- Some classes listed may not be offered in a given academic year. Consult the timetable for details.

Note: Classes marked * may not be offered every year. Please consult the current timetable on registration to determine if these classes are offered.

SSA 1000R Culture and Society: An introduction to the comparative study of human society from the parallel perspectives of Sociology and Social Anthropology. The principal focus is on continuity and change in a variety of societies ranging from simple hunting and gathering societies to highly complex industrial societies.

Format:	Lecture 3 hours
Prerequisite:	None
Exclusion:	SSA 1050R, SSA 1100R, SSA 1200R
Enrolment:	Sections with maximum 60 and maximum 150

SSA 1001R Introduction to Service Learning: This class is designed as the introductory and foundation class for the President's Leadership Class. It will include a study of the roots of service learning. A sociological perspective on altruism and the place of service in our society will be explored. There will be a monthly speaker series which will be organized by the class as well as a lab which places the students in a variety of service experiences. This class is not a prerequisite to other SSA classes. This class fulfils the first-year writing requirement.

***SSA 1050R Explorations in Culture and Society:** This class covers the same topics as SSA 1000R but partly in a seminar format. There are bi-weekly written assignments. This class fulfills the first-year writing requirement.

Format:	Lecture and seminar 3 hours
Prerequisite:	None
Exclusion:	SSA 1000R, SSA 1100R, SSA 1200R
Enrolment:	30 students

SSA 1100R Introduction to Anthropology: This class introduces students to all subfields of anthropology while emphasizing the socio-cultural. Topics considered include: the variety of human cultures and societies and how they are organized and function, the relationship between ecology and culture, human evolution, nonhuman primate behaviour, principles of archaeology, and the study of languages around the world as they relate to the cultures of which they are part.

Format:	Lecture 3 hours
Prerequisite:	None
Exclusion:	SSA 1000R, SSA 1050R, SSA 1200R
Enrolment:	60 students

SSA 1200R Introduction to Sociology: This class introduces students to basic sociological concepts, the logic of social inquiry, and major theoretical and methodological issues in the field. Substantive

class contents include the study of culture, socialization, deviance, social organizations, institutions, social roles, and demography. Emphasis is on the study of modern industrial societies with special attention given to Canadian society.

Format: Lecture 3 hours
Prerequisite: None
Exclusion: SSA 1000R, SSA 1050R, SSA 1100R
Enrolment: Sections with maximum 60 and maximum 150

***SSA 2010A/B Archaeology: An Introduction:** This class covers the following topics: archaeology and its relationship to history and prehistory, the origins and growth of the discipline of archaeology, the application of archaeological techniques in the field of prehistory, the excavation of a site, the establishment of a chronological framework, and the reconstruction of the historical past.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

SSA 2010A Introduction to Social Research: This class provides an introduction to basic research skills used by anthropologists and sociologists to investigate and analyze social phenomena. The class is organized into three modules each of four weeks duration. The first module emphasizes the effective use of existing information, with particular emphasis on library research techniques and resources. The second module provides an introduction to computers and demonstrates a variety of computer based research activities. The third module stresses the evaluation of research and provides the student with both the skills and opportunity to assess critically and professionally the work of empirical anthropologists and sociologists.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

SSA 2011B Research Design: The class is organized around four 3-week modules, representing a survey of the major research designs employed in anthropology and sociology. Module I deals with the design of experiments and simulations; Module II examines historical and comparative research designs; Module III treats survey-based designs; Module IV examines designs based upon fieldwork and observation.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R and SSA 2010A or permission of the instructor
Enrolment: 60 students

***SSA 2030R Deviance and Social Control:** Groups make formal and informal rules in an attempt to regulate and make predictable the behaviour of their members. Violations of these rules occur in many different ways and stem from various causes. This class examines both the processes by which groups make rules and the reasons why these rules are violated. Specific issues such as crime, delinquency, narcotic addiction, alcoholism, prostitution, suicide, and minority group relations are discussed in this context.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 150 students

***SSA 2040R Social Stratification:** Aspects of social inequality in modern industrial society. The formation of classes, status groups, and organized political expressions is considered. Questions of the distribution of power and wealth in society, the existence of power elites or governing classes, the impact of bureaucracy on class relations, the extent to which major economic inequalities have been reduced in this century, and problems of the mobility of individuals and groups through the stratification systems are analyzed. Theoretical discussions in the class are largely concerned with the ideas of Karl Marx and Max Weber, but attention is also paid to contemporary theoretical approaches to stratification.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2050R Sociology of Religion:** The relations between religious beliefs and human behaviour and social structure. Major themes include: the impact of social structure on the development of belief systems; the question of whether beliefs guide and direct human behaviour; the formal organization of religious institutions; and social psychological considerations of religious behaviour. The primary focus is on current religious movements in Canada.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

SSA 2060A/B Social Gerontology: A general introduction to social gerontology, in which emphasis will be placed upon the historical and philosophical development of the study of aging in Canada, theories of aging, current social and economic programmes for the elderly both in Canada and to some extent cross-culturally, and various pertinent social-psychological aspects of the aging process. The class familiarizes students with some of the problems people experience as a consequence of aging in Canadian society and

provides an understanding of the socio-economic factors relevant to these problems.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Cross-listed: Nursing 4900R
Enrolment: 60 students

***SSA 2070R Socialization:** Socialization is the process by which a society's values and customs are perpetuated, passed along to the younger generation. This is seen as the function of certain institutions, such as the family, the churches, and the schools. These, however, require support from the larger social milieu. Our own rapidly changing society appears to be at a point of crisis in this regard. Recent social changes have undermined traditional means by which children acquire a sense of allegiance to their elders, and take to themselves the society's major values.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2080R Communities:** An examination of a wide variety of territorially based residential groups such as the large metropolitan centre, the rural village, and the intentional community. Major themes include: evolution of the modern city, urbanization, rural depopulation, ecology of the city, neighbourhood social networks, behaviour in public places, minority subcommunities, and urban planning.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2100R Ecology and Culture:** This class deals with the ways in which different environments affect how people live, relate to one another, think, and organize themselves. The major focus is on how cultural choices are influenced and constrained by the relationships among ecology, technology, and how people are making a living. Examples of hunter-gatherer, horticulturalist, rancher and farmer cultures are used as illustrations.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2110R Canadian Society:** An analysis of selected aspects of Canadian society employing theoretical perspectives and empirical materials to develop a composite view of the society as a whole through understanding the interrelationships among its parts. Major foci include the integration and survival of Canadian society, structural change, and the management and consequences of inequality. Prospects for the future of Canada are discussed in terms of these characteristics.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Cross-listed: Canadian Studies
Enrolment: 60 students

***SSA 2120A/B Minority Groups:** The social status of minority groups is examined in the light of contemporary theories of prejudice and discrimination. The societal consequences of discrimination are considered with respect to their effect on both minority and majority groups. Emphasis is on an analysis of Canadian minorities.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2140A/B Industrial Sociology:** This class deals with the development of modern industrial society, especially advanced capitalist society. Major topics for investigation include theories of industrial capitalism, the modern corporation and trade unionism. The role of the state is also highlighted.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2141A/B Sociology of Work:** This class deals with work in modern society. Major topics investigated include modern work values, varieties of work relationships (e.g. white/blue collar, professionalism), work alienation, job satisfaction and issues of industrial democracy. It is a companion course to SSA 2140A/B but the latter though recommended is not required as a prerequisite.
Format: Lecture 3 hours
Prerequisites: SSA 1000R, SSA 1050R, SSA 1000 or SSA 1200R
Enrolment: 60 students

***SSA 2150A/B Mass Society:** The origin of modern, post-industrial mass society. Problems associated with industrialization, cybernation, leisure, technology, and environmental degradation are examined in detail. Various attempts at solution of these problems are analyzed. The rise of the expert and of counter-cultural movements are given particular attention. Theoretical and methodological innovations for future forecasting are introduced.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2160A/B Sociology of Occupations:** Sociological views of the occupational structure, and of the constraints and influences that bear upon persons in various occupations.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2170A/B Political Sociology:** Introduces students to the major concepts and theories which inform the sociological study of politics. In addition to this general orientation, particular attention is devoted to the role of power and ideology in Western society, the interplay between economy and polity in contemporary North America, and political transformation as a social process.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2180R Criminology:** Crime as a form of social deviance. The significance of official crime rates is analyzed, and the various forms of criminal structure and behaviour are examined. The second part of the class deals primarily with societal response to offenders, tracing the judicial and correctional processes in Canada.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 150 students

***SSA 2190R Gender Roles in Cross-Cultural Perspective:** Taking a broad comparative framework, we examine sex roles in the contexts of daily life, of economics, politics, kinship, social stratification, religion and values, and socialization. With these data as background, we then look at sex roles in Canada and in Nova Scotia.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Cross-listed: Women's Studies 2800R
Enrolment: 60 students

***SSA 2200R Sociology of the Family:** Family in one form or another is an aspect of all societies. It is the most important agent of early socialization and personality formation. The first term is devoted to a consideration of some of the cross-societal characteristics of the family in general, and of the extended family as found in traditional societies in particular. The second term is devoted to a consideration of family characteristics in urban-industrial societies, concentrating on the nuclear family with particular reference to the Canadian scene. An attempt is made to understand the processes by which family structures and functions have changed through time as societies evolved from a traditional to an urban-industrial social organization.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2220A/B Social Psychology:** Groups influence individuals and individuals react (resist, adapt to, cooperate with, or use to their own advantage) to these influences. The processes involved in such person-group relationships are explored in a number of different settings, such as the family, mental hospitals, and universities. The class will focus on both a critical review of actual studies done and on social-psychological interpretations or theories of these findings.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

SSA 2240A/B Introduction to Sociological Theory: An introduction to some of the major approaches taken by sociologists to understand the nature of society. The early foundations of social thought are surveyed with emphasis on the emergence of sociology as a discipline in the nineteenth century. The contributions of prominent theorists - Durkheim, Marx, Mead, Spencer, and Weber - are stressed. The most important sources of virtually all the varieties of sociological theories of the twentieth century are found in these thinkers. Specific contemporary approaches to be considered include functionalism, conflict theory, social action theory (including symbolic interactionism and ethnomethodology), and exchange theories.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2250A/B Introduction to Social Anthropological Theory:** The foundations and development of social anthropology. The growth of theory in social anthropology is stressed, with special attention paid to major schools of thought and the work of prominent individuals within those schools, including Cultural Evolution; Historical Particularism; Functionalism; Culture and Personality; Structuralism; Symbolism; Cultural Materialism; and the directions in which contemporary social anthropology points. Special efforts are made to expose students to the original writings of prominent anthropologists.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2290A/B Belief Systems:** The study of non-Western belief systems. Emphasis is on the religion of small-scale societies, treated from the

perspective of religion as a system of symbols giving meaning to the universe and one's place in it. Topics include religion as a biological phenomenon, the nature of ritual, religion and healing, religion and altered states of consciousness, sorcery and witchcraft, and religion and culture change.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2350A/B Native Peoples of Canada:** A survey of the cultures of the peoples who inhabited Canada at the time Europeans came to this continent. Following a review of prehistory, the class uses an ecological perspective to examine the geographic culture areas and representative tribes in them. As time permits, information on ethnohistory and the situation of contemporary native peoples is incorporated. This class should be taken with SSA 2360A/B to gain an overall ethnographic knowledge of North America.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Exclusion: SSA 2355R
Enrolment: 60 students

***SSA 2360A/B Native Peoples of the United States:** A survey of the cultures of the peoples who inhabited the area that is now the United States at the time Europeans came to this continent. Following a review of prehistory, the class uses an ecological perspective to examine the geographic culture areas and representative tribes in them. As time permits, information on ethnohistory and the situation of contemporary native peoples is incorporated. To gain an overall ethnographic knowledge of North America, this class should be taken with SSA 2350A/B.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Exclusion: SSA 2355R
Enrolment: 60 students

***SSA 2370A/B Peoples and Cultures of the World I:** Each year, the Peoples class surveys the peoples of a specific geographic area. The class includes background material on geography, climate, and history. Its focus is on the people themselves, their social organization and political, economic and kinship systems; and their problems of modernization and development. Consult the department to find which regions are to be offered in a particular year.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2380A/B Peoples and Cultures of the World II:** See class description above.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2390R Social Anthropology of the Middle East:** We know the Middle East as the cradle of civilization, the scene of the Crusades, and the focal point for a variety of international tensions. But beyond history book and newspaper are real people with their own modes of social organization, values, ways of thinking and making a living, and their own valued resources. If Western nations, including Canada, are to deal effectively with this increasingly important region, their people must come to understand the values and aspirations of the people of the Middle East. In this class we touch upon some of the common trends and diversities which characterize the region from Iran and Afghanistan to Morocco: geography and population; ethnic groups and languages; religion; social organization; modes of subsistence; values; and the impact of the West.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2400R Medicine and Health Across Cultures:** Every culture has its own concepts of health and nutrition, its own treatments and practices. The strengths and weaknesses of our own system grow clearer when medical anthropologists compare it with that of other societies. This class's specific topics vary from year to year but always include: native theories of the etiology of illness, transcultural vs. culture-specific disease syndromes, pregnancy and childbirth in other cultures and our own; senescence and death viewed cross-culturally, the conflict between traditional medical systems and the Western physician and hospital, patients' expectations and the medical subculture, the physician as secular priest, and food and nutrition across cultures.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2500A/B Sociology of Health and Illness:** An introduction to sociological analyses of health, illness, and health care. Class topics include the experience of illness, socioeconomic and cultural variations in patterns of illness, social behaviour and its effects on health, the social production of health and illness, occupational hazards, the relationship between mental and physical health, the organization of health care, hospital and community care, health care workers, inequalities in health and health care.

Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Exclusion: SSA 2501R
Enrolment: 60 students

***SSA 2600R Food and Nutrition Across Cultures:** Our bodies determine nutrition, our environments limit what may be available, and our cultures decide what is to be considered "food". This class joins the anthropology of food with the cross-cultural study of nutrition. Topics include definitions of the edible, nutrition and modernization, ecology and food, food taboos, age and gender differences in food prescriptions and proscriptions, dieting and obesity, food and religion, cannibalism, the symbolic meaning of eating and food, and food shortages.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 2700A/B Sociology of Mediation:** Mediation is a process where a neutral third party assists two contending parties to reach an agreement. It is a rapidly growing form of conflict resolution, particularly in North America. This class will apply sociological research to the various types of mediation such as: divorce mediation, victim-offender mediation, community mediation. Mediation will be studied as a social movement, as an organizational form and as a small group process. Although this class does not teach the student how to be a mediator, it does complement non-credit programmes providing mediation training.
Format: Lecture 3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 60 students

***SSA 3010R Sociology of Work Roles:** A seminar which examines development and change in work roles and the labour process. Among the topics covered are labour-management relations, job satisfaction, the quality of working life, professionalization, the working poor, and gender patterns of work. Underlying processes of power and control in the labour process, and of status and earnings attainment will be emphasized.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3030R Social Problems and Social Policy:** This class focuses on the nature of social problems and social policy in advanced industrial societies. It adopts a social movement perspective, exploring the processes whereby agitation on behalf of undesirable but remedial social conditions leads to changes in social policy. Among the areas treated in depth are crime prevention, the quality of work life, race relations, deviance, and poverty and inequality.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3060A/B Social Change and Development:** This class considers theories of social change and development, approaches to the analysis of rural and urban livelihoods at the micro level, and examination of community, class, patronage and gender relations in both their economic and cultural aspects. The constructive uses of social analysis in the support and design of development initiatives are also discussed.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R and one SSA credit at 2000-level, or International Development Studies 2000.
Enrolment: 20 students

***SSA 3070R Human Nature and Anthropology:** Can anthropologists explain why we feel sexual jealousy or why we tend to follow a dominant leader in times of stress? Can the evolutionary theories explaining why we have fingerprints and flat nails explain our behavioural traits? This class reviews theory and data on the evolution of human mind and culture in order to construct a theory of human nature. Its perspective and contents include much of what some have categorized as "human sociobiology," "Darwinian anthropology," and "Darwinian psychology." Evaluation will be based on essay exam and a term paper.
Format: Seminar 2-3 hours
Prerequisite: SSA SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R or an introductory class in Psychology or Biology
Enrolment: 20 students

***SSA 3080R Linguistics and Anthropology:** A seminar which examines aspects of linguistics relating to anthropology. Students learn to transcribe utterances phonetically, then to apply this knowledge as they study the relation of language and culture in both western and non-western societies. Each student does a phonetics fieldwork project and writes a sociolinguistics term paper.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3090R Sociology of Culture:** The Sociology of Culture deals with the symbolic aspects of social activity. The class will examine major

contributions to this field by intellectuals from the western industrial systems. This overview will include consideration of works by Bourdieu, Habermas, Lasch, McLuhan and Williams. We will also look at the ongoing debates regarding popular culture, and the new interest in theories of postmodernity.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R and SSA 2240A/B or SSA 2250 A/B
Enrolment: 20 students

***SSA 3095A/B Demographic Techniques:** This class will explore the demographic techniques used to describe the dynamics of population structure. Various demographic sources ranging from census to church records will be examined. Basic techniques for determining rates and measures of fertility, mortality, morbidity and growth as well as more advanced methods using computer programmes and simulations will be discussed. Students will be expected to complete a project using primary sources. A knowledge of logarithms and high school algebra is required.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R and SSA 2010A
Enrolment: 20 students

***SSA 3100A/B Feminism and Sociological Theory:** An examination of sociological theory using a feminist perspective, and an exploration of feminist theorizing. Topics include feminist critiques, comparative theories, principles of feminism, methodological issues, Marxist-feminist theorizing, Radical feminist theorizing, and the study of key authors in selected areas of interest.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R, SSA 1200R and SSA 2240A/B; or two Women's Studies credits
Enrolment: 20 students
Cross-listed: WOST 3805A/B

***SSA 3110A/B Sociology of Leisure:** This class looks at the phenomenon of leisure from a sociological perspective. Emphasis is on leisure research and the application of sociological theories to the study of leisure. Topics include: the social organization of leisure; the leisure industry and the roles of the state, the mass media, culture and leisure; and leisure and disadvantaged groups, e.g., women, the elderly, the unemployed, and minority groups.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Cross-listed: Leisure Studies 3491B
Enrolment: 20 students

SSA 3115A/B Research Methods: This class discusses the construction of theory, the formulation of research problems, research designs, measurement, methods of data collection, and analytic theory testing. Special attention is given to the sample survey as one of the main methods of social science research. Practical experience in survey methods is provided through a class project.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R and SSA 2010A and SSA 2011B and SSA 3415A/B
Enrolment: 20 students

***SSA 3116A/B Issues in Social Research:** This class focuses on various methodological issues such as causal analysis, qualitative research, measurement theory. The specific class content in a given year is available through the Department.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R and SSA 2010A and SSA 2011B
Enrolment: 20 students

***SSA 3117A/B Formal Organizations:** This class makes a critical study, from the comparative point of view, of theoretical models for the analysis of bureaucratic organizations. Students examine the classical, structural-functionalist, and management-science approaches to organizations. The class entails a systematic survey of the sociological literature on this subject, with special concentration on organizational structure, strategy and decision-making.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3120A/B Social Conflict:** Introduces students to the various analytical perspectives sociologists have employed to understand the patterning and consequences of conflict in society. In this regard particular attention is devoted to the functional, coercion, and Marxian theories of conflict. This class is also concerned with conflict in contemporary society, with special reference to patterns of conflict and change in Canada.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3135A/B The Social Organization of Health Care:** The social organizaiton of medicine and the politics of health are examined. Particular attention is paid to environmental and occupational health issues in light of technological and social change. Epidemiological patterns of morbidity and mortality are assessed. Students are

responsible for seminar presentations in areas of interest.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3140R Sociology of Mental Disorders:** Mental disorders as both a social and sociological problem. Social factors in the definition, incidence, etiology, and treatment of mental disorders are examined. Societal views toward and responses to so-called mental illness are reviewed and analyzed from a sociological perspective. Other topics include the social role of the mental patient and the development of mental health policy in Canada. Evaluation is based primarily on essays or a term paper. Format: Seminar 2-3 hours

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3145A/B Gender and Health:** The class focuses upon 3 major areas in the relationship between gender and health: (a) The relationships among gender stereotypes and food, sexuality and body image, dieting and health; (b) Reproduction and childcare including birth control, menstruation, menopause, reproductive technology, childcare and child health; (c) Health care and health care workers - an analysis of caring, both paid and unpaid. Topics include sexual inequality in health care, health policy, family relationships and health care responsibilities.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Cross-listed: Women's Studies 3800A/B
Enrolment: 20 students

***SSA 3150A/B Micro-Sociology:** This class will consist of a micro-sociological examination of the human body as a socio-cultural construction. Topics include: bodily self image, cultural definitions of physical attractiveness, stigmatization, proxemic behaviour, non-verbal communications, body hygiene and pollution taboos, and cultural aspects of human reproduction and sexuality. Special attention will be paid to class, gender and ethnicity and their relationship to body politics.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3160 A/B Dawn of Civilization:** The processes of development of civilization in the New and Old Worlds examined from the viewpoint of current anthropological and archaeological research. The role of environment, ideology, technology, and population as causal and/or limiting factors will be examined, as well as those features which differentiate civilizations from other forms of society. Different explanations for the rise and decline of early civilizations are tested against the archaeological record.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3170A/B Sociology of Sport and Recreation:** A survey class which views the interrelationships among sport, recreation, culture, and society from a sociological perspective. The class provides the student with a broad overview of selected sociocultural factors which help to explain the incidence, form, and regulation of sport and specified recreational elements in contemporary society.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Cross-listed: Physical Education 4490A/B
Enrolment: 20 students

***SSA 3180A/B Issues in the Study of Society:** This seminar consists of an intensive examination of a selected substantive issue within Sociology and Anthropology. Since the specific topic or research problem which receives special treatment will differ from year to year, students are advised to consult the department prior to registration.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3185R Issues in the Study of Native Peoples of North America:** This seminar is concerned with the historical background of the Native-European contact situation in North America and with issues arising from this background. Students will research and present reports on issues which are significant to themselves and important to native groups. Topics covered may vary from year to year, but will normally include a combination of historical issues such as culture change and acculturation among specific groups, and contemporary issues such as land claims, government policy, and social conditions of natives.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R and SSA 2350A/B or SSA 2360A/B or SSA 2355R
Exclusion: SSA 3185A/B
Enrolment: 20 students

***SSA 3190A/B Social Movements:** The general topic of unstructured group activity encompasses phenomena traditionally classified as collective

behaviour incidents, as well as reformist and revolutionary social movements. Although there is considerable overlap, the collective behaviour literature tends to focus on relatively brief and spontaneous activities, such as panics, disasters, and crazes, while work on social movements examines relatively more organized and enduring group activities which still fall outside the realm of normal institutions. This class investigates problems emerging from both areas of concern. Emphasis is given to relevant Canadian materials.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3205R Ethnicity, Nationalism, and Race:** This class begins with a consideration of the concepts of ethnic group and race, and proceeds to a view of ethnic group formation and change. Next, systems of ethnic stratification are surveyed. The class concludes with the study of policies concerning ethnic relations, ethnic nationalist movements, and problems of race and ethnic relations. Both Canadian and comparative data, particularly from developing countries, are included.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3210R Continuity and Change in Rural Societies:** An examination of the ways of life of the majority of humanity. The focus is upon groups making their living from primary production (farming, fishing) or artisan production. The structures developed and stategies employed at the local level as well as in situations of subordination to more powerful insitutions and groups are of particular concern. The perspective taken is comparative with cases from the western world contrasted with other areas.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3220A/B Coastal Communities:** Coastal communities as a social/ecological type are examined as populations, and social structures (territorial, economic, occupational, political) as they have developed in response to particular ecological and social circumstances. Various perspectives which have been applied to coastal communities are examined with regard to the contribution they may make to understanding the dynamics of these communities. Major (though not exclusive) emphasis is on North Atlantic communities.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Cross-listed: Environmental Studies 5180B
Enrolment: 20 students

***SSA 3230R Psychological Anthropology:** The overlap between psychology and anthropology. Topics include: culture and personality, culture and mental health, psychiatry in other cultures, cross-cultural differences in learning, and the evolution of human psychological characteristics. The class will focus on the extensive psychological anthropology literature dealing with the people of Japan.
Format: Seminar 2 - 3 hours
Prerequisites: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Exclusion: SSA 2230R
Enrolment: 20 students

***SSA 3250A/B Sociology of Science and Ideas:** In the attempt to understand the reciprocal interaction between science and society we stress a comparative approach, examining science in different cultural groups and different historical periods. Various modern scientific disciplines are compared in different countries, including developing and developed countries, with differing economic and political organizations. The social organization of science is investigated through the application of micro-sociological analysis (e.g. small groups and organizational sociology theory). In particular, we focus upon tensions and conflicts within the scientific community which are understandable in sociological terms. We examine innovation and change within the scientific community, including the processes by which new fields emerge and new ideas are evaluated.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3275A/B Crime and Public Policy:** This class deals with the dynamics of change in the criminal justice system that reflect three major factors namely social movements (e.g., the victims movement, the women's movement), social forces (e.g. aging, multiculturalism), and internal processes (e.g., professionalism, rationalization). The class focuses on how outside pressures modify, and are channelled by, the criminal justice system.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3280R Youth Crime:** This class deals with criminal offences committed by young persons. Etiologies drawn from various disciplines are examined and evaluated. A secondary focus concerns the criminal justice system as it applies to young offenders.

Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R and SSA 2030R or SSA 2180R
Enrolment: 20 students

***SSA 3285R Sociology of Criminal Law:** This class includes an examination of the philosophy and origins of criminal law, with emphasis on the Canadian experience. Current issues related to revisions to the Canadian Criminal Code and the Young Offenders Act (1982) receive major emphasis.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R and SSA 2030R or SSA 2180R
Enrolment: 20 students

***SSA 3290R Corrections:** This class traces the difficulties of the penal system in Western societies, with particular reference to Canadian corrections. The effectiveness of current methods is assessed in terms of their aims and objectives. Problems of the evaluation of current practice receive major consideration. Examination of conventional and innovative programmes in community-based treatment is included.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R
Enrolment: 20 students

***SSA 3295A/B Society and the Police:** The police play an increasingly powerful role in the maintenance of social order in contemporary Canadian society. This class introduces students to sociological theory and research on: a) the role of police in social develoment and social control; b) the historical and political development of public policing; c) the nature and structure of police work; d) control and accountability and e) selected issues in policing such as, policing the family, minorities and the police, community based policing and police discretion.
Format: Seminar 2-3 hours
Prerequisite: SSA1000R, SSA1050R, SSA 1100R or SSA1200R & SSA2180R
Enrolment: 20 students

SSA 3401A History of Sociological Thought: Selected theorists in the history of sociological thought.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R and SSA 2240A/B or SSA 2250A/B
Enrolment: 20 students

SSA 3405B Contemporary Sociological Theory: A number of recent theoretical developments in sociology are critically examined. The choice of specific theoretical topics is left up to the instructor.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R and SSA 2240A/B or SSA 2250A/B
Enrolment: 20 students

SSA 3415A/B Social Statistics: There are three main components to this class: (1) lectures, in which the logic of statistical inference is presented; (2) laboratories, in which computer programmes such as SPSS are utilized; and (3) analysis of sociological data. Students are required to interpret the results of the analysis in two drafts of the same paper. An appreciation of the interplay among methods, theory and statistics is emphasized. A grasp of Grade 9 algebra is assumed.
Format: Seminar 2-3 hours
Prerequisite: SSA 1000R, SSA 1050R, SSA 1100R or SSA 1200R and SSA 2010A and SSA 2011B
Enrolment: 20 students

SSA 4000R Seminar in Social Anthropology: This seminar is designed to allow small groups of students to pursue a particular area in social anthropology for which no regular class is offered. The topic and requirements for the class are jointly decided by the students and the professor involved.
Format: Seminar 2-3 hours
Prerequisite: Honours registration in Social Anthropology or permission of the instructor.
Enrolment: as required

SSA 4500R Honours Seminar in Sociology: Consult the Department's Undergraduate Advisor for details of this class.
Format: Seminar 2-3 hours
Prerequisite: Honours registration in Sociology or permission of the instructor.
Enrolment: as required

SSA 4510A/B Readings in Sociology/Social Anthropology: In a reading class the student is assigned to a member of staff for regular meetings to discuss readings in a selected area. Papers and research projects are expected.
Format: individual instruction
Prerequisite: Honours registration in Sociology or Social Anthropology or permission of the instructor.
Enrolment: as required

SSA 4520A/B Readings in Sociology/Social Anthropology: See class description above.
Format: Seminar 2-3 hours
Prerequisite: Honours registration in Sociology or Social Anthropology or permission of the instructor.
Enrolment: as required

SSA 4590R Honours Seminar in Anthropology: This class carries two credits. The student writes an honours thesis under the supervision of his/her principal adviser.

Format:	Seminar 2-3 hours or individual supervision
Prerequisite:	Honours registration in Social Anthropology or permission of the instructor.
Enrolment:	as required

Spanish

Location:	1376 LeMarchant Street Halifax, N.S.
Telephone:	(902) 494-2544

Chair
J.E. Holloway (494-2544)

Undergraduate Advisor
J.E. Holloway (494-2544/7017)

Professors
J.M. Kirk, BA (Sheff.), MA (Queen's), PHD (UBC)
A. Ruiz Salvador, BA (Brandeis), AM, PHD (Harv.)

Associate Professors
J.E. Holloway, BA (No. Colo.), MA (Wyoming), PHD (Duke)

Lecturer
M. Jimenes (Sorbonne)

Introduction

After Chinese and English, Spanish is the most widely spoken language in the world. It is the native tongue of well over 300 million people living in 22 countries.

Spanish-speaking nations are making international headlines and students of political science, economics, commerce, sociology, anthropology, literature, history, and other academic disciplines feel increasingly interested in this area of the world. Students from these departments are welcome to take our classes on Spanish and Latin American culture, civilization, history, and politics. These classes are conducted in English, the reading is in translation, and there are no prerequisites.

Knowledge of the Spanish language will be useful to all Canadians seeking careers as members of the foreign service, business, interpreters, translators, teachers, professors, critics, editors, journalists, and many others. Our beginning language class especially emphasizes conversational Spanish.

It is a widely recognized fact that some of the best novels and poetry are coming out of Latin America today, providing stimulating and challenging material for many of our literature classes.

If your tastes and abilities lie in the direction of Spanish or Latin American studies, you should consider the possibility of taking Spanish as an area of concentration in a General Bachelor's degree programme, a Bachelor's degree with Honours in Spanish, or with Honours in Spanish and another subject combined. An undergraduate concentration in Spanish, followed by training in Management Studies, for example, could lead to a variety of possible careers in the Spanish-speaking world in international business and public service.

The Salamanca Programme at the Colegio de España

The Salamanca Programme is a special inter-disciplinary course of instruction designed to allow Dalhousie students to undertake both an intensive study of the Spanish language and classes in Hispanic culture. In order to participate, students must normally have completed Spanish 2010B with at least a standing of 'B'. The programme takes place during the fall, lasts for one term, and is offered at the Colegio de España in Salamanca, Spain. Dalhousie University will grant 2½ credits to those students who successfully complete their classes in Spain. Enquiries and applications should be addressed to the Coordinator of the Programme.

Spanish Studies to be taken at the Colegio de España

SPAN 3100S Advanced Grammar (1 credit)
SPAN 3120A Spanish Art (½ credit)
SPAN 3140A Spanish Literature (½ credit)
SPAN 3160A Spanish History (½ credit)

Spanish Degree Programmes

Bachelor of Arts with Honours in Spanish

Classes should include:

Year I:	SPAN 1020R, and four electives.
Year II:	SPAN 2000A, SPAN 2010B, SPAN 2500A/B, SPAN 2510A/B, plus two other 2000-level half classes; a class in the minor subject; and one elective.
Year III:	SPAN 3020A/B, SPAN 3030A/B, plus two other 3000-level half classes; a class in the minor subject, and an elective in a subject other than that of the previous year.
Year IV:	Six Spanish half classes to be chosen from the upper-level programme; and two electives (may be Spanish).

In addition, students are required to write an Honours essay, in Spanish, supervised by a member of the Department.

Bachelor of Arts with Combined Honours in Spanish and Another Subject

Programmes may be arranged by consultation (as early as possible) with the departments concerned.

Notes

- The "other" classes chosen as electives in the programmes outlined above must satisfy general degree requirements.
- Combinations of classes other than those set forth above may be chosen after consultation with the Department Chair.
- A student may, with the permission of the Department, be admitted to a Spanish class at an advanced point because of prior knowledge of the language. Such a student, however (except as he/she may be granted transfer credits in the usual way), must normally take the same total number of classes as other students in the same programme.

Advanced Major

The BA Advanced Major 20 Credit Programme is also available in Spanish. It is comprised of 6-9 credits in Spanish beyond the first year, of which at least 3 must be beyond the 2000 level. Recommended classes are those also listed in the Spanish Honours Programme description, and students wishing to change to an Honours Programme may do so, provided the quality of their work justifies it.

Bachelor's Degree

Programme should consist of at least four full-credit upper level classes taken in the second and third year, four of which must be conducted in Spanish. Any student who wishes to deviate from these basic requirements should consult the Department Chair.

Classes Offered

Classes marked * are not offered every year. Please consult the current timetable on registration to determine if this class is offered.

SPAN 1010B Advanced Beginning Spanish: For students with some slight prior knowledge of Spanish. Students join, at mid-year, classes of SPAN 1020R already in progress.

Instructor:	Staff
Format:	Discussion and conversation 3 hours, lab as needed.
Prerequisite:	Knowledge of Spanish to the equivalent of first half of SPAN 1020R.
Enrolment:	No limit

SPAN 1020R Beginning Spanish: For students wishing to achieve proficiency in both spoken and written Spanish.

Instructor:	Staff
Format:	Discussion and conversation 3 hours, language lab and computer-assisted language learning techniques as needed.
Prerequisite:	For students with no knowledge or only a slight knowledge of Spanish.
Enrolment:	Limited to 25

***SPAN 1100A/B Spanish Civilization:** Although it may sound self-evident to Canadian students, this class deals with Spain and the Spaniards. What Spain is and who the Spaniards are, however, may not be that clear-cut for Spaniards themselves. This class is a search for Spain throughout her history (Roman, Arab, Jewish, and Christian Spain), her art, literature, four main languages, and customs. The goal is a clearer picture of one of the most perplexing components of Western Civilization.

Instructor:	A. Ruiz Salvador
Format:	Lecture and discussion 2 hours, conducted in English.
Prerequisite:	No prerequisites. Open to students in all departments. No knowledge of Spanish necessary.
Enrolment:	Limited to 60

***SPAN 1110A/B Latin American Civilization:** The aim of this class is to provide the non-specialist with a basic understanding of this complex -- and fascinating -- world area. The first half of the class examines the development of Latin America from pre-Columbian times to the Mexican Revolution. In the second half, by means of a careful study of selected texts, the class examines the way in which the reality of Latin America has shaped a continental cultural identity, producing one of the most dynamic, "readable" world literatures.

Instructor:	J. Kirk
Format:	Lecture and discussion 2 hours, conducted in English.
Prerequisite:	No prerequisites. Open to students in all departments. No knowledge of Spanish necessary.
Enrolment:	Limited to 60

SPAN 2000A Intermediate Spanish: This class continues the work done in SPAN 1010B or SPAN 1020R. Supplementary reading as necessary.

Instructor:	Staff
Format:	Discussion and conversation 3 hours, language lab as needed.
Prerequisite:	Spanish 1020R, or equivalent.
Enrolment:	Limited to 20

SPAN 2010B Reading and Conversation: Emphasis is on perfecting conversational skills as the reading material is discussed in class.

Instructor: Staff
Format: Discussion and conversation 3 hours
Prerequisite: Spanish 2000A, or equivalent
Enrolment: Limited to 20

***SPAN 2069A/B Central America to 1979:** Events in Central America are frequently covered in our media, causing people to believe that "the unrest" there is recent. This class seeks to examine the historical roots of the conflict from the colonial period until the 1970s. The aim of the class is to provide students with a background knowledge of this area, so that they can better understand current developments there.

Instructor: J. Kirk
Format: Lecture and discussion 2 hours, conducted in English.
Prerequisite: No prerequisite. Open to students in all departments. No knowlege of Spanish necessary.
Enrolment: Limited to 60

***SPAN 2070A/B Area Studies on Mexico and Central America:** Following an examination of the Indian heritage, and the colonial legacy of the conquistadors, the class deals principally with the contemporary period, examining the Mexican Revolution and its aftermath, Petroleum Power, the Somoza dynasty, Nicaragua under the Sandinistas, the U.S. role in the region, the human rights situation in Central America, the current El Salvador crisis, and probable developments in the region. The class is designed to provide an understanding of the contemporary reality of this volatile region, in many ways a microcosm of the crucial situation of Latin America as a whole.

Instructor: J. Kirk
Format: Lecture and discussion, 2 hours, conducted in English.
Prerequisite: No prerequisites. Open to students in all departments. No knowledge of Spanish necessary.
Enrolment: Limited to 60

***SPAN 2080A/B The History of Modern Spain:** This class focusses on four main historical periods: the Republic of 1931, the Civil War (1936-1939), General Franco's Spain (1939-1975), and the post-Franco Restoration of the Monarchy.

Instructor: A. Ruiz Salvador
Format: Lecture and discussion 2 hours, conducted in English.
Prerequisite: No prerequisites. Open to students in all departments. No knowledge of Spanish necessary.
Enrolment: Limited to 60

***SPAN 2100A/B La Civilización de España:** Recommended to students planning to join the Salamanca Programme at the Colegio de España. This class is an exploration of Spain, one of Europe's most perplexing nations, with references to its history, art, literature, languages, and customs.

Instructor: A. Ruiz Salvador
Format: Lecture and discussion 2 hours, conducted in Spanish.
Prerequisite: SPAN 1020R and SPAN 2000A or equivalent facility in the Spanish language.
Enrolment: Limited to 25

***SPAN 2109A/B Cuba from Colonial Times to 1961:** While many people are aware of the impact of the Cuban Revolution of 1959, few are aware of the kind of society that existed in Cuba beforehand. This class seeks to examine the historical roots of the country from the colonial period until the 1960's, with particular attention being paid to socio-cultural aspects. The objective is to provide students with a background knowledge of this country and its current reality.

Instructor: J. Kirk
Format: Lecture and discussion 2 hours, conducted in English.
Prerequisite: No prerequisites. Open to students in all departments. No knowledge of Spanish necessary.
Enrolment: Limited to 60

***SPAN 2110A/B The Cuban Cultural Revolution:** Cuba, the only Communist society in the Western Hemisphere, has undergone a dramatic political and economic transformation. The Revolution has also brought about changes in education, the arts, the role of women, race relations, and athletics. The class focuses on the problems and achievements of the Revolution, the peculiarities of Communism in a Caribbean society, and its effect on literature and the arts.

Instructor: J. Kirk
Format: Lecture and discussion 2 hours, conducted in English
Prerequisites: No prerequisites. Open to students in all departments.
Enrolment: Limited to 60

***SPAN 2130A/B Latin American Dictators in the Novel:** The history of Latin America since Independence has been characterized by the rise to power of countless dictators. Some of the best Latin American novels portray these almost mythical figures who to this day wield absolute power in many countries. The class examines the literature and history of this phenomenon with particular attention to the twentieth century, and attempts to discover its roots in militarism, underdevelopment, and imperialism. Instructor:J. Kirk

Format: Lecture and discussion 2 hours, conducted in English.

Prerequisites: No prerequisites. Open to students in all departments. No knowledge of Spanish necessary.
Enrolment: Limited to 60

***SPAN 2210A/B The Novel of the Mexican Revolution:** The Mexican Revolution (1910-1917) is the first people's revolution of the twentieth century. The prerevolutionary situation, the war, and its aftermath, resulted in some of the finest Latin American novels. This class views these works against the historical and social background of contemporary Mexico.
Instructor: J. Kirk
Format: Lecture and discussion 2 hours, conducted in English.
Prerequisites: No prerequisites. Open to students in all departments. No knowledge of Spanish necessary.
Enrolment: Limited to 60

***SPAN 2220A/B Masterpieces of Spanish Theatre:** This class discusses and analyzes plays from Spain's Golden Age (16th and 17th centuries) as well as works written in the contemporary period. Lectures provide an historical and cultural context for the plays which clarifies their significance.
Instructor: Staff
Format: Lecture and discussion 2 hours, conducted in English.
Prerequisites: No prerequisites. No knowledge of Spanish necessary.
Enrolment: Limited to 25

***SPAN 2230A/B Contemporary Latin American Prose:** This class samples short stories and novels of contemporary prosists from throughout Latin America. Included are works by such outstanding experimental writers as Julio Cortázar, Juan Rulfo, Carlos Fuentes, Alejo Carpentier, García Márquez and José Donoso-- authors whose vigorous narrative, technical innovation and synthesis of surrealism, myth, and magical realism evidence not only a "new consciousness" in Latin America, but perhaps a rejuvenation in prose art of global consequence.
Instructor: J. Holloway
Format: Lecture and discussion 2 hours, conducted in English
Prerequisite: No prerequisites. Open to students in all departments. No knowledge of Spanish necessary.
Enrolment: Limited to 25

***SPAN 2240A/B Contemporary Latin American Prose, Part II:** This class is a continuation of Spanish 2230A/B, but may be taken independently of it.
Instructor: J. Holloway
Format: Lecture and discussion 2 hours, conducted in English.
Prerequisite: No prerequisites
Enrolment: Limited to 25

***SPAN 2500A/B Introduction to Spanish Literature:** Study of illustrative works.
Instructor: A. Ruiz Salvador
Format: Lecture and discussion 2 hours, conducted in Spanish
Prerequisite: SPAN 2000A, or equivalent
Enrolment: Limited to 25

***SPAN 2510A/B Introduction to Latin American Literature:** Introduction to major authors and trends in recent Latin American literature. Study of illustrative works.
Instructor: J. Holloway
Format: Lecture and discussion 2 hours, conducted in Spanish.
Prerequisite: SPAN 2000A, or equivalent
Enrolment: Limited to 25

***SPAN 3010A/B Workshop in Advanced Oral Spanish:** This class intends to build vocabulary, increase fluency and enhance the style of spoken Spanish through continued development and intensive use of oral Spanish skills.
Instructor: Staff
Format: Lecture and discussion 3 hours, conducted in Spanish
Prerequisite: SPAN 2010B, or equivalent
Enrolment: Limited to 20

SPAN 3020A/B Translation: Exercises in translation from Spanish to English and from English to Spanish.
Instructor: Staff
Format: Lecture and discussion 3 hours
Prerequisite: SPAN 2000A, or equivalent
Enrolment: Limited to 20

SPAN 3030A/B Composition: Training towards accuracy in writing Spanish. Vocabulary-building, free composition.
Instructor: Staff
Format: Lecture and discussion 3 hours
Prerequisite: SPAN 2000A, or equivalent
Enrolment: Limited to 20

***SPAN 3070A/B Contemporary Latin American History:** This class examines the underlying structures of Latin America through a consideration of the major political and social trends in the continent. After a brief historical overview it studies both general currents (e.g., the Church's role, militarism's growth, and U.S. influence) and specific developments, such as the Mexican and Cuban Revolutions, Chile under Allende and Pinochet, and the Sandinistas' Nicaragua. This helps the student understand the present-day reality of this important world area.
Instructor: J. Kirk
Format: Lecture and discussion 2 hours, conducted in English

Prerequisite: No prerequisites. Open to students in all departments. No knowledge of Spanish necessary.
Enrolment: Limited to 60

***SPAN 3200A/B Cervantes:** This class examines Cervantes' philosophy of life through an analysis of his great masterpiece, Don Quixote. In this precursor of the modern novel, Cervantes studies human nature in all its many aspects. Life is presented as a complex and ironic interplay of idealism and disillusionment, appearance and reality, chivalrous love and worldly love. All truth is relative, but the ultimate irony is felt by the reader himself who discovers, in the end, that Don Quixote's view of the world is superior to that of all the "sensible" people who judged him to be mad.
Instructor: Staff
Format: Lecture and discussion 2 hours, conducted in English.
Prerequisite: No prerequisites. Open to students in all departments. No knowledge of Spanish necessary.
Enrolment: Limited to 25

***SPAN 3215A/B Seminar in Spanish American Literature:** This class studies in depth, selected topics in Spanish American prose and poetry, in their cultural and aesthetic contexts. Areas of special focus include modernismo, creacionismo and the prose of Quiroga and the Regionalist authors, as well as the more recent inheritors of these traditions; Neruda, Vallejo, Paz and novelists of the "Boom" generation.
Instructor: J. Holloway
Format: Lecture and discussion 2 hours, conducted in Spanish
Prerequisite: SPAN 2010B, or equivalent
Enrolment: Limited to 25

***SPAN 3225A/B Seminar in Modern Spanish Literature:** This class studies in depth, selected topics in Modern Spanish prose and poetry, in their cultural and aesthetic contexts. The focus of the class falls especially on such figures as Galdos, Leopoldo Alas, and writers of the Generation of '98 such as Baroja, Unamuno, Ortega, Machado and Jiménez.
Instructor: A. Ruiz Salvador
Format: Lecture and discussion 2 hours, conducted in Spanish
Prerequisite: SPAN 2010B, or equivalent
Enrolment: Limited to 25

***SPAN 3230A/B Literature of the Spanish Civil War:** A study of representative works.
Instructor: A. Ruiz Salvador
Format: Lecture and discussion 2 hours, conducted in Spanish
Prerequisite: SPAN 2010B, or equivalent
Enrolment: Limited to 25

***SPAN 3500A/B Contemporary Spanish Literature:** A study of representative works.
Instructor: A. Ruiz Salvador
Format: Lecture and discussion 2 hours, conducted in Spanish
Prerequisite: SPAN 2010B, or equivalent
Enrolment: Limited to 25

***SPAN 3510A/B Contemporary Spanish American Literature:** A study of representative works.
Instructor: J. Holloway
Format: Lecture and discussion 2 hours, conducted in Spanish
Prerequisite: SPAN 2010B, or equivalent
Enrolment: Limited to 25

***SPAN 3970A/B Directed Reading in Spanish American Literature**

***SPAN 3975C Directed Hispanic Studies**

***SPAN 3980A Reading class for majors**

***SPAN 3990B Reading class for majors**

***SPAN 4040A/B Advanced Style and Syntax:**
Instructor: Staff
Format: Lecture and discussion 2 hour
Prerequisite: SPAN 3020, or equivalent
Enrolment: Limited to 25

***SPAN 4500A/B Golden Age**

***SPAN 4510A/B Golden Age Poetry and Prose:**
Instructor: Staff
Format: Lecture and discussion 2 hours
Prerequisite: SPAN 3020, or equivalent
Enrolment: Limited to 25

SPAN 4980A Reading class for Honours students

***SPAN 4985C Independent Advanced Hispanic Studies**

SPAN 4990B Reading class for Honours students

Theatre

Location: Dalhousie Arts Centre, 5th Floor
Halifax, N.S.
Telephone: (902) 494-2233

Chair
D. Overton (494-2241)

Undergraduate Advisor
R.G. Merritt (494-2233)

Professors

A.R. Andrews, BA, Dipl. Ed., MA (Leeds), PhD (Ill.) FRSA
P.Perina, MA Dipl. Scenography (Prague)

Associate Professors

P. Christopher, Dipl. (NTSC)
R. Doyle
R.G. Merritt, AB (Corn.), MA (N.Car.), PhD (Tul.)
P.B.O'Neill, BA (Waterloo), MA (USD), PhD (LSU)
D. Overton, BA, MA (UBC), PhD (Calif.)

Lecturer

K. Collins, AB (Dallas), MFA (Calif.)

Senior Instructor

L. Sorge, BA (King's/Dal)

Production Manager

D. Griffin

Special Instructors

C. Bader (Acting)
K. Edgett (Acting)
B. MacLennan (Light and Sound)
M. McMurray Pigot (Acting)
D. Porter (Properties)
R. Theriault (Costumes)
L. Thomson (Construction)

Introduction

The Dalhousie Theatre Department offers different ways to study the theatre: (1) You can undertake programmes that lead to a university degree: an Honours BA (4 years), a General BA (3 years); (2) You can enroll in a training programme in costume studies that leads to: a Certificate (2 years), a Diploma (3 years); (3) You can select certain theatre classes to reinforce and complement your studies in other disciplines offered by the university; (4) You can enroll in one class, from a special group, as a part-time or extension student.

Basically, the degree programmes involve a curriculum of theatre classes, and a selection of other classes in different disciplines. The university has a set of regulations which specify how these programmes must be arranged. These regulations are all listed earlier in this calendar, and prospective students should refer to them to become aware of the opportunities offered. There are a surprising number of different ways to arrange one's studies; what we recommend is the basic structure you should follow if theatre is your primary interest.

Degree Programmes

Note: Honours programmes may not be available. Interested students should contact the Undergraduate Advisor.

BA with Honours in Theatre (4 years)

Students who wish to follow a programme of theatre studies that keeps the whole of the theatre in perspective choose this programme. They must maintain a high scholastic level of performance to remain in this programme (B⁻ or better in all classes.) Only theatre classes are listed.

Year 1:	THTR 1000R, THTR 1050R.
Year 2:	THTR 2000R, THTR 2011A/B, THTR 2012A/B, and THTR 2900R or THTR 2700R.
Year 3:	THTR 3500R and choice of two of THTR 3200R, THTR 3600R, THTR 2300R or THTR 3510A/B.
Year 4:	THTR 4900, THTR 4700R, THTR 4710R.

BA with Combined Honours (4 years)

It is possible to follow a programme of studies that leads to Combined Honours in two subjects. Students interested in constructing such a programme should start by seeing both Chairpersons of the disciplines they wish to combine. From that point a suitable programme can be constructed.

BA in Theatre (Acting) (3 years)

The BA programme in acting is a degree program only, and students in it must satisfy the ongoing degree requirements of the University. If accepted as a result of audition you must pursue the following programme:

Year 1:	THTR 1500R, THTR 1050R, plus three classes in other subjects.
Year 2:	THTR 2011A/B, THTR 2012A/B, THTR 2800R/ THTR 2810R/ THTR 2820R, plus one class in another subject.
Year 3:	THTR 3800R/ THTR 3810R/ THTR 3820R and either THTR 3500R or THTR 2900R, plus one class in another subject.

BA in Theatre (Scenography & Technical Scenography (3 years; 4 years with Honours)

People from very different backgrounds are attracted to the study of scenography. Students with considerable art school or architecture background are offered especially tailored programmes, and should contact the scenography professor to work out a suitable programme of studies in scenography. Students starting with a keen interest and little formal background in art or architecture are admitted if they meet the university entrance requirement, and should then plan to follow the following programme:

Year 1: THTR 1000R, THTR 1050R; plus three classes in other subjects.

Year 2: THTR 2700R, THTR 2011A/B, THTR 2012A/B, THTR 2060R/ THTR 2070R; plus one class in another subject.

Year 3: THTR 3060R/ THTR 3070R; plus two of THTR 2000R, THTR 2900R, THTR 2300R, THTR 3500R, THTR 3710R, plus one class in another subject.

Year 4: THTR 4900R; plus two of THTR 3600R, THTR 3200R, THTR 4700R, THTR 4710R; plus two classes in other subjects.

Students wishing to pursue the scenography specialty are urged to make an appointment with the scenography professor before they register to ensure they plan their specific programme in line with their particular needs.

BA with a Major in Theatre

You can major in theatre in a three-year BA programme (15 classes). This requires at least four and not more than eight theatre classes beyond the 1000-level. You may also take an advanced major after consultation with the Undergraduate Advisor.

Year 1: THTR 1000R, THTR 1050R; plus three other classes of your choice.

Year 2: THTR 2011A/B, THTR 2012A/B plus up to three of THTR 2000R, THTR 2700R, THTR 2900R; plus elective(s).

Year 3: Up to four of THTR 3200R, THTR 3500R, THTR 3510A/B, THTR 2300R, THTR 3600R, plus elective(s).

Year 4: Optional - consult the department.

Combined BA/BEd

The Theatre Department in conjunction with the School of Education may offer a 4-year programme leading to the BA and BEd degrees. The outline of this programme is approximately as follows:

Year 1: (5 Credits) THTR 1000R, THTR 1050R, an approved writing class (1 full credit), introductory class in minor area* (1 full credit), and Arts and Social Sciences elective (1 full credit).

Year 2: (5 Credits) THTR 2000R, THTR 2900R, further classes in minor area* (2 full credits), ½ credit class in educational foundations, ½ credit Arts and Science or other elective.

Year 3: (6 Credits) THTR 3200R, THTR 2011A/B, THTR 2012A/B, further classes in minor area* (2 full credits at 2000* level), two ½ credit classes in educational foundations, and one credit Arts and Science or other elective.

Year 4: (6 Credits) Education 4620R, one credit class in Field Experience, one credit in methods area (elementary option: 2 credits), one credit in special education, ½ credit class in educational foundations, further class in minor area* (1 full credit), and ½ credit Arts and Science or other elective.

* The minor area must also be a recognized teachable subject.

For further information, consult the Undergraduate Advisor.

Costume Studies, Certificate in 2 years, Diploma in 3 years

This professional programme is designed for the student whose goal is the professional theatre or the fashion industry. Students must meet university entrance requirements. Students in this programme do not have to take classes outside of theatre.

Students are required to work on departmental productions as a means of gaining proficiency in garment assembly. In order to maintain a harmonious student/teacher relationship only twenty-five students will be enrolled in the first year, fifteen students in the second year and five in the third year. The third year prepares the student for professional work, either in the fashion industry or in the theatre.

Facilities

The department is located in the theatre wing of the Dalhousie Arts Centre. The theatre wing is a self-sufficient unit involving one proscenium theatre, two studios, and supporting workshops.

The department is developing close collaboration in certain theatre work with the Neptune Theatre and other regional theatres.

Some theatre classes by the nature of the work involved have a restricted enrollment. All students wishing to take any class in theatre should therefore first consult with the department.

Please note: Theatre by its nature requires evening work. Students, especially in acting, scenography, and costume classes, are advised not to undertake other evening commitments.

Classes Offered

Note: Classes marked * are not offered every year. Please consult the current timetable on registration to determine if these classes are offered.

Classes in the Degree Programme

Year 1

THTR 1000R The Nature of the Theatre: This class provides an introduction to the nature of the production process and theatre through lectures, discussion, demonstration, script analysis, and practical scene work.
Instructor: R.G. Merritt/D.R. Overton
Format: Lecture/lab 3 hours
Enrolment: 30 per section

***THTR 1010R Introductory Theatre:** (Summer Session only). This class provides an introduction to the nature of the theatre as a composite performing art, involving work with written scripts, improvisation, criticism, and discussion leading to a basic understanding of the functions of theatre. It is designed to serve as an elective for the student who wishes to take a single class in theatre. It may serve as a prerequisite to advanced theatre classes in lieu of THTR 1000R.
Instructor: D.R. Overton
Format: lecture/lab 10 hours
Enrolment: Limited to 20

THTR 1050R Theatre Organization and Stagecraft: An introduction to theatre production, providing initial contact with scenography. Basic theatre construction, common materials used for construction, stage properties and costumes, knowledge of basic theatre lighting and sound equipment, and the methods and procedures for working with all of them efficiently, creatively and safely make up the substance of this class. Students who intend to major in the theatre programmes must take this class. It is also a prerequisite for the scenography classes. Because of the required evening production work, those enrolling in this class must avoid permanent evening commitments other than departmental theatre activity during the academic year. There are certain lab charges connected with this class.
Instructor: P.Perina and staff
Format: lecture 2 hours, lab 4 hours
Enrolment: Limited to 50

***THTR 1200R The Nature of Acting:** (Summer Session only). This class is designed to be a basic exploration of the fundamental techniques required by the performer. It is not intended as a substitute for THTR 1500R nor is it a prerequisite for admission to the acting programme. Through the use of theatre games (C. Barker), introductory improvisational exercises (V. Spolin), and physical awareness work (R. Benedatti), the student develops the imaginative and emotional awareness that serves as the foundation of the performers' technique.
Instructor: P.Christopher
Format: 6 hours lecture
Enrolment: Limited to 20

THTR 1500R An Introduction to Theatre Studies (Acting 1): Acceptance into the Acting Programme is highly selective and is based on an evaluation of the applicant's ability and potential through the audition process. (Contact the Department of Theatre for details.)
DISCOVERY YEAR: The first year of the programme is structured to assist the acting student in the discovery of what talents--physical, vocal and imaginative--nature has provided them with. The student is guided in the discovery of what must be done to develop these talents in order to acquire technique and performance skills. Concentration is placed on the emotional and imaginative range through the use of theatre games, improvisational techniques and sensory awareness exercises. This work is integrated with the fundamentals of voice and speech and one term each of ballet and jazz training. A strong emphasis is placed on the discipline that is required for a career in the professional theatre.
Instructor(s): Christopher/Collins and Acting Staff
Format: 6 hours
Prerequisite: Audition (Consult department for details.)
Enrolment: Limited to 20

Year 2

THTR 2000R Theatre Performance: Designed to provide exposure to the production/performance process. Through a workshop/discussion approach, basic performance problems are considered and the student is given the chance to experiment with various solutions in a performance situation. The ability to articulate solutions both verbally and nonverbally is developed. The class may result in a public performance.
Instructor: D.R. Overton
Format: lecture/lab 6 hours
Prerequisite: THTR 1000R
Enrolment: Limited to 20

THTR 2011A/B The History of the Theatre from its Origins to the Renaissance: This class gives students an opportunity to study various aspects of the early history of theatre. Specific topics covered include the origins of theatre, the Greek theatre, the Roman theatre, the medieval theatre and the theatres of the Italian Renaissance and of Shakespeare. Although there is no formal prerequisite for the class, students should normally be in their second year of study. A background in theatre, history, and/or dramatic literature will be an advantage.
Instructor: P.B. O'Neill
Format: Lecture 3 hours
Enrolment: Limited to 40

THTR 2012A/B The History of the Theatre from Renaissance to the Twentieth Century: This class is in a sense the sequel to Theatre 2011A/B, though that class is not a prerequisite. It aims to study the development of the theatre in Europe and North America from the Renaissance to the twentieth century. There is no prerequisite, but students should normally be in at least the second year of study. A background in history, theatre and/or dramatic literature will be an advantage.
Instructor: P.B. O'Neill
Format: Lecture 3 hours
Enrolment: Limited to 40

***THTR 2020R Jazz Dance I:** (Summer Session only). The Theories and techniques of Jazz Dance: the use of space, rhythm, dynamics, and aesthetic awareness. Emphasis is on the development of personal expression through the medium of dance. Concentration is also placed on awareness of dance terminology and vocabulary.
Instructor: K.Edgett
Format: 4 hours lab/demonstration
Enrolment: Limited to 20

THTR 2060R/2070R Technical Scenography I: This class is concerned with the progressively more complex problems of the preparation of theatre production in lighting, sound, construction, photography, and properties. The theory behind the operation of these crafts, the advances in technology and their expense and adaptability, form part of this class. Lecture periods are concerned with Stage Management, Technical Drawing, Theatre Organization and Administration as well as other related topics. Workshop preparation in light and sound, darkroom, properties, and construction is integrated with crew responsibilities in department productions. There are certain lab charges connected with this class.
Instructor: P. Perina and staff
Format: lecture/lab 6 hours
Prerequisite: THTR 1000R, THTR 1050R
Enrolment: Limited to 10

***THTR 2300R Film as Theatre (Normally Summer Session):** The class provides an overview of the development of film as both an art form and a portion of the "entertainment industry". In both its conception and initial practices, film began an an offshoot of popular 19th Century theatre, borrowing both its vocabulary and its aesthetics from the older art form. Since then, film has had a major influence on the modern theatre, and the function of the class is to explore the parallels by considering the content and style of significant films from the silent era to the present. This class replaces THTR 1300R.
Instructor: R.G. Merritt
Format: lecture/lab 8 hours
Prerequisite: THTR 1000 or permission of instructor
Enrolment: Limited to 20

THTR 2700R Scenography I: Designed to give students basic visual judgement and understanding. In the first half, it follows the Bauhaus approach to graphic design but adapts it to the needs of three-dimensional theatre space. In the second half the class teaches perspective; the final project is to integrate all the previous material and apply it to simple stage composition. Throughout the year analysis and criticism of various works are encouraged. The texts followed are Gyorgy Kepes' Language of Vision and Johannes Iben's The Elements of Colour. Students wishing to take this class should consult with the instructor.
Instructor: P. Perina
Format: lecture/lab 6 hours
Prerequisite: Permission of instructor
Enrolment: Limited to 15

THTR 2800R/ THTR 2810R/ THTR 2820R Acting II: TRANSFORMATION YEAR. The second year of the programme is structured to build on the knowledge acquired in the previous year. The student begins to learn how to use the possibilities as they gain further knowledge of physical, vocal and imaginative expression and how not to be always themselves. 2800: The focus of the acting class is divided between scene study (the actor as interpreter) and mask characterization (the actor as creator). 2810: Voice and Text/Singing: Emphasis is placed on the development of range, flexability and speech that is free of regionalisms. Musical ability is explored through weekly classes in singing technique. 2820: Jazz and Ballet: Continued work to enhance posture, grace and a knowledge of movement.
The student may be invited to perform in the D.T.P. season, depending upon the needs of the plays chosen and the student's suitability for the performance situation.
Instructor: Christopher/Collins and Acting Staff
Format: lecture/lab 15 hours
Prerequisite: THTR 1500 with a minimum grade of C, THTR 1050 and completion of the first-year degree requirements. Permission to continue into the second year of the programme is dependent upon an evaluation of the student's progress.
Enrolment: Limited to 15

THTR 2900R Dramaturgy: How to Read a Play: This is a beginning class in dramaturgy, involving the following: learning to read a play as a theatre performance piece rather than solely as dramatic literature; understanding the theatrical and social conventions implicit in the text of any script; finding a basis for connecting scripts from other

societies to a contemporary audience. The plays studied will be taken from a wide range of historical periods, cultures, and styles. The focus is on the play script as a performance vehicle, written not for readers, but for actors, designers, directors, etc. This class replaces THTR 2100A/B and THTR 3100A/B.

Instructor: R.G. Merritt
Format: lecture 3 hours
Prerequisite: THTR 1000R or permission of instructor.
Enrolment: Limited to 25

Year 3

***THTR 3020R Jazz Dance I (Summer Session only):** Intermediate studies in the principles and techniques of Jazz Dance. Students must have a solid foundation in dance technique (Modern, Ballet or Jazz).

Instructor: K.Edgett
Format: Lecture/demonstration 4 hours
Prerequisite: Admission is subject to approval of instructor. (Audition/Interview)
Enrolment: Limited to 20

THTR 3060R/ THTR 3070R Technical Scenography II: An advanced class in production technology. Students work intensively in one of the areas of: construction, properties, lights and sound, or stage management. Lecture periods are devoted to Administration, Publicity, Advanced Techniques, and other related topics. Lectures are common to all students. Each student serves as crew head for at least two departmental productions. There are certain lab charges connected with this class.

Instructor: P.Perina et al
Format: lecture/lab 6 hours
Prerequisites: THTR 2011A/B, THTR 2012A/B, THTR 2060R/THTR 2070R/THTR 2700
Enrolment: Limited to 10

***THTR 3200R The Director in the Theatre:** This class explores in theoretical and practical terms the various functions of the director in creating a theatrical event. Topics include the historical role of the director, conceptualizing scripts, working with dramaturges, relationships with actors, and the script development process. Laboratory exploration of practical problems related to the above topics will form an integral part of the class. This class replaces THTR 4600R.

Instructor: D.R. Overton
Format: lecture/lab 4 hours
Prerequisites: THTR 2000R, THTR 2900R, or permission of instructor.
Enrolment: Limited to 15

THTR 3500R The Modern Theatre: The modern theatre has been characterized by successive bursts of creative energy and experiment. This class gives an opportunity to study these developments in detail and to examine several important theatrical theories and their application.

Instructor: A.R. Andrews
Format: seminar 2 hours
Prerequisite: THTR 2011A/B, THTR 2012A/B, or permission of instructor.
Enrolment: Limited to 20

THTR 3510A/B Topics in the Modern Theatre: This is a class in supervised research on specific topics in the modern theatre. It may only be taken by students registered concurrently in THTR 3500R.

Instructor: A.R. Andrews
Format: seminar 3 hours
Prerequisite: Permission of instructor
Enrolment: Limited to 10

THTR 3600R The Playwright in the Theatre: The play as a vehicle for performance rather than as a literary work. Through weekly writing exercises dealing with specific dramaturgical problems, the craft of playwriting is explored. Simultaneously, a basis for understanding the nature of dramatic forms is provided through detailed analysis of the structure and techniques of plays representing a broad spectrum of styles, genres, and historical periods. With this background, the class then writes plays (both individually and collaboratively) which are then revised, critiqued, given a public presentation, and rewritten.

Instructor: R.G. Merritt
Format: lecture/lab 4 hours
Prerequisite: THTR 2900R or permission of the instructor
Enrolment: Limited to 10

***THTR 3710R Scenography:** For theatre honours and special scenography students only. It builds on the knowledge from the previous class in the field, THTR 2700R, as far as visual knowledge is concerned, and from technical knowledge acquired in THTR 2060R/ THTR 2070R. Students concentrate on learning in more detail about three-dimensional theatrical space, its dynamics and composition. At the same time, they learn technical drawing for the theatre and the methods of executing constructionally a designed work. They are introduced to the directorial/scenographic relationship. The texts followed are John R. Walker's Exploring Drafting: Basic Fundamentals and Willis Wagner's Modern Woodworking.

Instructor: P. Perina
Format: lecture/lab 6 hours
Prerequisites: THTR 2011A/B, THTR 2012A/B, THTR 2060R/THTR 2070R, and THTR 2700R.
Enrolment: Limited to 5

THTR 3800R/ THTR 3810R/ THTR 3820R Acting III: INTERPRETATION AND PERFORMANCE YEAR: Having discovered the natural equipment that is available and enlarging it to some degree, the student can now acquire confidence and apply it to the interpretation of plays in different styles. The student begins to project and communicate with an audience. This is achieved by applying the in class work to the DTP season. 3800 ACTING: focus is put on the requirements of the profession--audition technique and the performance situation. 3810 VOICE AND TEXT/SINGING: students continue to expand their range and expression with particular emphasis on individual strengths and weaknesses. Weekly singing classes focus on breathing, pitch and relaxation. 3820 JAZZ/BALLET: students develop a dance vocabulary which addresses flexibility, alignment, strength and balance. Students are expected to earn significant parts in at least two departmental productions. It is likely that most students will exceed this minimum performance requirement.

Instructors: Christopher/Collins and Acting staff
Format: lecture/lab 18 hours
Prerequisite: THTR 2011A/B, THTR 2012A/B, a grade of at least "B" in THTR 280OR/THTR 2810R/THTR 2820R. Permission to continue into the third year of the programme is dependent upon an evaluation of the student's progress, and completion of the second year degree requirements. Students must be concurrently reqistered in either THTR 2900R or THTR 3500R.
Enrolment: Limited to 10

***THTR 3900R Heroines and Actresses: Women in Drama and Theatre:** This class is intended to provide and opportunity for hte study of theatrical events as representations of women's experience. Specific themes to be explored are: women as dramatic characters; the experience of women who attempted to pursue careers in the theatre in different countries at different times; and contemporary feminist theatre in Britain, the United States, and Canada.

Instructor: A. Andrews
Format: 2 hours
Recommended: Some background in dramatic literature and/or theatre studies is useful
Cross-listed: WOST 3900R

Year 4

***THTR 4200R (EDUC 4620R) Developmental Drama:** A class which shows anyone involved or interested in the development of children or adults how drama can be used both to guide personal development and to heighten learning ability. The class considers how best to adapt developmental drama to school situations or organized groups. Improvisation, theatre games and dramatizations of social issues make up part of the class; various approaches to drama in education are considered. Regular practice runs through the class, and each student must develop individual practical workshops.

Instructor: TBA
Format: seminar 3 hours

***THTR 4700R and * THTR 4710R Special Topics:** The student explores in detail particular areas of the theatre of special interest, with the guidance of members of the faculty. Frequency and the length of meetings are decided to meet the needs of the particular topic or project under study. The class is open only to fourth-year honours theatre students.

Instructor: Faculty
Format: seminar 6 hours
Prerequisite: Permission of department
Enrolment: Limited to 10

***THTR 4800R/ THTR 4810R/ THTR 4820R Acting III:** An advanced class in exercises and scene study, as well as interview and audition techniques.

Instructors: Christopher/Collins and Acting staff
Format: seminar 18 hours
Prerequisite: THTR 3800R/THTR 3810R/THTR 3820R and either THTR 3500R.
Enrolment: Limited to 10

***THTR 4900R Dramatic Theory and Criticism, and the Aesthetics of the Theatre:** All of the arts face a profound problem in the attempt to establish criteria for evaluating creative activity. This class tackles that problem as it affects the theatre. It looks at the various hypotheses and critical strategies that have been devised hitherto, and attempts to judge their present worth. It also asks what critical values are necessary for the survival and future growth of the theatre.

Instructor: A.R. Andrews
Format: seminar 4 hours
Prerequisite: THTR 2011A/B, THTR 2012A/B and THTR 3500R
Enrolment: Limited to 10

Classes in Costume Studies

These classes make up an entire programme. They are not available for credit towards a degree, i.e. BA programmes. Students accepted for the Costume Studies programme concentrate their work solely on these classes.

Year 1

THTR 1750R Costume Studies I: A basic outline of the history of costume; a history of textiles; pattern drafting; a designer's method for the media; and practical costume construction. There

are certain lab charges connected with this class. The content of THTR 1050R forms a component of THTR 1750R.

Instructors: Doyle/Sorge
Format: 4 hours daily
Enrolment: Limited to 20

Year 2

THTR 2750R Costume Studies II: This covers advanced pattern drafting; decoration techniques; millinery; costume accessories; the wearing of costume; and costume making. There are certain lab charges connected with this class. The content of THTR 2011A/B and THTR 2012A/B may be a component of this class.

Instructors: Doyle/Sorge
Format: 4 hours daily
Prerequisite: THTR 1750R, with a grade of "B" or better, and the content of THTR 1050R, and permission of the instructor.
Enrolment: Limited to 15

Year 3

*THTR 3750R Costume Studies III: In residence and professional theatre apprenticeship, Doyle, 30 credit hours. Prerequisites: The content of THTR 2011A/B and THTR 2012A/B, THTR 2750R, permission of the instructor. On the basis of outstanding performance in the first two years, five or six students are selected for the third year. During this year, these chosen students are responsible for the total production of costumes required for use within the theatre department. It is intended that during part of this year the student is placed under the supervision of the Costume Studies director to assist in bridging the gap between student projects and the profession. During this year, these students learn to direct and supervise hired staff within the specific needs of today's professional theatres. They also learn all aspects of budgeting related to costume design and manufacture for major stage productions. There are certain lab charges connected with this class.

Instructor: R. Doyle
Prerequisites: The content of THTR 2011A/B and THTR 2012A/B, THTR 2750R, permission of the instructor.
Enrolment: Limited to 5

Please note:Classes marked with asterisk (*) may not be offered on a regular basis. For details consult department.

Women's Studies

Location: Multidisciplinary Centre
Halifax, N.S.
Telephone: (902) 494-3814

Coordinator & Undergraduate Advisor

Ann Manicom (494-3724/3814)

Faculty

A. Andrews (Theatre)
J. Arscott (Political Science)
B. Bednarski (French)
J. Crowley (History)
A. Dowdall (English)
J. Fingard (History)
J. Gilroy (Social Work)
N. Jabbra (Sociology and Social Anthropology) (on leave)
T. Laidlaw (Education)
A. Manicom (Education)
I. Oore (French)
J. Parpart (History, Development Studies)
S. Pollock (Sociology and Social Anthropology)
S. Sherwin (Philosophy)
M. Stone (English)
N. Trèves (French)
M. Turner (History, Development Studies) (on leave 1991)

Introduction

This multidisciplinary programme is designed for students who wish to focus on Women's Studies as the major concentration of their undergraduate degree. The goal of the Women's Studies major is to demonstrate the usefulness of gender as a category of analysis. Students will develop interconnections among the fundamental questions raised by scholarship on women through a selection of classes in the humanities and social sciences. Because this major is multidisciplinary, a student will also gain a perspective on women's experiences through the examination of other issues such as race, class and cultural differences, that are central to the study of gender. A critical awareness of methodology in the organization of knowledge and the framework for analysis is important throughout the body of the student's work.

Programme Structure

The BA degree in Women's Studies includes one required half credit class at the 1000-level (WOM 100A/B/WOST 1000A/B held at Mount Saint Vincent University) and four to eight full credit classes above the 1000-level to be selected from the list of core classes in consultation with the advisor. A minimum of one of these classes must be at or above the 3000-level and the major classes must be taken from a

minimum of three disciplines. In addition, the student may choose elective classes from a list of related classes, remembering that:

a) one class must satisfy the writing requirements
b) at least 7 full credits shall be beyond the 1000-level
c) some of the classes have prerequisites.

A related class is one in which the topic and/or approach is pertinent to Women's Studies and in which the professor has agreed to permit the student to submit work on women-related topics.

Appropriate classes offered at Mount Saint Vincent University and Saint Mary's University may also be selected, subject to the rules and regulations of the College of Arts and Science at Dalhousie regarding transfer credits and in consultation with the advisor.

Classes Offered

Note: Classes marked * may not be offered every year. Please consult the current timetable on registration to determine if these classes are offered.

Core Classes

WOST 100A/B Focus on Women: An interdisciplinary class presenting a variety of perspectives on the role, function and expression of women. This class is held at Mt. St. Vincent University. Students must register by a letter of permission. Consult the Secretary of the program for details.

WOST 2100A/B Introduction to Gender Socialization: Identification and analysis of problems deriving from gender socialization form the core of this class. Emphasis is placed on female roles both historically and in contemporary society. Attention is paid to the influence of education - both formal and informal - in the development and perpetuation of gender socialization.

Format:	Lecture, discussion, student participation
Prerequisites:	None
Enrolment:	Preference is given to students enroled in Education or Women's Studies.
Cross-listed:	EDUC 4021A/B
Instructor:	Toni Laidlaw

***WOST 2200R Fictions of Development:** Fictions of development are novels or short stories focusing on the crises and the conflicts involved in growing up, finding a vocation, and finding oneself. This class studies representative fictions of development ranging from 19th century classics like Jane Eyre to contemporary works like The Color Purple. Special attention will be given to the connection between psychological theories and literary depictions of human development.

Format:	2 hours lecture/discussion.
Prerequisites:	ENGL 1000R
Enrolment:	Limited to 35
Cross-listed:	ENGL 2221R
Instructor:	Marjorie Stone

***WOST 2211R Commonwealth Literature:** This class will examine a number of modern novels and short stories written by Indian sub-continent and Canadian writers, mostly but not exclusively female. Among the questions which will concern us: Can we define a post-colonial consciousness? What does it mean to express nationalist themes in international English? Can we generalize a feminine consciousness from these textual examples? What is the nature of our comparative project? I hope that by turning our own culture into an object of study side by side with a foreign culture we will end up with more self-consciousness as well as an understanding of what it can mean to study a foreign culture. I expect two medium-length term papers.

Format:	2 hours lecture/discussion
Prerequisite:	ENGL 1000R
Enrolment:	Limited to 35
Cross-listed:	ENGL 2211R
Instructor:	Anna Dowdall

WOST 2500A/B Philosophical Issues of Feminism: An examination of various approaches to feminism, and of practical and theoretical issues associated with feminism, such as abortion, pornography, sexual harassment, and economic equality.

Format:	2 - 3 hours lecture/discussion
Prerequisites:	None
Enrolment:	Limited to 60
Cross-listed:	PHIL 2160A/B
Instructor:	Susan Sherwin

***WOST 2600A/B Women in Western Political Thought:** The role of women in political life has been vilified, praised or ignored by major thinkers. Pertinent texts will be read along with interpretations by modern feminists in order to assess why the formal political enfranchisement of women has not resulted in greater substantial equality.

Format:	2 hours lecture/discussion
Prerequisites:	None
Enrolment:	Unlimited
Cross-listed:	POL 2327A/B
Instructor:	Jane Arscott

***WOST 2800R Gender Roles in Cross-Cultural Perspective:** Taking a broad comparative framework, we examine sex roles in the context of daily life, of economics, politics, kinship, social stratification, religion and values, and socialization. With these data as background, we then look at sex roles in Canada and in Nova Scotia.

Format: 3 hours
Prerequisites: SSA 1000R/SSA 1050R/SSA 1100R/SSA 1200R or Women's Studies Class.
Enrolment: Limited to 50
Cross-listed: SSA 2190R
Instructor: Staff

WOST 3000A/B Directed Readings in Women's Studies: Advanced readings and research in Women's Studies on selected topics. See Coordinator about particulars.
Format: Individual reading
Prerequisites: Open only to senior students in Women's Studies
Instructor: Staff

WOST 3100A/B Gender Issues in Education: Central concerns in Education include classroom practices, politics and ideology of the curriculum, family-school relations, and the transition from school to work. Recent feminist critiques have forced educators to re-examine these areas of concern. This course considers how gender analysis deconstructs and reconstructs our understanding of central economic, social and cultural issues in education.
Format: 2 hours lecture/discussion
Prerequisites: One previous course in Sociology or Women's Studies
Enrolment: Limited to 30
Cross-listed: EDUC 4022A/B
Instructor: Ann Manicom

***WOST 3250A/B French Women Writers through the Centuries/Les femmes écrivains: Du temps des cathédrales à celui des Editions des femmes:** A chronological survey based on the study of literary texts by French Women Writers, this class will attempt to analyze the society of the time, the way it portrayed women and their role, and the overall condition of women. Emphasis will be given each time to a special period/authors within the context of the survey. Students taking the class as a Women's Studies credit may write their essays and exams in English.
Format: Lecture/discussions 3 hours
Recommended: FREN 2201A or FREN 2202B
Enrolment: Limited to 20
Cross-listed: FREN 3250A/B
Instructor: Nicole Treves

***WOST 3300A/B Family and Community in North America 1600-1900:** The family in North American history from the period when the family was a model for social relations to the time when it was seen as a private refuge from society at large. Among the topics considered are the role of the family in rural and urban communities; the demographic transition from high fertility and mortality; the construction of the family's responsibilities in economic life and education; the role of ideology in shaping sex roles and child rearing; and the relations of family and community according to ethnic group, class and economic setting.
Format: 2 hours seminar
Prerequisites: 2000-level class in Canadian or American History
Enrolment: Limited to 20
Cross-listed: HIST 3350A/B
Instructor: Jack Crowley

***WOST 3305A/B Women in Capitalist Society: The North American Experience:** An examination of the impact of industrialization and urbanization on "women's sphere" in society and of the emergence of various strains of feminism in the 19th and 20th centuries.
Format: 2 hours seminar
Prerequisites: 1000- or 2000-level Canadian/North American History or Women's Studies class.
Enrolment: Unlimited
Cross-listed: HIST 3610A/B
Instructor: Judith Fingard

***WOST 3310A/B Women and Development in Africa:** This class examines the economic, political and social roles of African women from precolonial to modern times. It analyzes women not as objects, but as actors who participate in the political and economic processes affecting their lives.
Format: 2 hours seminar
Prerequisites: 1000-or 2000-level History, IDS, or Women's Studies class
Enrolment: Limited to 20
Cross-listed: HIST 3461A/B
Instructor: Jane Parpart

***WOST 3330A/B Women in Socialist Societies:** Investigates the progress made towards the achievement of equal status for women in societies dedicated in principle to equality for all. Case studies will range from Cuba to China.
Format: 2 hours seminar
Prerequisites: 2000-level Arts class
Enrolment: Limited to 25
Cross-listed: HIST 3612A/B
Instructor: Mary Turner

***WOST 3500A/B Theories of Feminism:** A study of the theoretical underpinning of the major feminist theories in critical comparison, concentrating on the ideological disputes and the implications for traditional approaches to social and political thought.
Prerequisites: Two previous classes in Philosophy or Women's Studies
Enrolment: Limited to 25
Cross-listed: PHIL 3170A/B
Instructor: Susan Sherwin

***WOST 3800A/B Gender and Health:** The class focuses upon three major areas in the relationship between gender and health: food, reproduction, and health care. Topics include gender stereotypes and food consumption, sexuality, dieting; birth control, childbirth, menstruation, menopause, reproduction technology; health workers, caring in the family, health policy, sexism in medicine, hospital and community care. This is a discussion class and students are responsible for class participation, and research in their selected area.

Format: 3 hours discussion
Prerequisites: SSA 1000R/SSA 1050R/SSA 1100R/SSA 1200R or Women's Studies Class
Enrolment: Limited to 20
Cross-listed: SSA 3145R
Instructor: Scarlet Pollock

***WOST 3805A/B Feminism and Sociological Theory:** An examination of sociological theory using a feminist perspective, and an exploration of feminist theorizing. Topics include feminist critiques, comparative theories, principles of feminism, methodological issues, Marxist-feminist theorizing, Radical feminist theorizing, and the study of key authors in selected areas of interest.

Format: 2-3 hour seminar
Prerequisite: SSA 2240A/B or 2 previous full credits in Women's Studies
Enrolment: Limited to 20
Cross-listed: SSA 3100A/B
Instructor: Scarlet Pollock

***WOST 3850A/B Women and Social Change:** This course is designed to examine feminist critiques of selected social policies and servicesj (polices such as those governing financial assistance or welfare programmes, child protection services, day care provision); evaluate the usefulness of feminist theories and methods for developing social policies and programmes which are more oriented to women; assist students in developing a critical analysis of social policy and human services from the perspective of women and feminism.

Format: lecture/seminar 2.5 hrs
Prerequisite: Preference is given to students registered in Social Work and in the third year of Women's Studies
Co-requisite: Related courses in social work, health and social sciences, and/or Women's Studies
Enrolment: limited to 20
Cross-listing: BSW 3230A/B
Instructor: J. Gilroy

***WOST 3855A/B Feminist Counselling:** This class examines feminist counselling theories and approaches, assesses these critically and assists students in the development of feminist frameworks for counselling.

Format: lecture/seminar 2.5 hrs
Prerequisite: Preference given to students in Social Work or Women's Studies
Co-requisite: Related courses in social work, health and social sciences, and/or Women's studies
Enrolment: limited to 20
Cross-listing: BSW 3170A/B
Instructor: J. Gilroy

***WOST 3900R Heroines and Actresses: Women in Drama and Theatre:** This class is intended to provide an opportunity for the study of theatrical events as they represent women and their experiences. Specific themes to be explored are: women as dramatic characters; the experience of women who attempted to pursue careers in the theatre in different countries at different times; and contemporary feminist theatre in Britain, the United States and Canada.

Format: 2 hours
Recommended: Some background in dramatic literature and/or theatre studies is useful
Cross-listed: THTR 3900R
Instructor: Alan Andrews

WOST 4000A/B, WOST 4100A/B Selected Topics in Women's Studies: Advanced readings and research in Women's Studies on selected topics. See the Coodinator about particulars.

Enrolment: Open only to senior students in Women's Studies

***WOST 4250A/B Québec Women Writers/ Écrivaines Québécoises:** This class will explore the condition of women as revealed in texts by Québec women writers. In any given year different writers and time periods will be covered, and a variety of genres may be included.

Format: 2 hours lecture/discussion
Recommended: FREN 2201A/2202B and at least one third-year literature class, preferably French Canadian
Enrolment: Limited to 15
Cross-listed: FREN 4904A/B
Instructors: B. Bednarski, I. Oore

WOST 4500A/B Topics in Feminist Philosophy: In this class we shall explore some of the current research in a focused area of feminist philosophy such as feminist ethics, feminist epistemology, feminist philosophy of science, or postmodern feminism.

Format: 2 hr seminar
Prerequisite: Strong background in philosophy or feminist theory (normally including at least one previous class in feminist philosophy or permission of the instructor).
Enrolment: limited to 25
Cross-listed: PHIL 4500A/B and PHIL 5500A/B
Instructor: S. Sherwin

Related Classes

These classes are subject to change; consult the programme office for offerings.

Classes Offered at Mount Saint Vincent University

Classes offered at Mount Saint Vincent University are subject to change. Please consult Women's Studies, Mount Saint Vincent, (902) 443-4450. These classes must be taken on a letter of permission.

Faculty of Science

Location: 3rd Floor, Arts and Administration Building
Telephone: (902) 494-2373
FAX: (902) 494-1957

Introduction

Dalhousie's Faculty of Science, the primary centre in the region for science education and research, is part of the College of Arts and Science and consists of eleven Departments. The principal mission of the Faculty is the discovery, organization, dissemination and preservation of knowledge and understanding of the natural world. The Faculty is dedicated to excellence in the pursuit of this mission. Students in the Faculty of Science are assisted to develop the capacity for inquiry, logical thinking and analysis, to cultivate the ability to communicate with precision and style, and to acquire the skills and attitudes for lifelong learning.

Undergraduate students in the Faculty of Science normally develop these abilities by concentrating their studies in one or two of the following fifteen subjects: biology, biochemistry, chemistry, computing science, economics, engineering, geology, marine biology, mathematics, meteorology, microbiology, neuroscience, physics, psychology, and statistics. Both BSc and BA degree programmes are available in most of these subjects. Details concerning particular programmes of study are provided below.

Officers of the Faculty

Dean

W.C. Kimmins, PhD (London)
Professor of Biology
Telephone: (902) 494-3540

Associate Dean

R.L. Mazany, BSFS (Georgetown), PhD (UBC)
Associate Professor of Economics
Telephone: (902) 494-3421

Assistant Dean (Student Affairs and Space)

G.F.O. Langstroth, BSc (Alta), MSc (Dal), PhD (London), Professor of Physics
Telephone: (902) 494-2373

Secretary of Faculty

D.W. Russell, BPharm, PhD, DSc (London), BEd (Dal), Professor of Biochemistry
Telephone: (902) 494-2373

Administrator

D.P. Chase, BSc (Queen's)
Telephone: (902) 494-1443

Departments of the Faculty of Science

Biochemistry (also in the Faculty of Medicine)
Biology
Chemistry
Economics
Engineering
Geology
Mathematics, Statistics and Computing Science
Microbiology (also in the Faculty of Medicine)
Oceanography
Physics
Psychology

Degree, Certificate and Diploma Requirements

See section 11 of the College of Arts and Science entry for information on degree, certificate and diploma requirements in the Faculty of Science.

Biochemistry

Location: Sir Charles Tupper Medical Building
College Street
Telephone: (902) 494-2480
Fax: (902) 494-1355

Head of Department
W. Carl Breckenridge

Faculty Advisors
J.A. Verpoorte - Undergraduate Advisor (494-2022)
A.H. Blair - Graduate Advisor (494-2407)

Professors
A.H. Blair, BA, MSc (UBC), PhD (Calif.)
W.C. Breckenridge, BSc (Queen's), MSc, PhD (Tor.)
R.W. Chambers, BA, PhD (Calif.)
F.J. Dolphin, BSc, PhD (Southampton)
W.F. Doolittle, AB (Harv.), PhD (Stan.)
M.W. Gray, BSc, PhD (Alta.)
C.W. Helleiner, BA, PhD (Tor.)
C.B. Lazier, BA (Tor.), MSc (UBC), PhD (Dal)
C. Mezei, MSc, PhD (UBC)
F.B.St.C. Palmer, BSc, PhD (W.Ont)
D.W. Russell, BPharm, PhD, DSc (Lond.), BEd (Dal)
R.A. Singer, AB (Princeton), PhD (Harv.)
M.H. Tan, BSc, MD (Dal)
M.W. Spence, MD (Alta.), PhD (McG.)
J.A. Verpoorte, BSc, Drs (Utrecht), DSc (Pretoria)
S.D. Wainwright, BA (Cantab.), PhD (Lond.)

Associate Professors
H.W. Cook, BSc, MSc (McG.), PhD (Dal)
B.A. Faust, BSc, PhD (McGill)
F.I. Maclean, BA, MA (Tor.), DPhil (Oxon.)
C.J.A. Wallace, BA, MA, DPhil (Oxon)

Assistant Professors
D.M. Byers, BSc, MSc (Dal), PhD (Alta.)
D.E.C. Cole, BSc, MD (Tor.), PhD (McG.)
P.X.-Q. Liu, BSc (Wuhan), PhD (Cornell)
H.-S. Ro, BSc, PhD (McMaster)
C.G. Waghorne, BSc (Guelph), PhD (Tor.)

Lecturers
S.S. Reddy, BS, MD (Memorial)
D.C. Riddell, BSc, PhD (Kingston)

Introduction

Biochemistry is the study of biological function at the molecular level. Although biochemical processes follow the basic laws of physics and chemistry, living organisms, because of their complexity, operate on a set of distinct principles that are not found in simple isolated chemical systems. The goal of biochemistry is to elucidate these principles. The department offers an integrated series of classes that will provide students with an up-to-date view of modern biochemistry ranging from structure-function relationships in macromolecules to the dynamic aspects of metabolism and genetic information transfer,including the exciting new biological and biochemical vistas opened up by recombinant DNA technology.

Degree Programmes

Note: Students interested in a Biochemistry degree should obtain from the department a special booklet that describes all of the programmes available and the special requirements relating to them. Degree programmes should be planned in consultation with the undergraduate coordinator (Dr. J.A. Verpoorte), or another faculty advisor (Dr. F.B. Palmer, Dr. D.W. Russell).

There is no three-year programme with a Biochemistry major. Students wishing to include Biochemistry in other programmes are welcomed. Students cannot obtain credit for both Biochemistry 2200 and 2020 and the Biochemistry 2000 and 2600 offered previously. Note that all Biochemistry classes have prerequisites.

B.Sc. with Honours in Biochemistry

This is a special concentrated Honours Programme. Because Biochemistry and Chemistry are closely interwoven both conceptually and experimentally, the list of major classes required (see Regulation 11) includes both subjects to a total of 10.5 credits. Additional chemistry classes may be taken as electives, or by choosing Chemistry as a minor subject. Students are strongly urged to include Mathematics 1060 or 2070 and Biology 2030 and 2100 in their programmes, and should consider also Biology 3070 and (for students interested in molecular biology) Microbiology 3033. Honours students must meet the general degree requirements of the faculty (Regulation 11).

Year 1: Chemistry 1100 or equivalent; Biology 1000; Physics1100; Mathematics 1000 & 1010, a "Writing Class" (see Regulation 11).

Year 2: Biochemistry 2020A, 2200B; Chemistry 2200, 2310, 2320, and 2400; and one full credit in the minor subject. Students who want to enter the molecular biology stream are advised to take Biology 2030.

Year 3: Biochemistry 3200, 3300, & 3400; Chemistry 3410 & 3430; one half-credit elective (any subject); one full credit elective (not Biochemistry nor minor); and one full credit in the minor subject.

Year 4: Biochemistry 4602 and 4603A; three more credits in Biochemistry, including at least one half-credit in each of the following areas: Metabolism (43xx), Molecular Biology (44xx), and Physical Biochemistry (47xx); one half-credit elective (not Biochemistry nor minor).

A minor subject (see Regulation 11) should be chosen in consultation with the department's Advisor. Elective and minor classes need not be taken in the order stated.

BSc with Combined Honours in Biochemistry and Another Science

Biochemistry may be chosen along with one of Biology, Chemistry, Mathematics, Microbiology, Physics, Psychology, or possibly another subject, for a Combined Honours Programme. Consult the Undergraduate Advisor, Dr. J.A. Verpoorte, for details of recommended courses of study.

BSc Advanced Major in Biochemistry

The department offers a four-year, 20-credit programme of study leading to an Advanced Major Degree. The programme, while not designed as a preparation for graduate study in Biochemistry, nevertheless introduces students to all main aspects of the subject. As well as meeting the general degree requirements of the faculty (Regulation 11) students must complete the following classes with a grade of C-- or better: Chemistry 1100 (or equivalent), 2200, and 2400; Biology 1000; Biochemistry 2020, 2200, 3200, 3300, 3400, and at least three full credits in Biochemistry at the fourth-year level. Students who want to emphasize molecular biology are advised to take Biology 2030. Students who have not passed Nova Scotia grade 12 Physics or its equivalent must include a 1000-level Physics class among their first ten credits.

Classes Offered

The Department also teaches students in Dental Hygiene, Dentistry, Medicine, Nursing and Pharmacy; these classes are described in the appropriate sections of the Calendar. Classes marked * are not offered every year; please consult the current timetable.

BIOC 1420B Introductory Biochemistry: Topics discussed are structure, biosynthesis, and function of carbohydrates, lipids, proteins and nucleic acids; enzyme kinetics; genetic engineering; nutrition. Medical aspects are stressed.

Instructor: F. I Maclean
Format: Lecture 3 hours, Lab 2 hours
Prerequisite: Chemistry 1410A or permission of Instructor
Cross-listing: Chemistry 1430
Exclusions: this class cannot be used as a prerequisite for any other biochemistry class.
Enrolment: limited to 150 students

BIOC 2020 A/B Cell Biology: This class is described under Biol 2020 A/B

BIOC 2200B Introductory Biochemistry: This class will survey basic topics and concepts of Biochemistry. Topics include ; the chemical and biological description of constituents of living organisms, like amino acids, pyrimidines and purines, carbohydrates, lipids, hormones and vitamins. The interrelations between the various groups of compounds will be discussed. Introductions to macromolecular structures and functions will be presented.

Instructors: C.W. Helleiner, D.W. Russell, C.J.A. Wallace and W.C. Kimmins (Biology)
Format: Lectures 3 hours, tutorial 1hour alternating with Lab 4 hours
Prerequisites: Biology 1000, Chemistry 1100. Students are advised to also take Chemistry 2400.
Cross-listing: Biol 2010 B
Exclusions: No credit will be given together with credits for previous classes Bioc 2000 and 2600 Enrolment : limited to 100 students

BIOCHEMISTRY 3200, 3300, and 3400: are half-credit classes, each of which deals with one important aspect of biochemistry. The level of instruction is such that adequate preparation is essential.

Prerequisites: Chemistry 2400, Biochemistry 2020A, 2200B, Biology 2030B, or instructor's consent

BIOC 3200A Biological Chemistry: This class deals with chemical principles governing biochemical systems. We discuss the factors that determine how readily a given metabolic reaction proceeds and describe how these factors may be expressed quantitatively. Basic principles of protein structure, carbohydrates and lipids are discussed. The ways in which proteins bind other molecules are described.

A discussion of enzyme catalysis emphasizes relationships between macromolecular structure and biochemical function, enabling us to explain the striking effectiveness and high specificity with which these catalytic proteins carry out their functions.

Instructors: A.H. Blair, C. Mezei and J.A. Verpoorte
Format: Lecture 3 hours ; Lab 3 hours
Prerequisites: see above
Cross-listing: Biol 3012A
Enrolment: limited to 64 students

BIOC 3300B Intermediary Metabolism: Emphasis is chiefly on metabolic pathways common to all organisms, notably the reductive synthesis and oxidative catabolism of carbohydrates, lipids, and some nitrogen compounds. Other pathways, significant in certain tissues or organisms, are included. Metabolic regulation is surveyed, and factors influencing the rate at which compounds flow through selected pathways are examined. Students learn how pathways are compartmentalized, interrelated, and affected by abiotic chemical changes in the environment. Laboratory exercises demonstrate the strategies and techniques used to study metabolic pathways.

Instructors: C. Mezei, F.B. Palmer and W.C. Kimmins (Biology)
Format: Lecture 3 hours, Lab 3 hours
Prerequisites: see above
Enrolment: limited to 64 students
Cross-listing: BIOL 3013B

BIOC 3400B (Biology 3014B) Nucleic Acid Biochemistry and Molecular Biology: This class focuses on the relationship of structure to function in RNA and DNA. Methods for studying the primary, secondary, and tertiary structures of nucleic acids are explored in lectures and in the laboratory. Enzymic mechanisms for biosynthesis, rearrangement, degradation, and repair of nucleic acid molecules are studied, as are the processes of replication and transcription. In this context, nucleic acid biochemistry is emphasized as a basis for understanding storage and transfer of biological information.

Instructors: E.A. Faust, J.M. Wright (Biology) and M.J. O'Halloran (Biology)
Format: Lecture 3 hours, Lab 3 hours
Prerequisites: see above
Enrolment: limited to 64 students.

4300 Series: Intermediary Metabolism and Control: These half-credit classes continue the study of metabolism begun in Biochemistry 3300, and introduce also some specialized topics of particular interest. Emphasis is on how metabolic systems are related and how the systems and their relations are controlled. Appraisal of experimental evidence and interpretation of data are stressed. Students are asked to note the prerequisites stated in each class description.

BIOC 4301B Biochemical Communication: Membranes, Neurotransmitters, and Hormones: This class examines current ideas of biochemical communication mechanisms, especially in the nervous and endocrine systems. The topics include membrane biogenesis, structural and functional relationships between cytoskeleton and membranes, intra- and intercellular trafficking and signal transduction. Recent advances in our knowledge of hormonal regulation of gene expression are emphasized and the mechanisms of action of peptide and steroid hormones and neurotransmitters are discussed in depth.

Instructors: C. Lazier and C. Mezei
Format: Lecture 2 hours
Prerequisites: Bioc 3200,3300 and 3400 or permission of instructors
Enrolment: limited to 64 students

BIOC 4302A Biochemistry of Lipids: The chemistry and physics of insoluble lipids in an aqueous environment are explored. Current evidence for the physical state of lipids in organisms is examined, and problems in the interaction of insoluble lipids with soluble and insoluble enzymes are considered. The metabolism of lipids that have specialized physiological functions, such as glycolipids, eicosanoids, steroids, phospholipids, etc, are studied.

Instructors: F.B. Palmer and H.W. Cook
Format: Lecture 2 hours
Prerequisites: Bioc 3200 and 3300
Enrolment: limited to 64 students

BIOC 4304B Integration and Control of Metabolism: Topics include: generation and regulation of membrane potentials, roles of membrane potentials in energy generation and in modulating pathways requiring movement of metabolites among cellular compartments, adaptation of metabolic pathways to meet special needs or circumstances, and assessment of flux through competing pathways. Specific mechanisms by which metabolic pathways respond to both internal and external signals such as direct metabolite control, covalent and non-covalent modification of enzymes, enzyme translocation among cellular compartments and enzyme turnover are considered in detail. Interpretation of experimental data is emphasized.

Instructors: F.L. Maclean and F.B. Palmer
Format: Lecture 2 hours
Prerequisites: Bioc 3200 and 3300
Enrolment: limited to 64 students

BIOC 4400R Protein Synthesis and Control Mechanisms: The class deals with the cell components and reactions involved in the biosynthesis of proteins, with special reference to mechanisms controlling the rate of synthesis and the spectrum of proteins made. Students are expected to undertake independent reading of research reports.

Instructor: S.D. Wainwright
Format: 2 hours
Prerequisite: Permission of instructor.

4403A & 4404B Molecular Biology of the Gene: These half-credit classes consider the duplication, transfer, and expression of genetic material. The experimental evidence for current concepts of gene structure and function is stressed. Students study the language of molecular biology and learn

about the experimental techniques peculiar to it. Lectures adopt a historical perspective so that students come to appreciate how the discipline of molecular biology has developed.

BIOC 4403A Structure, Organization, and Replication of Genes: Topics include basic molecular genetics; evaluation of genetic complexity and gene arrangement; chromosome structure; identification and enumeration of specific genes; mechanisms of replication, recombination, and repair; and manipulation of genes in vivo and in vitro ("genetic engineering").

Instructors:	W.F. Doolittle and M.W. Gray
Format:	Lecture 3 hours
Prerequisites:	Bioc 3400
Cross-listing:	Micro 4403A

BIOC 4404B Gene Expression: The different mechanisms for regulation of gene expression in bacterial and eukaryotic cells, and their viruses, are emphasized. Particular topics include genomic, transcriptional, and post-transcriptional modes of regulation.

Instructors:	H.-S. Ro and R.A. Singer
Prerequisites:	Bioc 4403A or permission instructors
Enrolment:	limited to 25 students

BIOC 4602R Honours Project & Thesis: The class requires laboratory research, at least one day per week and an interim report at the end of the first term. A final written report must be submitted at the end of the academic year.

Instructor:	Class coordinator J.A. Verpoorte
Format:	Lab 1 day per week
Prerequisites:	Permission by coordinator and a member of the department who will serve as supervisor.
Exclusions:	In exceptional cases the research project can be done outside the biochemistry department, prior approval must then be obtained from the class coordinator.

BIOC 4603A Advanced Laboratory in Biochemical Techniques: The class will consist of a series of laboratory modules (each of 4 weeks' duration, 1 day per week or 72 hours total, with flexibility to accommodate the need to attend other classes) The class is organized collaboratively by the Departments of Biochemistry, Biology and Microbiology. Several modules will be offered in 3 sections covering techniques used in the study of molecular biology, protein structure-function, and specific metabolic processes. Students in a concentrated Honours Biochemistry programme must complete 1 module from each section. Students in advanced major or other programmes may select their three modules from any section or sections, subject to availability of space. Such students should consult the department regarding prerequisites.

Instructors:	C.J.A. Wallace and members of the departments of Biochemistry, Biology and Microbiology
Format:	Lab 1 day
Prerequisites:	Bioc 3200,3300 and 3400
Cross-listing:	Biol 4012 and Micro 4601
Enrolment:	limited to 16 students

BIOC 4700A Proteins: Selected aspects of the chemistry of proteins are considered. Topics include relationships of structure and bioactivity, the forces that stabilize protein structures, and chemical and physical methods used to isolate and study proteins and other macromolecules.

Instructor:	J.A. Verpoorte
Format:	Lecture 2 hours, Tutorial 1 hour
Prerequisites:	Bioc 3200 and Chem 2310 and 2320 or permission of instructor
Enrolment:	limited to 64 students

BIOC 4701B Enzymes: Our current understanding of enzymic catalysis and its experimental basis are examined. The relationship between structures of catalytic and regulatory sites and their functions is considered for selected enzymes. The kinetics of enzyme-catalysed reactions are studied, as is the way in which binding of regulatory molecules influences kinetic behaviour and thereby regulates cellular metabolism.

Instructor:	A.H. Blair
Format:	Lecture 2 hours, Tutorial 1 hour
Prerequisite:	Bioc 3200
Enrolment:	limited to 64 students

***BIOC 4800R Clinical Medical Biochemistry:** To be offered in 1992

BIOC 4801R Introduction to Pharmacology: Described under Biol 4401R.

BIOC 4802R Principles of Instrumentation: This class examines the theory and practice of a wide range of modern instrumental techniques for clinical biochemical analysis.

Instructors:	Members of the Department of Pathology
Format:	Lecture 3 hours, Lab 4 projects
Prerequisite:	Bioc 3200
Cross-listing:	Path 503
Enrolment:	consult with the Department of Pathology

BIOC 8880 Honours Qualifying Examination: Honours students must fulfill the requirements of this class (see Regulation 11) by presenting two additional reports on their work in Biochemistry 4602. The first is a Progress Report, and the second an oral presentation at a special year-end Departmental Seminar.

Biology

Location	Biology Wing, Life Science Centre, Main Office, 2nd floor, Room 2078
Telephone	(902) 424-3515
Fax	(902) 424-3736

Chair
R. G. Boutilier

Undergraduate Programme Advisors
C. Beauchamp (494-2145)
P. Collins (494-3847)
M.J. O'Halloran (494-2136)
E. Staples (494-2464)

Honours Programme Advisors
P. Collins (Administration) (494-3847)
B. Freedman (494-3737)
J. Farley, Marine Biology (494-6587)
G. Hicks (494-3563)
J. Ogden (494-2158)
J. Wright (494-6468)

Professors
R.G. Brown, MSc (McG), PhD (Rutgers)
A.R.O. Chapman, PhD (Liv.)
R.W. Doyle, MSc (Dal), PhD (Yale) Director, Gene Probe Laboratory.
J. Farley, MSc (W.Ont.), PhD (Man.)
J.C. Fentress, PhD (Cantab.)(Cross-appointment with Psychology)
B. Freedman, MSc, PhD (Tor)
B.K. Hall, PhD, DSc (UNE), FRSC, Killam Research Professor
O.P. Kamra, MS (N.Car.State), PhD (Wash. State)

W.C. Kimmins, PhD (Lond.) Dean of Faculty of Science
F.A. Lane, MSc (SUNY Binghampton), PhD (SUNY Albany) Chair of Senate
K.E. von Maltzahn, MS, PhD, (Yale) - Carnegie Professor, King's
I.A. McLaren, MSc, (McG), PhD (Yale) - George S. Campbell Professor
E.L. Mills, MS, PhD (Yale) - (Oceanography)
R.K. O'Dor, PhD (UBC) Director, Aquatron
J.G. Ogden, III, MA (Tenn.), PhD (Yale)
D.G. Patriquin, MSc, PhD (McG)
L.C. Vining, MSc (Auck.), PhD (Cantab.), FRSC,

J.H.M. Willison, PhD (Nottingham)
E. Zouros, MSc, PhD (Agri. Coll. Athens), PhD (Chic.)

Associate Professors
E.W. Angelopoulos, MS, PhD (Minn.)
R.G. Boutilier, MSc (Acadia), PhD (East Anglia), University Research Fellow
A.J. Hanson, MSc (UBC), PhD (U. Mich.) IES
G.S. Hicks, MSc (Carl.), PhD (Sask.)
R.W. Lee, MA (Mass.), PhD (SUNY Stony Brook)
T.H. MacRae, MSc, PhD (Windsor)
R.P. McBride, MSc (UBC), PhD (Edin.)
J.A. Novitsky, PhD (Ore. S.U.)
R.E. Scheibling, PhD (McG)

Associate Professor (Research)
G.F. Newkirk, PhD (Duke)

Assistant Professors
A. Pinder, PhD (U. Mass.) University Research Fellow
W. Pohajdak, MSc, PhD (Manitoba)
S. Walde, PhD (Calgary) University Research Fellow
H. Whitehead, PhD (Cantab), University Research Fellow
J.M. Wright, PhD (MUN)

Adjunct Professors
R.G.S. Bidwell, MA, PhD (Queens), FRSC, Atl. Inst. Biotech.
J.D. Castell, MSc (Dal), PhD (Oregon St.), Fish. & Mar. Serv., D.F.O.
J.S. Craigie, MSc, PhD (Queens), Atl. Reg. Laboratory, NRC
K.H. Mann, PhD (Reading), DSc (Lond.), FRSC Mar. Ecol. Laboratory, BIO, D.F.O.
J.L. McLachlan, MA, PhD (Oregon State College), Atl. Reg. Laboratory, NRC
M. Schrempf, PhD (Stuttgart-Hohenheim)
M. Silver, PhD (Syracuse)

Senior Instructors
C. Beauchamp BSc., MSc (Memorial), BEd (Dal)

J. Breckenridge, BSc (Queen's)
P. Collins, BSc, MSc (Dal)
P. Harding, BA (Tor.), BEd, MSc (Dal) (on leave)
A. Mills BSc (Carlton)
M.J. O'Halloran, BSc (South), BEd, MSc (Dal)
E. Staples, BSc (Dal), BEd (Mt. St. Vincent)

Instructors
C. Corkett, Dip. Ed. (Technical), PhD (London)
T. Grignon, BES (Waterloo)
B. Hill, BSc (Carleton) (on leave)
B. Retallack, BSc, MSc (Dal), PhD (Manchester)

Post Doctoral Fellows
P. Bentzen, MSc (UBC), PhD (McG)
A.C. Burke, MA, PhD (Harvard)
G. Claireaux, PhD (Brest)
R. Escribano, PhD (Dal)
A. Graveson, BSc (Bishop's), PhD (Ottawa)
R. McGarvey, MA (Oregon)
T. Miyake, MS (Michigan), PhD (Texas A & M)
J. Nelson, PhD (Michigan)

B. Ramsey, MSc (Guelph), PhD (Carleton) Gene Probe Laboratory
S. Smith, MSc, PhD (Ottawa)
C. Staicer, MSc (NAU)
E. Taylor, MSc, PhD (UBC)

Areas of Specialty of Biology Faculty

Animal Biology : J. Farley, A. Pinder, H. Whitehead
Developmental Biology: B.K. Hall, G.S. Hicks
Ecology/Environmental Studies: R.W. Doyle, B. Freedman, P. Lane, I. McLaren, J.G. Ogden, R. Scheibling, S. Walde
Entomology and Parasitology: E. Angelopoulos
General Studies: R.P. McBride, K.E. vonMaltzahn
Genetics: R.W. Doyle, R.W. Lee, O.P. Kamra, E. Zouros
History of Biology: J. Farley
Marine Biology: J. Farley, R. O'Dor, R. Scheibling
Microbiology: R.G. Brown, J. Novitsky, L.C. Vining
Molecular Biology: J. Wright, W. Pohajdak
Physiological/Cell Biology: R. Boutilier, T. MacRae, R.K. O'Dor, D. Patriquin, M. Willison
Plant Biology: G.S. Hicks, A.R.O. Chapman, M. Willison

Degree Programmes

The department offers the 15- and 20-credit BA or BSc Major degree; unconcentrated, concentrated or combined BA, BSc Honours in Biology; concentrated BSc in Marine Biology.

Major (15- and 20-Credit) BA, BSc

Consult Regulations 11.1 and 11.3 of the general regulations of the College of Arts and Science. Requirements are:

1. A grade of C or better in BIOL 1000R.
2. Four full credits (15-credit major) or six full credits (20-credit major) beyond the 1000 level in Biology.
   At least one half-credit must be selected from each of the 4 discipline areas in Biology at the 2000 level (see regulations below for 2000 level classes).

Honours Biology, BA, BSc

Advisors: Consult Regulation 11.3 of the general regulations of the College of Arts and Science. You should register for Honours before selecting the second year classes. For registration and class selection you should complete an application form (available in the Biology Main Office) and then consult with an Honours Advisor (listed above). In addition to the College Regulations, the requirements are:

1. BIOL 2020A or B; 2060A or B; 2030A or B; two from 2001A, 2002B and 2100A or B; 3050A. A grade average of B or above must be attained with no mark lower than B-.
2. BIOL 4900R (thesis)
3. For the standing required for honours, see section 22.1 in the College of Arts and Science regulations.

The basic Biology Honours Programme provides a broad background in the biological sciences and enough flexibility to allow some degree of specialization in a variety of subdisciplines. A suitable programme of this kind (e.g. cellular and developmental biology, cellular biology and genetics, ecology and evolution, environmental biology, molecular biology, human biology, etc.) worked out with an advisor and leading to a thesis in that area is excellent preparation for advanced studies.

Some students may wish to choose a Combined Honours Programme with Biochemistry, Chemistry, Economics, Geology, Mathematics, Microbiology, Psychology or Physics. These programmes must be worked out with the two departments. Special combined programmes exist with some departments. A programme with Economics is particularly applicable to students with an interest in ecology. Students interested in such a programme should take BIOL 1000R and ECON 1100 in their first year.

Students may be interested in programmes that are not oriented toward a traditional discipline but rather emphasize a broad knowledge. For them, an Unconcentrated Honours Programme may offer the best preparation.

Honours in Marine Biology

Advisor: J. Farley
The Biology Department recognizes the special needs of the rapidly expanding marine field and offers a BSc Honours Degree in Marine Biology.

Details of the programme will be found under a separate listing for Marine Biology.

Classes Offered

Please note that BIOL 1000R with a minimum grade of C is the prerequisite for all classes in the Biology Department.

Note: Due to the combined pressures of student numbers and a dearth of available space in some classes, the names of students not appearing on the first day of class may be deleted from class lists. Students are advised that being signed into the class is no guarantee of late admission.

Classes marked with an asterisk (*) are offered in alternate years. Consult timetable for current year.

Biology classes are grouped into four general categories:

1. **1000 - Level classes:** BIOL 1000R. This class is designed as an introductory university-level class in biology. This class, with a minimum grade of C, is required for entrance to all higher level classes in the department.

   BIOL 1984R and 1200R may be of interest to non-biologists.

2. **2000-Level Classes:** All Biology majors (15, 20 credit and Honours) are required to take a core program at the 2000 level. Students should normally complete these core classes in their second year. The core programme is designed to provide a basis for more advanced studies in Biology as well as to ensure that all majors are exposed to general discipline or subject areas of biology. A variety of skills including writing, oral presentation, computer literacy, library use, and problem solving are integrated into the curriculum of these core classes along with 'hands-on' activities in the laboratory or field. The second-year core programme covers four discipline areas; some evolutionary biology and some physiology will be included in these four areas.

   I Cell Biology
   2020A/B

   II Diversity of Organisms (animals, plants and microbes)
   2001A
   2002B
   2100A/B

   III Ecology
   2060A/B

   IV Genetics and Molecular Biology
   2030A/B

   All students majoring in Biology are required to take a minimum of four, 2000-level, half-credits, with one half-credit class being selected from each of these 4 discipline areas.

   Students interested in biochemistry are advised to take the second year biochemistry class offered by the Biology and Biochemistry departments. This class is not part of our core-programme but is a pre-requisite for entry into some higher level classes.

   Students majoring in subjects other than Biology can design their own programmes and will not have to conform to these 2000-level core requirements. All students should ensure they have the necessary prerequisite classes required for entry into 3000-level classes.

   Transition procedures: These 2000-level core requirements were introduced in 1990 and will apply to Biology honours and majors entering their second year from September 1990 onwards.

   Biology honours and majors presently in their third or fourth year will still be able to follow the old regulations which can be obtained on a form available in the Biology main office. Third or fourth year biology majors wishing to take any of the new 2000-level classes should note the regulations given in the class descriptions below concerning which of the old 2000 level classes had similar content. Students that have already taken old 2000-level classes with similar content will be unable to receive additonal credit in some of the new core classes.

3. **3000-Level Classes:** These classes are mainly for second and third year students. No biology major will be allowed to register in any 3000 or 4000-level class without having completed, or being registered in 2000-level classes in biology totalling at least two full credits.

4. **4000-Level Classes:** These classes are primarily for honours students. They are open to others with the permission of the instructor. Where biology classes are identified as being given in another department (e.g. Anatomy), that department should be consulted for details.

BIOL 1000R Principles of General Biology: The class emphasis is on those features common to all organisms. It examines the requirements for life, its biochemical base and its cellular organization. These are related to the function of whole organisms and their diversity. Considerations of physiology and metabolism lead to questions of genetic control of life processes, including the genetics, organization and control of the individual, evolution, ecology, development and systematics. BIOL 1000R is the basic introductory class in biology. If you are a biology major, BIOL 1000R is the prerequisite for all other classes in the biology department, regardless of previous background in biology. Under certain circumstances, students may apply to be exempted from taking BIOL 1000R.

Format:	lecture 1 hour, Study Centre/laboratory 3 hours, tutorial 1 hour every 2 weeks.
Instructors:	R.G. Brown, T. Grignon, I.A. McLaren
Enrolment:	limited to 800

BIOL 1200R Science for Non-Science Students - An Overview of the Cosmos, Earth and Life: This class meets the science distribution requirement for BA students. There are no prerequisites and the class does not count as a prerequisite for any other science class. Students are introduced to selected concepts central to each of the disciplines of geology, biology and physics. Emphasis is placed on developing an

understanding of the scientific method, its limitations, and its application in society. Where appropriate, written exercises are used as an aid to learning.

Format: lecture 2 hours, tutorial 1 hour
Instructors: G.S. Hicks, R.H. March, P.H. Reynolds.
Cross-listings: GEOL 1200R, PHYS 1200R
Enrolment: limited to 50

1204R A Citizens Guide to the Biological Issues of our Times: An awareness and comprehension of major developments in biology sufficient for citizen involvement in science-society controversies. Studying topics with major social impact such as genetic engineering, environmental health hazards and modern agriculture, students acquire a scientific vocabulary, insight into the strengths and limitations of science, and an understanding of basic biological concepts.

Format: lecture 2 hours, tutorial 1 hour
Instructor: R.P. McBride.
Restriction: For BA students only; cannot be used as a prerequisite for other biology classes.

BIOL 2001A Marine Diversity: (Area II) The sea was the cradle of life and the origin of most phyla. This class explores the enormous variety of living and fossil organisms from the sea and looks at the special problems and adaptations of benthic, planktonic and nektonic species. It examines functional and taxonomic relationships using lectures, laboratories with living organisms, and field trips.

Format: lecture 2 hours, tutorial 1 hour, laboratory 3 hours
Instructors: C. Corkett, R. O'Dor
Prerequisite: BIOL 1000R (Grade C or better)
Enrolment: limited to 140 (28 per laboratory)

BIOL 2002B Terrestrial Diversity: (Area II) A survey of the terrestrial organisms. The class emphasizes the restrictions imposed on terrestrial adaptations by the aquatic origins of the colonizers, discusses the physiology of living in a terrestrial environment, and finally looks at the domestication of plants and animals by man and speculates on the future diversification of the earth environment and its inhabitants.

Format: lecture 2 hr, tutorial 1 hr, lab 3 hr
Instructors: A.H.Mills, D.G. Patriquin, R. Scheibling
Prerequisite: BIOL 1000R (Grade C or better)
Enrolment: limited to 140

BIOL 2010B Introductory Biochemistry: This class is described under Biochemistry, BIOC 2200B.

BIOL 2020A/B Cell Biology: (Area 1) An introduction to the eukaryotic cell. Major cell components and activities are described at ultrastructural and molecular levels with emphasis on mammalian systems. The concept of the cell as an integrated structural, functional unit is developed.

Format: lecture 3 hours, laboratory 3 hours every second week.
Instructors: T.H. MacRae and B. Retallack
Prerequisite: BIOL 1000R (Grade C or better)
Cross-listing: BIOC 2020A/B
Exclusion: BIOL 2015R/BIOC 2000R
Enrolment: limited to 190

BIOL 2030A/B Genetics and Molecular Biology: (Area IV) Genes contain the biological information that specifies the cell and the organism. Therefore, genetics, the study of genes, is a means to understand the function and propagation of cells and organisms. The power and prominence of modern genetics have grown from a blend of classical and molecular approaches; both of these approaches are emphasized in this class. Major topics discussed include: the structure and function of DNA, the nucleic acid that comprises genes and chromosomes; transmission genetics, concerned with the propagation of genetic information; gene function, the expression of genetic information; and manipulation of DNA (genes) by genetic engineering. A range of organisms is considered, including bacteria, single-celled and multicellular eukaryotes, and viruses.

Format: lecture 3 hours, laboratory & tutorial 3 hours
Instructors: O.P. Kamra, R.W. Lee, R.A. Singer (Biochemistry) E. Staples
Prerequisite: BIOL 1000R (Grade C or better)
Exclusion: BIOL 2035R (last offered in 1989-90)
Enrolment: Limited to 190

BIOL 2060A/B Introductory Ecology: (Area III) Ecology is the study of the interrelationships of organisms and their environments. The broad subject of ecology focuses upon the interactions of plants and animals, including humans, with each other and with their non-living world. Three levels of ecology are studied: (1) Individuals, (2) Populations, (3) Communities and Ecosystems. Assignments and tutorials enlarge upon concepts presented in lectures. Students are instructed in elementary computer techniques and use the computer for most assignments. This class provides an overview of the science of ecology for the informed citizen, and also a good foundation for further work in ecology, marine biology and environmental studies.

Format: lecture 3 hours, laboratory/tutorial 3 hours,
Instructors: C. Beauchamp, R. McGarvey, R. Scheibling
Prerequisite: BIOL 1000R (Grade C or better)
Exclusions: BIOL 2066, BIOL 2046R
Enrolment: limited to 200 (25/laboratory)

BIOL 2100A/B Introductory Microbiology: (Area II) An introduction to the basic concepts of microbiology through lectures, laboratory sessions and demonstrations. The diversity and uniqueness of different microorganisms is emphasized, in addition to their structure, growth, metabolism and interactions. The involvement of microorganisms in fields each as medicine, industry and ecology is also discussed. Since laboratory section assignments are made during the first lecture period, and space in laboratories is limited, students must attend the first lecture to confirm their admission to the class. All students must be registered prior to admission to laboratory periods beginning in the second week of class. Students who plan to repeat the class must obtain permission from the instructor before they register in the class.

Format: lecture 2 hours, laboratory 3 hours
Instructors: J. Breckenridge, J. Novitsky, D. Stoltz
Prerequisite: BIOL 1000R (Grade C or better or permission)
Cross-listing: MICR 2100A/B
Enrolment: limited to 120 (40 per laboratory)

BIOL 3012A Introduction to Biological Chemistry: This class is described under Biochemistry, BIOC 3200A.

BIOL 3013B Intermediary Metabolism: This class is described under Biochemistry, BIOC 3300B.

BIOL 3014B Nucleic Acid Biochemistry and Molecular Biology: This class is described under Biochemistry, BIOC 3400B.

BIOL 3020A Advanced Cell Biology: Molecular and organellar aspects of cytoplasmic organization in eukaryotic cells are examined. A number of interrelated topics are discussed providing an opportunity to study new concepts in cell biology and to evaluate established ideas in the context of recent findings. Students must supplement lectures with assigned readings and discuss selected subjects in essays.

Format: 3 lectures of 1.5 hours per week
Instructor: T.H. MacRae
Prerequisite: BIOL 2020A/B or BIOL 2015R or permission of the instructor.
Enrolment: limited to 20

BIOL 3031B Molecular and Evolutionary Genetics: Topics to be covered in this class include molecular models of genetic recombination, molecular and transmission genetics of chloroplast and mitochondrial DNA, developmental genetics, elements of population genetics, transposable elements, multigene families, pseudogenes and molecular clocks. Examples will be drawn from a wide variety of unicellular and multicellular eukaryotic organisms.

Format: lectures and discussions 3 hours
Instructors: R.W. Lee, E. Zouros
Prerequisite: BIOL 2030A/B
Exclusion: BIOL 2035R (last offered in 1989-90)
Enrolment: limited to 50

***BIOL 3032B Cytogenetics:** Detailed consideration of certain genetical and cytological mechanisms in relation to chromosomal modifications, gene mutations and evolution. Not offered in 1991/92.

BIOL 3033A Microbial Genetics: This class is described under Microbiology, MICR 3033A.

***BIOL 3034B Biological Effects of Radiation:** A survey of current knowledge of the effects of ionizing radiation on biological material at three levels: physical, chemical and biological. In addition, methods of dosimetry, autoradiography, somatic and genetic effects, radiometic chemicals and biolasers are discussed. Not offered in 1991/92.

***BIOL 3039B Human Genetic:** Not offered in 1991/92.

BIOL 3050A Developmental Biology: The lectures describe development as a sequence of programed events, in which 'simple' structures such as the fertilized egg are progressively transformed into complex organisms. These events are governed by a set of developmental 'rules'. Our knowledge of these rules comes from experimental study of a variety of developing systems such as sea urchins, frogs, peas, carrots, chick embryos and humans. Laboratories stress the use of live material and give students practice with such techniques as test tube fertilization in echinoderms.

Format: lecture/discussion 3 hours, laboratory 3 hours,
Instructors: P. Collins, B.K. Hall, G.S. Hicks
Prerequisite: BIOL 1000R (Grade C or better)
Exclusion: BIOL 2050A (last offered 89/90)
Enrolment: limited to 120 (30/laboratory)

BIOL 3051B Advanced Animal Development: This class is the follow-up to BIOL 3050A and deals with the mechanisms and controls which regulate the development of vertebrate and invertebrate embryos. Topics covered include cell determination and differentiation, morphogenesis, mechanisms of organ formation, inductive tissue interactions, growth, regeneration and wound healing. The two laboratory projects involve experiments designed to explore aspects of cell differentiation and morphogenesis; preparation of laboratory reports, and introduce the student to microdissection, sterile techniques, tissue recombinations and whole-embryo staining.

Format: lecture 2 hours, laboratory/discussions 3 hours

Instructors: P. Collins, B.K. Hall
Prerequisite: BIOL 3050A (with a minimum grade of B-) plus completed or concurrent registration in second year cell/molecular classes from the old or new core.
Enrolment: limited to 25

BIOL 3060B Environmental Ecology: Various topics within the field of Environmental Ecology are discussed. Emphasis is on the organism/ecosystem effects of forestry practices and other types of land management, including recreation. The effects of various types of pollutants, including acid precipitation, oil spills, heavy metals, sulphur dioxide, and pesticides are considered.
Format: lecture 2 hours, laboratory/tutorial 3 hours
Instructor: B. Freedman.
Prerequisite: BIOL 2060A/B (or see instructor).
Enrolment: No limit

BIOL 3062A Behavioural Ecology: This class examines animal behaviour from an evolutionary perspective. Why do animals do what they do? Using the theory of natural selection as a basis, we will examine foraging, grouping patterns, territorial behaviour, parenting, mating behaviour, social organization, aggression and cooperation. There will be tutorials and laboratory/field and essay assignments.
Format: lecture 2 hours, tutorial 1 hour
Instructor: H. Whitehead
Prerequisite: BIOL 2060
Enrolment: limited to 50

BIOL 3063B Resource Ecology: Introduction to sustainable development and the management of renewable resources. Topics vary from year to year but generally include fisheries population models and bioeconomics, wildlife and forest management, biological control strategies and agro-ecology, genetic containment and the protection of genetic diversity.
Format: lectures & seminars 3 hours
Instructors: R. Doyle, B. Freedman, S. Walde
Background: Introductory ecology, calculus and statistics classes or half-classes.
Enrolment: limited to 30.

BIOL 3066A Plant Ecology: Various topics within the field of Plant Ecology are discussed. At the ecosystem level, we deal with the cycling of energy and significant nutrients, and with successional changes in these processes. At the autecological level we deal with plant population biology, resource allocation, and physiological ecology. The plant environment is described in terms of energy budgets, soils, and water availability.
Format: lecture 2 hours, laboratory 3 hours, one/two field trips on weekends
Instructor: B. Freedman
Prerequisite: BIOL 2060
Enrolment: No limit

BIOL 3067B A Survey of Fish Biology: The topics covered include fish systematics, physiology, behaviour and ecology. The primary purpose is to prepare students for Honours research projects in fish biology and to provide the background necessary for entry to 4th-year classes such as Fisheries Population Biology, and Fisheries Oceanography. Although no laboratory is scheduled, practical and library research projects are required.
Format: lecture 2 hours, seminar 1 hour
Instructors: R.G. Boutilier and R.K. O'Dor
Prerequisites: BIOL 2060, BIOL 2020
Enrolment: Limited to 40

BIOL 3069A Population Ecology: An examination of selected topics in population ecology. Topics include the effect of species interactions (predation, competition, mutualism) on population fluctations, cycles and extinction. The relevance of theory to particular case studies such as lynx-hare cycles and biological control of winter moth will be discussed. Recent literature will be emphasized. Assignments, presentations and exams will contribute to the final grades.
Format: lecture/tutorial 2 hours
Instructor: S. Walde
Prerequisites: BIOL 2046 or 2060, MATH 1010 and 1060.
Enrolment: limited to 20

BIOL 3070R Principles of Animal Physiology: A discussion of the mechanisms which coordinate the activities of cells within multi-cellular organisms and permit such organisms to maintain a stable internal environment in a changing external environment. The emphasis is on the mechanisms most widely distributed through the animal kingdom. The laboratories are designed to illustrate these "principles of physiology" in a variety of organisms and to demonstrate the experimental approaches used to study physiology.

Format: lecture 3 hours, laboratory 3 hours
Instructors: R.G. Boutilier, R.K. O'Dor, M.J. O'Halloran, A. Pinder.
Prerequisite: BIOL 2001A or 2002B
Exclusion: BIOL 3071R
Enrolment: Limited to 50

BIOL 3071R Physiology of Marine Animals: The problems of animals in a marine environment are quite different from those found in air or fresh water, but the "physiological principles" are similar. This class deals with the same principles as 3070, but emphasizes the special characteristics of marine animals and the techniques necessary to study them in laboratories and tutorials.

Format: lecture 3 hours, laboratory 3 hours
Instructors: R.K. O'Dor, R.G. Boutilier, M.J. O'Halloran, A. Pinder.
Prerequisite: BIOL 2001A or 2002B
Exclusion: BIOL 3070R
Enrolment: Limited to 40

* **BIOL 3073B Plant Physiology:** Topics include water relations, photosynthesis, respiration, nitrogen metabolism, transport, translocation, and some aspects of plant development, crop physiology and productivity.
Format: lecture 2 hours, laboratory 3 hours

Instructor: D.G. Patriquin
Prerequisite: BIOL 2002 or 2020 or permission of instructor.

BIOL 3100B Aquatic Microbiology: The main emphasis of this class is on the interactions of microbes and aquatic plants and animals including nutrition, disease, and immunization. The latter part of the class considers the role of microorganisms in nutrient availability and productivity in aquatic environments.
Format: lecture 2 hours, laboratory 3 hours
Instructors: R.G. Brown and J. Novitsky
Prerequisite: Normally, Biology 2100 but Marine Biology Honours students are exempt.
Enrolment: limited to 24

BIOL 3114A Introduction to Virology: This class is described under Microbiology, MICR 3114A.

BIOL 3115A Introduction to Immunology: This class is described under Microbiology, MICR 3115A.

***BIOL 3117B Yeasts and Fungi:** An introduction to the biology of yeasts and fungi with emphasis on the structure and function of the cell wall and membrane, control of cell metabolism, and the cell cycle.
Not offered in 1991/92.

BIOL 3118B Medical Bacteriology: This class is described under Microbiology, MICR 3118B.

BIOL 3120A Advanced General Microbiology: For students interested in increasing their knowledge and skills in microbiology beyond the introductory level. This class provides excellent background for students continuing in microbiology or entering employment where skills in handling microbes are required. Topics include microbial metabolism, growth, structure, genetics, taxonomy, symbioses, pathogenesis, the environmental effects on microbial activity, and an introduction to soil, food, aquatic, applied, and industrial microbiology. The laboratory stresses basic techniques in microbiology with a strong emphasis on individual students' skills.
Format: lecture 2 hours, laboratory 4 hours
Instructor: J. Novitsky
Prerequisite: Grade B or better in BIOL 2100A/B

BIOL 3211B Systematic Survey of the Algae: An examination of the taxonomic and evolutionary relationships of the algae. Considerable emphasis is placed on practical work (field and laboratory) where students become familiar with the algal components of the local flora.
Format: lecture 2 hours, laboratory 3 hours
Instructors: Staff
Prerequisite: Grade C or better in BIOL 2001
Enrolment: limited to 20

BIOL 3212A Biology of the Algae: A non-systematic examination of the cellular, organismic, population and community organizations of benthic and planktonic algae.
Format: lecture 2 hours, laboratory 3 hours
Instructors: Staff
Prerequisite: Grade C or better in BIOL 2001A
Enrolment: limited to 20

3215A Systematics of Higher Plants: This class is largely concerned with the flowering plants. We cover the historical basis of classification from its classical medical origins, through the Renaissance, Linnaeus to the modern theorists. The new analytical techniques of phenetics, cladistics and chemotaxonomy are introduced as well as a critical examination of the Magnoliophyte Hypothesis and the origin of the Angiosperms. While not a class on the plants of Nova Scotia each student has to become familiar with a few plant families and submit a small collection of pressed plants (see instructor for details).
Format: lecture 2 hours, laboratory 3 hours
Instructor: P. Taschereau
Prerequisite: Biology 2002 or instructor's consent

BIOL 3218B Plant Anatomy: Lectures will explore the internal organization of the leaves, stems, and roots of both the flowering plants and the cone- bearing plants, emphasizing the common plan that is found at the tissue system level of organization. All major cell and tissue types will be reviewed in the light of modern evidence which correlates structure with function. These surveys will embrace both the primary and the secondary plant bodies, and developmental aspects will be emphasized. Laboratory exercises will illustrate these concepts, focussing on the study of a variety of economically important woody and herbaceous crop plants.
Format: lecture 2 hours, lab 3 hours

Instructors: P.A. Collins, G.S. Hicks
Prerequisite: BIO 1000
Enrolment: limited to 25

BIOL 3321R Invertebrates: Recent fossil findings in the Burgess Shale of British Columbia and elsewhere plus methods of cladistic analysis have profoundly changed our understanding of the relationships between and within the various invertebrate phyla. Thus this class will not only examine the structure, function, and classification of the invertebrates, using live material from the marine environment as much as possible, but will come to terms with some of the new ideas about their phylogenies. Recommendation: This class is designed not only for honours students in marine biology, but for anyone who loves "mucking about" with some of God's most beautiful organisms.
Format: lecture 3 hours, laboratory 4 hours
Instructor: J. Farley
Prerequisite: BIOL 1000R (Third and fourth year Geology students interested in paleontology may take this class without any previous biology classes.)
Enrolment: Limited to 30

BIOL 3322B Parasitology: The lectures emphasize the parasite-host relationships, evolution of the parasites and adaptations to the host, modifications of physiology, structure and life cycle for a parasitic existence. Examples are taken from all major animal groups where a parasitic mode of existence has developed beginning with the protozoa. Since the most extensive research pertains to parasites of man, the emphasis is on human parasites. Recommended for Ecologists and Pre-Meds. The laboratory stresses recognition and identification of parasites.
Format: lecture 2 hours, laboratory 3 hours
Instructor: E. Angelopoulos
Prerequisites: BIOL 2001 and 2002; BIOL 3321 is desirable
Enrolment: limited to 48

BIOL 3324R Entomology: Entomology is an important branch of academic biology and also one of the largest divisions of applied biology. The class is an introduction to the study of insects dealing with: (1) The classification and evolutionary diversity of insects. (2) The biology, ecology and behaviour of insects. (3) Applied aspects -- medical, agricultural and forest entomology, harmful and beneficial insects; biological control of insects.
Format: lecture 2 hours, laboratory 3 hours
Instructor: E. Angelopoulos
Enrolment: limited to 24

***BIOL 3402A The Rise of Modern Science:** The modern world has been fundamentally altered by science and technology. In what ways? How has this come to be? This class will attempt to answer these questions by looking at the origins of modern science and technology in the 16th and 17th centuries, its growth of popularity in the 18th, and the rise of the scientific profession and science-based industry in the 19th and 20th centuries. Recommendation: This class is designed for students in the arts and the sciences who have some interest in history and/or philosophy. Science students in particular should realize that a considerable amount of reading and writing will be required in this class.
Not offered in 1991-92.

BIOL 3403B History of Biology: The class deals with the history of the biological sciences in the 19th and 20th centuries, with emphasis on systematics, evolution, genetics, embryology and molecular biology. This class is designed for honours and majors in biology and geology, who have some interest in the history of their discipline.
Format: class 2 hours
Instructor: J. Farley
Enrolment: limited to 30

BIOL 3404A History of Medicine: This class deals with the history of medicine in the 19th and 20th centuries. It will stress the impact of the medical sciences (physiology, pathology, bacteriology etc.) on the theories and practice of medicine from the 1880's to the present. This class is designed for pre-medical students and students in the health professions.
Format: class 2 hours
Instructor: J. Farley
Cross-listing: HIST 2995A
Enrolment: Limited to 60

BIOL 3410B Man in Nature: The class has evolved from that originally taught by Dr. Kraft von Maltzahn at Dalhousie. It considers the relationships between humanity and natural systems from various perspectives. Topics include: the pursuit of human emancipation from nature, conservation of natural resources and the preservation of nature in the face of human population growth. Discovering the intrinsic value of nature is a consistent theme. For students in the arts and sciences. There are no special prerequisites, but students must deal seriously with questions raised. The class is also useful for students in biology who wish to obtain a broader framework of knowledge.
Format: lecture 2 hours, tutorials 1 hour
Instructor: M. Willison
Enrolment: Limited to 90

BIOL 3421B Comparative Vertebrate Histology: An advanced histology course surveying the whole range of vertebrate tissues and organs.
Format: lecture 2 hours, lab 2 hours
Instructor: D.M. Chapman (Anatomy Dept.)
Prerequisite: BIOL 3430A.

Cross-listed: ANAT 3421B
Enrolment: Limited to 15

BIOL 3430A Introduction to Human Histology: Histology is the study of the structure of cells, tissues and organ systems, and utilizes information derived from both light and electron microscopy. It complements studies in anatomy, cell biology, physiology and biochemistry, broadening the understanding of how organisms function.
Format: lecture 2 hours, laboratory 2 hours
Instructor: D.H. Dickson (Anatomy Dept.)
Prerequisite: BIOL 2020A, or 2015 or permission of instructor.
Recommended Background:
Cross-listings: ANAT 2160A, PHYT 2160A
Enrolment: limited to 48 (01-24, 02-24)

BIOL 3435R Anatomy: A comprehensive review of the gross anatomy of the human body with special emphasis on musculoskeletal, cardiovascular and respiratory systems.
Format: lecture 3 hours, laboratory 4 hours
Instructor: R.E. Clattenburg (Anatomy Dept.)

Prerequisites: BIOL 2020A/B, or 2015R and permission of instructor.
Cross-listings: ANAT 2170R, PHYT 2170R
Enrolment: limited to 18

BIOL 3440B Neuroanatomy: A survey of the histology, development and organization of the central nervous system, with emphasis on the developmental and structural relationships between spinal cord and brainstem. The organization of cranial nerves and microanatomy of the brain stem is discussed. The organization of sensory and motor systems is presented in detail. The cerebral cortex, cerebellum, basal gaglia, and limbic system are also covered. Cross listed with ANAT 2100B, NESC 3440B and PHYT 2100B.
Format: lecture or laboratory 3 hours
Instructor: D.A. Hopkins (Anatomy Dept.)
Prerequisite: BIOL 2020A/B or 2015R or permission of instructor
Cross-listed: ANAT 0210B
Enrolment: Limited to 30

PHIL 3580B Philosophy of Biology: This class is described under Philosophy, PHIL 2420B

BIOL 3614C Field Ecology: The class provides practical experience in techniques of quantitative field ecology, including design of field sampling programmes and manipulative experiments. Students examine specific ecological questions and hypotheses by collecting, analyzing and interpreting field data and writing scientific reports. Projects focus on intertidal and subtidal systems but involve concepts and techniques that have broad application in ecology. Lectures provide the theoretical background to projects and the rationale for methodology and statistical analysis. Topics include: spatial pattern, zonation, animal movement, disturbance and succession, and herbivore-plant interaction.
Format: 5 projects involving 7 days of field work in September; laboratory or lecture first term only
Instructor: R. Scheibling
Prerequisites: BIOL 2060 and MATH 1060, 1070 or equivalent

BIOL 4012A/B, 4022A/4023B Microbial Ultrastructure Project: This class is described under Microbiology, MICR 4022A/4023B.

BIOL 4024A Microscopy: The class deals with some of the principal methods involved in the study of cell structure. Electron microscopy, including ancillary techniques, is considered in depth. The importance of a proper understanding of the physical and/or chemical principles governing technical procedures is emphasized. During laboratory periods students practise, or watch demonstrations of, some of the techniques covered in the lectures.
Format: lecture 2 hours, laboratory 3 hours
Instructors: J.H.M. Willison, D.B. Stoltz, K.B. Easterbrook and G. Faulkner
Prerequisites: A grade of B- or better in 3020A, 3114A, or an equivalent relevant 3000-level course.
Cross-listed: MICR 4024A
Enrolment: limited to 12

BIOL 4026A The Mammalian Cell: This class is described under Microbiology, MICR 4026A).

BIOL 4027B The Cancer Cell: This class is described under Microbiology, MICR 4027B).

BIOL 4037B Genetics of Industrial Bacteria: This class is described under Microbiology, MICR 4037B.

BIOL 4038B Molecular Biology of Yeast: This class is described under Microbiology, MIRC 4038B.

BIOL 4039B Topics in Human and Medical Genetics: An advanced level seminar open to Biology and Medical students. Students present reports based on a research project (experimental or literature search) conducted under the supervision of faculty members in Biology or one of the medical departments. Lectures from the faculty supplement class work and emphasize integration of student seminars into a self-contained unit.
Format: lecture/seminar 2 hours
Instructors: O.P. Kamra (Coordinator), R.S. Tonks, J.P. Welch and E. Zouros
Prerequisite: Biology 3039A or 1st year Med.

BIOL 4064C Pleistocene Biogeography: Lecture,discussion, and laboratory experience in the reconstruction of environmental change during the Pleistocene epoch. Laboratory and field experience pay particular attention to the environmental history of the Maritime region, including environmental changes caused by man. Techniques of pollen and diatom analysis, plant and animal macrofossil study, dendrochronology, geochemical and isotopic dating methods are explored. Field and laboratory work include a class problem in an area in the Halifax region.

Format:	laboratory 3 hours
Instructor:	J.G. Ogden, III
Prerequisites:	At least two credits in Biology or Geology; instructor's consent
Cross-listing:	GEOL 4064C

BIOL 4068A Limnology: The class is divided into four sections: (A) Physical Limnology – geology, morphometry, thermal properties, system hydrology & budgets, optical properties, vegetational interactions, history of limnology in N.S.; (B) Chemical limnology -- oxygen, acidity/alkalinity, physical/chemical interactions, major/minor ions and heavy metals, organic molecules, atmospheric geochemistry, ionic budgets and mass balances; (C) Biological limnology -- palaeolimnology, microbiology/ phytoplankton, quantitative geochemistry, zooplankton/invertebrates, vertebrates, sampling technology; (D) Cultural limnology -- eutrophication, BOD/COD, phosphorus loading, environmental impact assessments, acid rain, future shock.

Format:	lecture 3 hours, laboratory/tutorial 3 hours
Instructor:	J.G. Ogden
Prerequisite:	2046, 2066 or 2060

BIOL 4070C Advanced Topics in Animal Physiology: Whereas the introductory animal physiology classes emphasize common principles, this class emphasizes the diversity of physiological solutions to common problems among animals. A different problem is chosen each year and each student presents a seminar reviewing the literature of a particular animal's solution and applies advanced techniques in an experimental study of the animal. Students choose the animal and the technique.

Format:	lecture 2 hours, open laboratory
Instructors:	R.G. Boutilier, R.K. O'Dor, A. Pinder
Prerequisite:	BIOL 3070 or 3071

***BIOL 4072A/B(R) Animal Nutrition:** General principles and techniques of animal nutrition are reviewed and used to examine current literature. Emphasis is on the assessment of nutrition requirements of aquatic and marine species. Not offered 1991-92.

BIOL 4102A Topics in Biotechnology: This class will deal with the application to industrial processes of microbiological and biochemical research. It will include both standard fermentation technology and the development of recombinant DNA methodology. The main goal of the class will be to assess current developments in biotechnology, evaluating both its promise and its limitations, or risks.

Format:	lecture/seminar 2 hours
Instructor:	L.C. Vining
Prerequisites:	BIOL 2010B and 2100 or equivalent
Background:	Third year biochemistry and microbiology

BIOL 4113B Biology of the Prokaryotic Cell: Although the class concentrates on the structure and function of the bacterial cell envelope, that is, the capsule, cell wall and cell membrane, other topics such as the physiology of obligate anaerobiosis, sporulation, motility etc. are also covered. As part of this class, students will write one essay.

Format:	lecture 2 hours
Instructor:	R. Brown
Prerequisite:	BIOL 2100A/B and CHEM 2400 or BIOL 2010
Enrolment:	limited to 24

4114B Topics in Basic and Medical Virology: This class is described under Microbiology, MICR 4114B.

BIOL 4115B Immunology: This class is described under Microbiology, MICR 4115B.

***BIOL 4214B Physiology of Marine Algae:** A comparative study of the physiology and biochemistry of the various algae classes is conducted, including studies of carbohydrates, proteins, fats, pigments and nutrition. Not offered in 1991/92.

BIOL 4301A Cellular Immunology: This class is described under Microbiology, MICR 4301A.

BIOL 4302B Advanced Immunology: This class is described under Microbiology, MICR 4302B.

BIOL 4369B Fisheries Oceanography: This class is described under Oceanography, OCEA 4160B.

BIOL 4401R Introduction to Pharmacology: This introductory class is designed to acquaint students with the actions of drugs on physiological and biochemical functions in mammals including man. Interactions of drugs with central and peripheral nervous systems and with the physiologically active chemicals (e.g. prostaglangins, peptides) are stressed. Factors affecting blood levels of drugs (absorption, distribution, metabolism and elimination) are considered, and potential uses. The laboratory consists of prescribed exercises

followed by a project of several weeks duration carried out in the research laboratories of the Department.

Format: lecture 2 hours, laboratory 2 ½ hours
Instructor: H. Robertson (Co-ordinator for Dept. of Pharmacology).
Prerequisite: Permission of co-ordinator

BIOL 4403R Human Physiology: A class dealing with the physio-chemical basis of the physiological processes in man.

Format: lecture 3 hours
Instructor: N. Morgunov (Physiology/Biophysics Dept.).
Prerequisites: Introductory classes in Biology, Chemistry and Physics. Permission of the instructor is required.

BIOL 4500B Invertebrate Fisheries and Aquaculture: Subject matter will deal with commercially exploited invertebrates (crustaceans and molluscs) with a heavy emphasis on bivalves. Topics to be covered include: (1) Review of the major invertebrate harvest fisheries (locations, methods, population cycles, fisheries models) (2) Biology and ecology of the Bivalvia (feeding, bioenergetics, growth, and reproduction) (3) Shellfish aquaculture (methods, species, site location, economics). These topics will be covered with respect to the Maritimes as well as non-local fisheries. Course structure will be a mixture of lecture and class discussions, supplemented by visits to aquaculture sites. Course requirements will include a research paper and oral presentations.

Instructors: J. Grant, G. Newkirk, R. Mohn
Format: lecture/discussion 3 hours
Prerequisites: BIOL 2001A, 2060A/B, and 3321R; fundamental knowledge of statistics; permission of instructor.
Cross-listing: Oceanography 4600/5600

BIOL 4650B Resource Systems and Economic Development: Major theories of natural resource management have evolved rather separately through economic, behavioural and ecological disciplines. The interphase of ecology with these other disciplines and the criteria which may be used to weigh ecological inputs in economic development planning processes are the major topics to be covered. Current approaches and analytical techniques are described. These illustrate adaptive strategies for long-term resource use, pest and disease control. The course may focus on specialized topics such as fisheries or tropical resource management, as announced in advance. The class includes an introduction to practical problems of project cycles, of defining objectives and of budget analysis. It is open to students from any faculty by permission of the instructor.

Format: lecture/seminar 3 hours
Instructor: A.J. Hanson (Inst. for Resource & Environmental Studies)

BIOL 4652A Advanced Ecology Seminar: Consult Department.

BIOL 4653B Advanced Ecology Seminar: Consult Department.

BIOL 4660A Introduction to Biological Oceanography: Quantitative descriptions of biological oceanographic processes are used to explore interactions with physical and chemical processes in various oceanic ecosystems. Topics discussed range from factors affecting rates of microalgal photosynthesis to expected response of the ocean ecosystem to global variation in carbon dioxide and climate. Laboratory emphasizes independent, original research.

Format: lecture 2 hours, laboratory 1 plus hours,
Instructor: C. Boyd. (Oceanography Dept.)
Prerequisites: Biology 2060A/B or 2046R or equivalent, Math 1000A/B/C, 1010A/B, and instructor's consent
Cross-listing: OCEA 4330B

BIOL 4662B Biology of Phytoplankton: The role of phytoplankton as primary producers of organic material in the sea, and as agents of biogeochemical transformations, is explored in the context of interactions with physical and chemical oceanographic processes. Emphasis is on the current literature.
Not offered in 1991/92.

BIOL 4664B History of Oceanography: This class describes the development of Oceanography from biological, chemical, physical, and geological knowledge going back to the 18th century in scientific, political and social contexts. Includes: plankton dynamics, deep sea biology, ocean circulation and plate tectonics.

Format: lecture and seminar
Instructor: E.L. Mills (Oceanography Dept.)
Prerequisite: instructor's consent, Science or History
Cross-listing: OCEA 4331B
Enrolment: no limit

BIOL 4666B Benthic Ecology: This class is described under Oceanography, OCEA 4330B.

BIOL 4800 Special Topics: Available as 4806A, 4807B, 4808C. Arranged by consultation with staff and with approval of the Curriculum Committee.

BIOL 4900R Honours Research and Thesis: Compulsory class in honours programme.

Marine Biology

Programme Coordinator
J. Farley

Honours in Marine Biology

This programme is designed to provide a fundamental background in Biological Science while permitting concentration in marine biology. It prepares students for technical positions in marine biology and fisheries and for advanced research training in graduate school. It combines the resources of the Departments of Biology and Oceanography and other various marine-related sciences (mostly located in the Life Sciences Building, which is equipped with a sophisticated flow-through sea water system). Dalhousie is located very close to the sea coast and this enables many classes to offer extensive field work.

Curriculum

Year I: BIOL 1000R (Principles of General Biology)
CHEM 1010R (General Chemistry)
MATH 1000A (Differential and Integral Calculus)
MATH 1010B (Differential and Integral Calculus)
PHYS 1100R (Introduction to Physics)

Year II: BIOL 2060A/B (Introductory Ecology)

BIOL 2001A (Marine Diversity)
BIOL 2020A/B (Cell Biology) BIOL 2030A/B (Genetics and Molecular Biology) OCEA 2850R (Introduction to Oceanography)
BIOL 3067B (Survey of Fish Biology)
Electives

Year III: BIOL 3321R (Invertebrates) BIOL 3071R (Physiology of Marine Animals)

BIOL 3212A OR 3211B (Biology of Algae OR Systematic Survey of Algae)

BIOL 3061A OR 3069B (Communities and Ecosystems OR Animal Population Ecology)
BIOL 3614C OR 3062B (Field Ecology OR Behavioural Ecology) BIOL 3100B OR 3120A (Aquatic Microbiology OR Advanced General Microbiology) MATH 2060A/2080B OR PSYC 3500R (Introduction to Probability and Statistics I and II OR Statistical Methods in Psychology)
Note: All students must complete BIOL 2061A, 2020A or B, 2030A or B, and 2060A or B by the end of Year III. A 'B' average is required in these classes with no mark less than B-.

Year IV: BIOL 4900R (Honours Research and Thesis)
BIOL 4369B (Fisheries Oceanography)

BIOL 4660A (Introduction to Biological Oceanography)
OCEA 4170B (Introduction to Physical and Chemical Oceanography)
OCEA 4260A (Biology of Zooplankton)
BIOL 4666B (Benthic Ecology) OR BIOL 4600B (Invertebrate Fisheries & Aquaculture) Elective

Suggested Electives:
BIOL 4650A (Resource Ecology and Economic Development)
BIOL 4379A (Ichthyology)
POLI 3590R (The Politics of the Sea)
GEOL 4280B (Marine Geophysics)
BIOL 3073B (Plant Physiology)
BIOL 4214B (Physiology of Marine Algae)
BIOL 4070C (Advanced Topics in Animal Physiology)
BIOL 4662B (Biology of Phytoplankton)
BIOL 4616B (Ecosystem Analysis)
OCEA 4664B (History of Oceanography)
OCEA 4380B (Marine Modelling)
OCEA 4230B (Biology of Phytoplankton)

Co-operative Education Programme in Marine Biology

The co-operative education programme is an integrated programme of 8 academic terms and 4 work terms in industry, government laboratories, and institutes etc. The work terms, each of 4 months duration, enables students to apply their knowledge of marine biology and helps them make intelligent career choices. Upon successful completion of the programme the student's transcript indicates the programme was a co-operative one.

This co-op programme is available as an Advanced major (20-credit) degree programme or as an Honours degree programme. The co-op degree normally takes 4 1/3 years to complete.

Eligibility

- Students are required to demonstrate sufficient academic potential and maintain a B average or higher with no mark lower than B- in BIOL 2001A, 2020A or B, 2030A or B, 2060A or B.
- A suitability for, and interest in, co-op education.

Normally, students entering their second year of study may apply for admission to these co-op programmes. However, interested first year students are strongly urged to contact the Marine Biology Co-op co-ordinator as early as possible.

The Work-Study Programme

The work terms are each of four months duration and alternate with study terms as follows:

Year	Fall	Winter	Summer
	AT1	AT2	Free
	AT3	AT4	WT1
	AT5	WT2	AT6
	WT3	AT7	WT4
	AT8	Graduation	

AT - Academic Term
WT - Work Term

The Faculty's Co-op placement officer serves to co-ordinate the contacts between student and employer. Students are remunerated according to the employer's policies regarding permanent employees of similar training and education. At the end of each work term, each student must submit an acceptable work report.

The academic programme and required classes for honours co-op are essentially the same as for the B.Sc. degree with Honours in Marine Biology listed below, with a few minor changes in class sequence. Please consult the Marine Biology Co-op cordinator for details of this programme and for the Co-op Advanced Major.

Co-op students enrolled in their second year must attend a few non-credit seminars for co-op students, where various topics relevant to the work terms are discussed. The purpose of these seminars is to better prepare students for their work terms.

Further Information

For additional information, class selection advice, and entry into one of the co-op programmes, contact the Marine Biology Co-op co-ordinator, Biology Department.

Chemistry

Location: Chemistry Building
Telephone: (902) 494-3305
Facsimile: (902) 494-1310

Chairperson of Department

J.C.T. Kwak

Faculty Undergraduate Advisors

T.S. Cameron (494-3759)
T.P. Forrest (494-3315)
J.S. Grossert (494-3314)
R.D. Guy (494-7079)
P. Kusalik (494-3627)
J.A. Pincock (494-3324)
L. Ramaley - Chair (494-7078)
R.E. Wasylishen (494-2564)

Emeritus Professors

W.J. Chute, BSc (Acad.), MA, PhD (Tor.)
O. Knop, DSc (Laval), Harry Shirreff Professor of Chemical Research
D.E. Ryan, BSc (UNB), MA (Tor.), PhD, DSc (Lond.), DIC

Professors

D.R. Arnold, BS (Bethany College), PhD (Roch.)
W.A. Aue, PhD (Vienna)
R.J. Boyd, BSc (UBC),PhD (McG)
T.S. Cameron, BA, MA, DPhil (Oxon.)
A. Chatt, BSc (Calcutta), MSc (Roorkee), MSc (Wat.), PhD (Tor.)
H.C. Clark, BSc, MSc, PhD (Auckland), PhD, ScD (Cantab.), President, Dalhousie University
J.A. Coxon, MA (Cantab.), MSc, PhD (East Anglia)
T.P. Forrest, BSc (MtA), MSc (Dal), PhD (UNB)
J.S. Grossert, BSc, MSc, PhD (Natal)
W.E. Jones, BSc, MSc (MtA), PhD (McG) (on leave of absence)
J.C.T. Kwak, BSc, MSc, PhD (Amsterdam)
K.T. Leffek, BSc, PhD (Lond.)
P.D. Pacey, BSc (McG), PhD (Toronto)
J.A. Pincock, BSc, MSc (Man.), PhD (Toronto)
R. Stephens, MA (Cantab.), MSc (Bristol), PhD (London), DIC
R.E. Wasylishen, BSc (Wat.), MSc, PhD (Man.)

Associate Professors

T.B. Grindley, BSc, MSc, PhD (Queen's)
K.R. Grundy, BSc, MSc Hons, PhD (Auckland)
R.D. Guy, BSc (SFU), PhD (Carl.)
D.L. Hooper, BSc, MSc, PhD (UNB)
L. Ramaley, BA (Col.), MA, PhD (Prin.)
C.H. Warren, BSc (UWO), PhD (McM)
M.A. White, BSc (UWO), PhD (McM)

Assistant Professors
N. Burford, BSc (Wales), PhD (Calgary)
P.G. Kusalik, BSc (Lethbridge), MSc, PhD (UBC), (NSERC University Research Fellow)
P.D. Wentzell BSc (Dal), PhD (Mich. State)
R.L. White BSc (Dal), PhD (McM)

Visiting Scientists (1990)
T.C. Chang, National Cheng Kung University, Tainan, Taiwan
Jouku Kankare, University of Turku, Finland
Alguo Liu, Shandong Institute of Chemistry, China
C. Sarasola, Euskal Herriko Unibertsitatea, Spain
G.H. Schmid, University of Toronto
J.M. Ugalde, Euskal Herriko Unibertsitatea, Spain
J. Wang, National Cheng Kung University, Taiwan
Liang Chen Wang, East China University of Chemical Technology, China

Senior Instructors
C.D. Burkholder, BSc (Wat.)
J. Gabor, MSc (Budapest)
S.A. Sawler, BSc, (MSVU)
D.J. Silvert, MSc (CWRU)
W.D. Tacreiter, MSc (Krakow)
K.E. Thompson, BSc (Acad.)
M.E. Warren, BSc (Western)

Instructors
C.M. Byers, BSc Hons (Dal)

Adjunct Professors (1990)
A.J. Thakkar, UNB, BSc, PhD (Queen's)
K. Vaughan, St. Mary's, BSc (UMIST), PhD (St. Andrew's)

Honourary Research Assoc. (1990)
M. Zaworotko, St. Mary's, BSc (London), PhD (Alabama)

Postdoctoral Fellows and Research Associates/Assistants (1990)
Ruth Cordes, BSc (Dal), MSc (UBC)
Hiroshi Furue, BSc (Inter. Christ Univ., Japan), MSc (Osaka Univ., Japan), PhD (Queen's University)
W. Galezowski, PhD (Mickiewicj University, Poznan)
Z. Gao, PhD (Dal)
Photos Hajigeorgiou, BSc (Dal), PhD (Dal)
D. LeBlanc, BSc (StFX)
Mingguang Li (Quinghai Inst. of Salt Lake Chinese Academy of Science)
K.C. Manthorne, BSc (Dal), BSc Eng (TUNS)
Raghunadha Rao, BSc (Andhra, India), PhD (IIT, Bombay, India)
Z. Shi, BSc (Shandong), PhD (Dal)
R. Thangarasa, PhD (Dal)

Introduction

Chemistry is one of the fundamental sciences. It explores the interactions among different forms of matter and energy. Its main purpose is to gain a basic - but also a very useful - understanding of how compounds react and when and why they form particular products. The universe and the world in which we live are composed of chemicals. Therefore, chemical knowledge helps us to influence and protect our environment; chemical principles and procedures are found everywhere in the groundwork of the natural and medical sciences.

The honours BSc is the expected professional requirement for a chemist. Chemists with honours degrees are employed in widely differing areas in industry and government. This degree will provide a background for further graduate work in chemistry or in such diverse areas as medicine, law, business administration, biochemistry, oceanography and geology. A postgraduate degree is essential for independent original research in an industrial career or in university teaching.

Chemistry 1010 (or 1020 or 1030 or 1040) is an introduction to the discipline. All students intending to take classes in chemistry beyond the first-year level should include classes in mathematics and physics in their first year. Final grades in these classes should not be less than C; if they are, the student is bound to find advanced classes in chemistry difficult and frustrating.

At the second-year level the student is exposed to the four traditional areas of specialization in chemistry. Inorganic chemistry deals with all the chemical elements except carbon, and the compounds which these elements form. Organic chemistry is devoted to the study o the almost limitless number of compounds containing carbon. Analytical chemistry is concerned with the determination of the composition of substances, and with the detection of elements in quantities however minute. Physical chemistry is concerned with both macroscopic phenomena, including why and at what rates chemical reactions occur, and with molecular phenomena through the application of spectroscopic techniques. Beyond the second-year level, a student's studies in chemistry become increasingly concentrated in one of these four areas. The student may also be introduced to biochemistry or the chemistry of living organisms, as well as such specialties as structural chemistry, radiochemistry, environmental chemistry and theoretical chemistry.

Degree Programmes

Honours in Chemistry

This programme is intended to provide a broad training in chemistry while at the same tim making provision for the individual interests of

students. Competence in mathematics as well as chemistry is required. All honours students must consult annually with an Honours Student Advisor and obtain approval of their course selection.

All nine required chemistry credits must be passed with a grade of at least C.

Honours Programme

The following Chemistry classes beyond first year must be completed by all honours students: CHEM 2101A/B, 2201B/A, 2301A, 2302B, 2400R, 3101A or B, or 3102B or A, 3201A, 3301A, 3302B and 3401B. In addition, all honours students must complete MATH 1000A, 1010B and 2000R (or equivalent) and PHYS 1100R.

The remaining seven half credits in Chemistry must be chosen from the classes listed below, with at least one half credit from each of the groups A, B, C and D.

Group A: CHEM 3101A or B, or 3102B or A (whichever was not taken earlier), 4101A or B, 4102B or A.
Group B: CHEM 3202B, 4201A or B, 4202A or B, 4203A or B.
Group C: CHEM 3303A, 4301B, 4304A, 4305B, 4306A or B, 4307B.
Group D: CHEM 3402A, 3403B, 4401A, 4402B, 4403A.
Group E: CHEM 3501B, 4501A or B, 4502A or B, 4503A or B, 4504B.

In order to ensure that the honours requirements can be completed within the usual four year period, students are urged to follow the program outlined below.

Year 1: CHEM 1010R or preferably CHEM 1030R (or equivalent); Mathematics 1000A and 1010B, Physics 1100R, an approved writing class, and one elective.
Year 2: CHEM 2101A/B, 2201B/A, 2301A, 2302B and 2400R; Mathematics 2000R or 2480A/2490B or 2500R; and one elective.
Year 3: CHEM 3101A or B, or 3102B or A, 3201A, 3301A, 3302B, 3401B plus at least one other chemistry half credit from either Group A, B, C, D or E; and two electives.
Year 4: The remaining six half credits in chemistry from Groups A, B, C, D and E; and two electives. In addition, the non-credit classes CHEM 3880, 4880, and 8880 (21st or honours credit) must be taken.

Two credits beyond the 1000 level must be taken in a minor subject. Minor subjects allowed for this degree are biochemistry, biology, computing science, geology, mathematics, or physics. The minor, the unspecified credits in chemistry, and electives should be chosen according to the future plans of the student.

Combined Honours Programme

The department has designed a number of programmes which allow a student to obtain a Combined Honours Degree in Chemistry with one of Biochemistry, Biology, Computing Science, Geology, Mathematics or Physics. To obtain an introduction to all the basic areas of chemistry, CHEM 2101A/B, 2201B/A, 2301A, 2302B and 2400R must be part of any combined honours programme involving Chemistry, and must be passed with a grade of at least C.

The additional eight credits in chemistry and the other subject must be chosen in consultation with the two departments involved. Students must consult an Honours Student Advisor of the Department of Chemistry and the Chair of the other area of study before registering in the combined programme. Interested students should also consult the Department's Handbook "Undergraduate Studies in Chemistry" for more information.

Advanced Major in Chemistry

In order to obtain a general background in Chemistry, the student, after taking CHEM 1010R or 1020R or 1030R or 1040R, must include in his/her programme the classes 2101A/B, 2201B/A, 2301A, 2302B and 2400R as part of the required minimum 6 credits in chemistry beyond first year. These required classes give exposure to the four areas of specialization in chemistry. In addition, all advanced major students must complete MATH 1000A and 1010B (or equivalent).

Of the classes remaining to satisfy the minimum requirements in Chemistry, at least three half classes should be chosen from CHEM 3101A or B, or 3102B or A, 3201A, 3301A, 3302B and 3401B depending on the student's major interests. Advanced Major students in their fourth or higher year of study can also elect to be involved in a literature or experimental project, CHEM 4801A/B/C. Each student who plans to major in chemistry should consult with a Chemistry Counsellor each year regarding a programme of study. The student's programme must also include Mathematics 1000A and 1010B and Physics 1100R.

All chemistry classes to be counted towards the Advanced Major in chemistry must be passed with a grade of C⁻ or better.

Major in Chemistry

See the above entry for the Advanced Major for a description of the required classes. The remaining single Chemistry credit (minimum) beyond the first year can be taken from any of the 3000 or 4000 level Chemistry classes. Notwithstanding the Faculty regulation that two credits in the major must be at the 3000 or 4000 level, in Chemistry three credits must be at the 2000 level with one credit (minimum) at the 3000 or 4000 level. Note that CHEM 4801A/B/C is not available in the Chemistry Major Programme.

All chemistry classes to be counted towards the Major in chemistry must be passed with a grade of C⁻ or better.

Classes Offered

A or B indicates that the class is a half credit and is offered in either the A or B term or in exceptional circumstances in both terms. A/B indicates a class offered in both terms. C indicates a half credit class extending over both the fall and winter terms. An asterisk (*) indicates that the class is not necessarily offered every year. Consult the timetable for up-to-date details.

Early registration for classes is strongly encouraged. In recent years certain classes, particularly CHEM 1010R, 1030R, 2101A/B, 2201B/A and 2400R have reached maximum possible enrolment long before completion of the final registration period in September.

Students who have passed a first-year Chemistry class with a grade of D should consider themselves inadequately prepared for further studies in this subject. Such students may not be allowed to register directly for second-year Chemistry classes but may request that their names be put on a waiting list. Consult the Department for details. Duly registered students, who do not show up for the first two scheduled lectures in a class, may lose their place to students on the waiting list.

Science

Chemistry Resource Centres

First-Year and Advanced Resource Centres are located in Rooms 167 and 166. The former is staffed with people who can help with Chemistry problems. Facilities include study areas, a computer laboratory with special programmes designed for Chemistry students, molecular models, audio-visual aids and a small library.

CHEM 1000R The Chemical World: This class is intended for students who want to take only a first-year credit in science, and who wish to understand some of the chemical aspects of the world around us. The class does not use a mathematical approach to science, and can be taken by students with no, or limited, previous chemistry experience. The class will cover the development of chemical knowledge from early times to the present. By means of lectures, frequent (and sometimes spectacular!) demonstrations, and laboratory or reading projects, students will be introduced to the world of chemistry and to chemicals and chemical ideas in everyday use. Students contemplating careers, e.g., in law, business, or government could profit from the material studied in this class. Students will be required to do extensive written assignments, which will be marked both on content and writing style. CHEM 1000R is an approved "writing class" in the College of Arts and Science. CHEM 1000R does not serve as a prerequisite for second-year chemistry classes.

Instructor:	T.S. Cameron
Format:	lectures 2 hours, lab/tutorial 2 hours
Exclusions:	CHEM 1000R cannot be taken concurrently with or after CHEM 1010R, 1020R, 1030R and 1040R
Enrolment:	limited

CHEM 1010R General Chemistry (formerly 1100R): A study of the fundamental principles of chemistry with particular reference to stoichiometry, atomic and molecular structure, gases, liquids and solids, solutions, thermochemistry, equilibria, chemical properties of common substances, acid-base and oxidation-reduction reactions and chemical kinetics. Students enrolling in this class should have a background in chemistry equivalent to the Nova Scotia XII level. Mature students should consult the Department. It is important that students be familiar with exponents and logarithms, and be able to solve quadratic and simultaneous equations.

Instructors:	N. Burford, T.B. Grindley, K. Grundy, J.C.T. Kwak, P. Wentzell, M.A. White, R.L. White
Format:	lectures 3 hrs, tutorial 1 hr, lab 2 hrs

CHEM 1020R General Chemistry for Engineering Students (formerly 1110R): This class is similar to Chem 1010(1100), but with greater emphasis on quantitative topics, including chemical equilibrium, thermodynamics, reaction kinetics and electrochemistry. The class is open only to students enrolled in the Engineering programme, but it serves also as a regular prerequisite for all second-year chemistry classes.

Instructors:	J.A. Coxon, R.E. Wasylishen
Format:	lectures 3 hours, tutorial 1 hour, lab 2 hours

CHEM 1030R Principles of Chemistry (formerly 1200R): Similar to CHEM 1010 but with more emphasis on atomic and molecular structure, thermodynamics, equilibria and kinetics. This class is intended for prospective science students and for students wishing to gain a more thorough introduction to the principles of chemistry. Students enrolling in this class must have attained high standing in high school chemistry and are advised to contact the lecturer prior to registering for this class. Concurrent enrolment in Mathematics 1000 and 1010, or in Mathematics 1500 is advised.

Instructor:	Staff
Format:	lectures 3 hours, lab/tutorial 3 hours
Enrolment:	limited

CHEM 1040R General Chemistry for the Life and Health Sciences (formerly 1120R): The basic content and rigour of this class is the same as that of CHEM 1010(1100). However, more emphasis is given to organic (as opposed to inorganic) structures, and topics that are of interest to the life and health sciences are favoured over those of the inanimate variety. Thus, chemical principles are illustrated primarily by examples from living systems. Some additional topics such as enzyme kinetics, ionizing radiation, and several types of bio-analyses are introduced in short and simple form. CHEM 1040 uses the same textbook and laboratory experiments as CHEM 1010 and serves as a regular prerequisite for all second-year Chemistry classes.

Instructor: W.A. Aue
Format: lectures 3 hours, tutorial 1 hour, lab 2 hours

Any of CHEM 1010R, 1020R, 1030R or 1040R may serve as a prerequisite for any 2000 level class in Chemistry, and as a credit in the College of Arts and Science. However, credit will only be given for one of 1010, 1020, 1030 or 1040.

CHEM 1410A Introductory Chemistry: A descriptive introduction to chemistry with emphasis on materials related to the life and health sciences. The class requires a background of high school chemistry and mathematics. Topics covered include units, matter, the Periodic Table, stoichiometry of reactions, gases, liquids, solids, solutions, simple concepts of equilibria, acids, bases, radioactivity hydrocarbons, alcohols, ethers, amines, amides, esters and simple carbohydrates and proteins. The organic chemistry deals primarily with structures and introduces molecules of medicinal interest.

Instructor: P.D. Pacey
Format: lectures 3 hours, tutorial 2 hours

Note: This class does not serve as a prerequisite for any other chemistry class.

CHEM 1430R Introductory Chemistry and Biochemistry: This class combines CHEM 1410A and Biochemistry 1420B for use by Nursing students and cannot be used for credit in Arts and Science.

CHEM 2101A/B Introductory Inorganic Chemistry (formerly 2110A/B): The fundamentals of inorganic chemistry are covered. Specific topics include: ionic bonding and the nature of solids, the structure of atoms and simple bonding theory, coordination chemistry of the transition metals and selected topics in main group chemistry. The preparation, analysis and observation of inorganic compounds are the laboratory assignments.

Instructor: Staff
Format: lectures 3 hours, lab 3 hours
Prerequisite: CHEM 1010(1100) or 1020(1110) or 1030(1200) or 1040(1120)
Enrolment:

CHEM 2201A/B Introductory Analytical Chemistry (formerly 2200A/B): An introduction to those analytical techniques most often employed in modern chemical analysis. Topics include: acid-base and redox chemistry and the theory of titrations based on these types of reactions; atomic and molecular spectroscopy in the visible and ultraviolet regions of the electromagnetic spectrum; potentiometry and the use of ion selective electrodes; and gas and liquid chromatography. Laboratory experiments will be based on topics selected from the lectures and will introduce the student to a wide variety of methods.

Instructors: L. Ramaley, R. Guy
Format: lectures 3 hours, lab 3 hours
Prerequisite: CHEM 1010(1100) or 1020(1110) or 1030(1200) or 1040(1120)

CHEM 2301A Chemical Thermodynamics (formerly 2310A): The physical chemist attempts to describe macroscopic systems and chemical reactivity based on an understanding of the atoms and molecules which make up the systems we study. This first class in physical chemistry will start with a discussion of the forces between molecules, and the properties of gases, liquids and solids. Energy relations in macroscopic systems are presented; further topics in thermodynamics include thermochemistry, entropy, and free energy relations, with many applications including phase equilibria, chemical equilibrium, solutions and colligative properties. In the laboratory students will perform experiments based on many of the concepts discussed in class, including an introduction to data handling by computer.

Instructor: R.J. Boyd
Format: lectures 3 hours, lab 3 hours
Prerequisites: CHEM 1010(1100) or 1020(1110) or 1030(1200) or 1040(1120), Mathematics 1000 and 1010

CHEM 2302B Chemical Kinetics and Dynamics (formerly 2320B): This class examines the dynamics of systems by considering motion and reactivity of molecules. Topics include transport properties such as diffusion and ionic conductivity, the molecular kinetic theory of gases, and rates of chemical reactions. The latter are studied in detail, with applications in atmospheric chemistry, liquid and solid state reactivity, catalysis, enzyme kinetics and polymers. The laboratory experiments emphasize the determination of molecular motion and chemical reactivity using a variety of techniques and instrumental methods.

Instructor: P.D. Pacey
Format: lecture 3 hours, lab 3 hours
Prerequisites: CHEM 1010(1100) or 1020(1110) or 1030(1200) or 1040(1120), Mathematics 1000

***CHEM 2303B or A Physical Chemistry for the Life Sciences (formerly 2330B or A):** Chemistry majors may not apply credit for CHEM 2303 towards the major requirements for a degree in Chemistry. Those who do not plan a career in chemistry, but who can use the principles and concepts of physical chemistry in related areas, are introduced to the basic ideas of physical chemistry with the necessary mathematical concepts in simple terms. Previous knowledge of calculus is not necessary. The principal topics: thermodynamics, rates of enzyme-catalyzed reactions, chemical equilibrium and spectroscopy are treated by application to examples of biological and environmental interest.

Instructor:	Staff
Format:	lectures 3 hours, lab/tutorial 3 hours
Prerequisite:	CHEM 1010(1100) or 1020(1110) or 1030(1200) or 1040(1120)
Exclusions:	Credit will not be given for both of CHEM 2301(2310) and CHEM 2303 or for both of CHEM 2302(2320) and CHEM 2303

CHEM 2400R Introductory Organic Chemistry: This class gives a broad introduction to the chemistry of carbon compounds, including molecular shapes and bonding, characteristic reactions of functional groups and the way in which they take place, and the application of spectroscopy to organic chemistry. Laboratory work is designed to teach a broad range of fundamental operations and techniques used in modern organic chemistry laboratories. Students should have a good comprehension of the principles studied in CHEM 1010(1100) or equivalent, as evidenced by a grade of at least C.

Instructors:	D.R. Arnold, J.S. Grossert, D.L. Hooper, and J.A. Pincock
Format:	lecture 3 hours, lab 3 hours
Prerequisite:	CHEM 1010(1100) or 1020(1110) or 1030(1200) or 1040(1120)

CHEM 3101A/B Chemistry of the Main Group Elements (formerly 3110A): This class gives an overview of the chemistry of the non-metal elements (p block), with particular emphasis on the elements of the second (B - F) and third rows (Al - Cl). Preparative methods, molecular structure, characterization, and bonding are discussed, with some examples examined in detail. The laboratory introduces synthetic procedures for the preparation of inorganic compounds and some study of their reactions. Some of these experiments involve special techniques, such as vacuum line manipulation and high temperature.

Instructor:	N. Burford
Format:	lecture 3 hours, lab 3 hours
Prerequisite:	CHEM 2101(2110)

CHEM 3102B/A Coordination Chemistry of the Transition Metals (formerly 3120B): Modern bonding theories are used to unify discussion of the chemical and physical properties of compounds of the transition elements. The laboratory experiments introduce procedures for the preparation and characterization of compounds of the transition elements. The compounds prepared illustrate the principles discussed in class and exhibit unusual structures, geometries, oxidation states and other interesting properties.

Instructor:	K. Grundy
Format:	lecture 2 hours, tutorial 1 hour, lab 3 hours
Prerequisite:	CHEM 2101(2110)

CHEM 3201A Analytical Spectroscopy and Separations (formerly 3210B): The most commonly employed instrumental techniques in chemical analysis use spectroscopy in some form or involve separations. Qualitative and quantitative analysis and the instrumentation involved are discussed in some detail for spectroscopic methods in the visible, ultraviolet, and X-ray regions of the spectrum. Various methods of separation including precipitation, solvent extraction, and the various types of chromatography are presented. Laboratory experiments illustrate the above techniques with practical examples.

Instructor:	R. Guy
Format:	lecture 3 hours, lab 3 hours
Prerequisite:	CHEM 2201(2200)

CHEM 3202B Instrumental Methods of Analysis (formerly 3220B): This class deals with the application of various important instrumental and computer techniques to problems in chemical analysis. These techniques include electrochemistry, radiochemistry, mass spectrometry, sampling theory, electrophoresis, data analysis and automation. Basic chemical, physical and mathematical principles are explained, instrumentation is described and analytical applications are examined. Laboratory experiments are designed to illustrate the techniques covered in the lectures.

Instructor:	L. Ramaley
Format:	lecture 3 hours, lab 3 hours
Prerequisite:	CHEM 3201(3210) or instructor's consent

CHEM 3301A Quantum Mechanics and Chemical Bonding (formerly 3000A): This class gives an introduction to quantum mechanics and its application to spectroscopy and the electronic structure of atoms and molecules. The postulates of quantum mechanics are presented and applied to some simple physical systems, followed by a discussion of the rotations and vibrations of molecules, and the electronic structure of atoms, concluding with an introduction to the simple Hückel molecular orbital method. The relevance to chemical bonding will be stressed.

Instructor: Staff
Format: lectures 3 hours
Prerequisite: Mathematics 2000 or 2490B and CHEM 2101(2110) or 2301(2310) or 2302(2320)

CHEM 3302B Symmetry and Spectroscopy (formerly 3340B): Many different types of electromagnetic radiation, such as ordinary visible light, microwave radiation, and X-rays, are absorbed and emitted by all atoms and molecules. The understanding and uses of such phenomena constitute the subject of spectroscopy. Spectroscopic methods are used extensively in all areas of chemistry and a wide range of applications have been developed. In recent years, the traditional approaches have been complemented by dramatic development of newer techniques, such as magnetic resonance and laser spectroscopies. This class provides an introduction to the physical basis and applications of most types of spectroscopy, including microwave, infrared, visible, ultraviolet, laser, Raman, and magnetic resonance techniques. The topics of molecular symmetry and elementary group theory are introduced at an early stage, and provide a satisfying and unifying thread extending over all areas of spectroscopy.
Instructor: J. A. Coxon
Format: lecture 3 hours, lab 3 hours
Prerequisite: CHEM 3301(3000) or permission of the instructor

CHEM 3303A Materials Science (formerly 3310): The emphasis of this class will be on the exposition of the underlying principles involved in understanding physical properties of materials, such as thermal and mechanical stability, and electrical and optical properties. All phases of matter will be examined: gases, liquids, films, liquid crystals, perfect crystals, defective solids, glasses. The principles of important processes such as photography and Xerography will be explained.
Instructor: M. A. White
Format: lecture 3 hours
Prerequisite: CHEM 2301(2310) or Physics 3200A or Geology 2100R or Engineering 2340A or permission of the instructor.

CHEM 3401B Intermediate Organic Chemistry (formerly 3420B): This class is a continuation of CHEM 2400 and covers many of the topics included in the last third of modern organic chemistry texts. Topics presented include enolate anions, amines, aromatics, heterocycles, carbohydrates, amino acids, and concerted reactions. The synthesis of compounds of chemical and pharmaceutical interest will be used as a focus for these topics. In addition, an introduction to some of the principles of mechanistic organic chemistry will be presented. Students work independently in the laboratory on the preparation of organic compounds. The success of student syntheses is monitored by the use of spectroscopic and other techniques. Students should have a good comprehension of the principles studied in CHEM 2400R, as evidenced by a grade of at least C.
Instructor: J. A. Pincock
Format: lecture 3 hours, lab 3 hours
Prerequisite: CHEM 2400R (or equivalent)

CHEM 3402A Identification of Organic Compounds (formerly 3410A): The class develops separation techniques, together with wet chemical and spectroscopic analysis methods, that were introduced in CHEM 2400. Spectral techniques studied include ultraviolet, infrared, Raman, proton and carbon nmr, and mass spectrometry. Students, using a variety of techniques, work independently in the laboratory to identify unknown substances and to separate and identify components of mixtures. Students should have a good comprehension of the principles studied in CHEM 2400R, as evidenced by a grade of at least C.
Instructor: J.S. Grossert
Format: lecture 3 hours, lab 3 hours
Prerequisite: CHEM 2400 (or equivalent)

CHEM 3403B Bioorganic Chemistry (formerly 3430B): The principles of organic chemistry that are used by the organic chemist to explain and predict the reactivity of compounds will be used to study the behaviour of organic compounds in nature. To cause a reaction to occur in the laboratory it might be necessary to alter functional groups and provide other conditions necessary to induce particular reactivity. In a natural system the same principles can be considered in the analysis of the reactivity of the organic compounds involved. The basic principles controlling the reactivity of organic compounds will be reviewed and applied to a study of selected naturally occurring reaction pathways.
Instructor: Staff
Format: lecture 3 hours
Prerequisite: CHEM 2400 or equivalent

CHEM 3501B Numerical Methods in Chemistry (formerly 3360B): This class provides an introduction to numerical methods that can be applied to various problems in chemistry. Students will utilize these techniques on microcomputers. Topics to be covered include the treatment of experimental data by least squares methods; by curve fitting, smoothing, and interpolation techniques; and by numerical integration. Matrices, determinants, and eigenvalue equations will be studied and applied to problems in quantum chemistry and spectroscopy. Complex equilibria will be examined through the numerical solution of simultaneous equations. Computer graphics will

be introduced and applied to topics such as wave functions, gas laws, potential energy contours, coordinate transformations and molecular geometries. Computer simulation of experiments will also be examined.
Instructor: C. H. Warren
Format: lecture 3 hours
Prerequisites: CHEM 2301(2310) and 2302(2320) and Mathematics 2000 or 2480A and 2490B or instructor's consent

CHEM 3880 General Topics in Chemistry: A non-credit seminar class to be given by invited speakers. Attendance at all seminars is required of all 3rd year honours Chemistry students.

***CHEM 4101A/B Topics in Non-Metal Chemistry:** Following a brief overview of the fundamental aspects of preparation, structure and bonding for familiar systems, selected topics are examined in some detail. An emphasis is placed on novel structure and bonding arrangements in comparison with carbon chemistry and other common systems.
Instructor: N. Burford.
Format: lectures 3 hours
Prerequisite: CHEM 3101(3110)

***CHEM 4102B/A Advanced Transition Metal Chemistry** (formerly 4100A/B): Organotransition metal chemistry has grown over the last several decades into one of the most important areas of research and development in inorganic chemistry. In this class the most important types of organic ligands and their bonding characteristics will be surveyed, as will the most important reaction pathways such as migratory insertion, oxidative addition, nucleophilic addition, etc. The class concludes by examining homogeneous catalysis by organotransition metal complexes. The lab consists of several projects in which the principal reaction pathways are explored and the important characterization techniques are employed.
Instructor: K. R. Grundy
Format: lecture 2 hours, lab 3 hours
Prerequisite: CHEM 3102(3120) or instructor's consent

***CHEM 4201A/B Advanced Topics in Separations** (formerly 4200): Chemistry started as the science of separations and separations are still its most prominent feature in most laboratories around the world. This class will deal mainly with chromatography and associated techniques; in particular, gas chromatography in its regular, capillary and supercritical forms, high-pressure liquid (including ion) chromatographies, capillary electrophoresis, and gas and liquid chromatography combined with other instrumental techniques such as mass spectrometry. The original ideas behind the design of separation media and detection modes will be emphasized, and so will be their consequences for the analysis of living and environmental systems. This class will not present a survey of the field; rather, it will focus primarily on past (and future) innovation. Please consult the instructor for the detailed content of this class in a given year.
Instructor: W. Aue
Format: lecture 2 hours, lab arranged
Prerequisite: CHEM 3201(3210), or instructor's consent

***CHEM 4202A/B Topics in Advanced Analytical Spectroscopy** (formerly 4210): The topics covered are applicable to elemental analysis: atomic absorption, emission, fluorescence; optical rotation; X-ray spectroscopy; neutron activation analysis. The class will cover the theory and application of the different spectroscopic methods, and will include discussion on instrument design and performance. The emphasis on different topics may vary from year to year; students are advised to consult with the instructor for further detail.
Instructor: R. Stephens
Format: lecture 2 hours, lab arranged
Prerequisite: CHEM 3201(3210)

***CHEM 4203A/B Environmental Chemistry:** The first part of this class covers the chemical equilibria suitable for the description of metal ion and organic chemical interactions in the environment. Topics to be covered in this section include polyprotic acid equilibria in sufficient depth to describe carbonate and hydrogen sulphide systems (acidity, alkalinity, conservative quantities), redox equilibria (E_h-pH diagrams), solubility of oxides, hydroxides and carbonates and complexation equilibria. Adsorption equilibria are covered for metal ion and organic interactions with clays, humic and hydrous oxide materials. The second part of the class covers analytical methodology for the determination of metals and organics in environmental systems. Particular interest is paid to analytical methods for the speciation of compounds in waters and sediments. Students should be familiar with or interested in using microcomputers for chemical calculations.
Instructor: R. Guy
Format: lecture 3 hours, lab arranged
Prerequisite: CHEM 3201(3210)

CHEM 4301B Theory of Chemical Bonding (formerly 4000B): This class discusses chemical bonding within the framework of molecular quantum mechanics, the science relating molecular properties to the motions and interactions of electrons and nuclei. The emphasis is on the qualitative features and physical basis of molecular orbital theory and its application to chemistry. The symmetry properties of molecular orbitals are discussed within the context of group theory. Other topics include ladder operators and the addition of angular momenta.

Instructor: Staff
Format: lecture 2 hours
Prerequisite: CHEM 3301(3000) or instructor's consent

***CHEM 4304A Kinetics and Catalysis** (formerly 4320A): This class relates the properties of molecules in motion to the rates of chemical changes. Collision, transition state and diffusion theories are applied to significant industrial, biological and atmospheric processes. Photochemistry, and its converse, luminescence, are interpreted. Mechanisms of catalyst activity are discussed. The laboratory experiments use sophisticated techniques, including computerized data acquisition.
Instructor: P. D. Pacey
Format: lecture 2 hours, lab 3 hours, alternate weeks
Prerequisite: CHEM 2302(2320) or equivalent

***CHEM 4305B Introductory Statistical Thermodynamics** (formerly 4300B): The principles of statistical mechanics are introduced and the relationship between the laws of thermodynamics and the underlying microscopic processes is examined. Wherever possible applications to chemical systems are emphasized. An overview of modern techniques is also given.
Instructor: P. Kusalik
Format: lecture 3 hours
Prerequisites: CHEM 2301(2310) and 3301(3000), or instructor's consent

***CHEM 4306A/B Magnetic Resonance:** The basic principles of magnetic resonance will be discussed and reinforced with examples of applications to problems in chemistry and chemical physics. Topics to be discussed include: the magnetic Hamiltonian, chemical shielding, nmr in solids, quantum mechanical approach to spectral analysis of nmr spectra in liquids, esr of organic radicals, relaxation, molecular rate processes, and two dimensional nmr. Students will be assigned problems on a regular basis.
Instructor: R.E. Wasylishen
Format: lectures 2 hours
Prerequisite: CHEM 3301(3000) or instructor's consent

***CHEM 4307A/B Biophysical Chemistry** (formerly 4330A/B): This class gives a theoretical and practical introduction necessary for the application of physical chemistry to life sciences and medicine. Topics include the structure and conformation of biological macromolecules, techniques for the study of biological structure and function, transport processes and biochemical spectroscopy. The laboratory is on an open basis with at least four experiments to be completed during the term.
Instructor: Staff
Format: Lectures 2 hours, lab 3 hours, alternate weeks
Prerequisite: CHEM 2301(2310) and 2302(2320) and CHEM 3301(3000) and 3302(3340) or instructor's consent

CHEM 4401A/B Synthesis in Organic Chemistry: The prerequisite classes provide a foundation of knowledge of many organic reactions that are useful for bringing about specific functional group transformations. This class expands this foundation and shows how these reactions can be combined in well planned, multi-step strategies to synthesize complex molecules. The thought processes involved are illustrated with examples chosen from recently reported syntheses of natural and unnatural products.
Instructor: T.B. Grindley
Format: Lectures 3 hours
Prerequisites: CHEM 3401(3420) and 3402(3410) or equivalents, or instructor's consent

CHEM 4402A/B/C Organic Structure Determination (formerly 4400A/B/C): This class continues the study of molecular structure and conformation begun in CHEM 3402A, using methods and results from infrared and nuclear magnetic resonance, and mass spectrometry.
Instructor: D.L. Hooper
Format: Lecture 3 hours, lab as needed
Prerequisite: CHEM 3402(3410)

CHEM 4403A/B Organic Reaction Mechanisms (formerly 4420A/B): The fundamental concepts of bonding, structure, and dynamic behaviour of organic compounds are discussed. The applications of molecular orbital theory and molecular mechanics calculations are introduced. Methods for determining the mechanisms of organic reactions are discussed. Topics considered include applications of kinetic data, linear free energy relationships and acid and base catalysis, concerted reactions and the importance of orbital symmetry, steric effects, solvent effects, and isotope effects.
Instructors: D. R. Arnold and J. A. Pincock
Format: lecture 3 hours
Prerequisites: CHEM 3401(3420) and 3402(3410) or equivalents, or instructor's consent

***CHEM 4501A/B Electronic Instrumentation for Scientists:** This class starts with basic electrical concepts and describes simple ac and dc circuits. Semiconductors are introduced, followed by a discussion of power supplies and the various types of amplifiers. Chemical instruments are used as examples whenever possible. Practical aspects of electronics such as basic measurements, the use of various electronic instruments, reading circuit diagrams and troubleshooting are emphasized. No knowledge of physics beyond the first year is required.

Instructor: L. Ramaley
Format: lecture 2 hours, lab 3 hours
Prerequisite: CHEM 2201(2200)

CHEM 4502A/B Polymer Science: This class will cover aspects of synthesis, analysis, characterization, structure and application of synthetic and naturally occurring macromolecules. Emphasis will be on the application of standard methods of organic synthesis, analytical separations, and physico-chemical characterization. There is no laboratory, but students will do an independent literature project.
Instructor: Staff
Format: lecture 3 hours
Prerequisites: CHEM 2201(2200) and 2301(2310) and 2302(2320) and 2400 or instructor's consent

CHEM 4503A/B Group Theory in Chemistry (formerly 4350A/B): The theory of abstract groups and their representations, crystallographic and non-crystallographic point groups, and an introduction to space groups are given. Examples from stereochemistry, crystallography and spectroscopy illustrate the theory.
Instructor: Staff
Format: lecture 3 hours
Prerequisite: CHEM 3302(3340)

CHEM 4504A/B Diffraction Techniques in Solid State Chemistry (formerly 4120A or B): All chemical elements and compounds can exist as crystalline solids. This class will study the arrangements of atoms and molecules in such solids and will examine the methods used to determine these structures. Particular emphasis will be placed on the techniques of X-ray crystallography.
Instructor: T. S. Cameron
Format: lecture 2 hours, lab 3 hours
Prerequisites: CHEM 2101(2110) and Math 2000 or 2200 or equivalent

CHEM 4801A/B/C Advanced Major Research Project: This class is designed for those students in the Advanced Major programme that wish to participate in original research. It will consist of a literature or experimental research project on some aspect of chemistry in which the student has an interest. The results of the research will be embodied in a report which shall be graded. All advanced majors wishing to take this class should consult with the professor below.
Coordinator: L. Ramaley

CHEM 4880 Advanced Topics in Chemistry: A non-credit seminar class to be given by invited speakers. Attendance at all seminars is required of all 4th year Honours Chemistry students.

CHEM 8880 Honours Qualifying Examination: This is an additional class required of all Honours students in Chemistry in order to satisfy regulation 11. It should be taken in the final year of a concentrated chemistry honours programme. All honours students, whether in a concentrated or unconcentrated programme, must consult with the professor in charge of the Honours Thesis Programme.
Coordinator: T.S. Cameron

Computing Science

Location: Chase Building
Telephone: (902) 494-2572

Director of Division
K.J.M. Moriarty

Faculty Advisors
K. Moriarty (Undergraduate)
B. Fawcett (Honours)
A. Farrag (Graduate)
A.E. Sedgwick (Co-op)

Professors
P.Keast, PhD (St. Andrews)
K.J.M. Moriarty, MSc (Dal), PhD (London)

Associate Professors
A. Farrag, PhD (Alberta)
B.W. Fawcett, MSc, PhD (McMaster)
C.S. Hartzman, MS (Purdue), PhD (Colorado)
J. Mulder, PhD (UBC)
M.A. Shepherd, MSc, PhD (Western)

Assistant Professors
A.E. Sedgwick, MS (Wisconsin), PhD (Tor)
D. Tsang, MASc (TUNS), PhD (Penn.)

Computer Systems Manager
D. Trueman, MSc (Toronto)

Adjunct Professors
H.S. Heaps, MA (Tor) LL.D (St. F.X.)
H.S.P. Jones BSc (Wales) MSc (Southampton)
C. R. Watters, MSc (Western), PhD (TUNS)

Please refer to the entry for the Department of Mathematics, Statistics and Computing Science for a full listing of the members of the Department and information on other programmes offered by the Department.

General Interest Classes

The Division offers a number of classes that should be of interest to students whose major field of study while at Dalhousie will not be Computing Science. These classes are:

CS1000A/B: A class designed for the humanities and social sciences but probably of interest to students in other disciplines as well.

CS3090A: A class that should be of interest to students in all disciplines.

CS1200A and CS1210B: The main purpose of these classes is to provide an introduction to computing suitable for science majors. This pair of courses leads naturally into CS3170, CS3210, and CS3350.

Degree Programmes

Students who plan to pursue a programme leading to a degree in Computing Science should arrange a programme in consultation with the appropriate Faculty Advisor, listed above. Students should also consult the appropriate sections of the Calendar for specific regulations.

Honours in Computing Science

The Honours programme in Computing Science must include the following courses usually taken in the years shown:

Year 1: Math 1000, Math 1010, CS1400, CS1410, CS1670*, CS2670*

Years 2&3: CS2450, CS2350, CS2610, CS2700, CS2670, CS3170, Math 2070, Math 2030, Math 2130 or (Math 2030, Math 2040). CS3040, CS3700, CS3250

Year 4: CS8870, and four 4000-level CS courses.

*Typically taken within the first two years.

Combined Honours

Students interested in taking honours in Computing Science and another subject as a combined programme should consult the honours advisor through whom a suitable course of study can be arranged.

A combined honours programme may well be an appropriate choice for many students. If a student is contemplating graduate work, it should be borne in mind that the work in either subject of a combined honours programme may be insufficient for entry to a regular graduate programme, and that a qualifying year may be necessary.

Advanced Major in Computing Science

Advanced majors in Computing Science must obtain at least six (and no more than nine) credits beyond the 1000-level in Computing Science, with 3 full credits beyond the 2000-level. In addition to the necessary first-year prerequisites (i.e. Math 1000, 1010, Computing Science 1400, 1410) the following classes are required:

Year 2: CS 2350, CS 2450, CS 2610, CS 2700, Math 2030 or Math 2130

Year 3: CS 3170, CS 3040, CS 3700, CS 3250

For further information consult sections 11.1, 11.2 and 11.4 of the College of Arts and Science regulations in this calendar.

Major in Computing Science

Majors in Computing Science must obtain at least four (and no more than eight) credits beyond the 1000 level in Computing Science.

In addition to the necessary first-year prerequisites (i.e. Math 1000, 1010, Computing Science 1400, 1410) the following classes are required:

Year 2: CS 2700, CS 2350, CS 2450, CS 2610, Math 2030 or Math 2130.

Year 3: CS 3170, CS 3700.

Students wishing to major in Computing Science will normally take the pair CS 1400/1410, but it will be possible to proceed from CS 1200/1210 into a Computing Science programme after consultation with the Undergraduate Advisor (see above).

Students who wish to arrange inter-disciplinary programmes (with fields such as Mathematics, Physics, Psychology, and others) are invited to discuss their interests with the department.

Cooperative Education Programmes

The department offers several Co-op education programmes involving Computing Science, a concentrated programme in Computing Science, a 20-credit major programme and a combined programme with Mathematics.

Computing Science Co-op students are required to take all the classes that non Co-op students take.

Further information about the Co-op programmes is included under the Calendar entry for Mathematics. Interested students should note that some departmental regulations for Co-op students differ from those regulations for students not in the Co-op programme.

Any student who is interested in enrolling in a Co-op programme is urged to contact the Faculty Advisor for Co-op Education as early as possible in their academic career for advice on classes and other information.

Prerequisites

If a Computing Science class is listed as a prerequisite for a Computing Science class beyond the first year level, a grade of C or better is required in the listed class for it to count as a prerequisite.

Other Information

The Department operates a SUN 4/280 system, running Unix, for Computing Science students. The terminals are located in the Killam Library Building. The University also operates a VAX-8800 running VMS that is used for some

Computing Science courses and has a PC lab and a Macintosh lab available for course work and student use. In addition, a SUN 4/490 system, running Unix and a network of SUN workstations, is available for faculty and graduate students.

Students who complete the first two years of a Dalhousie programme in Computing Science may complete their programmes at Dalhousie or may be able to transfer to the Technical University of Nova Scotia (TUNS) to complete a Bachelor of Computing Science with Engineering options. Further information about the classes required for admission to a TUNS programme may be obtained from TUNS or the Department of Mathematics, Statistics and Computing Science.

Note that credit may not be obtained for the same class twice even if the number has been changed (e.g. 2610 is the same as the former 3690).

Classes Offered

Not all classes are necessarily offered every year. Please consult the current timetable on registration to determine if a class is offered.

COMP1000A/B Microcomputer Applications: The goal of this class is to learn how to make correct use of contemporary computer application software to accurately represent and analyse data, thereby facilitating a deep understanding of the problems from which the data arise. Spreadsheets will be used to carefully design and implement models in mathematics, the sciences, and the social sciences. The proper design of database schemes to accurately represent data and their interrelationships will be introduced through the use of database management systems. Societal issues connected with computing such as matters of privacy, security, and reliability as well as the effect of modern computer technology on society will be a major theme woven into the fabric of the course. Students will write essays based on these issues using word processing software.
Format: Lecture 3 hours, tutorial 1 hour
Prerequisite: None
Exclusion: Note that Computing Science students may not take this course for credit.

COMP1200A Introductory Computing Science: Together with CS1210 this class provides an introduction to Computing Science. No previous knowledge of computing is assumed. The course will teach the elements of programming and algorithm development. The language which will be used is FORTRAN. Throughout the course the emphasis will be on numerical and scientific applications.

Format:	Lecture 3 hours, tutorial 1 hour
Prerequisite:	Nova Scotia Math 441 or equivalent
Exclusion:	Credit will be given for only one of CS1200 and CS1400

COMP1210B Scientific Applications and Algorithms: This is a continuation of CS1200. The course will deal mainly with scientific applications of computers and with the development of algorithms for scientific problems. Elementary numerical techniques will be taught and deterministic and random simulation will be discussed.

Format:	Lecture 3 hours, tutorial 1 hour
Prerequisite:	CS1200 (or CS1400 and instructor's consent), and Math 1000
Exclusion:	Credit will be given for only one of CS1210 and CS1410

COMP1400A Introduction to Computing Science: This class together with CS1410 provides a general introduction to algorithmic concepts, structured programming, and Computing Science. Students develop programming skills in a higher-level language such as Pascal, with emphasis on structured programming. The exercises involve primarily non-numerical tasks including character manipulation and sequential file processing.

Format:	Lecture 3 hours, tutorial 1 hour
Prerequisites:	Nova Scotia Math 441 or equivalent

COMP1410B Algorithms and Data Structures: This is a continuation of CS1400. Topics include algorithm development and analysis, sorting and searching techniques, list structures, stacks, queues, recursion, trees.

Format:	Lecture 3 hours, tutorial 1 hour
Prerequisite:	CS1400 (or CS1200 and permission of the instructor) and Math 1000.

COMP1670A Discrete Structures I: For description see Math 1670A.

Format:	Lecture 3 hours
Prerequisite:	Nova Scotia Mathematics 441 or equivalent
Cross-listing:	Mathematics 1670A

COMP2300B Introduction to Mathematical Modelling Using Algebra: For description see Math 2300B.

Format:	Lecture 3 hours
Corequisite:	Math 2030
Cross-listing:	Mathematics 2300B

COMP2350B File Structures and Relational Databases: The relational data model is introduced. Efficient retrieval and manipulation of data stored in relational databases motivates the study of file and index structures. The class examines logical file organizations (indexed sequential files, direct files, tree-structure files, etc.), file operations, and their physical implementations. The entity-relationship model, used for proper database design, is introduced.

The class will make use of commercial, micro-computer based relational database software.
Format: Lecture 3 hours
Prerequisite: CS2610

COMP2450A Introduction to Computer Systems: An introduction to machine architecture from the perspective of an assembly language programmer. Students gain familiarity with an assembly language and the translation process needed to produce machine code. Common addressing modes, macros and file I/O are discussed, together with the internal structure of memory, control units and processing units.
Format: Lecture 3 hours
Prerequisite: CS1410

COMP2610A Data Structures and Algorithmic Analysis: Data types and the operations on them are covered in this class. After a review of the data structures covered in CS1410, the class proceeds in detail to examine trees, graphs, sets and strings. Efficient representations and algorithms for these structures are discussed. External file sorting methods are also discussed. Considerable emphasis is placed on the analysis of algorithms.
Format: Lecture 3 hours, tutorial 1 hour
Prerequisite: CS1410

COMP2670B Discrete Structures II: For description see Math 2670B.
Format: Lecture 3 hours
Prerequisite: C.S.1670
Cross-listing: Mathematics 2670B

COMP2700B (formerly 3690) Programming Languages: The emphasis is on fundamental concepts such as block structure and recursion and structured control flow. Exercises are given in several languages such as C, Lisp and Prolog. Recursion and functional programming are extensively discussed as well as an introduction to programme correctness.
Format: Lecture 3 hours
Prerequisite: CS2610

COMP3040A Introduction to Computer Organizations: An introduction to logic design and detailed computer architecture. Basic logic elements such as gates and flip-flops are discussed and the design of combinational networks, registers and control mechanisms analyzed. Internal representation and arithmetic, communication between components, instruction fetch and sequencing, interrupts and I/O controllers are also discussed.
Format: Lecture 3 hours
Prerequisite: CS2450

COMP3090A Computers and Society: The impact of computers on society is discussed in this class. Topics include the history of computing and technology, the place of the computer in modern society, legal issues such as the copywriting of software, the computer scientist as a professional, the impact of databanks on individual privacy and the public perception of computers and computer scientists.
Format: Lecture 3 hours
Prerequisite: None

COMP3170A (formerly 2270) Introduction to Numerical Linear Algebra: Floating point arithmetic. Numerical solution of linear systems of equations; Gauss elimination methods and iterative methods; condition numbers of problems and of algorithms; estimation of condition numbers. Numerical calculation of eigenvalues; QR and LR algorithms; singular value decomposition; Gram Schmidt orthogonalization. Use is made of program libraries such as Linpack, Eispack and Matlab.
Format: Lecture 3 hours
Prerequisites: Math 1010, Math 2030, CS 1410
Cross-listing: Same as Math 3170

COMP3210B (formerly part of 320) Introduction to Numerical Analysis: See class description for Mathematics 3210B.
Format: Lecture 3 hours
Prerequisites: Mathematics 2000 and CS3170
Cross-listing: Same as Mathematics 3210B

COMP3250A Data Base Management Systems Design: The concepts and structures necessary to design and implement a data base management system are stressed. Hierarchical, network and relational models are discussed with emphasis on the necessary logical and data structures. Various normal forms and canonical schema are discussed as well as the concepts of relational algebras and relational calculus.
Format: Lecture 3 hours
Prerequisites: CS2350

COMP3350A Introduction to Supercomputing: An introduction to the computer architecture of the supercomputers of today: CRAY X-MP, CRAY 2, CDC CYBER 205, ETA-10, FUJITSU VP2000 and NEC SX-3. The software for the efficient implementation of vectorization and parallel processing will be discussed.
Format: Lecture 3 hours
Prerequisites: CS 3170 and CS2450

COMP3390A/B Statistical Computing: For description see Stats 3390
Format: Lecture 3 hours
Prerequisites: Statistics 3390, Mathematics 2040, CS1210 (or 1410)
Cross-listing: Statistics 3390

COMP3700B Operating Systems I: This class covers the principles of modern operating system design with examples from existing systems.

Specific topics include: concurrent processes, interprocess communication, synchronization, scheduling policies, multi-level storage management, and associated algorithms.
Format: Lecture 3 hours
Prerequisite: S2610, 3040

COMP3750A Artificial Intelligence: An introduction to basic concepts and techniques of artificial intelligence systems with insights given into active research areas and applications. Representational issues and notational structures are emphasized and existing systems are surveyed. Students work on assignments and small projects using Lisp.
Format: Lecture 3 hours
Prerequisite: CS2700

COMP4160A or B Operating Systems II: A further development of the material of Operating Systems I. Topics include concurrent processes, address space management, resource allocation, multiprogramming systems, protecting access to objects, pipelining, user interfaces and networks.
Format: Lecture 3 hours
Prerequisites: CS3700B, Mathematics 2070-2080

COMP4130A Analysis of Algorithms: This class covers algorithmic solutions to a wide variety of problems and a formal analysis of their complexity. It is a continuation of the 2610 class. Problems are taken from combinatorics and numerical computation including algorithms for unordered and ordered sets, graphs, fast multiplication, prime testing, factoring, polynomial arithmetic and metric operations. Other topics include the analysis of algorithms used in systems programming and artificial intelligence, such as pattern matching for text processing and algorithms in natural language processing.
Format: Lecture 3 hours
Prerequisite: CS2700
Cross-listing: Same as Math 4130A/B

COMP4140A Software Design and Development: This class involves a formal approach to state-of-the-art techniques in software design and development. Students work in teams in the organization, development and management of a large software project. Formal models of structured programming, stepwise refinement and top-down design, strength and coupling measures, milestones and estimating, chief-programmer teams, programme libraries and documentation are included.
Format: Lecture 3 hours
Prerequisite: CS2700

COMP4150B Theory of Programming Languages: This is a class in the formal treatment of programming language translation and compiler design concepts. Topics include lexical analysis and parsing with emphasis on the theoretical aspects of parsing context-free languages, translation specification and machine-independent code optimization. Finite state grammars, lexical scanners, and context-free parsing techniques such as LL(k), procedence, LR(k), SLR(k) are included.
Format: Lecture 3 hours
Prerequisite: CS2700

COMP4200B Selected Topics in Artificial Intelligence:
Format: Lecture 3 hours
Prerequisite: CS3750

COMP4250A/B Information Retrieval: An introduction to online information retrieval systems for textual databases. The major models of information retrieval will be covered as well as such basic tools as automated indexing and performance measures.
Format: Lecture 3 hours
Prerequisite: CS2350

COMP4350A/B Topics in Computer Science: An introduction to object-oriented programming (OOP) and C++.
Format: Lecture 3 hours
Prerequisites: Three 3000 level CS courses

COMP4400A Programming Methodology: Techniques for verification of computer programmes. Formal specification of software.
Format: Lecture 3 hours
Prerequisite: B average in 3000-level Computing Science courses

COMP4450B Introduction to Data Communications: The elements of data communications and the structure of computer networks will be discussed. The course uses the ISO model as a reference and includes an introduction to basic data transmission techniques, computer network topologies and architectures, and a look at some specific implementations and applications. This course will concentrate on the lower layers of the ISO model.
Format: Lecture 3 hours
Prerequisites: STATS 2070/2080

COMP4550B Microcomputers: This course provides an overview of microcomputer systems both at the general concept level and by examining specific systems. General architecture topics includeinstruction sets, memory I/O, bus systems and interrupt structures. Specific systems by several different manufacturers are examinedon the basis of both hardware and software.
Format: Lecture 3 hours
Corequisite: CS3700

COMP4650A/B Selected Topics in Information Retrieval: Assuming that the student has a broad understanding of the field of information retrieval,

this course takes an in-depth look at selected topics at the forefront of the field. The topics will vary slightly from year to year, but may include: clustering and nearest neighbour matching, information theory, bibliometrics, and new models of information retrieval.
Format: Lecture 3 hours
Prerequisite: CS4250A

COMP4660B Automata and Computability: This class deals with finite state, pushdown and linear bounded automata; their correspondents in the Chomsky hierarchy for formal grammars and Turing machines. Appropriate closure properties and non- determinism are discussed as well as computable and noncomputable functions and the Halting problem.
Format: Lecture 3 hours
Prerequisite: CS2670
Cross-listing: Same as Mathematics 4660A/B

COMP4700A/B Advanced Topics in Data Base Design: Topics vary from year to year depending on the interests of the students and the instructors. Past topics have included concurrency control, scheduling, query optimization and object-oriented data bases.
Format: Lecture 3 hours
Prerequisites: CS3250

COMP4900A Computer Systems Modelling: This course develops queueing network models suitable for modelling computer systems. Approximate and exact solutions to these models are developed and single and multiple classes of users are considered. Modelling multiprocessors, I/O, shared memory, swapping, paging, etc. are also considered. Finally, some of the modelling techniquesare applied to other situations such as database performance. The models are developed intuitively and justified rigorously using queuing network theory.
Format: Lecture 3 hours
Prerequisites: CS3700 and Stats 2070/2080

COMP8700 (non credit) Co-op Seminar

COMP8870C Honours Seminar

COMP8891 Co-op Work Term I

COMP8892 Co-op Work Term II

COMP8893 Co-op Work Term III

COMP8894 Co-op Work Term IV

Economics

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E. Klein

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T.A. Pinfold, BA, MA (W.Ont.), PhD (Minn.)

Introduction

Economics is a social science -- a science because it involves a rigorous intellectual effort to derive logical conclusions from basic facts and propositions; a social science because it has human beings and their welfare as its ultimate

concern. The basic facts of Economics cannot be knowable and measurable with the same precision as those of the physical sciences -- human society and its motivations are far too complex to permit this -- but none of the sciences surpasses economics in its relevance to our needs, problems and goals.

Economic man is rational man consuming, organizing and producing within a framework of laws and customs in an effort to use the limited resources of our world efficiently for the greatest satisfaction. It is not an easy science; indeed it is one of the most complex, difficult (and fascinating) areas of study you could choose in the university when you pursue it beyond its elementary levels, but some basic knowledge of economics is essential for any educated person. A more extensive knowledge of the subject is an invaluable complement to other fields of specialization such as law, commerce, politics and other studies in social sciences or humanities, and a specialization in the field can lead to a variety of interesting career opportunities.

Degree Programmes

The department offers both BA and BSc degree programmes which are described below. A student may graduate with either a BA or a BSc degree but not both. In all programmes the student must ensure that the courses selected satisfy the overall faculty requirements for the relevant general degree (BA or BSc).

General Principles

The following programme arrangements are provided to the students as guidelines to facilitate the selection of classes appropriate to particular areas of interest. They should not, however, be construed as straitjackets nor as a reason for not seeking individual guidance from faculty members. In suggesting such programme frameworks, two principles have particular weight: (a) students taking economics as a major, or in an honours programme, should strike a balance between breadth of coverage among disciplines and depth of specialization in economics; (b) students taking economics as a minor or as a component of another specialization, such as commerce, should be allowed a reasonable degree of flexibility in their choice of economics classes.

BA Honours Degree Programme (Four Years)

Undergraduate Coordinator: M. Bradfield (Tel: 494-2026)

Requirements:

1. Minimum total number of credits required in Economics (see also note 4 below) beyond the 1000 level: nine (this includes core classes, see 2 below).
2. Core classes in Economics: Economics 1100; 2200A/B (or equivalent), 2201A/B (or equivalent), 2228 (or Math 2060A/2080B); either 2232, or 2238A and 2239B; 3338A; 3347A/B; 3348A/B, 4100C, 4420B, 4421A.
3. Classes in Mathematics: Mathematics 1000A/B; 2030A or equivalent.
4. An honours essay graded on a pass/fail basis.

BSc Honours Degree Programme (Four Years)

Undergraduate Coordinator: M. Bradfield (Tel: 494-2026)

Requirements:

1. Minimum total number of credits required in Economics (see also note 4 below) beyond the 1000 level: nine (this includes core classes, see 2 below).
2. Core classes in Economics: Economics 1100; 2200A/B (or equivalent), 2201A/B (or equivalent), 2228 (or Math 2060A/2080B); either 2232 or 2238A and 2239B; 3338A; 3347A/B; 3348A/B, 4100C, 4420B, 4421A.
3. Classes in Mathematics: Mathematics 1000A/B; 1010B; 2030A or equivalent.
4. An honours essay graded on a pass/fail basis.

Notes:

1. Classes selected (outside of economics) in the third and fourth year must include at least two classes above the 1000 level.
2. The student's programme is chosen in consultation with the department and must have approval of the department.
3. Students must arrange their courses to ensure that they satisfy the overall requirements for the 15-credit BSc degree.
4. Since mathematics is required for graduate work in most good graduate schools, the value of econometrics and of additional mathematics is stressed. In some instances, the department may permit students to take classes in other subjects in lieu of classes in Economics and may permit minor variations in the required classes.

Combined Honours

Combined honours programmes, BA or BSc, may be arranged with other departments such as Biology, Geology, History, Mathematics, Political Science, Sociology, etc. For combined honours programmes with Economics, students also should consult the other departments concerned.

BSc Advanced Major Programme (Four Years)

Requirements:

1. Total of twenty credits that meet the requirements in regulation 11.3.
2. Economics 2200A/B (or equivalent),

Economics 2201A/B (or equivalent), Economics 2228 (or Math 2060A/2080B), 3338A.
3. Math 1000A/B, 1010B, 2030A/B.

A student who wants to have the option of later converting an advanced major to an honours degree should select classes in accordance with the list of core classes given above and should consult regulations 11.4 and 22. Besides additional core classes, the honours programme requires an honours essay and a higher academic standing than the advanced major. An honours programme can be converted to an advanced major at the student's discretion. The advanced major does, however, allow a maximum of only nine credits in economics while the honours programme allows a maximum of eleven.

BA Advanced MajorProgramme (Four Years)

An advanced major (BA) is available in economics. This program requires a total of twenty credits that meet the requirements given in regulation 11.3. In addition to those requirements, the twenty credits offered for an advanced major in economics (BA) must include Economics 2200A/B and Economics 2201A/B.

While the total number of credits required for the advanced major is the same as for an honours degree, the honours program in economics requires an honours essay and must include a core of classes in economics as given above. In addition, the honours program requires a higher academic standing than does the advanced major. However, the advanced major program does offer students the opportunity to enrol in a comprehensive program not available with the three-year program. Four-year major students are strongly encouraged to consult with members of the department to ensure an integrated and coherent program.

A student who wants to have the option of later converting an advanced major to an honours degree should select classes in accordance with the list of core classes above and should consult regulations 11.4 and 22. An honours program can be converted to an advanced major at the student's discretion. The advanced major does, however, allow a maximum of only nine credits in economics while the honours program allows a maximum of eleven.

BA Degree Programme (Three Years)

Undergraduate Coordinator: M. Bradfield (494-2026)

General Format

Requirements for a major in economics can be satisfied by taking Economics 1100 or equivalent and any four other full-year classes, or equivalent, in economics. Intermediate micro and macro theory (Economics 2200 and 2201, respectively) are not required but serve as prerequisites for most other classes and should be taken. Students who wish to keep open the option of transferring into the honours or advanced majors programmes should select classes consistent with the requirements of these programmes. No more than one-half credit will be given for Economics 2200A/B and 2220A/B, or for Economics 2201A/B and 2221A/B.

BSc Degree Programme (Three Years)

Undergraduate Coordinator: M. Bradfield (Tel. 494-2026)

For the general description of the programme see the description of the BA degree programme. The specific requirements are set out below.

Requirements:
1. Economics 1100, 2200A/B, 2201A/B, 2228 (or Math 2060A/2080B), 3338A,
2. Math 1000A, 1010B, 2030A/B,
3. A total of at least four full-year classes, or equivalent, in Economics other than Economics 1100,
4. Students must arrange their courses to ensure that they satisfy the overall faculty requirements for the general BSc degree.

Several combined programmes may also be arranged, with economics as the major or minor subject in association with such other fields as political science, sociology, history, geology, biology, mathematics - and possibly others.

Final programme approval for all majors' students must be obtained from the appropriate coordinator.

Classes Offered

Classes marked * may not be offered in 1991-92. Please consult the current timetable on registration to determine if any such class is being offered.

ECO 1100R Principles of Economics: For those lacking a background in economics, this class is taken as the first in a series of classes in economics or as a background elective. Emphasis is on developing the basic analytical tools and applying them in the context of contemporary, and generally Canadian, economics problems. Section 5 of Economics 1100 offers a problem-oriented framework in which the analytical tools are developed by examination in each term of a specific question. No more than one credit will be given for 1100 and 1105B.

Format: lecture 3 hours, tutorial 1 hour (optional)
Instructor: Staff

***ECO 1101A/B Principles of Microeconomics:** This class completes the principles of economics complement. Consult Department.

Format: lecture 3 hours, tutorial 1 hour (optional)
Instructor: Staff
Restriction: Available only to students who have one half credit of introductory macroeconomics which is being transferred from another university.

***ECO 1102A/B Principles of Macroeconomics:** This class completes the principles of economics complement. Consult Department.

Format: lecture 3 hours, tutorial 1 hour (optional)
Instructor: Staff
Restriction: Available only to students who have one half credit of introductory macroeconomics which is being transferred from another university

***ECO 1105B Principles of Economics:** For description see Economics 1100. Consult Department. No more than one credit will be given for 1100, 1105B.

Format: Lecture 6 hours, tutorial 2 hours (optional)
Instructor: Staff
Restrictions: Available only to students who are enrolling for the first time in January or who are declared economics majors, in that order of priority.

ECO 1106A/B Introductory Statistics for Non-Mathematicians: For description see Mathematics 1060A/B. Format:Lecture 3 hours

Prerequisite: Nova Scotia Mathematics 442 or equivalent
Cross-listing: Mathematics 1060A/B

ECO 2200A/B Intermediate Microeconomics: An introduction to microeconomic theory and its applications which satisfies the minimum microeconomic theory requirements for majors and honours in economics. Of particular interest to Commerce students or others not majoring in economics, it pays particular attention to applications of theory in a practical context. Serves as the microeconomic prerequisite for higher-level classes in economics.

Format: Lecture 3 hours
Instructor: Staff
Prerequisite: Economics 1100 or equivalent
Restriction: Students may not receive credit for both 2200A/B and 2220A/B

ECO 2201A/B Intermediate Macroeconomics: inflation, unemployment, exchange rate and related macro problems, with emphasis on Canadian policy experience in these areas. An introduction to macroeconomic theory and its applications which satisfies the minimum macroeconomic theory requirements for majors and honours in economics. Of particular interest to commerce students or others not majoring in economics, it serves as the macroeconomic prerequisite for higher-level classes in economics.

Format: Lecture 3 hours
Instructor: Staff
Prerequisite: Economics 1100 or equivalent
Restriction: Students may not receive credit for both 2201A/B and 2221A/B.

ECO 2222A Economic Statistics I (cross-listed with Commerce 2501A/B): For description see Commerce 2501A/B.

Format: Lecture 3 hours, workshop 2 hours
Instructor: Staff

ECO 2223B Economic Statistics II (cross-listed with Commerce 2502A/B): For description see Commerce 2502A/B.

Fomat: Lecture 3 hours, workshop 2 hours
Instructor: Staff

***ECO 2228R Intermediate Statistics:** Including the basic theory of mathematical statistics and an introduction to econometrics, this class concentrates on the theory of probability, discrete and continuous probability models, mathematical expection, moment generating functions, and statistical inference. The linear regression model is also discussed. A critique of various problems that arise consequent to violations of the assumptions of the linear regression model is presented as a preparation for applied econometric work and advanced work in econometrics.

Format: Lecture 3 hours
Instructor: U.L.G. Rao
Prerequisite: The student is expected to have at least a one-year course in calculus (Mathematics 1000 and 1010). Students should take Math 2060A and 2080B.

ECO 2232R Canadian Economic History: The development of Canada from the age of discovery to now, presented in relation to the larger system of the relationships between the Old World and the New. As the class proceeds, the focus shifts more and more towards Canada and more formal theory is introduced in discussing Canadian problems and policies, especially in the twentieth century.

Format: Lecture 3 hours
Instructor: B. Lesser
Prerequisite: A class in economics principles and some knowledge of history is recommended.

***ECO 2238A The Industrial Revolution in Europe:** Transitions from preindustrial to industrial economies in England, France, Germany and Russia form a broad background for understanding the roots of contemporary society; of particular relevance for those interested in the economic history of Canada, the United States and other countries formerly part of a colonial system. Emphasis is on the economic, social, and technical changes of these industrial "revolutions" to disclose common elements in the experience of industrialization.

Format: Lecture 2 hours
Instructor: P.B. Huber
Prerequisite: Introductory Economics or permission of Instructor

***ECO 2239B The European Economy in Historical Perspective - After the Industrial Revolution:** A self-contained class (may be taken separately from Economics 2238A) examining the contrasting development patterns of various industrialized European countries after their respective industrial revolutions and up to about 1960. Focus is on the development of hypotheses regarding the causes and effects of differences in the experience of growth of mature economies.

Format: Lecture 2 hours
Instructor: P.B. Huber
Prerequisite: Introductory Economics or permission of the Instructor

***ECO 2241A Comparative Economic Systems: National Economies:** A detailed background of institutional material on the structure and performance of several economies is featured. Reading on specific countries provides the basis for several short papers. There is no written examination. A student taking this class must understand the interrelated character of economic activity and grasp the nature of the price system.

Format: Seminar 2 hours
Instructor: P.B. Huber
Prerequisite: Introductory Economics

***ECO 2242B Comparative Economic Systems: Economic Organization and Planning:** The economic behaviour of organizations and the ways in which this can be controlled provide the basis for consideration of the theory and practice of economic planning at micro-economic and macro-economic levels in various institutional contexts.

Format: Seminar 2 hours
Instructor: P.B. Huber
Prerequisite: Introductory Economics, plus an additional half-class in Economics

ECO 2250R Applied Development Economics: Analysis of economic development theory and practice, with particular emphasis on developing countries and regions. There are three main elements: (1) policy and theory for economic development, focussing on foreign aid and regional aid; (2) development plans, budgets, and programmes -- lessons from experiences of agencies such as CIDA, CUSO, and the World Bank; (3) projects for development -- drawing on case studies and first-hand field work. Experienced advisors from government and the private sector join the instructor during project visits.

Format: Seminar 2 hours and tutorials
Instructor: R.I. McAllister
Prerequisite: Introductory Economics

ECO 3315A Labour Economics: The theory of labour markets is emphasized, in particular the aftermath of alternative viewpoints which seek to explain relative wages, unemployment and the allocation of labour.

Format: Lecture 3 hours
Instructor: L. Osberg or S.A. Phipps
Prerequisites: ECON 1100; ECON 2200 and 2201 (or equiv) are recommended

ECO3316B Collective Bargaining and Labour Market Policy: Topics covered are the theory and institutions of collective bargaining and current issues in labour market policy, e.g. discrimination, manpower planning, wage/price controls, impact of unemployment insurance or the negative income tax.

Format: Lecture and seminar
Instructor: L. Osberg
Prerequisite: Economics 3315A

***ECO 3317B Poverty and Inequality:** The extent of poverty and the distribution of income and wealth in contemporary societies are discussed. Most data are drawn from Canada but international evidence is introduced for comparative purposes. The theories underlying alternative measures and explanations of economic inequality are emphasized.

Format: Lecture and seminar
Instructor: L. Osberg
Prerequisites: Economics 1100; Economics 3315A is highly recommended

ECO 3324R Public Finance: The principles of public finance and public policy, i.e. the economics of the public sector. The two major sections are (1) the theory of public goods and public expenditures and (2) the theory of public revenue, principally taxation. Other important areas are public borrowing, fiscal (stabilization) policy, and intergovernmental fiscal relations. Both normative and positive theory are considered. Particular attention is paid to the Canadian federal system, with its three levels of government: federal, provincial and municipal.

Format: Lectures and seminar 3 hours
Instructor: J.F. Graham
Prerequisites: Introductory Economics, Economics 2200A/B and 2201A/B (or equivalents) are desirable.

***ECO 3326A Money and Banking:** The class concerns the nature and operation of the financial system, with particular reference to Canadian experience. It treats financial instruments (including money) and institutions and the social control of the supply of money and credit. This class is complemented by Economics 4426B.

Format: Lecture 3 hours
Instructor: R.L. Comeau
Prerequisite: Economics 1100R. It is also desirable to have completed Economics 2201A/B (or equivalent).

ECO 3328R Industrial Organization: The application of the models of price theory to economic reality. In any industry, the problems of a firm competing with its rivals in order to survive and acquire a higher market share are far more complex than those in price theory where we have to deal with more or less simplified assumptions. The three main parts are: market structure, market conduct and market performance.

Format: Lecture 2 hours
Instructor: C. Marfels
Corequisite: Economics 2200A/B (or equivalent) or instructor's consent

ECO 3330A/B International Trade: The causes of international exchange of goods and services are considered and the effects of international integration on the incomes and growth rates of national economies are analyzed. The theory and practice of commercial policy and other restrictions on trade are considered after the pure theory of international trade and its implications have been explored. Depending upon class interest and availability of time, the subjects of economic integration and of Canadian commercial policy may be discussed in some detail.

Format: Lecture 3 hours
Instructor: R.L. Mazany or A.M. Sinclair
Prerequisites: Introductory Economics and 2200A/B (or equivalent)

ECO 3332A/B Resource Economics: This class focuses on intertemporal economics and the economics of market failure as they pertain to the use of natural resources. A selection of resource sectors will also be discussed. Fisheries, agriculture, forestry, and energy represent possibilities, but this will vary from year to year.

Format: Lecture 3 hours
Instructor: M. Cross
Prerequisite: Introductory Economics. Economics 2200A/B (or equivalent) is also desirable.

ECO 3333A/B Theories of Economic Development: A theoretical framework for the understanding of the process of economic development in the more and the less developed countries is provided with a view to its eventual application to the solution of practical problems. The concluding seminars are devoted to the problem of the foundations of the theory of economic development, and the distinction between the concepts of unilinear and multilinear evolution is discussed.

Format: lecture 2 hours
Instructor: B. Lesser
Prerequisite: Introductory Economics. Economics 2201A/B (or equivalent) and Economics 3347 and 3348 are desirable.

***ECO 3334A/B Economic Development - Recent Debates, Controversies and Conflicts:** Whereas Economics 3333A deals with the more rigorously defined theories and models and their appraisal, this class focusses on the development policies and related controversies. Important examples of such controversies and conflicts, with far reaching developmental consequences, are provided. Attention is paid to the much debated environmental aspects of growth and development.

Format: Lecture 2 hours
Instructor: Staff
Prerequisite: Economics 1100. Economics 2201 (or equivalent) and Economics 3333A/B are desirable.

***ECO 3336B Regional Development:** Most countries have richer and poorer regions. The energy crisis has raised additional complications. Economic development issues, policies, and theories facing more industrialized nations are analyzed with particular focus on Canada (especially the Atlantic region), the European Economic Community, U.S.A., Japan, and Australia.

Format: Seminar 2 hours and tutorials
Instructor: R.I. McAllister
Prerequisite: Introductoiry Economics. At least one class in both Political Science and Canadian History are desirable.

ECO 3338A Introductory Econometrics I: The theory of some quantitative methods commonly used by economists is introduced in the context of the classical linear model. Estimation problems caused by violations of the assumptions of the classical model are discussed including heteroskedasticity, autocorrelation and simultaneous equations bias.

Format: Lecture 3 hours
Instructor: L. Osberg
Prerequisites: Mathematics 1000 (or equivalent) and one of Economics 2228 (or Math 2060A/2080B), Economics 2222A and 2223B or Mathematics 1060A.

***ECO 3339B Introductory Econometrics II:** Practical problems associated with economic data and with model specification and estimation are discussed. The techniques introduced in Introductory Econometrics I are used to estimate simple economic models. Some additional methods of estimation and forecasting are introduced.
Format: lecture 3 hours
Instructor: D. Gordon
Prerequisite: Economics 3338A

ECO 3347A/B Classical Political Economy: The theories of production, value, distribution, and economic growth developed in classical political economy will be discussed in this class. Reactions to classical political economy and links between this body of thought and macroeconomics will be included as time permits.
Format: Lecture 3 hours
Instructor: M.L. Cross
Prerequisites: Economics 1100R; Economics 2200A/B and 2201A/B (or equivalents) are recommended, but not required; though intermediate theory is not a prerequisite, it will be assumed that students taking this class have achieved the level of academic maturity normally expected in third year university students.

ECO 3348A/B Modern Economic Thought: Theories of production, value, and distribution developed since the marginal revolution, which dates from roughly 1870, will be examined in this class. Contributions to this body of thought developed before 1870, while classical political economy was dominant, will also be considered. Theories of equilibrium, stability, and economic growth will be discussed as time permits, but coverage of all topics must be selective because of the vastness of modern economic literature.
Format: Lecture 3 hours
Instructor: M.L. Cross
Prerequisites: Economics 1100 and 2200A/B or equivalent; Economics 2201 or equivalent advised.

ECO 3350A/B Social Cost Benefit Analysis: The methodological base of social cost benefit analysis is developed, demonstrating some practical applications. Social cost benefit analysis and capital budgeting are two approaches to investment decision making. The former is used by public sector agencies; the latter is employed by private sector firms. Similarities and differences in the two approaches are highlighted. Solving problems which illustrate basic concepts and a paper reporting on an actual application of the methods taught are important requisites.
Format: Seminar 3 hours
Instructor: T.A. Pinfold
Prerequisite: Introductory Economics; Intermediate Microeconomics and Introductory Statistics are desirable.

***ECO 3356A/B Marxian Economics I:** Historically, the economics of Karl Marx defined a very important period in the development of economic theory. Recently, several attempts have been made to integrate Marxian economics into the mainstream of modern economic analysis. This class and Economics 3357B constitute an introduction to the economics of Karl Marx. In 3356, special attention will be paid to the labour theory of value; the theory of exploitation and Marx's fundamental theorem on industrial capitalism; and the theory of simple reproduction.
Format: Lecture 3 hours
Instructor: Staff
Prerequisites: Economics 2200A/B and 2201A/B or instructor's consent; Economics 3347A/3348B is recommended.

***ECO 3357A/B Marxian Economics II:** This class is a continuation of Economics 3356. Special attention will be paid to the theory of extended reproduction and accumulation of capital, the so-called transformation problem, and the issue of class struggle in a growing economy.
Format: Lecture 3 hours
Instructor: Staff
Prerequisites: Economics 3356A/B or instructor's consent

***ECO 3432R Regional Economics:** A variety of growth theories are examined, followed by a discussion of empirical studies and their assessment from the various theoretical points of view. Policy discussion and the presentation of a seminar paper are involved. A framework for understanding the reasons for regional disparities is provided. Focus is on the underdeveloped regions of developed nations.
Students may take Economics 5511A/5512B.
Format: lecture and seminar 3 hours
Instructor: F.M. Bradfield
Prerequisite: Economics 2200A/B (or equivalent)

***ECO 4000R Seminar on Economic Policy - Public Policy in the 90's:** The discussion centres on the problems of formulating and carrying out economic policy in Canada. Recent budget addresses; industrial policy and tax and expenditure policies are reviewed. Other topics include Canada's reliance on resource exports and capital imports; issues raised by multinational corporations and their consequences for political sovereignty. The choice of a balanced economy or export specialization is examined. The approach is interdisciplinary.
Format: 2 hours

ECO 4100C Honours Seminar: This is a required course for honours students, optional for others. The course is devoted to: a) preparation and presentation of honours papers; b) discussion of policy issues; and c) lectures and discussion by faculty members and occasional invited guests.
Format: Seminar 3 hours
Instructor: Staff
Prerequisites: Economics 2200A/B (or equivalent) and 2201A/B (or equivalent) and Economics 2228 (or Math 2060A/2080B)

***ECO 4400A Linear Models I:** Exposition of aspects of economic theory from the standpoint of linear economic models. A brief systematic exposition of linear programming, followed by applications such as in: theory of the firm, Leontief inter-industry model, transportation problems, international trade, general equilibrium theory, game theory.
Format: Lecture 3 hours
Instructor: S. Dasgupta
Prerequisites: Instructor's consent if possible; Economics 2200A/B and/or Economics 2201A/B (or equivalents) and a class in linear algebra are desirable.

ECO 4408R Competition Policy/Antitrust Economics: In this class the various ways of public policy towards business are discussed. Basically, there are three approaches to public policy towards business -- the competitive approach, the regulatory approach, and the ownership approach. Under the first, the ownership of the means of production is in private hands, and the public interest is assumed to be protected by the free play of competitive forces. Under the second, ownership remains in private hands but in one way or another the state restrains the exercise of private economic power. And under the third, the state not only owns but manages and operates the productive facilities. Specific attention will be paid to the means of implementing the competitive approach to the antitrust laws.
Format: Lecture 2 hours
Instructor: C. Marfels
Prerequisite: Economics 3328R or instructor's consent

ECO 4420A/B Microeconomic Theory: A basic but rigorous introduction to modern microeconomic theory. Deals in detail with the theory of choice as applied to consumers and firms, and discusses the working of an economy as a system of interdependent decision-makers. Emphasis is on the comparison of alternative solution concepts for competitive economies ending with an introduction to stability theory.
Format: Lecture 3 hours
Instructor: E. Klein or S. DasGupta
Prerequisite: Economics 2200 (or equivalent); Mathematics 1000 and 1010 are desirable.

ECO 4421A Macroeconomic Theory: For those who wish to do relatively advanced work in economic theory, possibly with the thought of going on to do graduate work in economics. The class assumes some knowledge of calculus. Topics covered include: classical models of income and employment; Keynesian models of income and employment; the theory of economic growth (including two-sector models); and trade cycle models.
Format: Lecture 3 hours
Instructor: J. Cornwall
Prerequisite: Economics 2201A/B (or equivalent) and Mathematics 1000 and 1010 (or equivalent)

***ECO 4422B Inflation, Stagflation and Macroeconomic Policy:** A consideration of different theories of inflation that have been developed to explain the acceleration of inflation in the past decade. Alternative policy solutions are appraised. Forms of incomes policy are taken up in some detail.
Format: Lecture 3 hours
Instructor: J. Cornwall
Prerequisite: Economics 2201 (or equivalent)

***ECO 4426B Monetary Policy:** Assuming a basic knowledge of monetary institutions and macro-economics, a critical analysis of the objectives and effectiveness of monetary policy is developed. Particular attention is given to the Canadian experience and the effectiveness of Canadian policy.
Format: Lecture 3 hours
Instructor: R.L. Comeau
Prerequisite: Economics 2201A/B (or equivalent); It is advantageous for students to have completed Economics 3326A as well.

ECO 4431A/B International Payments: Selected topics in recent international monetary history are examined, the causes of, and remedies for, external imbalance in national economies are considered, and the reorganization of the international monetary system is discussed. Depending upon class interest, certain issues of international development finance and problems of instability and growth in the international economy may be discussed in detail.
Format: Lecture 3 hours
Instructor: R.L. Mazany or A.M. Sinclair
Prerequisite: Economics 2201A/B (or equivalent)

ECO 4446A/B Classical Liberalism, and Democracy: For description see Philosophy 4470A/B.

Format: Seminar 2 hours
Instructor: Staff
Cross Listing: Philosophy 4470A/B, Political Science 4479A/B

ECO 4447B The Theory of Games as an Approach to the Foundations of Ethics and Politics: For description see Philosophy 4430A/B.
Format: Seminar 2 hours
Instructor: Staff
Cross Listing: Philosophy 4430A/B, Political Science 4480A/B

ECO 4448A Social Choice Theory: For description see Philosophy 4480A/B.
Format: Seminar 2 hours
Instructor: Staff
Cross Listing: Philosophy 4480A/B, Political Science 4480A/B

Engineering

Location: Sir James Dunn Building, Room 326
Telephone: (902) 494-2344

Chairperson of Department
J.C. MacKinnon

Professors
J.C. MacKinnon, BEng (TUNS), MScEng (Lond.), PhD (Dal), PEng
S.T. Nugent, BSc (Mem.), BEng (NSTC), MASc (Tor.), PhD (UNB), PEng.

Associate Professors
D.M. Lewis, BEng, MEng (NSTC), PEng
M.H. Mansour, BEng (Cairo), BSc (AIN Shams) MEng (McM), PhD (TUNS), PEng
E.N. Paterson, BSc (MtA), BEng (NSTC), MSc (Queen's), PEng
D.G. Retallack, BSc (Dal), BEng (NSTC), MSc, PhD (Manchester), PEng

Assistant Professor
C.K.K. Lun, BEng, (McGill), MEng (McGill), PhD (McGill), P. Eng.

Introduction

Professional engineers are concerned with making the properties of matter and the sources of energy in nature beneficial to mankind. The curriculum develops "an individual's ability to use the basic sciences, mathematics, engineering sciences, economics and social sciences to convert, use and/or manage resources optimally through effective analysis, interpretation, and decision making to meet objectives". University studies in engineering are concerned with the design of engineering systems, but the skills learned are widely applicable. Many engineers combine their profession with other activities, most notably management.

The professional degree in Engineering is the Bachelor of Engineering degree which is conferred by the Technical University of Nova Scotia in association with Dalhousie University. The first two years of study are taken at Dalhousie and comprise a programme of 11 credits which lead to the Diploma in Engineering. Upon successful completion of this programme, students will be admitted to the Technical University of Nova Scotia for a further three years of study leading to the degree of Bachelor of Engineering in Civil, Electrical, Mechanical, Mining, Chemical, Industrial, or Agricultural Engineering. These programmes have been accredited by the Canadian Accreditation Board of the Canadian Council of Professional Engineers.

TUNS offers a combined BEng/MEng programme in Metallurgical Engineering. The admission requirement is the Diploma of Engineering, but admission is limited to ten students per year, on a competitive basis. The programme is accredited by the Canadian Accreditation Board of the Canadian Council of Professional Engineers.

Degree Programmes

Dalhousie offers various programmes for students wishing to pursue studies jointly in Engineering and in Arts or Science. Students may arrange programmes leading to a Bachelor of Science degree, with a major in Biology, Chemistry, Computing Science, Geology, Mathematics or Physics in addition to the Diploma in Engineering. Programmes leading to a Bachelor of Arts Degree in addition to the Diploma in Engineering can be arranged with a major in a language, social science, or humanities subject. These combined programmes require three years of study at Dalhousie. Three years are still required at TUNS in order to receive the Bachelor of Engineering degree.

Students wishing to enroll jointly in the Diploma in Engineering and Bachelor of Science or Bachelor of Arts programmes should consult the Department of Engineering prior to registration in the first year.

Students who graduate from TUNS fulfill the academic requirements for registration as a Professional Engineer in all provinces in Canada. In addition to the academic requirements, the Profession requires that applicants for registration have practical experience relevant to the discipline of engineering. The minimum requirement is two years of experience subsequent to completion of the BEng. It is recommended that, in addition to this, students obtain engineering experience in the summer periods prior to graduation.

Diploma in Engineering

Admission Requirements

Students wishing to enroll in the Diploma in Engineering Programme in the Department of Engineering must satisfy the requirements for admission to the Faculty of Science at Dalhousie and must also satisfy the additional requirements of the Department of Engineering. Students are normally expected to have completed Nova Scotia Grade XII senior matriculation classes, or equivalent, in Mathematics, Physics and Chemistry and should rank well in their class. Students may be admitted with advanced standing.

Admission with Advanced Standing

Students wishing admission with advanced standing in the Diploma in Engineering Programme are advised that normally a minimum of seven full credit classes of those described for the programme must be taken at Dalhousie. Transfer credit will not be granted for any class in which the final grade was less than C, or equivalent, or for any class in which a final grade was granted conditionally. Moreover, summer school classes are normally required as part of any Engineering programme incorporating advanced standing. Students must obtain agreement for such programmes, prior to the start of the Summer School session which precedes the next regular session, from the Department of Engineering.

Diploma in Engineering Programme

The programme is organized on a term basis although some classes are of two terms duration. Terms I and II are Year I; Terms III and IV are Year II.

Term 1: Engineering 1100A, Mathematics 1000A, Chemistry 1020R, Physics 1100R, and one elective[1].

Term 2: Engineering 1120B, Mathematics 1010B, Chemistry 1020R, Physics 1100R, and one elective[1].

Term 3: Engineering 2121A, Engineering 2331A, Engineering 2240A, Engineering 2340A, Mathematics 2480A, and one elective[1].

Term 4: Engineering 2222B, Engineering 2101B, Engineering 2230B, Engineering 2341B, Mathematics 2490B, and one elective[1].

[1] The electives are to be selected from the humanities and social sciences. In the first year the elective must be selected from an approved list of classes in which written work is considered frequently and in detail. Students should seek the advice, and they must obtain the approval, of the Department of Engineering for these electives.

BSc/Diploma in Engineering

Students may arrange programmes leading to a BSc with a major in one of the sciences in combination with the Diploma in Engineering. Upon completion of the joint programme, graduates receive both the Diploma in Engineering and a BSc degree.

The programme for the BSc plus Diploma in Engineering consists of fifteen classes. Eleven of the classes are the classes for the Diploma in Engineering. The remaining classes must be chosen to meet the requirements for the BSc. One of these requirements is that there must be four classes beyond the first year in the science major. If the science major is mathematics, physics, or chemistry, then the recommended first year programme is the first year of the Diploma in Engineering. The second and third years each consist of approximately half of the remaining requirements for the Diploma and half of the requirements for the BSc. If the science major is computing science, biology, or geology, then students should seek the advice of the Department of Engineering, prior to registration in first year.

BA/Diploma in Engineering

Students may arrange programmes leading to a BA with a major in one of the arts (humanities, languages, social sciences) in combination with a Diploma in Engineering. Upon completion of the joint program, graduates receive both the Diploma in Engineering and the BA degree.

This joint programme consists of fifteen classes. Eleven of the classes are required for the Diploma in Engineering; two of these must be in the arts. The remaining four classes must be chosen to meet the requirements for the BA.

Students interested in this type of programme should contact both the Department of Engineering and the department for the BA major subject.

Classes Offered

Texts and names of instructors shown are for the previous year.

ENGI 1100A Graphics: In this class the basic problem of representing three-dimensional solid objects on a two- dimensional sheet of paper is solved by a variety of methods. Problems involving points, lines, planes, and objects are tackled using the techniques of multiview drawing, pictorials (oblique, isometric, and perspective), and descriptive geometry.

Instructor:	D. G. Retallack
Format:	Lecture 2 hours, lab/tutorial 3 hours
Text:	Engineering Design Graphics, Earle
Enrolment:	160 maximum

ENGI 1120B Statics: Statics is the first in a sequence of three classes in Engineering Mechanics. The work in Statics is designed to instruct the student in concepts of force and equilibrium. Topics include a review of the laws of motion, elements of vector algebra, such quantities as position and force vectors, moments of a force about an axis, couple moments, equivalent force systems, equilibrium of two and three-dimensional structures, two-dimensional trusses, frames and simple machines, shear forces and bending moments in beams, laws of Coulomb friction, centroids and centre of mass area moments, and products of inertia.

Format:	Lecture 4 hours, lab/tutorial 2 hours
Instructors:	M.H. Mansour, C.K.K. Lun
Prerequisite:	Mathematics 1010
Text:	Vector Mechanics for Engineers, Vol. 1 Statics, 5th Edition, Beer and Johnston.
Enrolment:	160 maximum

ENGI 2101B Engineering Design: The work of 1100A (Graphics) is extended to include technical drawings and computer graphics, a design project with working drawings and a technical report, as well as the construction and testing of physical models.

Format:	Lecture 3 hours, lab/tutorial 3 hours
Instructors:	E.N.Patterson, M.H. Mansour
Prerequisite:	Engineering 2121A, 2331A, 2240A, 2340A, Mathematics 1000
Enrolment:	120 maximum

ENGI 2121A Dynamics of Particles: This second class in Engineering Mechanics considers the kinematics and kinetics of a single particle and of systems of particles. The class builds on the concepts introduced in Engineering 1120 (Statics); a vector approach is used. Topics include kinematics of a particle, Newton's laws, work, energy, power, conservative force fields, linear impulse and momentum, impulsive forces, impact, collisions, and angular momentum. All topics are treated using rectangular, path, and cylindrical coordinates.

Format:	Lecture 3 hours, lab/tutorial 3 hours
Instructors:	E.N.Patterson, S.T. Nugent
Prerequisite:	Engineering 1120B, Mathematics 1010
Text:	Vector Mechanics for Engineers, Vol. 2 Dynamics, 5th Edition, Beer and Johnston.
Enrolment:	120 maximum

ENGI 2222B Dynamics of Rigid Bodies: This class completes the study of Engineering Mechanics. The concepts introduced in Engineering 2121 (Dynamics of Particles) are extended to rigid bodies. Topics include kinematics of a rigid body using both the translating reference frame theory and the general rotating reference frame theory, kinetics of plane motion of rigid bodies including general plane motion, energy methods, impulse and momentum methods and vibrations of single degree of freedom systems.

Format:	Lecture 3 hours, lab/tutorial 3 hours
Instructors:	D.M. Lewis, D.G. Retallack
Prerequisite:	Engineering 2121A, 2240A, Mathematics 2480
Text:	Vector Mechanics for Engineers, Vol. 2 Dynamics, 5th Edition, Beer and Johnston.
Enrolment:	120 maximum

ENGI 2230B Electric Circuits: An introduction to the fundamental laws of electric circuits and circuit parameters, the concept of time-constants, impedances, admittances, general network theorems, three-phase circuits and transformers. The laboratory periods illustrate the use of electrical measuring devices.

Format:	Lecture 3 hours, lab/tutorial 3 hours
Instructor:	S.T. Nugent
Prerequisite:	Physics 1100, Mathematics 1010
Text:	Circuits, Devices and Systems, 4th Edition, Smith
Enrolment:	120 maximum

ENGI 2240A Computer Methods in Engineering: This class first introduces the student to computers in general and to our machines in particular, to the use of an editor for creating computer programmes, and to the design and running of simple programmes. The class then focuses on an algorithm-design process which uses structured programming techniques and is independent of the language chosen for coding. PASCAL is used as the implementation language, and it is taught to an intermediate level. Typical assignments involve computer solutions of engineering and mathematical problems.

Format:	Lecture 3 hours, lab/tutorial 3 hours
Instructors:	E.N.Patterson, J.C. MacKinnon
Prerequisite:	Engineering 1120B, Mathematics 1010
Text:	Problem Solving in Pascal for Engineers and Scientists, Etter
Enrolment:	120 maximum

ENGI 2331A Strength of Materials: This class is an introduction to the study of the stresses, strains, and deformation of a solid body which results when static forces are applied to the body. Topics discussed include: the definition and transformation relations of stresses and strains, axial loading applications, torsion of circular sections, stresses and deflection of beams, combined static loading and column action.

Format:	Lecture 3 hours, lab/tutorial 3 hours
Instructor:	M.H. Mansour
Prerequisite:	Engineering 1120B, Mathematics 1010
Text:	Mechanics of Engineering Materials, 4th Edition, Higdon, Olsen and Stiles.
Enrolment:	120 maximum

ENGI 2340A Classical Thermodynamics: An introduction to the fundamental concepts and principles of thermodynamics as applied to engineering design problems. Topics in this class include: properties and processes of ideal gases and simple compressible substances, work and heat interactions, energy and the first law of thermodynamics – analysis of control masses and control volumes, entropy and analysis based upon the second law of thermodynamics, performance of selected components (e.g. turbines, compressors, pumps, heat exchangers) and systems (power and refrigeration cycles).

Format:	Lecture 3 hours, lab/tutorial 3 hours
Instructor:	C.K.K. Lun, E.N. Patterson
Prerequisite:	Mathematics 1010, Chemistry 1110
Text:	Fundamentals of Engineering Thermodynamics, Howell and Buckius.
Enrolment:	120 maximum

ENGI 2341B An Introduction to Fluid Mechanics: This class extends the basic concepts of mechanics from solids to fluids. It comprises the study of fluid properties, fluids at rest and in motion. Dimensional analysis is introduced. The fundamental flow-governing equations (conservation of mass, momentum and energy) are derived and applied to a selection of engineering problems.

Format:	Lecture 3 hours, lab/tutorial 3 hours
Instructors:	C.K.K. Lun, J.C. MacKinnon
Prerequisite:	Engineering 1120B, 2121A, 2340A, Mathematics 1010, 2480
Text:	Fundamentals of Fluid Mechancis, Gerhart and Gross.
Enrolment:	120 maximum

Geology

Location: Life Sciences Centre, Room 3006
Telephone: (902) 494-2358

Chairperson of Department
P.J.C. Ryall

Undergraduate Advisor
G.K. Muecke (494-6569)

Co-op Co-ordinator
J. Hall (494-6510)

Graduate Co-ordinator
P. Reynolds (494-2325)

Emeritus Professors
H.B.S. Cooke, MSc, DSc (Witwatersrand)
C.G.I. Friedlaender, PhD (Zurich)

Professors
C. Beaumont, BSc (Sussex), PhD (Dal), (Oceanography)
D.B. Clarke, BSc, MA (Tor.), PhD (Edin.)
J.M. Hall, BSc (Wales), PhD, DIC (Lond.)
R.A. Jamieson, BSc (Dal), PhD, (MUN)
F. Medioli, PhD (Parma) - (on leave)
P.H. Reynolds, BSc (Tor.), PhD (UBC), (jointly with Physics)
P.T. Robinson, BSc (Mich.), PhD (Calif.),
P.E. Schenk, BSc (W.Ont.), MSc, PhD (Wisc.)
M. Zentilli, BSc (Chile), PhD (Queen's)

Associate Professors
R. Boyd, BSc, PhD (Sydney)
M.R. Gibling, BA (Oxon.), PhD (Ottawa)
G.K. Muecke, BSc, MSc (Alta.), DPhil (Oxon.)
P.J.C. Ryall, BSc (Dal), MSc (Alta.), PhD (Dal)
D.B. Scott, BSc (Washington), PhD (Dal)

Assistant Professors
N. Culshaw, BA (Keele), PhD (Ottawa)

Senior Instructor
P. Wallace, BSc, MSc (McM)

CIDA/NSERC Research Fellow
S.O. Akande, BSc (Ibadan), MSc (W. Ont.), PhD (Dal)

Research Associate
C. Beaumont (Major appointment in Oceanography Department)

Adjunct Professors
F. Gradstein, BA, MSc, PhD (Utrecht)
P. Hacquebard, PhD (Groningen)
M. Salisbury, BSc (MIT), PhD. (Washington)

Introduction

Geology is the science of the Earth and deals with many questions, such as: How was the Earth formed? What is its composition? Where do we look for oil? Or nickel? What changes the Earth now? What moves continents? Why are the ages of all the ocean basins less than one-twentieth the age of the Earth itself? Geology is an intellectually exciting discipline, and its study is of enormous economic importance to Canada.

Classes in geology are offered for different types of students. Some will want to make a career in some aspect of the study of the Earth -- as geologists, geochemists, geophysicists, oceanographers or teachers -- and work for private industry or government agencies. Some may need instruction in geology as an aid to other disciplines: for example, a mining engineer, an environmental scientist interested in groundwater problems, a marine engineer interested in coastal processes, or a biologist interested in protozoa. Other students may be interested in a geology degree before they take a professional qualification such as law or business administration. Those whose prime interest is the humanities or social sciences will find that introductory classes in geology stimulate their awareness of their surroundings, and develop their appreciation of science.

High School Preparation

Students in high schools who plan a career in sciences involving the Earth, such as geology or geophysics, should note that it is sensible to try to have the following subjects in Grades XI and XII: Grade XII Mathematics, plus Chemistry and Physics. Note that these are not prerequisites, but are strongly advised. The student should aim to make up deficiencies in high school preparation in the first year at Dalhousie.

Degree Programmes

Programmes and Classes for Non-Geology Majors

These classes are specially designed for those who want to know something about the Earth, but whose major field of study at Dalhousie will lie elsewhere; an economics student, concerned with resources; a history student, interested in the role played by Canada's geological frame in the development of transportation; a biology student interested in faunal environments on the sea floor. These classes are:

GEOL 1040A/1050B, a class especially designed for students in the arts and social sciences.
GEOL 1200R, interdisciplinary science class designed for non-science majors.
GEOL 2400A, Marine Geology, an evening class open to all with 1000 or good grades in 1040A.
GEOL 2410B, is an evening class, open to all with 1000, or good grades in 1040A.

For engineering students and science students in other disciplines: Biologists - 1000, 2410B/3410B, 2201A/2202B; Chemists - 1000, 2101A/2102B, 3010A, 3020B, 4380A; Physicists and Mathematicians - 1000, 2050B, 3130B, 4270A, 4280B, and 4290B.

Field Work

Field excursions are part of several classes and are conducted at appropriate times during the session. In addition, some optional field excursions may be held each year.

Students are charged a contribution towards the cost of all field excursions. Charges for those trips that are held during the session, as part of a class, are payable at registration. As a result of increased costs and uncertainty of external funding, fees for individual field excursions are fixed yearly. (Please consult Department.) The charges for optional field trips are notified, and payable, several months in advance. Overpayments, in excess of $5.00, are reimbursed to the student.

Honours Degree Programmes

An honours degree is almost essential for any professional work in earth sciences, and for graduate study. Students must take the second and third year classes of the Geology core programme listed below.

Year 1 will normally consist of: GEOL 1000 or 1040A/1001B; Mathematics 1000A/1010B or 1500; one class in two of Physics, Chemistry or Biology. Recommended classes are: Physics 1100, Chemistry 1100, Biology 1000 or 2001A/2002B; an elective (normally selected to meet the Faculty Writing Requirement).

Note: Physics 1100 and a Mathematics class are prerequisites for GEOL 2050B, which fits best into Year II of the programme.

Year 2 will normally consist of:

1. GEOL 2050B, 2101A/2102B, 2110A, 2201A/2202B.
2. One class in two of Physics, Chemistry, Biology, Mathematics. Recommended classes are: Biology 2001A and 2002B, 3321; Chemistry 2110A/B, 2200A/B, 2310A, 2320B; Physics 2000A, 2005A, 2010B, 2015B, or 2220A/2230B; Mathematics 2000, 1060A/1070B, 2270A/B.
3. Attendance at an approved field school (GEOL 0001).

Year 3 will normally consist of:

1. GEOL 3010A, 3020B, 3140A, 3301A/3302B
2. One class in Physics, Chemistry, Biology or Mathematics; and an elective.

3. Students in the geophysics stream will take GEOL 3130B. This class has a field school, which is an integral part of the course. It is normally held in late April or early May.
4. Attendance at the honours field trip (GEOL 0002) just prior to the beginning of Year IV.

Year 4 will normally consist of:
1. GEOL 4200, 4350A, 4351B, other 4000 level classes in Geology; and an elective.
2. To satisfy Regulation 11.5 concerning the Honours Qualifying Examination, a student may select one of three options:
   a. A thesis as GEOL 4200, followed by an oral examination, based on the general subject area of the thesis. This oral examination then counts as the honours qualifying examination.
   b. A thesis as GEOL 4200, and a written comprehensive examination, reflecting the content of the 3000 and 4000 level classes which the student has taken.
   c. An honours thesis in addition to five regular classes in the fourth year, in which case the thesis will count as the honours comprehensive examination.
3. Theses must be completed by the second Monday in March of fourth year. Students who complete after this date must re-register for the following academic year in GEOL 4200, pay the fees, and graduate at the spring convocation of the next academic year.

Students should take note that, without a grade of B⁻ or better in five advanced classes, that is, classes other than electives, they will not be admitted to the fourth Honours year without Departmental recommendation and prior approval from the Committee on Studies.

Each advanced class in the second, third and fourth year, except electives, must be passed with a grade of C.

In five of the advanced classes, a grade of B or better must be achieved, and in three additional advanced classes, a grade of B⁻ or better is required.

A grade of B⁻ or better must be achieved on the Honours Qualifying Examination.

For First Class Honours, students must achieve either:
   a. Grades of A or better in four advanced classes and of A⁻ or better in four additional advanced classes, or
   b. Grades of A or better in six advanced classes and of B or better in all advanced classes.

A grade of A⁻ or better must be achieved on the Honours Qualifying Examination.

Co-op Programme

A co-op programme is offered by the department, providing students with an opportunity to gain practical work experience concurrently with their academic training. The student is expected to fulfil the normal twenty credit requirement of an honours degree or advanced major, over eight academic terms that are interspersed with four work terms. A minimum average of B is required for entrance to the programme. The programme commences in the spring term of the second year and interested students should consult with the Co-op Co-ordinator prior to that time.

Hydrogeology/Environmental Geology/Marine Geology

In addition to the above normal geology programme, the Department offers special programmes emphasizing hydrogeology/ environmental geology or marine geology in the third and fourth year. Students interested in specializing in these areas should consult with the Undergraduate Advisor.

Combined Honours Programme

Students wishing to take combined honours in geology and another subject, should discuss this in detail with the undergraduate advisor. Students must attend the field school normally taken at the end of second year (GEOL 0001).

Combined Honours with Biology

Geology Honours Programme should be followed during Years I-III and students should take either a Biology class or GEOL 4501A/B or 4502A/B or 4503A/B in place of GEOL 3010A/ 3020B. Suggested Biology classes are 1000 or 2001A and 2002B in Year I; 2030A and 3030B and 2060A/B in Year II; 2001A and 2002B or 3321 or 3323 in Year III.

Combined Honours with Physics

Students should follow the Geology Honours Programme in years I to III, including GEOL 2050B and GEOL 3130B, but should take a Physics class in place of GEOL 3010A/3020B. Suggested Physics classes are 1100 in Year I, 2000A, 2005A, 2010B, 2015B in Year II, two of 3090B, 3140A or 3000A/3010B or 3200A/3210B and 3160A/3170B in Year III. Math 2000 should also be taken in either Year II or III, and Math 3110A/3120B in Year III or IV.

Combined Honours with Chemistry

Students should follow the Geology Honours Programme in Years I-III, but should take 3000 level Chemistry classes in place of GEOL 3301A/3302B and 2050B/3130B. Suggested Chemistry classes are 1010 in Year I, 2201A/B/2101A/B and 2301A/2302B or 2400 in Year II; any 3000 level in Year III.

Advanced Major (20-credits)

The programme for an Advanced Major degree in Geology requires four years to complete. Its requirements include those of the 15-credit programme (below) plus the following:

1. Twelve of twenty credits taken must be beyond the 1000 level.
2. Six to nine of the classes beyond the 1000 level must be in the major area, and three of these at the 3000 level or above.
3. Students are required to earn a minimum of 16 merit points for this degree.
4. Students in this programme are required to attend an approved field school, (GEOL 0001).

A grade of D in a Geology class precludes admission to classes for which the class is a prerequisite. Where several classes are listed as prerequisites, and a grade of C⁻ or better was not obtained in all, the instructor's consent may be the basis for admission. Students must satisfy the Faculty of Science Writing Requirement and Mathematics Requirement.

Major Programme (15-credits)

Three-year programmes with a major in Geology are suitable for students who intend to take further professional training or to enter fields where they are likely to need their geological training as background. A 15-credit degree is of little value as a qualification for a professional career in the earth sciences.

Year 1 will normally include:

GEOL 1000 or 1040A/1001B and four other classes. One programme recommended for students undertaking a 15-credit BSc with a major in Geology is the first three years of the concentrated honours programme (see above). GEOL 1000 or 1040A/1001B must be passed with a grade of B⁻ or better to continue in the programme.

Years 2 and 3 must include:

1. GEOL 2100R or 2101A/2102B, 2110A, 2200R or 2201A/2202B, 2050B, 3010A, 3020B.
2. Participation in an approved field school (GEOL 0001). Normally this is taken at the end of second year.

A grade of D in a Geology class precludes admission to classes for which the class is a prerequisite. Students must satisfy the Faculty of Science Writing Requirement and Mathematics Requirement.

Classes Offered

GEOL 1000R Introduction to Geology: An introductory class for students who plan to take a degree in geology, or in another science, or in engineering. The lecture material covers the whole field of geology including the origin of the solar system, earth history, geological time, ocean basin formation, mountain formation, volcanoes, continental drift, natural resources such as metals and petroleum, and environmental pollution. The laboratory component involves work with minerals, rocks, fossils, and geological maps as well as a number of field excursions to observe local geological features. Students who wish to major in Geology but have unresolvable scheduling conflicts with GEOL 1000 should consult the undergraduate advisor.

Instructors: M. Gibling/N. Culshaw
Format: Lectures/Field trips/ Laboratories

GEOL 1001B Beginning Geology: This course is intended primarily for students intending to major in geology. Lectures will cover the classification of Earth materials (minerals, rocks, fossils) and the operation of Earth processes (erosion, deposition, volcanism, metamorphism, earthquakes). They will also deal with the internal structure of the Earth (core, mantle, crust), and the many expressions of plate tectonics (mountain ranges, rift valleys, fracture zones, ocean basins, mid-ocean ridges). Laboratories involve work with minerals, rocks, fossils, and geological maps.

Instructors: M. Gibling/ N. Culshaw
Format: Lectures/Laboratories
Prerequisite: GEOL 1040A

GEOL 1040A/1050B The Earth and Society: These classes are designed for non-Geology majors. Previous Mathematics, Physics, or Chemistry are not required. These courses do not include formal labs, but 1040A includes three field trips, and some assignments are done in a laboratory environment. GEOL 1040A provides an introduction to some basic concepts about the Earth, including the Earth as a planet, geological time, evolution and extinctions, plate tectonics, and the evolution of the Earth's crust. GEOL 1050B applies the concepts learned in 1040A to understanding how geology affects society. Topics covered include mineral and energy resources, geological catastrophes, geology and landscape of Nova Scotia, and global climate change. GEOL 1040A is a prerequisite. Students with good grades in 1040A may enter GEOL 1001B or GEOL 2410B.

Instructors: R.A. Jamieson/ M. Zentilli/ P.J.C. Ryall
Format: Lectures/Field trips

GEOL 1200R - Science for Non-Science Students: This is an interdisciplinary class taught by members of the Geology, Biology and Physics Departments. Emphasis is placed on developing an understanding of the scientific method, its limitations and its application in society. This class is cross-listed with Biology 1200 and Physics 1200.

Instructors: P. Reynolds/G. Hicks/R. March
Format: Lectures/Tutorials 3 hours
Cross-listings: PHYC 1200R/BIOL 1200R

GEOL 2050B Principles of Geophysics: Geophysical methods are increasingly important in land- and sea-based geological studies. Understanding the principles of the various techniques (seismics, gravity, magnetics, electromagnetics), their powers, and limitations, provides a foundation for later more practical classes.
Instructor: P.J.C. Ryall
Format: Lecture 3 hours/ Laboratory 1 hour
Prerequisites: a first year class in Mathematics and Physics 1100

GEOL 2101A Mineralogy and Crystallography: This class deals with the way in which the chemical components of rocks are organized into specific crystalline compounds (minerals). The lectures cover the crystallographic principles which determine the regular internal and external structure of minerals (crystallography), the relationship between mineral composition and structure (crystal chemistry) and the interaction of polarized light with crystals (optics). The labs involve hand specimen identification of minerals based on their physical properties and associations with other minerals in rocks.
Instructor: P. Robinson
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisites: GEOL 1000 or GEOL 1040A and GEOL 1001B

GEOL 2102B Introduction to Petrography and Petrology: In this course we deal with the ways in which minerals interact with melts, solutions and each other to form rocks. Such topics as phase equilibria, solution chemistry and solid-solid reactions will be covered in the lectures as will the basic principles of rock classification based on textures and mineralogical compositions. The labs will emphasize optical identification of minerals and rocks using the petrographic microscope.
Instructor: P. Robinson
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisite: GEOL 2101A

GEOL 2110A Field Methods: This is intended as an introduction to field techniques useful to the practising geologist, particularly those concepts essential for the accurate field description and identification of rocks and the use and construction of geological maps. Geophysical field techniques and elementary structural geology are also considered.
Instructor: N. Culshaw
Format: Lecture 3 hours/ Laboratory 3 hours/ Field trips
Prerequisites: GEOL 1000 or GEOL 1040A and GEOL 1001B

GEOL 2201A Stratigraphy: We deal with the principles by which people interpret the history of the Earth. Topics include measurement of geologic time, origin of the Earth, construction of mountains, organic evolution, and sedimentary environments. Laboratories give practise in using these principles to interpret Earth history.
Instructor: P.E. Schenk
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisites: GEOL 1000 or GEOL 1040A and GEOL 1001B

GEOL 2202B Earth and Life Through Time: This course deals with many of the important events that have occurred to produce our present physical and organic Earth. These events include early attempts to create organisms, the separation and collision of continents, the changing character of life, and the times of great extinctions. A survey of paleontology and paleoecology is given in the laboratories.
Instructor: P.E. Schenk
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisites: GEOL 2201A or GEOL 1040A and Biology 1000

GEOL 2400A Marine Geology: The ocean basins make up nearly three quarters of the Earth's surface and are the loci of many active geologic processes. This course deals with the morphology and tectonic history of the ocean basins, the lithology and geophysical characteristics of oceanic lithosphere and the nature and distribution of marine sediments. Important processes such as oceanic volcanism, hydrothermal circulation, sea floor spreading and marine sedimentation will be discussed, as will environmental, legal and economic aspects of the marine environment. The course is designed to provide an introduction to marine geology for non-geology majors wishing to learn more about geology and for those who plan to take a degree in geology. This class is not recommended for geology honours students.
Instructor: P. Robinson
Format: Lecture/Laboratory 3 hours, one evening per week
Prerequisite: Any first year class in geology

GEOL 2410B Environmental and Resource Geology: Geology lies behind many of the environmental problems facing humanity today. In this class we consider topics such as energy and mineral resources, geological hazards such as earthquakes, landslides, and volcanic eruptions, the relevance of geology in the fields of foundation engineering, pollution and waste disposal, and the role that geology has to play in planning urban areas, especially in Nova Scotia.

This class is not recommended for geology honours students.

Instructor: G. K. Muecke
Format: Lecture/ Laboratory 3 hours, one evening per week
Prerequisites: GEOL 1000 or GEOL 1040A and 1050B or 1001B

GEOL 3001 Field School: The course provides ten days of training in geological field methods. A wide range of rock types are examined in the field, and are described using traverses, measured sections, and outcrop and structural maps. An individual field mapping project forms part of the course. For students taking combined honours with Physics, participation in the geophysics field school (part of GEOL 3130B) is considered equivalent. Although the field school is a non-credit class, it appears on transcripts and is a compulsory part of the geology programme.

GEOL 3010A Igneous Petrology: The study of the field relations, mineralogy, texture, and geochemistry of volcanic and plutonic rocks. Lectures discuss the classification, graphical representation, means of production, differentiation, and emplacement of igneous rocks, and their grouping into co-magmatic provinces. Labs involve using the petrographic microscope to determine the crystallization history of igneous rocks through their mineralogy and texture.

Instructor: G.K. Muecke
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisite: GEOL 2101A/2102B or 2100R

GEOL 3020B Metamorphic Petrology: Metamorphic petrology is the study of the way in which pre-existing igneous, sedimentary, and metamorphic rocks respond to changes in pressure, temperature, and geochemical environment. Metamorphic reactions, deformation and recrystallization, the stability relations of minerals and mineral assemblages under various physical and chemical conditions, and the concept of metamorphic facies are discussed. In the labs, microscopic mineralogy and texture are used to decipher the metamorphic history of rocks.

Instructor: R.A. Jamieson
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisites: GEOL 2100R or 2101A/2102B, GEOL 3010A

GEOL 3130B Exploration Geophysics: This is a class in exploration geophysics relating largely to the mining industry and designed to follow GEOL 2050B. It is a normal prerequisite for the several 4000 level geophysics classes. Topics include: electrical properties of rocks; resistivity, self-potential and induced polarization exploration methods; electromagnetic exploration; radioactivity as an exploration tool; geophysical well logging; integrated geophysical problems. The geophysics field school normally conducted during the last week of April is an integral part of this class.

Instructor: P.H. Reynolds
Format: Lecture 3 hours/ Tutorial 3 hours (Bi-Weekly)
Prerequisite: GEOL 2050B

GEOL 3140A Structural Geology: An introduction to the behaviour of rocks during deformation, stressing the geometrical aspects of rock structures on the scale normally encountered by the exploration geologist, and their interpretation. The laboratory exercises in the construction and interpretation of geological maps develop skill in the interpretation and graphical representation of structures in three dimensions.

Instructor: N. Culshaw
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisites: GEOL 2100R or 2101A/2102B, GEOL 2110A, GEOL 2200R or 2201A/2202B

GEOL 3301A Sediments and Sedimentary Rocks: The course deals with physical and biological processes which generate modern siliciclastic, carbonate and evaporite sediments. Materials associated with Quaternary glacial events are discussed. The formation of sedimentary rocks is examined and their petrology illustrated using laboratory techniques. Weekend field trips to selected modern and ancient sedimentary deposits in Nova Scotia take place in the first month of classes.

Instructor: M.R. Gibling
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisites: GEOL 2200R or 2201A and 2202B

GEOL 3302B Quaternary Sedimentary Environments: The course deals with facies models for Quaternary glacial, coastal, deep sea and alluvial sediment. Emphasis is placed on sedimentation processes typical of each depositional setting and the geometry of the resulting deposits. Ancient deposits, including those resulting from glacial events, are examined, and their association with hydrocarbons, coal and sedimentary ores discussed. The labs provide practical experience of techniques used in facies analysis.

Instructor: R. Boyd
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisite: Geology 3301A

GEOL 3400A Fundamentals of Hydrogeology: The availability of clean water is absolutely essential for the development and maintenance of modern societies. This course will deal with the mathematical description of groundwater

movement, geophysical and geological methods for groundwater exploration, regional occurrence and chemical quality of groundwater, and the effects of waste disposal on chemical quality. Laboratory work stresses familiarity with techniques employed in the assessment and exploration of groundwater resources, as well as the analysis and interpretation of water quality data.
Instructor: G.K. Muecke/J. Hall
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisites: GEOL 2200R or 2201A, 2100R or 2101A, 2102B

GEOL 3410B Enhanced Environmental Geology: The topics treated in this course are similar to Geology 2410B, but they will be discussed at considerably greater depth during an additional 3 hours lab / tutorial per week. Credit will be given for only one of GEOL 2410B or 3410B.
Instructor: G.K. Muecke
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisites: GEOL 2100R or 2201A or 2202B, 3400A, 2101A/2102B

GEOL 0002 Advanced Field School: The class is a field excursion of 7 to 14 days duration which is designed to give the student a regional perspective of Appalachian geology, including metamorphic terrains, igneous intrusions and sedimentary basins of Precambrian to Mesozoic age. Classic field localities in eastern North America will be visited. Exceptionally, a more distant location may be selected. It appears on transcripts and is compulsory for all Honours students.

GEOL 4064C Pleistocene Biogeography:
Instructor: J.G. Ogden III
Format: Laboratory 3 hours
Prerequisites: 2 credits in Geology or Biology
Cross Listing: BIOL 4064C

GEOL 4150R Economic Geology: For those interested in mineral exploration. The class starts with a brief introduction to principles of exploration and mining geology, followed by a review of the processes leading to the formation of metallic mineral deposits (e.g. the role of hydrothermal fluids in oceanic black smoker massive sulphide, Archean gold, and Mississippi lead-zinc deposits). Later, and developed mainly as seminars, important examples of ore deposits are discussed with emphasis on their total geological environment and the development of conceptual models for their genesis.
Instructor: M. Zentilli
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisites: GEOL 3010A, GEOL 3020B, GEOL 3140A

GEOL 4200R Honours Thesis: This class deals with many aspects of written and oral communication of scientific and technical material. In particular, it covers the elements of scientific style (clarity, precision, conciseness, and objectivity), the logical organization and development of ideas and arguments, and the acceptable formats for scientific writing. Some attention will also be given to techniques of oral presentation. This is a compulsory class for students writing an Honours thesis in Geology, but it is open to students from other disciplines. Text: H.M. Weisman, Basic Technical Writing.
Instructor: D.B. Clarke
Format: Lecture 2 hours

GEOL 4270A Applied Geophysics: The application of geophysical methods to petroleum and mineral exploration as introduced in 2050B and 3130B is here treated at a more advanced level. Assignments attempt to involve the student in interpretation of realistic geophysical data.
Instructor: K. Louden
Format: Lecture 3 hours
Prerequisites: GEOL 2050B, GEOL 3130B or instructor's consent

GEOL 4280B Marine Geophysics: The application of the various geophysical techniques to the study of the sea floor and the principal results obtained are examined. The processes involved in the creation, evolution and destruction of ocean basins and the implications of the experimental observations are also considered.
Instructor: K. Louden
Format: Lecture 3 hours/ Laboratory, occasional sea trip
Prerequisites: GEOL 2050B, GEOL 3130B, GEOL 4270A or instructor's consent

GEOL 4290A Geodynamics: Essential for geology or physics students who intend to be geophysicists, the class covers the physical state and behaviour of the Earth as a whole. It shows how studies of geomagnetism, the Earth's electrical conductivity, earthquake seismology, the Earth's gravity field and the loss of heat from the Earth contribute to our present detailed picture o the Earth's interior. Methods of absolute age determination and other isotopic studies together with palaeomagnetism allow us to follow aspects of the Earth's evolution to its present state.
Instructor: C. Beaumont
Format: Lecture 3 hours
Prerequisites: GEOL 2050B, GEOL 3130B, GEOL 4270A or instructor's consent

GEOL 4350A Tectonics: This is a required class for Geology Honours students. It is intended to synthesize the various aspects of geology treated in more specialized courses through an analysis of

those processes which have shaped the Earth's crust in the past and continue to do so today. Part of the course deals with modern plate tectonic processes as observed at active spreading centres, subduction zones, and transform faults. The rest of the course examines the structure, stratigraphy, and petrology of mountain belts like the Cordillera and the Appalachians in order to determine what processes, including plate tectonics processes, created them.

Instructor: J.M. Hall
Format: Lecture 3 hours
Prerequisites: All third year Geology core courses

GEOL 4351B Canadian Regional Tectonics: This course is intended to synthesize the various aspects of geology treated in more specialized courses through an analysis of those processes which have shaped some of the major Canadian geological regions. We will examine the structure, stratigraphy and petrology of mountain belts (Cordillera, Appalachians), Precambrian shield (Grenville, Churchill, Superior), and sedimentary basins (East Coast shelf, Western Canada, Sverdrup) in order to determine what processes, including plate tectonic processes, created them.

Instructor: Staff
Format: Lecture 3 hours
Prerequisite: GEOL 4350A

GEOL 4380A Advanced Geochemistry: Principles of crystal chemistry, isotope fractionation, thermodynamics and solution chemistry are applied to the investigation of hydrothermal solutions, as well as ground and surface waters. Geochemical aspects of ore formation, the exploration for economic mineral deposits, and environmental pollution are covered. Geochemical surveys, element dispersion in the near-surface environment, and the origin and evaluation of geochemical anomalies are also discussed. In the laboratory statistical methods of geochemical data processing are introduced using micro-computers.

Instructor: D.B. Clarke
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisites: GEOL 3010A, GEOL 3020B

GEOL 4390B Advanced Igneous Petrogenesis: Igneous rocks have an extremely large compositional range. Their only common characteristic is their former existence as magmas. This course is devoted to understanding the principles, and using the tools, of igneous petrogenesis to learn how the combination of a few dominant source rocks, and a rich variety of processes, can account for the compositional diversity of igneous rocks. Examples from divergent plate margins will include mid-ocean ridge basalts, oceanic island basalts, plagiogranites, and ophiolite suites in general; examples from convergent plate margins will include island arc tholeiites, and especially continental arc volcanic and plutonic suites (including granitoid rocks); and examples from within-plate tectonic settings will include magmatic rocks such as kimberlites, carbonatites, and anorogenic granites and rhyolites.

Text: P.C. Hess, Origins of Igneous Rocks
Instructor: D.B. Clarke
Format: Lecture 3 hours
Prerequisites: GEOL 3010A, GEOL 3020B

GEOL 4400B Advanced Metamorphic Petrology: Metamorphic rocks are considered as equilibrium systems. The role of fluids in metamorphism, metasomatism and mass transport, kinetics of metamorphic processes, microstructure, and textural development of metamorphic rocks are discussed. Laboratory projects and special topics are chosen to suit the students' interests.

Instructor: R.A. Jamieson
Format: Lecture 3 hours
Prerequisites: GEOL 3010A, GEOL 3020B

GEOL 4501A or B Basin Analysis: The course is designed to present advanced topics of current interest concerning regional and global patterns of sediment accumulation. Topics may include: sequence stratigraphy and continental margin evolution; stratigraphic and geochemical methods used in analysis of burial history; paleoflow patterns; and basinal geology in the context of plate-tectonic theory. This course is not offered every year. Consult department.

Instructor: R. Boyd
Format: Lecture 3 hours
Prerequisites: GEOL 3301A and 3302B or 3300R

GEOL 4502A or B Micropaleontology and Global Change: This course provides a systematic study of major groups of microfossils (principally foraminifera, ostracoda and calcareous nannoplankton). Particular emphasis is placed on the distribution and ecology of recent microfossils, and on laboratory techniques for sampling and studying them. Quaternary paleo-oceanography and faunal distribution is examined based on knowledge of the tolerances of the living organisms. This class is not offered every year, consult timetable.

Instructor: D.B. Scott
Format: Lecture 3 hours/ Laboratory 3 hours
Prerequisites: GEOL 3301A and 3302B or 3300R

GEOL 4503A or B Carbonate and Evaporite Petrology: This course deals with carbonate and evaporite depositional and diagenetic environments. Modern environments are surveyed from the deep sea to tidal flat and playa settings. Changes to these records and especially the

development of porosity are considered in the second half. This class is not offered every year; consult timetable.

Instructor: P.E. Schenk
Format: Lecture 3 hours/ Laboratories/Seminars 3 hours
Prerequisites: GEOL 3301A & 3302B or 3300R

GEOL 4510A/4511B Directed Reading: This class is intended to permit further study of a specific topic of interest, or to correct a deficiency in a student's programme.

Instructors: Staff
Format: As required
Prerequisite: Permission of Department

Seminars

Department seminars are arranged during the term. Other specialized seminars are arranged on an ad hoc basis.

Marine Biology

See entry in "Biology" section.

Mathematics, Statistics and Computing Science

Location: Chase Building
Telephone: (902) 494-2572/2573

Chairperson of Department
P.A. Fillmore

Emeritus Professors
M. Edelstein, MSc (Jerusalem), DSc (Technion-Haifa)
A.J. Tingley, PhD (Minnesota)

Professors
J. Borwein, MSc, DPhil (Oxford)
P. Borwein, MSc, PhD (UBC)
J.C. Clements, MA (UBC), PhD (Tor)
M.A.H. Dempster, MS, PhD (Carnegie-Mellon) (jointly with Business Administration)
C.A. Field, MSc, PhD (Northwestern)
P.A. Fillmore, MSc, PhD (Minnesota), FRSC
G. Gabor, MSc, PhD (Eotvos)
L.A. Grünenfelder, PhD (ETH Zurich)
R.P. Gupta, MSc (Agra), PhD (Delhi) (Director of Statistics)
P. Keast, PhD (St. Andrews)
K.J.M. Moriarty, MSc (Dal), PhD (Lond.) (Director of Computing Science)
R. Paré, MSc, PhD (McGill)
H. Radjavi, MA, PhD (Minnesota)
P.N. Stewart, MA (Berkeley), PhD (UBC)
W.R.S. Sutherland, MSc, PhD (Brown)
S. Swaminathan, MA, MSc, PhD (Madras)
K.K. Tan, PhD (UBC)
A.C. Thompson, PhD (Newcastle upon Tyne)
R.J. Wood, MSc (McM), PhD (Dal)

Associate Professors
A.A. Coley, PhD (Lond.)
K.A. Dunn, MSc, PhD (Tor.)
A. Farrag, MSc (SFU), PhD (Alberta)
B.W. Fawcett, MSc, PhD (McMaster)
J.B. Garner, MSc, PhD (Nottingham) (jointly with Community Health and Epidemiology)
D. Hamilton, MA, PhD (Queen's)
C.S. Hartzman, MS (Purdue), PhD (Colorado)
K.P. Johnson, MSc (Tor.), PhD (Brandeis)
J. Mulder, PhD (UBC)
R.J. Nowakowski, MSc, PhD (Calg.)
C.C.A. Sastri, MSc (Andhra), PhD (New York) (Director of Mathematics)
M.A. Shepherd, MSc, PhD (Western)
K. Thompson, PhD (Liverpool) (NSERC University Research Fellow) (jointly with Oceanography)

Assistant Professors
K. Bowen, PhD (California)
K. Dilcher, MSc, PhD (Queen's)
K.E. Manchester, M.Sc., Ph.D. (Toronto)
I.F. Putnam, PhD (Berkeley) (NSERC University Research Fellow)
A. Sedgwick, PhD (Tor.) (Co-op Director)
B. Smith, MA (Calgary), PhD (Berkeley)
D. Tsang, MASc (TUNS), PhD (Penn)

Lecturers
E. Cameron, MA (Oxon)
D. Trueman, MSc (Tor)

Computer Systems Manager
D. Trueman, MSc (Toronto)

Learning Centre Director
P. Stevens, MSc (Delft)

Statistical Consultant
W. Stubson, BSc (Manitoba)

Postdoctoral Fellows
S. Czapor, PhD (Waterloo)
J. Castejon, PhD (London, QMC)
F. Garvan, PhD (Penn State)
F. Lamarche, PhD (McGill)
M. Lamoureux, PhD (Berkeley)
S. Lou, PhD (Illinois)
J. Potvin, PhD (Colorado)
E. Vicari, PhD (Pisa)

Visiting Professors
D. Noll (Stuttgart)
B. Hartnell (SMU)

D. Qing (Inner Mongolia)
L. Skula (Masaryk)

Adjunct Professor

H.S. Heaps, MA (Tor), LLD (St.FX)
H.S.P. Jones, BSc (Wales), MSc (Southampton)
C.R. Watters, MSc (Western), PhD (TUNS)

Honorary Research Associates

M. Beattie (MEA)
P. Cabillo (Acadia)
F. Chipman (Acadia)
D. Ellis (DREA)
V. Huse-Eastwood (Acadia)
R. Rosebrugh (MtA)
M. Taylor (Acadia)

Cross Appointment

B. Eastwood (Community Health and Epidemiology)

Information concerning programmes and classes in Mathematics follows immediately below. For Computing Science or Statistics, please refer to the corresponding section of this Calendar.

Mathematics

Location: Chase Building
Telephone: (902) 494-2572

Director of Division

C.C.A. Sastri

Faculty Advisors

C.C.A. Sastri (Undergraduate)
R. Paré (Honours)
K. Johnson (Graduate)
A. Sedgwick (Co-op)

General Interest Classes

The Division offers several classes for non-majors who would like to know something about Mathematics.

Math 1000/1010: This core calculus class is the starting point for any degree programme in the sciences.
Math 1001/1002: A class designed especially for B.A. students and others who wish to know something about the historical and cultural aspects of mathematics.
Math 1060: An introduction, through examples drawn from a wide variety of disciplines, to the basic ideas of statistics.
Math 1110/1120: Linear algebra and calculus arranged to meet the needs of commerce students, but of interest to anyone wishing a brief introduction to either of these topics.

Degree Programmes

One full credit in Mathematics other than Mathematics 1001/1002 and 1110/1120 is required for a BSc degree.

Honours in Mathematics

The following programme is normally followed by students who plan to take honours in Mathematics. Entering students who have a strong interest or background in mathematics, or who contemplate taking honours, should enroll in Math 1500 and Math 1670/2670.

Year 2: Mathematics 2130 and 2500
Years 3 and 4: Mathematics 3030, Mathematics 3500 and five additional classes at least two of which are numbered 4000 or above.

Students may choose programmes with a concentration in Applied Mathematics, Computing Science, Pure Mathematics or Statistics. Students wishing to concentrate in Computing Science should consider Combined Honours in Mathematics and Computing Science, and examine the separate Calendar entry for Computing Science. Students wishing to concentrate in Statistics should consider Honours in Statistics or Combined Honours in Mathematics and Statistics, and examine the separate Calendar entry for Statistics. All honours programmes must be approved by the Chairman. Students wishing to take an Honours degree concentrating in Applied Mathematics are advised to consider a programme similar to the following:

Year 1: 1500R; 1670A/2670B; CS1400A; CS1410B; 2 elective classes
Year 2: 2500R; 2130R; 2060A; 2080B; 2270B; (Co-op Seminar) and 1 1/2 elective classes
Year 3: 3500R; 3030R; 3110A; two of 3210A, 3300A, 3260B, an appropriate statistics class; 1 1/2 elective classes
Year 4: 4400; the remaining two of 3210A, 3300A, 3260B, an appropriate statistics class; 1 1/2 other classes at the 4000 level; 2 elective classes.

Students wishing to take an Honours degree concentrating in Pure Mathematics are advised to consider a programme similar to the following:

Year 1: 1500R; 1670A/2670B; CS1400A; CS1410B; 2 elective classes
Year 2: 2500R; 2130R; another full mathematics class; 2 elective classes
Year 3: 3500R; 3030R; another full mathematics class; 2 elective classes
Year 4: 4010A; 4140A; three other full mathematics classes, at least one of which is at the 4000 level; 1 elective class.

It is recommended that the additional

mathematics classes include a statistics class, an applied class and a class in algebra, topology or complex variables.

Honours Comprehensive Examination: The Honours Comprehensive Examination in mathematics consists of a written paper of about 20-30 pages researched and prepared by the student during the spring term. The topic is decided on in conjunction with the supervisor of the Honours seminar. The paper is also presented to the seminar. The Honours Comprehensive Examination in statistics requires successful completion of Statistics 8880.

Combined Honours

Students interested in taking honours in mathematics or statistics and another subject as a combined programme should consult the chairman of the department through whom a suitable course of study can be arranged.

A combined honours programme may be appropriate for many. Students contemplating a combined honours course in mathematicsor statistics and another subject should, however, bear in mind that the work in either subject would probably be insufficient for admission to a regular graduate programme. A qualifying year would usually be necessary.

Advanced Major and Major in Mathematics

Students who plan to major in Mathematics should arrange a programme in consultation with the department.

For both the 15-credit major and the 20-credit advanced major in Mathematics, the following classes are required: Mathematics 2000(or 2480/2490 or 2500) and 2030/2040 (or 2130). In all other respects, the requirements of these programmes are as in Section 11 of the College of Arts and Science regulations.

Those students whose first registration in Arts and Science was for the academic year 87/88 or earlier should consult the calendar of the appropriate year.

Majors in Mathematics are strongly urged to include Computing Science 1400, 1410 as part of their programme.

Students wishing to concentrate in Applied Mathematics, Pure Mathematics or Statistics are advised to consider modelling their programmes on the first three years of the Mathematics or Statistics Honours programmes, after possibly replacing 2130R with 2030A and 2040B, 2500R with 2000R, or 2001A and 2002B, and 3500R with 3090A and 3100B.

Those students who wish to arrange inter-disciplinary programmes (with such fields as Physics, Chemistry, Biology, Engineering, Psychology and Economics) are invited to discuss their interests with the department.

Co-operative Education Programmes

The Co-operative Education Programme is an integrated programme of 8 academic terms and 4 work terms of relevant industrial/laboratory employment. The work terms, each of 4 months duration, are spent in industrial and laboratory positions. The work experience helps students see the applicability of their training in mathematics, statistics and computing science and helps them make intelligent career choices. Upon successful completion of the programme the student's transcript indicates that the programme was a cooperative one.

A Co-op degree normally takes 4 1/3 years. The co-op programmes are available either as an Advanced Major (20-credit) degree programme or as an Honours degree programme.

There are three Advanced Major Co-op programmes; one in each division of the Department.

There are four Honours Co-op programmes available within this Department, in the areas of:

- Mathematics
- Mathematics and Computing Science combined
- Computing Science
- Statistics

A Combined Honours Co-op degree, combining Mathematics or Computing Science or Statistics and another appropriate subject, is possible. Students interested in such a programme should consult the Director of Co-op Education.

Eligibility: Students must be Canadian citizens or landed immigrants and demonstrate:

- sufficient academic potential
- successful completion of the classes M1000/1010 and CS1400/1410.

Students entering their second year of study may apply for admission to one of the Co-op programmes.

Work Terms: It is ultimately the responsibility of the student to arrange the work term. The Programme Director serves to co-ordinate the contacts between student and employer. Students are remunerated according to the employer's policies regarding permanent employees of similartraining and education. At the end of each work term, each student must submit an acceptable work report.

It is important that students realize that successful completion of the work terms is an integral part of the course of study. Indeed, the advantages of Co-op Education derive directly from the successful interplay of academic knowledge and practical implementation. Consequently the work terms are central to Co-op Education.

Work terms are each of four months duration. Work terms alternate with study terms. Sometimes two consecutive work terms are required in order to accommodate full-year classes. This requires prior approval of the Director of Co-op Education.

Under normal circumstances, the following criteria apply:

- At least 3 academic terms must be completed before the first work term is begun
- In any twelve-month period (of full-time study) at least one academic term must be completed
- The last semester in the programme must be an academic term.

Co-op Seminar: This is a special seminar arranged for the benefit of Co-op students. Various topics of relevance to the work terms are discussed. The purpose of the seminar is to better prepare students for their work terms so that everyone involved in the work term -- the student, the employer and the University -- may benefit as much as possible.

Co-op students enrolled in their second year at Dalhousie must attend this non-credit seminar.

Additional Information: For additional information, class selection advice, and entry into one of the Co-op programmes, contact the Director, Co-operative Education, Department of Mathematics, Statistics and Computing Science, Dalhousie University, Halifax, Nova Scotia, B3H 4J5.

First-year students who are interested in a Co-op programme are urged to contact the Director before or during their first year for advice on class selection.

Prerequisites and Performance Test

The prerequisites listed in the class descriptions indicate the mathematical background expected of students entering that class, but may be waived with the consent of the instructor. In addition to the listed prerequisites students must write a short preliminary performance test before enrolling in the following classes: 0010R, 1000A/B, 1060A/B, 1110B,& 1120A.

These preliminary tests are held regularly during the summer and during fall registration. Students are urged to make arrangements for taking these tests as soon as possible. Further information is obtainable by contacting the Department or the Math Learning Centre (902-494-2484).

Classes Offered

Class descriptions for Computing Science can be found in the calendar under Computing Science. Class descriptions for Statistics can be found in the calendar under Statistics.

Credit may not be obtained twice for the same class even if the numbers have been changed.

Classes with the designation (MLC) are supported by the tutorial services of the Math Learning Centre.

Classes marked with an asterisk (*) may not be offered every year.

MATH0010R Pre-University Mathematics, "Classroom Version": This class does not count as part of the regular student class load. This class is designed for students who do not have the usual prerequisite for first-year math classes (i.e. N.S. Math 441), or for others who wish to strengthen their background in mathematics. The class begins with a review of algebra, use of variables, exponents, absolute value, factoring methods and solution of equations and inequalities. This leads to graphing and the functional approach which is the focus of the class. Functions studied include linear, quadratic, inverse, exponential, logarithmic and trigonometric. Throughout the year, there is strong emphasis on the use of mathematical models to solve application problems. Students completing this class should not only be adept at the mechanics of mathematics, but also have an understanding of the uses of these skills. After successful completion of this class, the student will have the necessary prerequisite for any first-year university mathematics, statistics or computing science class. Students register and pay for this class at Henson College, Centre for Continuing Studies, 6100 University Avenue.

Instructor:	E. Brennan
Format:	Lecture 3 hours, (non-credit class), MLC
Prerequisite:	Performance test

MATH0010R Pre-University Mathematics, "Self-Paced Version": This class does not count as part of the regular student class load. This, as the name suggests, is a self-paced programme. There are no classes, but assistance is available during the day and evenings through the Mathematics Learning Centre. The material covered is the same as that of the "classroom version" of the course. Students sign up for a six month period and work at their own pace. After successful completion of this class the student will have the necessary prerequisite for any first-year university mathematics, statistics or computing science class. Students register and pay for this class at Henson College, Centre for Continuing Studies, 6100 University Avenue.

Instructor:	E. Brennan
Format:	Self paced, (non-credit class), MLC
Prerequisite:	Performance test

Note: Mathematics 1000 and Mathematics 1010 introduce the basic ideas of the calculus, and together constitute a solid foundation for study in the Sciences (Physics, Chemistry, Biology, etc.), as well as for further study in Mathematics. The class Mathematics 1000 is offered in both terms. Students who require one or both of these classes, but are uncertain of their ability to handle them, are invited to make use of the diagnostic and

remedial services offered in the Mathematics Learning Centre, located in the basement of the Chase Building.

MATH1000A/B/C Differential and Integral Calculus: A self-contained introduction to differential and integral calculus. The topics include: functions, limits, differentiation of polynomial, trigonometric, exponential and logarithmic functions, product, quotient and chain rules, applications of differentiation, antiderivatives and definite integrals, integration by substitution. A sequel to this class is Mathematics 1010.

Format: Lecture 3 hours, tutorial 1 hour, MLC
Prerequisite: Nova Scotia Mathematics 441 or equivalent
Exclusion: Credit will be given for only one of Mathematics 1000,1120
Enrolment: Limited to 80 per section

MATH1001A Mathematics for Liberal Arts Students I: For students who wish to become acquainted with mathematics as an art rather than as a tool for the sciences. A selection of elementary topics will be discussed with a view to illuminating historical and cultural aspects of the subject. Required work will include a series of written reports on assigned readings and a major essay. This class may not be used to satisfy the B.Sc. mathematics requirement.

Format: Lecture 3 hours, MLC
Prerequisite: None

MATH1002B Mathematics for Liberal Arts Students II: As 1001A above, but with a different set of topics. Either one or both of 1001A and 1002B may be taken for credit.

Format: Lecture 3 hours, MLC
Prerequisite: None

MATH1010A/B Differential and Integral Calculus: A continuation of the study of calculus with topics including: techniques of integration, elementary differential equations and applications, Riemann sums, parametric equations and polar coordinates, sequences and series, Taylor series.

Format: Lecture 3 hours, tutorial 1 hour, MLC
Prerequisite: Mathematics 1000
Enrolment: Limited to 80 per section

MATH1060A/B Introductory Statistics for Science and Health Sciences: For description see Statistics 1060.

Format: Lecture 3 hours, tutorial 1 hour, MLC
Prerequisite: Nova Scotia Math 442 or equivalent
Cross-listing: Statistics 1060A/B
Enrolment: May be limited

MATH1110B Finite Mathematics for Commerce: This class provides an introduction to methods of finite mathematics with special emphasis on applications to business. Topics include linear equations, systems of linear equations, matrices, determinants, matrix inverses, linear programming including the simplex method, an introduction to nonlinear functions and the elements of the mathematics of finance. This class replaces half of the previous class Math 1100R. This class may not be used to partially satisfy the requirement that BSc students must have at least one full university class in mathematics.

Format: Lecture 3 hours, MLC
Prerequisite: Nova Scotia Mathematics 442 or equivalent
Exclusion: Credit can be given for only one of Math 1110, Math 1100, and Math 2030

MATH1120A Calculus for Commerce: This is an elementary calculus class with special emphasis on applications to business. Topics include functions, limits, rate of change, derivatives, one variable optimization and curve sketching, exponential functions, logarithmic functions, functions of several variables, Lagrange multipliers, elementary integration. This class replaces half of the previous class Math 1100R. This class may not be used to partially satisfy the requirement that BSc students must have at least one full university class in mathematics.

Format: Lecture 3 hours, MLC
Prerequisite: Nova Scotia Mathematics 442 or equivalent
Exclusion: Credit can be given for only one of Math 1120, Math 1100, and Math 1000

MATH1500R Calculus: This class is intended primarily for students who anticipate taking an honours programme in the physical or mathematical sciences. The topics of Mathematics 1000/1010 are covered, but in greater depth. Mathematics 1500 is equivalent as a credit to Mathematics 1000/1010.

Format: Lecture 3 hours, tutorial 1 hour
Prerequisite: High standing in Nova Scotia Mathematics 441 or equivalent
Exclusion: Credit can be given for only one of Mathematics 1000/1010 and 1500

MATH1670A Discrete Structures I: This class together with Math 2670 offers a survey of those areas in Mathematics which may be classified as dealing with discrete structures. Areas covered include set theory, mathematical induction, number theory, relations, functions, algebraic structures and introductory graph theory. The topics to be discussed are fundamental to most areas of Mathematics and have wide applicability to Computing Science.

Format: Lecture 3 hours
Prerequisite: Nova Scotia Mathematics 441 or equivalent
Cross-listing: Computing Science 1670

MATH2000R Intermediate Calculus: This class deals with the calculus of functions of several variables. Topics include: continuous functions and their fundamental properties, partial derivatives and applications, multiple integrals, geometry of Euclidean vector spaces with emphasis on three dimensions, elementary differential equations.
Format: Lecture 3 hours, MLC
Prerequisite: Mathematics 1010
Exclusion: Students who take Math 2000 may not also receive credit for 2400 or 2480/2490

MATH2030A Matrix Theory and Linear Algebra I: This class, together with Mathematics 2040, is a self-contained introduction to Matrix Theory and Linear Algebra. Topics include: vector spaces, linear transformations, determinants, systems of linear equations. Students should note that this is a second-year class and, although it has no formal first-year prerequisites, mathematical maturity and an ability to handle formal proofs at the level of a student who has completed Mathematics 1000 is expected.
Format: Lecture 3 hours, MLC
Prerequisite: Nova Scotia Mathematics 441 or equivalent
Exclusion: Credit can be given for only one of Math 1110, Math 1100 and Math 2030

MATH2040B Matrix Theory and Linear Algebra II: This class is a continuation of Mathematics 2030. Topics include: similarity, diagonalization, inner product spaces.
Format: Lecture 3 hours, MLC
Prerequisites: Mathematics 2030 and 1000
Exclusion: No more than one credit can be given for Mathematics 2030/2040 and 2130

***MATH2050R Problems in Geometry:** This class is organized around a sequence of stimulating geometrical problems. A set of approximately 20 challenging problems is given to the students at the beginning of the year. The students are expected to attempt these problems throughout the year. Good students should be able to do some of these problems and are encouraged to present their solutions to the class for extra credit in the final grade. These problems are chosen so that their solutions use a wide variety of geometrical ideas (from Combinatorial, Projective, Inversive, Transformational, Topological, Differential and Non-Euclidean Geometry).
Format: Lecture 3 hours
Prerequisite: Mathematics 1010

***MATH2051 A or B Problems in Geometry:** A half class on such material from Mathematics 2050R as time permits.
Format: Lecture 3 hours
Prerequisite: Mathematics 1010

MATH2060A Introduction to Probability and Statistics I: For description see Statistics 2060.
Format: Lecture 3 hours, MLC
Prerequisite: Mathematics 1000/1010
Cross-listings: Same as STAT 2060A

MATH2080B Statistical Methods For Data Analysis & Inference: For description see Statistics 2080.
Format: Lecture 3 hours, MLC
Prerequisite: Math/Statistics 1060
Cross-listings: Same as Statistics 2080B

MATH2130R Linear Algebra: For students who are interested in a broader and more basic understanding of the theory and techniques of linear algebra than is provided by 2030 and 2040. Topics include: the material of 2030 and 2040, canonical forms including the Rational Form and Jordan Form, inner product spaces including the Spectral Theorem for normal operators on finite dimensional vector spaces, linear programming and further topics in pure and applied linear algebra. This class provides an excellent background for further study in Mathematics.
Format: Lecture 3 hours
Prerequisite: Mathematics 1010
Exclusions: Only 1 credit can be given for MATH 2030-2040 & 2130

***MATH2300B Introduction to Mathematical Modelling Using Algebra:** This class is an introduction at an elementary level to the applications of mathematics in the physical and life sciences and in business and management. The class material will include the study of discrete models in biology and physiology as well as an introduction to the application of statistical and operational research methods in science and industry. Areas from which specific problems are drawn include resource management, transportation problems, computer simulation, elementary probability theory, decision processes and game theory. The use of user-friendly computer software packages such as MATLAB, LINDO and MAPLE to aid in the solution of these specific problems will be examined (no prior experience with computers is necessary).
Format: Lecture 3 hours, MLC
Corequisite: Math 2030

MATH2400B Vector Calculus: This class provides a careful development in three-dimensional space of the following topics: partial derivatives, gradients, Jacobians, Hessians, Taylor's theorem, iterated integrals, and integral

theorems. The geometrical and physical applications in three-dimensional space, including the following, will be stressed throughout the class; Netwon's equations - dynamics of systems of particles (including linear and angular momentum, moments of a vector, moments of inertia), scalar and vector fields and the grad, div and curl operators, cartesian coordinates - rotating axes - curvilinear coordinates and their applications (coriolis and centripedal forces).

Format: Lecture 3 hours
Prerequisite: Mathematics 1010 or 1500
Exclusion: Credit will not be given for more than one of Mathematics 2000, 2400 and 2480-2490

MATH2480A/2490B Intermediate Calculus for the Engineering Programme: The topics for these two half classes include functions of several variables, partial derivatives, multiple integrals, indeterminate forms, improper integrals, infinite series, power series, Taylor and MacLaurin series, matrices, determinants, systems of linear equations, complex numbers, elementary ordinary differential equations.

Format: Lecture 3 hours, MLC
Prerequisite: Mathematics 1290 or 1010
Exclusion: Students who take Math 2480/2490 may not also receive credit for 2000 or 2400

MATH2500R Introductory Analysis: For honours students and other serious students of mathematics. This class forms the first half of a 2-year sequence in analysis and advanced calculus; Mathematics 3500 completes the sequence. Topics include: real and complex numbers, set theory, elementary topology of Euclidean space, limits and continuity, differentiation, the Riemann integral, power series, series of functions.

Format: Lecture 3 hours
Prerequisite: Good standing in Mathematics 1010

***MATH2540A Basic Set Theory:** An introduction to the basic topics of set theory, including equivalence relations, order, recursion, the axiom of choice, ordinals and cardinals.

Format: Lecture 3 hours
Prerequisite: Mathematics 1000

***MATH2600 A or B Theory of Interest:** A detailed examination of the theory of simple and compound interest. The syllabus includes the material on which the theory of interest portion of Examination 4 in the Society of Actuaries examination series is based. Someof the topics are: nominal and effective rates of interest and discount, force of interest, annuities, perpetuities, price of bonds, callable bonds, special topics. This class should appeal to students in mathematics, economics and commerce. Students interested in an actuarial career should take this class and are urged to consult the department for guidance in class selection and additional information.

Format: Lecture 3 hours, MLC
Prerequisite: Mathematics 1010 or 1110

MATH2670B Discrete Structures II: This class continues Math1670. This course covers some basic concepts in discrete mathematics which are of particular relevance to students of computer science, engineering, and mathematics. The topics to be covered will include: Solution of Recurrence Relations, Generating Functions, Modular Arithmetic, Chinese remainder theorem, Trees and graphs, Finite state machines, Groups and rings, Boolean algebras.

Format: Lecture 3 hours
Prerequisite: Math 1670
Cross-listing: Same as Computing Science 2670B

***MATH2800 A or B Applied Mathematics for the Life Sciences:** This class is intended as a preparation for the mathematical aspects of advanced classes in ecology, genetics and physiology and is designed primarily for honours students in the biological sciences. The topics to be covered include complex numbers, linear algebra, difference equations and differential equations. Students are introduced to each topic through examples drawn from appropriate areas of biology and physiology. Computer software packages such as MINITAB, MATLAB and MAPLE are used to solve specific problems. This class is not given every year and students interested should consult the department. Students interested in the applications of mathematics should also consider Mathematics 2300 and/or Mathematics 3260.

Format: Lecture 3 hours, MLC
Prerequisites: Mathematics 1000 and Biology 1000

MATH3030R Abstract Algebra: In this first class in abstract algebra the following topics are treated: groups, sub-groups, factor groups, homomorphisms, rings, ideals, Euclidean domains, polynomial rings, fields, unique factorization, irreducible polynomials, Sylow theorems, solvability of polynomial equations, Galois theory, and the Jordan canonical form.

Format: Lecture 3 hours
Prerequisite: Mathematics 2040 or 2130

***MATH3040 A or B Metric Spaces and Elementary Topology:** Topics include: metric spaces: bounded-, totally bounded-, compact- and complete sets in metric spaces; Lipschitz and contraction mappings; topological spaces; open and closed sets, bases; continuity, compactness, connectedness.

Format: Lecture 3 hours
Prerequisites: Mathematics 2000 and 2130 (or 2040)

***MATH3050R Differential Geometry and Tensor Analysis:** The material consists of two parts. The first part discusses the theory of curves and surfaces in three-dimensional Euclidean space. Topics include: theory of curves, surfaces, first and second fundamental forms, Gaussian and mean curvature, formulae of Weingarten and Gauss, geodesic curvature and geodesics. The second part consists of an introduction to Riemannian geometry, and, if time permits, an introduction to general relativity as an application of Riemannian geometry. Topics include: foundations of tensor calculus, differentiable manifolds, foundations of Riemannian geometry, absolute differentiation and connexions.

Format: Lecture 3 hours
Prerequisites: Mathematics 2000 and 2130 (or 2040)

***MATH3070 A or B Theory of Numbers:** The following topics are discussed: congruences and residues; elementary properties of congruences; linear congruences; theorems of Fermat, Euler and Wilson: Chinese remainder theorem; quadratic residues; law of quadratic reciprocity; Legendre, Jacobi and Kronecker symbols, arithmetic functions: algebraic fields; algebraic numbers and integers; uniqueness of factorization, definition and elementary properties of ideals; ideal classes and class number.

Format: Lecture 3 hours
Prerequisite: Mathematics 2040

***MATH3080 A or B Introduction to Complex Variables:** An introduction to the basic elements of complex analysis. Topics include: complex numbers, functions, differentiation and integration in the complex plane, some special mappings, series in general, Taylor and Laurent Series, residues, some principles of conformal mapping theory.

Format: Lecture 3 hours
Prerequisite: Mathematics 2000

MATH3090A Advanced Calculus I: An introduction to Fourier Series. Topics covered include half range expansions, expansions on other intervals, convergence theorems, differentiation and integration of Fourier Series and the Complex form of Fourier Series. Also an introduction to special functions, including Gamma and Beta functions and orthogonal polynomials and some of their properties is given. Additional topics covered include some implicit function theorems and an introduction to transformations.

Format: Lecture 3 hours
Prerequisites: Mathematics 2000 (or 2200) and 2030
Exclusion: Credit cannot be given for Math 3090A and Math 3500

MATH3100B Advanced Calculus II: Topics covered include some properties of functions defined by integrals: differentiation under the integral sign, tests for convergence of improper integrals, improper multiple integrals and functions defined by improper integrals. Also considered is the Fourier integral and various other integral transforms, a review of multiple integrals and vector field theory. Green's, Stokes' and the divergence theorems and related matters are also considered.

Format: Lecture 3 hours
Prerequisite: Mathematics 3090
Exclusions: Only 1 credit can be given for Mathematics 3500 and 3100B.

MATH3110A Differential Equations: One of the aims of this class is to give students the ability to analyze and solve a number of different types of differential equations. Wherever possible, applications are drawn from the fields of physics, chemistry, biology, and other areas. The class is intended mainly for mathematics students interested in applications and for science students who wish to be able to solve problems arising in their major areas of interest.

Format: Lecture 3 hours, MLC
Prerequisite: Mathematics 2000

MATH3120B Differential Equations: The topics discussed are of great importance to any student interested in applied mathematics. Areas include Fourier series, orthogonal polynomials, Sturm-Liouville problems, the classical partial differential equations, and some applications to physics, chemistry and engineering.

Format: Lecture 3 hours
Prerequisite: Mathematics 3110

MATH3170A Introduction to Numerical Linear Algebra: For description see Computing Sciences 3170A.

Format: Lecture 3 hours
Prerequisites: Mathematics 1010, 2030 and Computing Science 1410
Cross-listing: Same as Computing Science 3170A

***MATH3210B Introduction to Numerical Analysis:** Some more advanced aspects of numerical linear algebra, including the Power Method and the QR Algorithm are examined. Various acceleration procedures for iterative processes are examined. Several forms of interpolating polynomials, Newton, Lagrange and Hermite are considered. Finite differences are also introduced. Numerical differentiation and integration is examined. In particular, interpolatory, Gaussian, Romberg and adaptive quadrature are discussed, and error estimates considered. Polynomial splines and some of their properties are introduced. Methods for solving nonlinear equations including the Newton-Raphson method are considered. Special

attention is paid to finding the roots of a polynomial. Throughout, the difficulties of implementing the various methods are discussed, and illustrated via assignments. Finally, some indication of the difficulties involved in multidimensional numerical analysis is given.
Format: Lecture 3 hours
Prerequisites: Mathematics 2270, 2000 (or 2200, 2500)
Cross-listing: Same as Computing Science 3210B, and previously part of 3200R

***MATH3220B Numerical Solutions of Ordinary Differential Equations:** Initial Value Problems are considered. Various methods, including Runge-Kutta and Predictor- Corrector are examined. The convergence and stability of the numerical methods is investigated and propagated error bounds and estimates sought. Also considered are starting techniques, variable order and/or variable step length strategies and automatic error control. Systems of equations and Stiff equations are discussed. Various methods for solving Boundary Value Problems (e.g. shooting methods and collocation are also discussed). Throughout, the difficulties of implementing various methods are discussed and illustrated via assignments and the use of various computer packages. A brief introduction to the numerical solution of Partial Differential Equations may also be included.
Format: Lecture 3 hours
Prerequisites: Mathematics 3110, 3210, 3090 (or concurrent registration in 3500.)

***MATH3230B Applied Approximation Theory:** A review of orthogonal polynomials and their properties is given, and basic concepts, function norms, and orthogonal systems introduced. The best approximation to a function in the Euclidean norm is obtained. The Weierstrass Approximation Theorem is given and Runge's phenomenon discussed. We also consider characterizing the best approximation in the uniform norm and methods for obtaining this best approximation. Economization of power series is also discussed. Fourier approximation is discussed, and the Fast Fourier Transform is examined. An introduction to Rational and Padé approximation is given and these techniques are compared with polynomial approximation techniques. Throughout, the difficulties of implementing the various methods is discussed and illustrated via assignments.
Format: Lecture 3 hours
Prerequisites: Mathematics 3210, 3090 (or concurrent registration in 3500)

***MATH3260 A or B Introduction to Mathematical Modeling Using Differential Equations:** This class is an introduction to the mathematical modelling and analysis of physical systems using difference equations, intermediate level calculus and differential equations. The emphasis is on the formulation and solution of problems from science and technology using the theory and methods of Math 2000 and Math 3110. Topics covered will include dimensional analysis, celestial mechanics, analysis of traffic flow, tidal bores, the mathematics of music and optimal control problems from the theory of economics.
Format: Lecture 3 hours
Corequisite: Math 3110

MATH3300A Optimization I: This class is an introduction to the concepts and applications of linear and nonlinear programming. Topics include the simplex method for linear programming, duality and sensitivity analysis, convex programming, Kuhn-Tucker and Lagrange multiplier conditions, numerical algorithms for unconstrained and constrained problems. Some of these topics are illustrated by means of interactive computer packages.
Format: Lecture 3 hours
Prerequisites: Mathematics 2000, 2040

MATH3310B Optimization II: This class continues the study of the topics in 3300. Additional topics to be covered include network flow theory, graph theoretic matching problems, shortest route problems, discrete dynamic programming models, and combinatorial optimization with emphasis on integer programming problems.
Format: Lecture 3 hours
Prerequisites: Mathematics 2000, 2040

***MATH3320 A or B Applied Group Theory:** This interdisciplinary half-class is intended for third and fourth-year undergraduate and first-year graduate students in Chemistry, Mathematics and Physics. With some additional reading in Physics, it is equivalent to Physics 4480A. Topics include: review of matrices, fundamentals of groups, normal subgroups, homomorphisms, representations, character, orthogonality, symmetry groups in crystallography, role of symmetry groups in quantum physics and chemistry, normal modes and molecular vibrations.
Format: Lecture 3 hours
Prerequisites: Mathematics 2000, 2030

***MATH3330 A or B Graph Theory and Combinatorics:** The following topics are discussed: elements of graph theory, paths and cycles, Eulerian graphs, trees, planar graphs and the Euler polyhedral formula, Hamiltonian graphs, chromatic numbers, the five-colour theorems; items to be selected from the following topics to suit class: graphs and matrices, graphs and groups, extremal problems, and enumeration problems.
Format: Lecture 3 hours
Prerequisites: Mathematics 2000, 2040

MATH3340 A or B Regression and Analysis of Variance: For description see Statistics 3340.
Format: Lecture 3 hours
Prerequisites: Statistics 2080, Mathematics 2030, and Math 1010 or Statistics 2060
Cross-listing: Same as Statistics 3340

MATH3360 A or B Probability: For description see Statistics 3360.
Format: Lecture 3 hours
Prerequisites: Statistics 2060 and Mathematics 2000
Cross-listing: Same as Statistics 3360

MATH3380 A or B Sample Survey Methods: For description see Statistics 3380.
Format: Lecture 3 hours
Prerequisites: Statistics 2060
Cross-listing: Same as Statistics 3380

MATH3460 A or B Intermediate Statistical Theory: For description see Statistics 3460.
Format: Lecture 3 hours
Prerequisites: Statistics 3360
Cross-listing: Same as Statistics 3460

MATH3500R Intermediate Analysis: Mathematics 3500 continues the analysis sequence begun in Mathematics 2500. Topics include: number systems, metric spaces, compactness, continuous functions on metric spaces, Stone-Weierstrass theorem, Arzela-Ascoli theorem, sequences and series of functions and their properties, inverse and implicit function theorems, extrema, co-ordinate transformations.
Format: Lecture 3 hours
Prerequisites: Mathematics 2130, 2500
Exclusions: Credit cannot be given for both Mathematics 3500 and 3090A, or for both Math 3500 and 3100B

MATH4010/5011 A or B Introduction to Measure Theory and Integration: A discussion of Lebesgue's theory of measure and integration on the real line. The topics include: the extended real number system and its basic properties; the definition of measurable sets, Lebesgue measure and the existence of non-measurable sets; the Lebesgue integral; differentiation of monotonic functions (e.g. the Cantor function), absolute continuity, the classical Lebesque spaces, Fourier series.
Format: Lecture 3 hours
Prerequisite: Mathematics 3500

***MATH4020/5021 A or B Analytic Function Theory:** A second half-class in complex function theory. Topics include: review of analytic complex functions including topological properties of the plane, Mobius mappings, exponential, logarithmic, trigonometric and related functions, integration and the Cauchy theorem. Cauchy's integral formula, residues, harmonic functions, analytic continuation, entire and meromorphic functions, some results of conformal mapping, including the Riemann mapping theorem.
Format: Lecture 3 hours
Prerequisites: Mathematics 3080 and either 3100B or 3500

MATH4030/5031R Advanced Abstract Algebra: This second class in abstract algebra deals with the structure of groups, rings, fields and modules. Topics which may be discussed include the Sylow theorems, tensor products, Ext and Tor, modules over a principal ideal domain and Galois Theory.
Format: Lecture 3 hours
Prerequisite: Mathematics 3030

***MATH4050/5051R Introduction to Algebraic Geometry:** An introduction to the basic concepts of algebraic geometry.
Format: Lecture 3 hours
Prerequisite: Mathematics 3030

***MATH4080/5080 A or B Statistical Analysis of Spatially Coherent Systems:** For description see Statistics 4080.
Format: Lecture 3 hours
Prerequisite: Stats 3460 or permission of instructor
Cross-listing: Same as Statistics 4080A/B

MATH4090/5090 A or B Probability: A mathematically rigorous treatment of probability theory in Euclidean space. Topics include the definitions and properites of random variables and their distribution functions, various convergence concepts, the Borel-Cantelli lemma, weak and strong laws of large numbers, characteristic functions, central limit theorems. Although the necessary measure theory is introduced, a previous analysis class is an asset.
Format: Lecture 3 hours
Prerequisite: Mathematics 3360 and a third year analysis class
Cross-listing: Same as Statistics 4090

***MATH4130/5131 A or B Analysis of Algorithms:** See class description for CS 4130A/B.
Format: Lecture 3 hours
Prerequisites: CS 3690 (with a grade of C-- or better)
Cross-listing: Same as Computing Science 4130

***MATH4140/5141 A or B Introduction to Functional Analysis:** An introduction to the basic principles of functional analysis including the following topics: infinite dimensional vector spaces, normed spaces, inner-product spaces, Banach and Hilbert spaces, linear and continuous linear functionals, the Hahn-Banach Theorem, the principle of uniform boundedness, dual spaces, weak* topology, and the Alaoglu theorem, the open mapping and closed graph theorems, and consequences and applications.

Format: Lecture 3 hours
Prerequisites: Mathematics 2130 and 3040 or 3500

***MATH4150/5151A/B Functional Analysis:** Topics include: topological vector spaces, locally convex spaces, normability, function spaces, strict convexity, uniform convexity, reflexive spaces, support functionals, geometry of convex sets and other topics.
Format: Lecture 3 hours
Prerequisite: Mathematics 4140

***MATH4160/5161 A or B Operator Theory:** An introduction to the theory and applications of continuous linear operators on Hilbert spaces, culminating with the spectral theorem, and including such topics as spectrum; adjoint; symmetric, self-adjoint, unitary, and normal operators; polar decomposition; differential and integral operators; C^* algebras; Gelfand's Theorem; and the spectral theorem.
Format: Lecture 3 hours
Prerequisites: Mathematics 4010 and 4140

***MATH4170/5171 A or B Introduction to General Topology:** An introduction to topological spaces, and includes the following topics: classification in terms of cardinality of bases, separation, etc., product spaces, Tychonoff theorem, compactness, compactifications, Tychonoff spaces, metrization.
Format: Lecture 3 hours
Prerequisite: Mathematics 3040 or 3500

***MATH4180/5181 A or B Introduction to Algebraic Topology:** An introduction to algebraic topology and including the following topics: homotopy type and the fundamental group, geometry of simplicial complexes, homology theory of complexes, chain complexes, homology groups for complexes, subdivision, induced homomorphisms, axioms for algebraic topology, singular homology, the singular complex, properties of cell complexes.
Format: Lecture 3 hours
Prerequisite: Mathematics 4170

***MATH4190/5191 A or B Differential Equations:** Mathematics 3120 is recommended. Topics covered include existence and uniqueness theorems, continuity of solutions, Floquet theory, autonomous differential equations and their relation to dynamical systems and flows, periodic solutions and the Poincaré-Bendixson theorem.
Format: Lecture 3 hours
Prerequisites: Mathematics 3500 (3090 and 3100) and 2030/2040 or 2130

***MATH4200/5201 A or B Differential Equations - Qualitative Theory:** Qualitative theory is concerned with what can be determined about the phase-portrait and the general behaviour of solutions of differential equations even though those solutions are not explicitly exhibited. Topics are selected from Liapunov stability theory, stable and unstable manifolds of singular points and periodic solutions, classification of plane singular points, structural stability, differential equations on manifolds and Hamiltonian systems. Various equations occurring in applications are qualitatively analysed. The precise topics and equations covered depend on the specific interests of the instructor and the students.
Format: Lecture 3 hours
Prerequisite: Mathematics 4190

***MATH4220/5221 A or B Introduction to Partial Differential Equations:** This class is the first half of a two term sequence designed to introduce the student to the theoretical and numerical aspects of partial differential equations. Topics to be covered include: review of the theory of ordinary differential equations, classification of partial differential equations, solution of first order equations, the diffusion equation and random walk, Fourier Series and transforms, generalized functions, eigenfunction expansions.
Format: Lecture 3 hours
Prerequisite: Mathematics 3110

***MATH4230/5231 A or B Partial Differential Equations:** This class continues the study of partial differential equations begun in 4220A. Topics to be covered include: The Rayleigh-Ritz method, Green's Functions, finite difference methods of solution, an introduction to the finite element method.
Format: Lecture 3 hours
Prerequisite: Mathematics 4220

***MATH4270/5271 A or B Numerical Software:** See class description for CS 4270 A/B.
Format: Lecture 3 hours
Prerequisite: CS 3210 (with a grade of C-- or better)
Cross-listing: Same as CS 4270

***MATH4300/5301 A or B Optimal Control Theory and Applications:** Initially the classical calculus of variations is studied and the sufficiency conditions emphasized. A constructive solution of the Euler equations is presented. Then the modern theory of optimal control is developed using techniques of mathematical programming. This approach is applied to a variety of problems such as economic growth theory, inventory control and regulator problems. Numerical methods are also presented.
Format: Lecture 3 hours
Prerequisite: Consent of instructor

***MATH4310/5310 A or B Nonlinear Programming:** A complete treatment of the mathematical theory which underlies the general problem of optimization of a real-valued function subject to a system of constraints. Examples and

exercises of an Operations Research nature are used to illustrate the theory. The material studied in this class is a basic prerequisite for understanding and contributing to recent developments in mathematical programming.
Format: Lecture 3 hours
Prerequisite: Consent of Instructor

***MATH4400/5401 A or B Mathematical Modelling in Science and Industry:** This class is concerned with the construction, analysis and interpretation of mathematical models in the natural sciences with an emphasis on industrial applications. Specific applications of potential theory, diffusion phenomena and wave propagation will be examined in detail. A brief introduction to the calculus of variations approach to the optimal control of dynamical systems will be given and some recent applications discussed.
Format: Lecture 3 hours
Prerequisites: required Mathematics 3110, recommended Mathematics 3120

***MATH4660/5660 A or B Automata and Computability:** For description see Computing Science 4660.
Format: Lecture 3 hours
Prerequisites: Computer Science 1410; a 3000 level Mathematics class such as 3030
Cross-listing: Same as Computing Science 4660

MATH8700 (non-credit) Co-op Seminar I

MATH8891 Co-op Work Term I

MATH8892 Co-op Work Term II

MATH8893 Co-op Work Term III

MATH8894 Co-op Work Term IV

Meteorology

A one-year diploma programme in meteorology is available to qualified students with a BSc degree in Physics or a related subject. For details see the under "Physics"

Microbiology

Location: Sir Charles Tupper Medical Building, 7th Floor
Telephone: (902) 494-3587

Head of Department
K.B. Easterbrook

Undergraduate Advisor
D.B. Stoltz (494-2590)

Professors
R.G. Brown, PhD (Rutgers), (Major Appointment in Biology)
K.B. Easterbrook, PhD (ANU), (Structure and Function in Microorganisms, Bacterial Spines)
G.C. Johnston, PhD (York), (Genetic Control of Cell Division)
S.H.S. Lee, PhD (Dal), (Diagnostic Virology; Interferon)
D.E. Mahony, PhD (McG), (Bacteriology; Bacteriocins, Toxins and Plasmids of Clostridia)
K.R. Rozee, PhD (Dal), Dip.Bact. (Tor.), (Viral Pathogenesis; Epidemiology) (on leave)
D.B. Stoltz, PhD (McM), Undergraduate Studies Coordinator, (Biology of Parasitic Insects; Insect Virology)
C. Stuttard, PhD (Dublin), (Microbial Genetics)
L.C. Vining, PhD (Cantab), (Major Appointment in Biology)

Associate Professors
R.I. Carr, MD (Tor.), PhD (Rockefeller), Prof., Medicine (Rheumatology) (Immunoregulation; CNS Immune System Interactions)
R. Rajaraman, PhD (Dal), Asst. Prof., Medicine, (Cancer Cell Biology, Cell-Extracellular Matrix Interactions)

Assistant Professors
M.T. Dalton, MBChB (Ireland), (Clinical Bacteriology)
G. Faulkner, PhD (Dal), (Ultrastructural Analysis of Infection and Cancer Cells)
D.J.M. Haldane, MBChB (Dundee), FRCP(C), (Medical Mycology and Parasitology)
P.S. Hoffman, PhD (Virginia Polytechnic Institute and State University) (Microbial Pathogenesis) (Graduate Studies Coordinator)
D.W. Hoskin, PhD (McG), (Immunology; Natural Suppressor Cells; MHC-Unrestricted Killer Cells)

Introduction

The field of Microbiology includes the activities of viruses and cellular organisms such as bacteria, fungi, protozoa and algae. Many viruses and microorganisms are potentially pathogenic, and so cannot be considered in isolation; thus,

immunology constitutes a major focus of study too. The Microbiology programme is designed to provide the student with an understanding of microorganisms -- their structures, functions, diversity, and contributions to the biosphere -- and attempts to provide a basic training which may serve as preparation for graduate or professional work in all fields of microbiology. The Department of Microbiology, located in the Sir Charles Tupper Medical Building and in the D.J. Mackenzie Laboratories, offers microbiology programmes in the Faculties of Medicine, Health Professions, Dentistry, Science and Graduate Studies.

Degree Programmes

There is no 3-4 year programme leading to a Microbiology major; however, a 4-year "advanced major" programme is now in place. Students wishing to include Microbiology in other programmes should take Microbiology/ Biology 2100, which is a prerequisite for most other microbiology classes offered at Dalhousie. Students interested in an honours programme (see below) should consult the departmental advisor, D.B. Stoltz, preferably prior to registration for 2nd-year classes.

BSc with Honours in Microbiology

This programme is recommended for students wishing to acquire the strongest possible background in the discipline of microbiology. It is particularly suited to individuals who may be interested in pursuing an academic or professional career in microbiology. Students applying for admission to this programme must have obtained a grade of B- or better in both Biology 1000 and Microbiology 2100. Interested students are asked to seek advice from the undergraduate advisor.

Year 1: Biology 1000, Chem 1010, "Writing class," Math 1060A/1070B or 1000A/1010B, and one minor or elective.

Year 2: Microbiology 2100A/B and if possible an additional ½ class in microbiology*, Biology 2020 and 2030, Biochemistry 2200B, Chemistry 2400, and minor/elective classes.

Year 3: Microbiology, three classes*; Biochem 3400B; and minor/elective class. See Note 3.

Year 4: Microbiology 4900 (Honours research and thesis); Microbiology, 2-2½ classes*; and minor/elective classes.

* To be chosen from any of the classes listed below (see note 2).

Microbiology
3033A Microbial Genetics
3114A Virology
3115A/4115B Immunology
3118B Medical Bacteriology
4022A/B Microbial Ultrastructure Project
4024A Microscopy
4026A The Mammalian Cell
4027B The Cancer Cell
4037A Genetics of Industrial Bacteria
4038B Molecular Biology of Yeast
4114B Topics in Basic and Medical Virology
4118A Molecular Pathogenesis
4301A Cellular Immunology
4302B Advanced Immunology
4601A Laboratory Techniques in Molecular Biology

Biochemistry
4403A Structural Organization and Replication of Genes
4404B Gene Expression
4603A Advanced Laboratory in Biochemical Techniques
4802R Principles of Instrumentation

Biology
3100B Marine Microbiology
3117A Yeasts and Fungi
3120A Advanced General Microbiology
3322B Parasitology
4102A Developments in Biotechnology
4113B Biology of the Prokaryotic Cell

Notes:

1. In general, "microbiology" has been used here in the sense of referring to the discipline, rather than the department.
2. Required classes: note that the 9 classes required beyond the 1000-level consist of Microbiology 2100, Biology 2020, 2030, Biochemistry 2200B and 3400B, Chemistry 2400 and 5½ additional classes in the discipline of microbiology.
3. Core classes: all students are required to take at least one half-class at the 3-4000 level in each of the following core subjects: bacteriology, virology, immunology, and microbial genetics. In these "core" classes, students must normally maintain a B average, with no grade less than B-. (Note: Microbiology 2100 is also considered to be a core course.)
4. The minor can be taken in any subject (except Microbiology); this includes Biology.
5. In year 4, the honours research thesis can be done in either the Microbiology or Biology Department, and indeed appropriate supervisors may exist in other departments as well (consult undergraduate advisor), but the work must be microbiological in content.
6. Students should be aware of Calendar regulation 22.1, and note further that certain advanced classes (eg 4114B) require that a particular grade be achieved in the prerequisite class.

7. Note that Calendar regulation 11.3 requires that of the 15 classes taken in years 2 to 4, 2-4 must not be in the major field.

BSc with Combined Honours in Microbiology and Biochemistry

Students in this programme complete core classes offered by both departments (Biochemistry 2200B, 3200A, 3300B, and 3400B; Microbiology 2100, 3033A, 3114A, 3115A and 3118B, together with Chemistry 2400 (minimum grade: C). Again, 3118B may be replaced by any half class in Bacteriology. Students must also take Biology 2030 and 2020. The remaining 5 credits in Biochemistry and Microbiology must include at least one full credit in each discipline (Dept.) at the 4000 level, exclusive of Biochemistry 4602 or Microbiology 4900. Thesis research may be done in either department. Advisors: D.B. Stoltz (Microbiology); J.A. Verpoorte (Biochemistry).

BSc with Combined Honours in Microbiology and Biology

Students in this programme must complete the core requirements of each department. Students are required to maintain an average grade of B in core classes, with no grade lower than B-. Biology 1000 should be taken in year 1, and Microbiology 2100 in year 2. Research thesis work can be carried out in either Department. Advisors: D.B. Stoltz (Microbiology); G.S. Hicks (Biology).

Classes Offered

Note: Due to the combined pressures of student numbers and a dearth of available space, the names of students not appearing on the first day of class may be deleted from class lists; students are therefore advised that being signed into the class is no guarantee of late admission.

MICR 2100A/B Introductory Microbiology: An introduction to the basic concepts of microbiology through lectures, laboratory sessions, and demonstrations. Topics include the structure, ecology, growth, genetics and physiology of microorganisms, as well as basic immunology. This class is a prerequisite for all the other microbiology classes listed below, with the exception of 3020. Lab section assignments are made during the first lecture period. Consequently, due to limits in lab space, students not attending that lecture may be denied admission to the class EVEN IF THEY ARE ALREADY REGISTERED; in particular, students must be registered prior to admission to laboratory periods, beginning in the second week of each term. Students wishing to repeat the class must have approval to do so from the Instructor. It should be noted that students wishing to acquire extra experience in microbiology could take 2100A followed by Biology 3100B, and/or Microbiology 3118B in the same academic year.
Instructors: D.B. Stoltz (class coordinator); J.A. Novitsky, J. Breckenridge (instructor)
Format: lecture 2 hours, lab 3 hours
Prerequisite: a grade of B- or better in Biology 1000
Cross-listing: Biology 2100A/B

MICR 3020R General Microbiology: Intended to provide a general knowledge of microbiology at an introductory level for students in the Health Sciences, this class is not considered to represent an alternative to 2100 in Science programmes; students who have taken 2100 may not register for this class. The lecture topics are divided into three sections. The first introduces the microbial world, the basic concepts and facts of structure and function, growth, genetics, and immunology. The second comprises a systematic survey of the medically important groups of microorganisms, with special emphasis on host-parasite relationships. The third section is concerned with applications of microbiology in health sciences, industry and ecology. Laboratory work is designed to complement the lecture materials and to provide experience in the isolation, identification, cultivation and control of microorganisms.
Instructor: S.H.S. Lee (class coordinator)
Format: lecture 2 hours, lab 3 hours
Prerequisite: Biology 1000 or permission of the instructor

MICR 3033A Microbial Genetics: Heredity in bacteria and their viruses, with principal emphasis on gene transfer and genetic mapping, molecular basis and genetic control of mutation, DNA replication, recombination, restriction and repair, use of microorganisms in molecular approaches to genetic analysis (e.g. gene cloning, DNA sequencing).
Instructor: C. Stuttard; G.C. Johnston
Format: lecture 2 hours, lab/tutorial 3 hours
Prerequisites: Microbiology 2100, Biology 2030, or permission of the instructor
Cross-listing: Biology 3033A
Enrolment: limited to 40

MICR 3114A Virology: Provides an introduction to Virology, and to some extent discusses all kinds of viruses -- animal, bacterial, insect and plant. Important concepts relating to the isolation, biophysical characterization, classification and replication of viruses are considered.
Instructors: K.B. Easterbrook; D.B. Stoltz
Format: lecture 3 hours
Prerequisite: Microbiology 2100
Cross-listing: Biology 3114A

MICR 3115A Introductory Immunology: This introductory class is designed to provide the student with an understanding of the fundamental principles of cellular and molecular immunology.

Lectures will focus on mechanisms governing the generation and regulation of cell-mediated and humoral immune responses. Topics to be discussed include cells and tissues of the immune system, the structure and synthesis of antibodies, complement pathways, T cell subsets and their functions, hypersensitivity reactions and the genetics of the immune response.

Instructor: D.W. Hoskin (class coordinator)
Format: lecture 3 hours
Prerequisite: Microbiology 2100, a 2000-level class in cell biology, or instructor's permission
Cross-listing: Biology 3115A
Enrolment: limited to 90

MICR 3118B Medical Bacteriology: A survey of several bacterial groups with particular attention devoted to bacteria of medical interest. Attention is given to those criteria which are regarded as important in the classification of bacteria, and to the techniques used to identify particular species.

Instructors: D.E. Mahony (class coordinator); M.T. Dalton
Format: lecture 2 hours, lab 3 hours
Prerequisite: grade of B- or better in 2100
Cross-listing: Biology 3118B

MICR 4022A/4022B Microbial Ultrastructure Project: A research project using one or more of the skills acquired in Biology/Microbiology 4024A, selected by the student in consultation with the instructor.

Instructors: K.B. Easterbrook; D.B. Stoltz; G.T. Faulkner
Prerequisites: 4024A or permission of an instructor
Cross-listing: Biology 4022A/4022B

MICR 4024A Microscopy: The class is concerned with biological ultrastructural analysis concentrating on transmission and scanning electron microscopy. The importance of a proper understanding of the physical and chemical principles governing technical procedures such as fixation, freeze-fracture, colloidal gold probes, stereology, autoradiography, x-ray microanalysis and photography is emphasized. During laboratory periods students have the opportunity through individual projects to participate in some of the techniques covered in the lectures.

Instructors: G.T. Faulkner (class coordinator); K.B. Easterbrook, D.B. Stoltz; M. Willison
Format: lecture 3 hours, no formal lab
Prerequisite: a grade of B- in 2020 or 2100
Cross-listing: Biology 4024A

MICR 4026A The Mammalian Cell: The class considers recent advances and current concepts in cellular and molecular biology with reference to the mammalian cell cultured in vitro. Emphasis is also placed on related laboratory techniques. The following general areas are discussed: cell cycle; somatic cell aging; extracellular, cytoplasmic and nuclear matrices; transmembrane interactions; gene expression; growth factors and their receptors; differentiation; hybridoma technology; mutagenesis and somatic cell and molecular genetics. Laboratory exercises and projects include techniques of cell culture, cell cycle analysis by fluorescence activated cell sorter, cell hybridization, detection of extracellular and intracellular antigens by immunofluorescence, SDS gel electrophoresis, autoradiography, ELISA, western blotting, cytofluorimetry.

Instructor: R. Rajaraman (class coordinator)
Format: lecture 3 hours, lab 3 hours
Prerequisite: Biology 2020 and 2030 or permission from the instructor
Cross-listing: Biology 4026A

MICR 4027B The Cancer Cell: The class considers recent cellular and molecular biology of cancer cells viewed as microorganisms in vivo. Students participate by giving seminars on recent articles and by writing term papers on selected topics. The following general areas are discussed: types of tumors; the transformed phenotype; extracellular matrix and neoplasia; hormones and neoplasia; anchorage and growth control; analysis of malignancy by cell fusion; transformation by DNA and RNA viruses, and by radiation; chemical carcinogenesis; oncogenes and the origin of human cancers; interferon and cancer; reverse transformation and chemoprevention of cancer; immunoresponse and cancer; anti-oncogenes, transgenic mice in cancer research and cellular basis of metastasis. Instructor: R. Rajaraman (class coordinator)

Format: lecture/seminar 3 hours
Prerequisite: Microbiology 4026A or permission from the instructor
Cross-listing: Biology 4027B

MICR 4037B Genetics of Industrial Bacteria: We review specific aspects of genetic structure, regulation, transmission and recombination in bacteria that are used to synthesize medically and commercially useful products. The principal focus will be on *Streptomyces* spp., and will include consideration of genome architecture and stability, and genetic control of morphological and physiological development. Seminars will consider recent research in the field.

Instructor: C. Stuttard
Format: lecture/seminar 3 hours
Prerequisite: Microbiology/Biology 3033A

MICR 4038B Molecular Biology of Yeast: The class will focus on the use of genetics and molecular genetics in the investigation of a wide variety of cellular activities in the yeast *Saccharomyces cerevisiae*, including: genome organization, regulation of gene expression at both transcriptional and translational levels, signal

transduction, role of oncogenes, secretion, and control of proliferation. Wherever possible, the role of particular yeast gene products will be compared to genes found in other eukaryotic cells including mammalian cells. This class will consist of lectures and student seminars and will rely heavily on the recent primary literature. Participants in the class will be encouraged to discuss and evaluate recent advances in the areas of genetics and molecular biology.
Instructor: G.C. Johnston
Format: lecture/seminar 4 hours
Prerequisite: MICR 3033A

MICR 4114B Topics in Basic and Medical Virology: A class for advanced students in virology. Several aspects of virology are discussed in detail; e.g., virus structure and replication, viruses and cancer, viral genetics, virus-cell interaction.
Instructors: D.B. Stoltz; S.H.S. Lee, K.B. Easterbrook
Format: lecture 2 hours, lab 3 hours
Prerequisite: grade of B- or better in 3114A
Cross-listing: Biology 4114B

MICR 4115B Topics in Immunology: An advanced class in which students read and discuss research papers taken from the current literature in immunology. While all major areas of immunology are discussed, particular emphasis is placed on mechanisms involved in the host immune response to pathogens and tumor cells.
Instructor: D.W. Hoskin
Format: lecture 2 hours
Prerequisite: a minimum grade of B- in Immunology 3115A
Cross-listing: Biology 4115B
Enrolment: limited to 24

MICR 4118A Molecular Pathogenesis: An advanced course on the molecular basis of bacterial pathogenesis. The course will use selected bacterial pathogens to develop basic principles regarding genes, regulatory mechanisms and the molecular function of gene products in surface colonization, invasion, intracellular growth and toxin production. The course will be taught from reviews and original research papers and will emphasize the use of modern molecular biological tools in problem solving.
Instructor: P.S. Hoffman
Prerequisites: Microbiology 3033 plus an advanced class in Bacteriology (3118 preferred)

MICR 4301A Immunobiology: An advanced class designed to examine the biological characteristics of the immune system, including its cells and the interactions between them, the idiotype network, and antigen processing and presentation. The mucosal immune system, and normal and pathologic autoimmunity, as well as CNS-immune system interactions will also be discussed.
Instructors: R. Carr; T. Issekutz; A. Issekutz; B. Pohajdk
Format: lecture 3 hours
Prerequisite: prior class(es) in immunology

MICR 4302B Molecular Immunology: An advanced class designed to examine the molecular biology of immunologic phenomena. Topics include the molecular genetics of immunoglobins, the molecular biology of cytokines, the T cell receptor, and other topics to be selected.
Instructors: T. Lee; A.W. Standynk; T. Issekutz; B. Pohajdk
Format: lecture 3 hours
Prerequisite: prior class(es) in immunology
Cross-listing: Biology 4302B

MICR 4403A Structure, Organization, and Replication of Genes: (see Biochemistry Dept.)

MICR 4404B Gene Expression: (see Biochemistry Dept.)

MICR 4601A Laboratory Techniques in Molecular Biology: This class will consist of a series of laboratory modules covering techniques used in molecular biology (each of 4 weeks duration, 6 hours per week). The class is intended primarily for honours and graduate students. Students should consult the department regarding eligibility and availability of space.
Instructor: G.C. Johnston
Format: lab 6 hours

MICR 4700 Special Topics: Consult department.

MICR 4701A/4702B Special Topics: Consult department. This class is intended to permit further study of a specific topic of interest, or to correct a deficiency in a student's programme.

MICR 4900 Honours Research and Thesis
Course Coordinator: D.B. Stoltz

Neuroscience

Location: Psychology Department
Life Sciences Centre
Telephone: (902) 494-3417

Programme Advisors
Dr. L.A. Meinertzhagen (494-2131)
Dr. S.R. Shaw (494-2047)

Introduction

The last two decades have witnessed the remarkable emergence of a new, interdisciplinary field called Neuroscience which has as its primary goal the understanding of the brain. Neuroscience

is a rapidly developing research area which includes all aspects of the structure and function of nervous systems. Neuroscience involves a variety of experimental strategies to understand nervous systems. These include molecular, biochemical, behavioural, anatomical, physiological, and developmental approaches. Although firmly grounded in the natural sciences, the scope of Neuroscience also encompasses fundamentally important philosophical issues, such as the nature of human thought and its mechanism. The programme outlined below represents all of these approaches, with an emphasis on behaviour as the adaptive product of neural activity. Knowledge obtained from research in Neuroscience is applied to a variety of human health problems, including neurological conditions such as those occurring in Alzheimer's disease, Parkinsonism, and a variety of drug- or injury- induced behavioural disorders. Research in Neuroscience is also contributing new information related to the major psychiatric disorders, including affective disorders and the schizophrenias.

The BSc (Honours) Programme

This programme is intended to serve as a preparation for graduate work in neuroscience, biological psychology, medicine, human communication disorders and related fields. Its interdisciplinary nature is reflected in the participation of faculty from several departments in the programme, which is offered through the Department of Psychology. Students interested in the Neuroscience degree programme should consult with either I.A. Meinertzhagen or S.R. Shaw in the Department of Psychology early in their undergraduate career, preferably by the end of their first year of study. Admission is often deferred until the end of the second year, however.

Structure

In the first year of study, students are required to take classes which provide a firm grounding in the physical and biological sciences. In subsequent years, the programme includes 9-credits in classes drawn from Neuroscience, Psychology and Biology. These include a number of required core classes which emphasize the acquisition and application of laboratory skills. Note that students intending to obtain an Honours degree in Neuroscience may not use Psychology as their minor subject, nor may Psychology Honours students use Neuroscience as a minor subject. It is anticipated, but not required, that Neuroscience Honours students will have Biology as their minor subject. In that case, classes cross-listed with classes in Biology cannot count for credit towards both the Neuroscience programme and the Biology minor.

Students wishing to take Combined Honours in Neuroscience and a second discipline, e.g. Biology, Biochemistry, should consult with a programme advisor. In general, the required classes of the honours programme in Neuroscience will be required of all such students, except Psychology 2000 A. Thus, the minimum programme after year I is NEUR 2071A, one full credit in Biology 2072B, (2020A/B and an extra half credit), NEUR 3370A, 3371B, 3440B, Neuroscience seminar (half credit), and (for those students who take Neuroscience as a major subject of a combined honours programme) NEUR 4500R.

Curriculum

Year I: Students entering the Neuroscience Honours programme in their second year will normally have had the following classes in their first year of study:
Biology 1000R (Lab): Introduction
Chemistry 1100R or 1200R (lab): General Chemistry
Mathematics 1000A/B and 1010A/B, or 1500R: Calculus
Writing class

In addition, the following classes are recommended during the first two years of study: Psychology 1000R or 1010R: Introduction; and Physics 1100R or 1300R: Introduction.

Year II Required Classes:
Neuroscience 2071A: Introduction to Neuroscience
Neuroscience 2072B: Cellular Neurobiology
Psychology 2000A (lab): Research Methods
Biology 2020A/B: Cell Biology
An additional one-half credit in Biology chosen from one of the three following: a)Biochemistry 2200B; b) Biology 2030A/B; or c) one of Biology 2001A, 2100A/B or 2002B.
Options: One additional credit from among the following:
Neuroscience 2140A or B: Learning
Neuroscience 2150A or B: Perceptual Processes
Psychology 2160A or B: Animal Behaviour
Neuroscience 2170A or B: Hormones and Behaviour
Neuroscience 2190A or B: Language and the Brain
Neuroscience 2270A or B: Human Neuropsychology
Neuroscience 2370A or B Drugs and Behaviour
Biology 2012A or B (lab): Lab Techniques: Cell & Molecular Biology
One and one-half credits in elective classes.

Year III Required Classes:
Neuroscience 3370A (lab): Neuroscience Laboratory I
Neuroscience 3371B (lab): Neuroscience Laboratory II
Neuroscience 3440B (lab): Neuroanatomy

Recommended:
It is recommended that students take Psychology 3500, Statistical Methods in either their third or fourth year of study.
Options: One and one-half credits from among the following:
Neuroscience 3000R (lab): Independent Research
Psychology 3040R (lab): Learning and Motivation
Neuroscience 3050R (lab): Perception
Neuroscience 3070R (lab): Physiological Psychology
Neuroscience 3071 R: Physiological Psychology
Neuroscience 3150A/B: Introduction to Hearing and Speech Mechanisms
Neuroscience 3160R (lab): Ethology
Neuroscience 3260A or B: Biological Rhythms
Neuroscience 3270A or B: Developmental Neuroscience
Psychology 3500R: Statistical Methods
Neuroscience 3590A or B: Perceptual Development
Neuroscience 3760A or B: Neuroethology
Two credits in elective classes.

Year IV Required Classes:
Neuroscience 4500R: Honours Thesis
Options: One credit in fourth year seminars from among:
Neuroscience 4000A/B: Senior seminar (topic open)
Neuroscience 4050A/B: Perception
Neuroscience 4070A/B: Neuroscience
Psychology 4160A/B: Topics in Behavioural Biology
Neuroscience 4370: Introduction to Pharmacology
One credit in courses from the third and fourth year lists above
Two credits in electives

Notes:
1. In designing the first year of study, students should consider the requirements for a BSc degree as outlined in paragraph 11.1(a) in the College of Arts and Science Regulations.
2. Biology 2015R (Cell Biology and Biochemistry), Biology 2020A (Cell Biology: Structure and Function) and Biology 3440B (Neuroanatomy; same as Neuroscience 3440B) cannot be counted as credits toward completing a minor in Biology.
3. Students are encouraged to consider the following classes as electives. Courses marked with an asterisk are recommended electives in the first or second year of study: Biochemistry 4301B: Biochemical Communication; Biology 3012A/Biochemistry 3200A: Introduction to Biol. Chemistry; Biology 3013B/Biochemistry 3300B: Intermediary Metabolism; Biology 3014B/Biochemistry 3400B: Nucleic Acid Biochemistry and Molecular Biology; *Chemistry 2400R: Organic Chemistry Philosophy 3460A/B: Mind and Brain *Physics 1100R/1300R: Introductory Physics

Classes Offered

NEUR2071A Introduction to Neuroscience: This class introduces a number of aspects of this field emphasizing analyses which are precise at the neuronal level. A general introduction is provided by the vertebrate visual system, concentrating upon the analysis of visual information in the mammalian visual cortex. This is followed by consideration of muscle spindles and other receptors of the motor nervous system; a brief treatment of the anatomy of the mammalian brain and a more detailed analysis of the cerebellum; the other major components of the motor pathways to the spinal cord; spinal reflexes and the integrative action of neurons.

Format:	lecture 3 hrs
Instructor:	I.A. Meinertzhagen
Prerequisites:	Psychology 1000 or 1010 or Biology 1000 and 2020 or consent of instructor.
Cross-listing:	PSY 2071A

NEUR2072B Cellular Neurobiology: Building on the knowledge of holistic aspects of brain function gained in Neuroscience 2071A, this class explores the neuronal basis of activity in all nervous systems. Starting with an analysis of the structure of neurons, the function of nerve cells will be explored with respect to the ionic and molecular basis of resting potentials and of electrical activity in nerve cells; synaptic transmission; the release and postsynaptic action of synaptic transmitters; aspects of the neurochemistry of synaptic transmitters and of drug action; and glial cells. Cellular phenomena relevant to neurological dysfunction will be discussed.

Format:	lecture 3 hrs
Instructor:	S.R. Shaw
Prerequisites:	Psychology/Neuroscience 2071 or consent of instructor
Cross-listing:	PSY 2072

NEUR2140A/B Learning: Traces the experimental study of learning from the turn-of-the-century research of Pavlov and Thorndike to the present. Development of the field of animal learning is described in terms of the ways in which particular conceptions of the learning process have guided experimentation, and have in turn been revised on the basis of the outcomes of that experimentation. Some important concepts discussed are: association, attention, biological constraints on learning, classical conditions, discrimination, expectancies, law of effect, learning-performance distinction, operant conditioning, S-S and S-R bonds, and stimulus control. The value of various approaches is discussed with respect to several goals: (1) providing general principles of learning; (2) understanding the behaviour of particular species: (3) direct application to human problems.

Emphasis is on understanding why researchers in animal learning do what they are currently doing (given the goals and the historical context), rather than on learning a number of facts about animal learning.
Format: lecture 3 hours
Instructor: V. LoLordo
Prerequisite: Psychology 1000 or 1010
Cross-listng: PSY 2140

NEUR2150A/B Perceptual Processes: Perception deals with the way in which our senses provide us with information about our environment. This class focuses on the process by which sensory experiences are coded, how they are interpreted by the nervous system, and how experience modifies perception.
Format: lecture 3 hours
Instructor: J. McNulty
Prerequisite: Psychology 1000 or 1010 or Biology 1000
Cross-listing: PSY 2150

NEUR2170A/B Hormones and Behaviour: An introduction to the endocrinological bases of mammalian social behaviour. Emphasis is on the mechanisms by which the hormones of the hypothalamus, pituitary gland, gonads and adrenal gland control sexual, aggressive and maternal behaviour. Other topics covered are: hormone receptors in the brain; the menstrual cycle and human reproduction; puberty, sex differences in the brain; the pineal gland; neuro-transmitters; pheromones; crowding and social stress.
Format: lecture 3 hours
Instructor: R.E. Brown
Prerequisite: PSY 1000 or 1010 or BIOL 1000
Cross-listing: PSY 2170

NEUR2190A/B Language and the Brain: This class is an introduction to the study of languages that are considered as symbolic functions of the human brain. The main topics are the common properties and organizing principles of languages; the acquisition of languages by children; the brain structures involved in language and the effects of brain damage on language disorders.
Format: lecture 3 hours
Instructor: M. Yoon
Prerequisite: Psychology 1000 or 1010
Cross-listing: PSY 2190

NEUR2270A/B Human Neuropsychology: This class explores not only normal but also abnormal brain function, as revealed by the consequences of trauma, disease, and surgical intervention. Aphasia, epilepsy, the role of certain brain chemicals in behaviour, cerebral asymmetry, localization of brain function are examples of topics covered.
Format: lecture 3 hours
Instructor: M. Ozier
Prerequisite: Psychology 1000 or 1010
Cross-listing: PSY 2270

NEUR2370A/B Drugs and Behaviour: An introduction to behavioural psychopharmacology. The lectures involve basic anatomy, physiology and chemistry of the nervous system. Behavioural effects and underlying mechanisms of various psychoactive drugs will be discussed. Specific topics will cover alcohol, tobacco, amphetamines, cocaine, opiates, hallucinogens, tranquilizers and antipsychotic drugs.
Format: lecture 3 hours
Instructor: S. Nakajima
Prerequisite: Psychology 1000 or 1010
Cross-listing: PSY 2370

NEUR3000R Independent Research in Modern Neuroscience: Primarily for students wishing further experience and understanding of neuroscience research. A student in the class chooses a member of staff who serves as an adviser throughout the academic year, and under whose supervision independent research is conducted.
Format: lab 4 hours
Instructor: Staff
Prerequisites: Psychology 2000A or Neuroscience 2071A and previous or concurrent enrollment in two other 3000-level classes; and the prior consent of the instructor
Cross-listing: PSY 3000

NEUR3050R Perception: This class considers the way in which information about the world is provided by the senses and how we use this information in our behaviour. The material falls into four sections. (1) The methodological and theoretical problems peculiar to the study of sensation and perception; (2) The transformation of physical stimulus energy into neural energy; (3) The physiological and psychophysical analysis of the sensory systems with particular emphasis on vision; and (4) The development of perception and its relation to the anatomical and physiological development of the sensory pathways. The experimental work has been selected for its importance in the theoretical understanding of perceptual processes and consists of a general introduction to the apparatus and methods used in perceptual research.
Format: lecture 2 hours
Instructor: D.E. Mitchell
Prerequisites: Psychology 2000A and 2150
Cross-listing: PSY 3050

NEUR3070R Physiological Psychology: Physiological psychology is concerned with the biological explanation of psychological phenomena. Students should have a working knowledge of concepts and methods in experimental psychology. Emphasis is on psychological issues with the answers sought in physiological terms. Labs will involve stereotaxic surgery on the rat.
Format: lecture 2 hours, lab 3 hours

Instructor: S. Nakajima
Prerequisite: Psychology 2000A and permission of the instructor
Cross-listing: PSY 3070

NEUR3071R Physiological Psychology: Students in this class attend the same lectures as students in Psychology 3070, but submit term papers rather than participate in laboratory work. The class is designed for students who wish to learn about physiological aspects of psychological issues, but who do not require the laboratory experience.
Format: lecture 2 hours, seminar 1 hour
Instructor: S. Nakajima
Prerequisite: Psychology 2000A
Cross-listing: PSY 3071

NEUR3150A/B Introduction to Hearing and Speech Mechanisms: Hearing and speech are two behavioural capacities of fundamental importance to normal human communication. This lecture class is designed to provide a basic understanding of the peripheral and central neural mechanisms of hearing, and of some psychological and physiological processes involved in speech production and speech perception. The class is intended for those students anticipating more advanced training in neural mechanisms of hearing, speech science, human communication disorders and/or audiology. The class emphasizes normal hearing and speech mechanisms, but will address pathology where evidence from pathological subjects is pertinent to understanding normal function. Class content: introductory acoustics; structure and function of the outer and middle ears; structure and function of the cochlea; hair cell physiology and sensory transduction; coding of simple and complex sounds in the auditory nerve; sound localization mechanisms as an example of the correspondence between the physical properties of the stimulus, neural sensitivity and behavioural performance; theories of speech production; theories of speech perception; acoustic and linguistic contributions to speech perception.
Format: lecture 3 hours
Instructor: D.P. Phillips
Prerequisites: Psychology 2150 or 3050; Neuroscience 2071A, 2072B strongly recommended
Cross-listing: PSY 3150

NEUR3160R Ethology: Ethology is the biological study of behaviour. It uses psychology, genetics, physiology, ecology and evolutionary theory to solve problems in the development, function and causation of behaviour across all animal species. These diverse approaches to the study of animal behaviour are presented in naturalistic and experimental situations. In laboratory exercises qualitative and quantitative records of behaviour are made in the field and in the laboratory. There are several group research projects (first term) and an individual research project (second term).
Format: lecture 2 hours, lab 2 hours
Instructor: J. Fentress
Prerequisites: Psychology 2160 or Biology 1000
Cross-listing: PSY 3160

***NEUR3260A/B Biological Rhythms:** The temporal structure of animal and human physiology is governed by both homeostatic mechanisms and by a system of biological clocks. These internal clocks generate rhythms with various periods in virtually every physiological and behavioural system. Daily (circadian) clocks are the most prominent; they generate rhythms in sleep, reproduction, intellectual performance and many other functions. This class examines the nature of these biological clocks and their physiological substrates, with an emphasis on the neural mechanisms involved in rhythm generation and synchronization in a variety of species. It also explores the hypothesized role of circadian mechanisms in sleep disorders, jet lag and depression.
Format: lecture 3 hours
Instructor: B. Rusak
Prerequisites: Psychology 1000 or 1010 or Biology 1000
Cross-listing: PSY 3260

NEUR3270A/B Developmental Neuroscience: This class introduces students who are already familiar with the structural organization and functional properties of the mature nervous system to aspects of neural development, especially at the cellular level. The first part of the class will link the early events of neural development to general embryonic development. Cell determination, pattern regulation, cell production, cell-lineage analysis, and neuronal differentiation, movement and migration will be discussed. Special attention will then be given to later developmental events such as neuronal growth cones, cell death, growth factors, neuron-neuron interactions and synapse formation using invertebrate and vertebrate examples.
Format: lecture 3 hrs
Instructor: I.A. Meinertzhagen
Prerequisites: Neuroscience 2071A and 2072B
Cross-listing: PSY 3270

NEUR3370A/B Neuroscience Laboratory I: The two classes 3370 and 3371 (see next entry) are coordinated and provide introduction to several techniques used in contemporary neuroscience. The following information applies to these classes as a pair, between which the exact distribution of experimental approaches may vary from year to year according to availability of equipment and material, and numbers enrolled. Usually, electrical recording methods from several types of preparation are emphasized in 3370, while detailed neuroanatomically-based approaches are favoured in 3371. Regularly scheduled labs with students

working in groups of 2 or 3 under supervision are supplemented by occasional lectures, in both classes. Students become familiar with electrical recording and stimulation methods and related techniques, currently using both sensory and motor system preparations. Neuroanatomical analysis is introduced by way of techniques usually selected from the following: Golgi impregnation of neurones, immunocytochemistry, dye-tracing of connections, and electronmicroscopy of the visual system or central nervous system. Lab II (3371) usually runs in the second term for selected, advanced students, building upon foundations laid in 3370 but using different practical approaches.

Format: lab 3 hours
Instructor: S.R. Shaw
Prerequisites: Neuroscience 2071A and 2072B, or 3270A, and consent of instructor
Cross-listing: PSY 3370

NEUR3371A or B Neuroscience Laboratory II: For a description of this neuroscience lab class, see the entry under 3370 above; usually, 3371 is coordinated closely with 3370.

Format: lecture or lab 3 hours
Instructor: D.A. Hopkins (Anatomy Dept.)
Prerequisites: Biology 2020 or 2015 or permission of instructor
Cross-listing: PSY 3371

NEUR3440A or B Neuroanatomy: A survey of the histology, development and organization of the central nervous systems, with emphasis on the developmental and structural relationships between spinal cord and brainstem. The organization of cranial nerves and microanatomy of the brain stem is discussed. The organization of sensory and motor systems is presented in detail. The cerebral cortex, cerebellum, basal ganglia, and limbic system are also covered.

Format: lab 3 hours
Instructor: Staff
Prerequisites: Neuroscience 3370 and consent of instructor
Cross-listing: PSY 3440

NEUR3590A or B Perceptual Development: This class examines the development of visual and auditory capacities in human infants and in a variety of animal species with sensory systems like our own. The neural events that underlie these developmental changes in the various sensory pathways will be discussed. The class will also grapple with the old question of how early sensory experience influences our perceptual abilities.

Format: lecture 3 hours
Instructor: D. Mitchell
Prerequisite: Psychology 2000A
Cross-listing: PSY 3590

***NEUR3760A or B Neuroethology:** Neuroethology is the study of the neural bases of animal behaviour. The class will emphasize cellular approaches toward understanding the integrative mechanisms of the nervous systems which underlie complex behaviours. Feature detectors, command systems and motor programme generators will be examined in depth using examples from vertebrate preparations. Cellular bases of higher order functions such as motivation, learning and choice will be explored if time permits.

Format: lecture 2 hours
Instructor: Staff
Prerequisites: Psychology 2000A or 2160 or Neuroscience 2071/2072 or Biology 2020 or consent of the instructor
Cross-listing: PSY 3760

NEUR4000A or B Senior Seminar:

Foramt: lecture 2 hours
Instructor: Staff
Cross-listing: PSY 4000

***NEUR4050A or B Topics in Perception:** This class explores the neural basis of perception, emphasizing the visual, tactile and auditory senses.

Format: lecture 3 hours
Instructor: Staff
Cross-listing: PSY 4050

NEUR4070A or B Neuroscience Seminar:

Format: lecture 2 hours
Instructor: Staff
Prerequisites: Psychology 2071 and 2072 and 3270 or consent of the instructor.
Cross-listing: PSY 4070

NEUR4160 Topics in Behavioural Biology:

Format: 2 hours
Instructor: Staff
Cross-listing: PSY 4160

NEUR4370R Introduction to Pharmacology: This introductory class is designed to acquaint students with the actions of drugs on physiological and biochemical functions in mammals including man. Interactions of drugs with central and peripheral nervous systems and with the physiologically active chemicals (e.g. prostaglandins, peptides) are stressed. Factors affecting blood levels of drugs (absorption, distribution, metabolism and elimination) are considered, and potential uses. The laboratory consists of prescribed exercises followed by a project of several weeks duration carried out in the research laboratories of the Department.

Format: lecture 2 hours, lab 2 hours
Coordinator: H.A. Robertson, Pharmacology Department
Prerequisite: permission of the coordinator
Cross-listing: PSY 4370

NEUR4500R Honours Thesis: The purpose is to acquaint the student with current experimental problems and research procedures in experimental neuroscience. Each student works with a staff member who advises the student about research in the major area of interest and closely supervises an original research project carried out by the student. Each student must submit a formal report of the completed research. The final grade is based upon the originality and skill displayed in designing the project and upon the submitted report and an oral presentation.

Instructor: Staff
Prerequisite: Restricted to honours students in their graduating year
Cross-listing: PSY 4500

Oceanography

Location: Life Sciences Centre
Telephone: (902) 494-3557

Chairperson of Department
E.L. Mills

Undergraduate Advisor
B.R. Ruddick (494-2505)

Graduate Advisor
J. Grant (494-2021)

Professors
C. Beaumont, BSc (Sussex), PhD (Dal)
A.J. Bowen, MA (Cantab.), PhD (Scripps.)
C.M. Boyd, MA (Ind.), PhD (Scripps.)
P. Chylek, Diploma (Charles), PhD (Calif.)
R.O. Fournier, MSc (Wm. & Mary), PhD (URI) Associate Vice-President (Research)
E.L. Mills, BSc (Carl.), MS, PhD (Yale), FLS
R.M. Moore, BA (Oxon), PhD (Southampton)
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Associate Professors
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K.R. Louden, BA (Oberlin), MEd (Temple), PhD (MIT)
B.R. Ruddick, BSc (UVic), PhD (MIT)

Assistant Professors
B.P. Boudreau, BSc (UNB), PhD (Yale) (NSERC University Research Fellow)
J. Grant, BSc (Duke), PhD (South Carolina)
O. Hertzman BASc, MSc (UBC), PhD (Wash.)
Wm. Hyde, BSc (Toronto), MSc (Waterloo), Ph.D. (Toronto)
D. Kelley, BSc (Mt A), PhD (Dal.) (NSERC University Research Fellow)
G.B. Lesins, BSc, MSc, PhD (U of T)
C. Taggart, BSc (Carleton) PhD (McGill) (NSERC University Research Fellow)
K.R. Thompson, BSc, MSc (UManc), PhD (Liv.) (jointly with Mathematics, Statistics and Computing Science)

Research Associates
N.E. Balch, BA (UNB), MA (OXON), PhD (Dal), Manager Dalhousie Aquatron
S. Sathyendranath, BSc (St. Teresa's College), PhD (Univ. P&M Curie)

Honorary Adjunct Professors
R.C. Courtney, BSc, MSc (Dal), PhD (Cambridge)
K.T. Frank, BSc, PhD (Toledo)
B.T. Hargrave, BSc, MSc (Dal), PhD (UBC),
D.A. Huntley, BA (Cantab), PhD (Bristol)
S. Pearre, BSc (Virginia), MSc, PhD (Dal)
D.J.W. Piper, BA, MA, PhD (Cantab.)

Introduction

Oceanography is an inter-disciplinary science that includes studies of tides and currents, the chemistry of sea water, plants and animals that live in the sea, and ocean bottom sediments and underlying crustal structures. The Atmospheric Science group applies physics, mathematics and other basic sciences to the study of the atmosphere, its weather, and its climate. In addition, they conduct field and laboratory measurement programmes and analyze data from these and other experiments; and as well, model climate-related processes at less than global scale. Career oceanographers are employed in Canada in a few universities, in various federal laboratories that are engaged in both basic research and applied problems which meet a national need, such as fisheries investigations, exploration for offshore mineral resources, and studies of ice in navigable waters, and in a number of private companies interested in marine environmental protection or exploration.

A good background in basic science is a necessary prerequisite to entering the department. Properly prepared undergraduates are permitted to take one or more graduate classes as electives. There are graduate introductory classes which survey the entire field and advanced classes in each of the major specialties - physical, chemical, geological and biological oceanography, fisheries biology and atmospheric sciences.

In addition, several undergraduate classes are offered. Classes marked * are not offered every year. Please consult the timetable on registration to determine if this class is offered.

Classes Offered

OCEA 2850R Introduction to Oceanography: A general survey of Oceanography showing how the oceans, which account for more than 70% of the earth's surface, function as a dominant

environmental force. Consideration also is given to man's impact on this ecological system. Designed to give a background of feeling for the ocean, what oceanography is, and what oceanographers do. It is not a good "background to science" class, since little feeling will be obtained for scientific techniques which would otherwise be acquired in a laboratory class. Most of the material covered is descriptive rather than basic, inasmuch as it is impossible in the time allowed and the material covered to also teach the basic required sciences.
Instructors:R.O. Fournier
Format: Lecture 3 hours
Prerequisites: Restricted to second year, or more advanced students

OCEA 4110B Introduction to Geological Oceanography: This is a one-term introductory class for new graduate students in oceanography who have little or no knowledge of geology or geophysics. The class content is mainly descriptive, and no subject is treated in great depth.
Instructor: K. Louden
Format: Lecture 3 hours
Prerequisites: Permission of the instructor

OCEA 4120A Introductory Physical Oceanography: This class explores some of the physical forces driving the oceans, and describes the responses of ocean water to these forces. Scales of ocean motion discussed range from currents of oceanic dimensions, like the Gulf Stream, through tides and waves, right down to very small-scale random movements of water known as turbulence. The class also includes a brief introduction to practical aspects of instruments and methodology, via a field trip and a laboratory session.
Instructor: B. Ruddick
Format: Lecture 3 hours
Prerequisites: Permission of the instructor

OCEA 4130A Introductory Chemical Oceanography: This class covers the major and minor constitutents of sea water, the controls on its chemical composition, nutrient cycling and the chemical interactions between ocean and atmosphere. Other topics included are chemical tracers, and radiochemical dating methods, stable isotope studies, chemical speciation and chemical models of sea water.
Instructor: R.M. Moore
Format: Lecture 3 hours, some labs
Prerequisites: Permission of the instructor

OCEA 4150A Introductory Biological Oceanography: Quantitative descriptions of biological oceanographic processes are used to explore interactions with physical and chemical processes in various oceanic ecosystems. Topics discussed range from factors affecting rates of microalgal photosynthesis to expected response of the ocean ecosystem to global variation in carbon dioxide and climate. Laboratory emphasizes independent, original research.
Instructor: C.M. Boyd
Format: Lecture 2 hours, lab 1 plus hours
Prerequisites: Biology 2060 or equivalent and permission of the instructor.
Cross-listing: BIOL 4660A

OCEA 4160B Fisheries Oceanography: Students who cannot demonstrate competence with fundamental statistical analysis will not be permitted to enroll. Familiarity with the fundamentals of population dynamics, ecology, physical oceanography, calculus, statistics, and computerized analysis is ESSENTIAL. The class will focus on the ecology of marine fisheries (including a consideration of significant advances made in freshwater systems) with emphasis on the biotic and abiotic influences on population dynamics and production. Areas to be covered include reproduction, early life history, feeding, growth, metabolism, mortality, and recruitment variability and forecasting. Emphasis will be placed on how hydrological and meteorological process influence the above. Some emphasis will also be placed on population and community ecology as well as fishery management techniques and models. The class will place emphasis on the primary literature, current problems and hypotheses, and fruitful research directions, approaches, and techniques.
Instructor: C.T. Taggart
Format: Lecture 2 hours, tutorial/lab 1 hour
Prerequisites: Biology 2060; Math/Stats 1060 and/or 1070. Permission of the instructor
Cross-listing: BIOL 4369B

OCEA 4170A Introductory Physical and Chemical Oceanography: This class outlines concepts in physical and chemical oceanography with special emphasis on topics most relevant to ocean biology. The oceans as a physical system, water properties, basic dynamical concepts, the forces creating oceanic motion, ocean circulation, shelf and coastal processes. The oceans as a chemical system. Composition of sea water, control of pH and redox potential, nutrient chemistry, trace elements, organic materials, distributions and geochemical cycles.
Instructor: Staff
Format: Lecture 3 hours
Prerequisites: A class restricted to third and fourth-year students. Permission of the instrustor

***OCEA 4210B Time Series Analysis in Oceanography:** Much of the data collected in oceanography and other earth sciences are in the form of a time series; measurements of variables as they change with time or place. A powerful way of interpreting and comparing time series is to

separate them into contributions in different frequency bands. This class discusses ways in which this can be done, with particular emphasis on applied auto- and cross-spectral analysis, and filtering techniques.
Instructor: Staff
Format: Lecture 3 hours
Prerequisites: Permission of the instructor
Cross-listing: STATS 4210B

***OCEA 4230B Biology of Phytoplankton:** The role of phytoplankton as primary producers of organic material in the sea, and as agents of biogeochemical transformations, explored in the context of interactions with physical and chemical oceanographic processes. Emphasis is on the current literature.
Instructor: Staff
Format: Lecture 3 hours, some labs
Prerequisites: Permission of the instructor
Cross-listing: BIOL 4662B

***OCEA 4280A/5280A Chemical Sedimentology and Early Diagenesis:** The present course aims at a quantitative understanding of the chemistry of sedimentary systems and the changes that occur during early burial history. Thermodynamic, kinetic and transport models are employed to describe and conceptualize the biological, chemical and physical processes responsible for these modifications. Some topics to be covered include compaction, formation and dissolution of carbonate and siliceous sediments, organic matter degradation and nutrient regeneration, iron and manganese diagenesis and the formation of ferromanganese nodules, and basalt-sediment interactions.
Instructor: B. Boudreau
Format: Lecture 3 hours
Prerequisites: knowledge of physical chemistry/ intermediate calc/Prof's consent

OCEA 4311A/4312B Fluid Dynamics I and II: An introduction to the theory of fluid dynamics, with some emphasis on geophysically important aspects. Topics include: flow kinematics, equations of motion, viscous flow, potential flow and basic aerodynamics in the first term, and open channel flow, compressible, rotating and stratified flows, hydrodynamic stability, convection and turbulence in the second term. A knowledge of methods of mathematical physics is a desirable prerequisite. Some laboratory expriments on stratified and rotating flows are included in the second term.
Instructor: Staff
Format: Lecture 3 hours
Prerequisites: Intended for first year graduate students in physical oceanography, but graduate students or senior undergraduates in Mathematics or Physics are invited to take it (subject to instructor approval)
Cross-listing: PHYC 4311A, PHYC 4312B

***OCEA 4330B Benthic Ecology:** An advanced level class concentrating on the major problem of benthic ecology, such as how food is supplied to benthic animals, what factors control the structure of biological communities, and how the benthos is related to processes in the sediments. Year-to-year the course content changes, keeping up with current problems of research workers in this discipline.
Instructor: J. Grant
Format: Lecture 3 hours
Prerequisites: Permission of the instructor
Cross-listing: BIOL 4666B

***OCEA 4331B The History of Oceanography:** A one-term course for graduate students and senior undergraduates emphasizing the major developments leading to the present state of knowledge in biological, physical, chemical, and geological oceanography. Events and changes are set in cultural and social contexts. How have scientific forces, institutional developments, and social influences affected the acquisition of knowledge about the oceans?
Instructor: E.L. Mills
Format: Lecture 3 hours
Prerequisites: Permission of the instructor
Cross-listing: BIOL 4664B

***OCEA 4380B Marine Modelling:** A graduate level survey of modelling techniques applied to biological-physical problems in oceanography. Lecture material includes: philosophy of modelling, dimensional analysis, parameterization of unresolved processes, numerical representation of ordinary or partial differential equations, model validation and fundamental limits to predictability and frequency domain analysis. Students are given the opportunity to study special topics in the current literature, e.g., prey-predator models, spatial patchiness models, models of the biomass size spectrum, models of pollutant dispersal, etc. Knowledge of computer programming is helpful but not a prerequisite.
Instructor: Staff
Format: Lecture 3 hours
Prerequisites: Permission of the instructor

OCEA 4411A Dynamic Meteorology I: The basic laws of fluid dynamics are applied to studies of atmospheric motion, including the atmospheric boundary layer and synoptic scale weather disturbances (the familiar highs and lows on weather maps). Emphasis will be placed on the blend of mathematical theory and physical reasoning which leads to the best understanding of the dominant physical mechanisms.
Instructors: O. Hertzman, G. Lesins
Format: Lecture 3 hours
Prerequisites: Permission of the instructor
Cross-listing: PHYC 4411A

OCEA 4412B Dynamic Meteorology II: The approach is the same as for 4411A, with emphasis placed on synoptic-scale wave phenomena, frontal motions, and the global circulation. An introduction to numerical techniques and their use in weather forecasting models and studies of climate is included. Additional special topics are covered at the discretion of the instructor.

Instructors: O. Hertzman, G. Leains
Format: Lecture 3 hours
Prerequisites: Phys/Ocean 4411A or permission of the instructor
Cross-listing: PHYC 4412B

OCEA 4500A Atmospheric Physics I: Main topics covered in this class are atmospheric thermodynamics and atmospheric radiation.

Instructor: D.F. Goble
Format: Lecture 3 hours
Prerequisites: Permission of the instructor
Cross-listing: PHYC 4500A

OCEA 4510B Atmospheric Physics II: The major topic covered is cloud physics. Other topics include atmospheric optics and acoustics, lightning and radar techniques.

Instructor: D.F. Goble
Format: Lecture 3 hours
Prerequisites: Phys/Ocean 4500A or permission of the instructor
Cross-listing: PHYC 4510B

OCEA 4520A Introduction to Meteorology: This course provides the student with an understanding of the thermal structure of the atmosphere, airmass and frontal theory, and weather generating physical processes and their consequences. Other topics include microscale phenomena, local wind systems and applications of meteorology to problems in air pollution control, hydrology and agriculture.

Instructor: Staff
Format: Lecture 3 hours
Prerequisites: Permission of the instructor
Cross-listing: PHYC 4520A

OCEA 4530B Introduction to Radiation and Climate: This course provides the student with an understanding of the origin, composition and thermal structure of the atmosphere, and radiative transfer through clear and cloudy atmospheres. There will be some discussion of the atmospheric general circulation, radiative transfer, atmosphere-ocean-biosphere interaction, and climate change.

Instructor: P. Chylek
Format: Lecture 3 hours
Prerequisite: Permission of the instructor
Cross-listing: PHYC 4530B

OCEA 4540B Climate Modelling: Topics discussed include: zero, one and 2-dimensional energy balance models, multiple solutions and stability, the diffusive/radiative length scale, stochastic and orbital forcing. Radiative-convective models, 3 dimensional models, predictive equations, general circulation models.

Instructor: Wm. Hyde
Format: Lecture 3 hours
Prerequisites: Permission of the instructor

OCEA 4600B Invertebrate Fisheries and Aquaculture: Subject matter will deal with commercially exploited invertebrates (crustaceans and molluscs) with a heavy emphasis on bivalves. Topics to be covered include: (1) Review of the major invertebrate harvest fisheries (locations, methods, population cycles, fisheries models) (2) Biology and ecology of the Bivalvia (feeding, bioenergetics, growth, and reproduction) (3) Shellfish aquaculture (methods, species, site location, economics). These topics will be covered with respect to the Maritimes as well as non-local fisheries. Course structure will be a mixture of lecture and class discussions, supplemented by vistis to aquaculture sites. Course requirements will include a research paper and oral presentations.

Instructors: J. Grant, G. Newkirk, R. Mohn
Format: Lecture/discussion 3 hours
Prerequisites: Biology 2001A, 2060A/B, and 3321R; fundamental knowledge of statistics; permission of instructor
Cross-listing: BIOL 4600B

Physics

Location: Sir James Dunn Science Building
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Professor Emeritus
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Professors
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B. L. Blackford, BSc (Acadia), MSc (MIT), PhD (Dal)
M. G. Calkin, MSc (Dal), PhD (UBC)
P. Chylek, Physics Diploma (Charles U., Czech.), PhD (U. of Calif. at Riverside), FOSA- jointly with Oceanography
D. J. W. Geldart, BSc (Acadia), PhD (McM), FRSC - A.C. Fales Professor of Theoretical Physics
M. H. Jericho, MSc (Dal), PhD (Cantab.) - George Munro Professor of Physics
D. B. I. Kiang, BSc. (MtA), MSc, PhD (McM)
H. J. Kreuzer, MSc, DSc (Bonn)
G. F. O. Langstroth, BSc (Alta.), MSc (Dal), PhD (London)
R. H. March, BSc, MSc (Dal), DPhil (Oxon)
B. E. Paton, BSc, MSc (Waterloo), PhD (McG)
F. H. Reynolds, BSc (Tor.), PhD (UBC) - jointly with Geology
A. M. Simpson, BA (Cantab.), MSc, PhD (Dal)
G. Stroink, BSc, MSc (Delft), PhD (McG), PEng

Associate Professors
J. G. Cordes, MSc (Dal), PhD (Cantab.)
R. A. Dunlap, BSc (Worcester), AM (Dart.), PhD (Clark)
D. F. Goble, BSc, MSc (Alta.), PhD (Tor.)
D. A. Tindall, BA, PhD (Cantab.)
C. G. White, BSc, MSc (Dal)

Assistant Professors
W. T. Hyde, BSc (Tor.), MSc (Waterloo), PhD (Tor.) - jointly with Oceanography
D. Labrie, BSc (U. de Mtrl.), MSc, PhD (McM)
G. Leslie, MSc., PhD (Tor.) - jointly with Oceanography

Cross-Appointments
R. Ravindra, BSc, MTech. (ITT), MA (Dal), MSc, PhD (Tor.) - Comparative Religion
M. A. White, BSc (West. Ont.), PhD (McM) - Chemistry

Research Associates
A. K. Das, MSc (Dacca, Bangladesh), DPhil (Oxon)
P. Mulhern, BSc (SFU), MSc, PhD (UBC)
S. H. Payne, BSc, PhD (Canterbury, NZ)
M. R. A. Shegelski, BSc (Calgary), MSc, PhD (UBC)
L. Wang, MSc (E. China)
A. Wierzbicki, MSc, PhD (A. Mickiewicz, Poland)

E. B. Eastburn Fellow
N. M. Fujiki, PhD (Dal)

Adjunct Professors
H. W. King, PhD (Birmingham),
A. D. J. O'Neill, PhD (Saskatchewan)

MacGregor Teaching Fellows
T. Craig
L. Gates
L. Levesque
X. Wang

Introduction

Physics is the study of the fundamental properties of energy and matter, and of the space in which they are found. It seeks to describe and explain the great diversity of nature with the fewest and simplest hypotheses, and to show the underlying similarities of seemingly diverse phenomena. It requires imagination disciplined by logic, and its success is judged by whether or not nature confirms its predictions when tested by experiment. An understanding of physics must be built on a good foundation. The various programmes are arranged to do this in an orderly, efficient way.

First Year Classes

There are six first year classes. Physics 1200 and 1450 are general interest classes for BA students and are not acceptable as prerequisites for further classes in physics. Physics 1000, 1100, 1300 and 1500A/1550B all give a general introduction to physics, but each has its own particular approach and selection of topics.

Physics 1000 is a survey class offering a wide range of topics in both classical and modern physics. It is primarily intended for students in arts and science, has regular tutorials, no labs, does not use calculus, and is not normally accepted as a prerequisite for advanced physics classes.

Physics 1100 is primarily for students intending to make a study of a physical science or engineering; it has regular labs, no tutorials, uses calculus, and is the accepted prerequisite for advanced physics classes. Background in physics equivalent to Nova Scotia Grade XII is strongly recommended.

Physics 1300 is an introductory class which is oriented towards the health sciences and is primarily intended for students in biology, pre-medicine, pre-dentistry and allied health sciences. The class incorporates labs and tutorials, and is accepted as a prerequisite for advanced physics classes when Mathematics 1000A and 1010B are taken concurrently

Physics 1500A/1550B is intended for students considering an honours programme in a physical science. It has regular labs, uses calculus, and is an accepted prerequisite for advanced physics classes. High standing in high school physics and mathematics is required.

Degree Programmes

BSc with Honours in Physics

All students who intend to take a BSc with Honours in Physics are encouraged to discuss their programme with staff members of the department, and to consult with the Chairperson or Undergraduate Advisor of the department at the beginning of the second year. The following classes will normally be taken.

Year 1: Chemistry 1100 or equivalent; Mathematics 1000A and 1010B or 1500; Physics 1100 or 1500A/1550B; an elective, and a writing requirement class.

Year 2: Physics 2000A, 2005A, 2010B, 2015B; two Mathematics classes; elective.

Year 3: Physics 3000A, 3010B, 3140A, 3200A, 3210B; Mathematics 3110A, 3120B; elective.

Year 4: Four physics classes at the 4000 level, including 4000A/B, 4100A/B, 4160A, 4151A, 4152B, 4230A/B, and an elective. A comprehensive examination is also required.

Students with special interests must select electives carefully. The following suggestions may serve as a guide.

Applied Physics Option: Physics 3340A, 3440B, 3810B, 4220A, 4800C.

Theoretical Physics Option: Physics 4170B, 4180A/B, 4480A, 4650A/4660B, 4800C; Mathematics classes such as complex variables, modelling, or advanced differential equations.

B.Sc. with Honours in Physics (Applied Physics Stream)

Students with an interest in the applications of physics to technology and industry are encouraged to consider the Co-operative Education Programme in Physics. See the description below of the Co-op Programme. It is possible to complete a Co-op degree in 4 years and 1 term, although students should expect to take 5 years.

The following classes describe a typical programme.

Year 1: Physics 1100; Chemistry 1010; Mathematics 1000A and 1010B, or 1500; Computer Science 1400A and 1410B; elective.

Year 2: Physics 2000A, 2005A, 2010B, 2015B; Mathematics 2000R, or 2480A and 2490B, 2040B; elective.

Year 3: Physics 3000A or 3340A, 3010B, 3140A, 3200A, 3210B, 3250A, 3440B, 3810B; Mathematics 3110A, 3120B; Summer work term.

Year 4: Fall work term; Physics 4100B, 4230B; three technical half classes; Summer work term.

Year 5: Physics 4000A, 4151A, 4160A, 4180B, 4800C; five technical elective half classes. A comprehensive exam is also required.

The technical elective classes may be selected from TUNS or Dalhousie classes in Materials Science, Computing Science, Physical Chemistry, Medical Engineering, Oceanography, Meteorology, etc., in consultation with the programme coordinator.

Combined Honours

Students interested in both physics and another science may wish to take a BSc with Honours in Physics and the other subject combined. Students contemplating such a programme should, in any case, consult the departments before the beginning of their second year of study.

Co-operative Education Programme in Physics

The Co-operative Programme provides physics students with an integrated pattern of academic study and supervised work terms in industry, government laboratories and institutes, etc. The programme enables students to obtain a better appreciation of the practical problems they will face in their physics careers upon leaving the university. The work term experience gives students an opportunity to orient themselves at an early stage towards the practical application of their newly acquired knowledge, and adds to their motivation for academic study.

Eligibility

Students entering their second year of an honours programme in physics or combined honours programme at Dalhousie are eligible for admission.

The Work Study Programme

The Programme consists of 8 academic terms and 4 supervised work terms, at least one of which is not a summer. The academic programme and required classes are the same as for the BSc degree with Honours in Physics. In addition, in year 2, Co-op students are required to participate in the non-credit class and lecture series "Scientific Methods".

Further Information

For further information contact the Programme Co-ordinator, Co-operative Education Programme in Physics, Department of Physics, Dalhousie University, Halifax, N.S. B3H 3J5.

Advanced Major (20-credits)

The department is able to offer a major in the 20-credit programme. For further information refer to specific regulations for the 20-credit programmes on page .

Bachelor's Degree/Major in Physics (15-credits)

Students intending to major in physics should include Physics 1100 and Mathematics 1000A and 1010B or 1500R in their first-year programme. (Physics 1000 is not normally included in a "Major".) Physics 2450, 3402A, 4020B may not be included in a "Major" to satisfy regulation 11.1(b)(d). (These classes may, however, be taken as additional electives with a "Major"). At least two 3000-level classes must be included, but in any one year, no student in a degree programme may take only Physics 3000A/3010B and Physics 3340A.

BSC Major in Physics

(Example only, other possibilities exist):

Year 1: Physics 1100, (Math 1000A & 1010B), science, arts, elective.

Year 2: Physics 2000A, 2050A, 2010B, 2015B (Math 2000 or other 2000-level math), science elective.

Year 3: Two 3000-level Physics classes; one additional Physics class is recommended; electives. A recommended selection includes 3140A or 3170B, 3160A, 3000A and 3010B.

BSc Major in Physics, with Diploma in Engineering

The physics content of this programme might be as follows:

Year 1: Physics 1100

Year 2: Physics 2000A, 2005A, 2010B, 2015B.

Year 3: Physics 3160A, 3170B, 3340A, elective. Other possibilities exist.

For the remainder of the programme, consult the Engineering Department.

Geophysics

For those interested in Geophysics, refer to classes 2050B, 3130B, 4270A. 4280B, and 4290A, listed under Geology.

Diploma in Meteorology

The one-year Diploma in Meteorology programme consists of the following five classes: Physics 4500A/4510B, 4520A, 4530B, 4540A/4550B; Oceanography 4411A/4412Band 4120A, Mathematics 4080B (or Oceanography 4210B).

Students admitted to this programme are eligible for consideration for AES-NSERC Studentships in Meteorology, which, for 1990-91, are valued at $5,000 per annum.

For admission into this programme, which has a limited enrollment, a general BSc degree in Physics or other appropriate subject is required. A strong background in Physics and Mathematics is necessary, and classes taken should also include Statistics and Computing Science. For students enrolled in a BSc programme at Dalhousie, the following classes are recommended: Physics 1100, 2000A, 2005A, 2010B, 2015B, 3160A/3170B, 4311A, 4312B; Math 1000A/1010B, 2000, 2030A/2040B, 2070A/2080B, 3110A/3120B; and Computing Science 1400A/1410B.

After completion of the Diploma programme, students are also eligible for admission into a graduate Atmospheric Science programme at Dalhousie.

Classes Offered in Physics

Classes marked * are not offered every year. Please consult the timetable on registration to determine if this class is offered.

PHYC 1000R Survey of Physics: A survey of physics is not normally accepted as a prerequisite to advanced classes in physics. It is designed for students in arts and science (and possibly for those expecting to continue into medicine or dentistry) who want to be exposed to a wide range of topics in physics. Topics covered include motion, force, momentum, energy, heat electricity and magnetism, waves, light, relativity, quantum theory and atomic radiations, the atomic nucleus and nuclear reactons, astrophysics and cosmology.

Mathematics is used as a language for expressing the basic ideas of physics, but normally this is no more advanced than high school algebra and trigonometry. Problem sets are assigned on a regular basis. Help with these can be obtained in the afternoon tutorial hour or through the Physics Resource Centre. Two or three times each term the tutorial time will be used to carry out some simple laboratory experiments.

Instructor: C. G. White

Format: Lectures 3 hours, lab/tutorial 1 hour
Prerequisite: Familiarity with algebra, graphs and trigonometry
Text: Jones/Childers, Contemporary College Physics
Enrolment: 150

PHYC 1100R Introduction to Physics: Primarily for students interested in the physical sciences. Students beginning this class should be familiar with algebra, graphs and trigonometry, and should be taking calculus (Math 1000A/1010B) concurrently. The class concentrates on three main areas: mechanics, oscillations and waves, electricity and magnetism. As far as possible, the basic ideas are introduced through in-class demonstrations, enabling students to relate the verbal and mathematical descriptions to events in the real world. In addition, students are able to explore the physical world via labs every second week.

Instructors: R. H. March (01)/G. Stroink (02)/D. F. Goble (03- Engineering students only)
Format: lecture 3 hours, lab 3 hours (approximately 8 sessions per term)
Prerequisites: Students should have a background in Physics equivalent to the Nova Scotia XII level.
Text: Serway, Physics for Scientists and Engineers, 3rd ed.
Enrolment: 450

PHYC 1200R Science for Non-Science Students-An Overview of the Cosmos, Earth and Life: This class meets the science distribution requirement for BA students. There are no prerequisites and the class does not count as a prerequisite for any other science class. Students are introduced to selected concepts in each of the disciplines of geology, biology and physics. Emphasis is placed on developing an understanding of the scientific method, its limitations, and its applications in society.

The origin and evolution of the universe is discussed as a prelude to the origin of our solar system, within which our planet Earth evolved to the point where life could occur. The origin of life and the variety of life are the central topics of the second term.

Instructors: G. S. Hicks/R. H. March/P. H. Reynolds
Format: lecture 2 hours, tutorial 1 hour
Prerequisite: None
Cross-listings: Biology 1200R; Geology 1200R
Enrolment: 50

PHYC 1300R Physics In and Around You: An introduction to physics for students in biology, and those preparing for medicine, dentistry and allied health sciences. It is accepted as a prerequisite to advanced classes in physics when combined with Mathematics 1000A and 1010B. After introducing basic concepts in physics, every opportunity is used to apply these concepts by using realistic biological examples, e.g. forces and torques are directly related to muscle action, fluids to blood circulation, sound to hearing.

Instructor: G. F. O. Langstroth
Format: lecture 3 hours, lab/tutorial 3 hours
Prerequisite: Students beginning this class should be familiar with trigonometry and algebraic equations.
Text: Kane & Sternheim, Physics, 3rd ed
Enrolment: 110

PHYC 1450R Astronomy: The Evolving Universe: This class meets the science distribution requirements for BA students. The class does not count as a prerequisite for any other science class. Our world, in the largest sense, is our universe. This class will start by looking at the static night sky, the properties and numbers of stars that are visible . Then stellar evolution, leading up to supernovae, pulsars and black holes, will be studied. Further topics covered will go outward, covering the origin and evolution of the universe itself, and then inward to examine the Solar System. The level is non-calculus with a minimum of mathematics. Included will be some of the historical evolution of the perception of our universe.

Instructor: W. Zukauskas
Format: lecture 3 hours
Prerequisites: None
Text: Pasachoff, Contemporary Astronomy, 4th ed.
Enrolment: 75

PHYC 1500A/1550B Principles of Physics: Topics covered are similar to PHYC1100 but are aimed at a deeper understanding. Wherever possible, general techniques such as dimensional analysis, model construction, approximation, analogy, special coordinate frames and symmetry considerations will be illustrated. Appropriate everyday phenomena will be selected for discussion.

This class is intended primarily for those students who anticipate taking an honours programme in the physical sciences. Students enrolling in this class must have attained high standing in high school physics and mathematics, and should seek prior permission from the departmental advisor. Concurrent enrollment in Mathematics 1000A and 1010B, or in Mathematics 1500 is advised.

Instructor: D. Klang
Format: lecture 3 hours, lab 3 hours
Prerequisites: See above description
Enrolment: 25

PHYC 2000A Oscillations and Waves: Topics discussed include the description of sinusoidal oscillations, vibrations of different physical systems, resonance, standing waves, wave synthesis, travelling waves, interference and diffraction.

Instructor:	A. M. Simpson
Format:	lecture 3 hours, lab 3 hours
Prerequisites:	PHYC1100 or 1500A/1550B, a 1000-level calculus class, or permission of the instructor.
Text:	French, Vibrations and Waves.
Enrolment:	60

PHYC 2005A Mechanics and Relativity: Topics include coordinate systems, collisions in three dimensions, angular momentum, rigid body motion, central force motion and orbits, the special theory of relativity, relativistic coordinate transformations, relativistic momentum and energy.

Instructor:	D. A. Tindall
Format:	lecture 3 hours, tutorial 3 hours
Prerequisites:	PHYC1100 or 1500A/1550B, a 1000-level calculus class, or permission of the instructor.
Text:	Kittel, Knight, Ruderman et al., Mechanics (Berkeley Physics Course), 2nd ed.
Enrolment:	60

PHYC 2010B Electricity and Magnetism: This class begins by studying electrostatics, electric fields and electric potential, then conductors in static fields, energy storage and capacitance. Magnetic fields and forces, electromagnetic induction and Maxwell's equations are discussed.

Instructor:	A. M. Simpson
Format:	lecture 3 hours, lab 3 hours
Prerequisites:	PHYC1100 or 1500A/1550B (PHYC2000A and PHYC2005A recommended), and a 1000 level calculus class
Text:	Purcell, Electricity and Magnetism
Enrolment:	60

PHYC 2015B Modern Physics: This introduction to quantum physics discusses some of the difficulties of classical physics in explaining blackbody radiation, photoelectric effect, Compton effect, particle pair production, and annihilation. The concept of wave-particle duality is introduced for light and particles, de Broglie waves and electron diffraction, quantisation of angular momentum. The Schrodinger equation is applied to one-dimensional examples. Applications of modern physics are discussed and illustrated through the tutorial sessions.

Instructor:	D. Labrie
Format:	lecture 3 hours, tutorial 3 hours
Prerequisite:	PHYC1100 or 1500A/1550B (PHYC2000A and PHYC2005A recommended) and a 1000 level calculus class
Enrolment:	60

***PHYC 2220A Radiation Physics:** Topics include the nature and origin of radiation, radioactive decay, the interaction of radiation with matter, and detection and measurement of radiation.

Instructor:	G. F. O. Langstroth
Format:	lecture 3 hours
Prerequisite:	First year physics or the approval of the instructor
Text:	Johns & Cunningham, The Physics of Radiology, 4th ed.
Enrolment:	50

*Offered in alternate years beginning in 1990-91.

***PHYC 2230B Radiation Physics, Applications:** Emphasis is on applications in biology, physiology and medicine; discussion will focus on methods and devices employed in the investigation and treatment of living organisms, with particular attention to imaging techniques for the examination of internal organs.

Instructor:	G. F. O. Langstroth
Format:	lecture 3 hours
Prerequisite:	First year Physics or approval of the instructor, with preference given to students who have taken Physics 2220A
Text:	Same as PHYC2220A
Enrolment:	50

*Offered in alternate years beginning in 1990-91.

PHYC 2450R Astronomy: An introduction to astronomy for science students. Topics discussed include: the observation and exploration of the planets, the origin and evolution of stars (including white dwarfs, pulsars, quasars, black holes), the structure of galaxies, and cosmology.

Instructor:	P. H. Reynolds
Format:	lecture 3 hours
Prerequisite:	One first-year science class
Text:	Kaufmann, Universe, 2nd ed.
Enrolment:	90

PHYC 3000A and 3010B Experimental Physics: Designed to give students a chance to do non-set experiments and thereby encounter and solve, on their own, the problems of experimentation. As the number of experiments is small (four to six), students should achieve a real understanding of a few physical phenomena. Topics cover a wide range of fields such as atomic physics, nuclear physics, solid state physics and electronics. A measurement of one of the fundamental constants such as c, G or e is required. Other than this, the student is free to choose the field of experimental study.

Instructor:	R. A. Dunlap
Format:	lecture 3 hours, lab 6 hours
Prerequisites:	PHYC2000A, PHYC2005A, PHYC2010B and PHYC2015B.
Text:	Dunlap, Experimental Physics: Modern Methods, 1st ed.
Enrolment:	20

PHYC 3090B Advanced Classical Mechanics: Topics include the principle of least action, Lagrange's equation, Hamilton's equation, Canonical transformations, Hamilton-Jacobi equation, motion of a rigid body, small oscillation.
Instructor: M. G. Calkin
Format: lecture 3 hours
Prerequisite: PHYC2005A
Text: Landau & Lifshitz, Mechanics
Enrolment: 25

PHYC 3140A Introduction to Quantum Physics: The experimental basis of the wave-particle duality of light is discussed and the existence of diffraction patterns for particles is used to motivate the construction of wave equations for particles. The determination and interpretation of solutions of Schrodinger's equation are illustrated by simple examples. The three dimensional Schrodinger equation is discussed, with special emphasis on the hydrogen atom. The concept of electron spin is also introduced.
Instructor: M. G. Calkin
Format: lecture 3 hours
Prerequisite: Mathematics 2000 or its equivalent; PHYC2015B
Text: French & Taylor, An Introduction to Quantum Physics
Enrolment: 25

PHYC 3160A Topics in Physics: An introduction to thermodynamics, statistical mechanics, and selected relevant topics.
Instructor: R. H. March
Format: lecture 3 hours
Prerequisite: At least one second-year level physics class.
Text: Students may select either K. Stowe, Introduction to Statistical Mechanics and Thermodynamics or Sears and Salinger, Thermodynamics, Kinetic Theory and Statistical Thermodynamics
Enrolment: 30

PHYC 3170B Topics in Physics: This is complementary to PHYC3160A. An introduction to optics and modern physics.
Instructor: D. Labrie
Format: lecture 3 hours
Prerequisite: At least one second-year level physics class.
Text: Serway, Moses & Moyer, Modern Physics
Enrolment: 30

PHYC 3200A Thermodynamics: An introduction to the laws and basic concepts in classical thermodynamics. Topics include equation of state, heat engines, thermodynamic functions, and phase equilibriums.
Instructor: H. J. Kreuzer
Format: lecture 3 hours
Prerequisites: Some knowledge of partial derivatives; Mathematics 2000 or its equivalent, which may be taken concurrently with the class.
Text: Callen, Thermodynamics and An Introduction to Statistics
Enrolment: 20

PHYC 3210B Statistical Mechanics: In this class the tools are developed to link the physical laws of the microscopic world to those of the macroscopic world, and the underlying atomic processes of the laws of thermodynamics are explored.
Instructor: D. D. Betts
Format: lecture 3 hours
Prerequisites: PHYC3200A, or its equivalent; Mathematics 2000, or its equivalent.
Text: Kittel & Kroemer, Thermal Physics
Enrolment: 20

***PHYC 3250A/B Computational Methods in Physics:** This course will provide experience in computer-based techniques for problem solving in physics. An essential part of the course is the use of computer facilities to replace conventional laboratory experiences. Topics include data analysis, numerical and algebraic solutions of analtyic problems, and computer simulations.
Instructor: B. L. Blackford
Format: lecture 3 hours, lab 3 hours
Prerequisites: Completion of a second year programme in physics, including Mathematics 2000 or 2500, or special permission of the instructor.
Text: Gould & Tobochink, Part I: Computer Simulation Methods
Enrolment: 10

PHYC3340A Electronics: Topics include: carrier transport in semiconductors, properties of diodes and transistors, amplifiers, oscillators, modulation, demodulation and rectification, operational amplifiers, linear and nonlinear analog systems.
Instructor: S. T. Nugent
Format: lecture 3 hours, lab 2 hours
Prerequisites: PHYC2010B; or Mathematics 2000R or 2500R, or 2480A/2490B.
Text: Brophy, Basic Electronics for Scientists
Enrolment: 20

***PHYC3402A The Rise of Modern Science:** The modern world has been fundamentally altered by science and technology. In what ways? How has this come to be? This class will attempt to answer these questions by looking at the origins o modern science in the 16th and 17th centuries, its growth of popularity in the 18th, and the rise of

the scientific profession and science-based industry in the 19th and 20th centuries. Recommendation: This class is designed for students in the arts and sciences who have some interest in history and/or philosophy. Science students in particular should realize that a considerable amount of reading and writing will be required in this class.

Instructors: R. Ravindra (Comparative Religion)/J. Farley (Biology)
Format: lecture/seminar 2 hours
Prerequisites: There are no formal prerequisites, but students should be in their third year or above, and have at least a B average.
Text: Westphal, The Construction of Modern Science
Cross-listings: BIOL3402A, HIST3072A, CREL3502A
Enrolment: 20
*Not offered in 1991/92

*PHYC 3440A/B Optics: Topics are selected from areas such as the radiation from accelerated charges, the statistical properties of the fields from assemblies of radiators, interference, diffraction, and the application of Fourier transforms to the structure of images, the resolving power of instruments, and the characterisation of coherence.

Instructor: B. E. Paton
Format: lecture 3 hours
Prerequisites: PHYC2010B; MATH2500. The student should be familiar with vector analysis, Maxwell's equations, and the use of complex exponential functions.
Text: Hecht, Optics
Enrolment: 20

PHYC 3810B Microcomputers and the Real World: Subject material: measurement theory, modern sensors, microcomputer architecture, single chip computers; software simulation of digital electronic circuits; machine language programming; assembly language programming; interfacing techniques; development of "intelligent" instruments.

Instructor: B. E. Paton
Format: lecture 3 hours, computer programming 1 hour
Prerequisites: PHYC2000A/2010B
Text: Newell, Introduction to Microcomputing
Cross-listing: CS3810B
Enrolment: 30

PHYC 4000A/B Advanced Lab: This is a physics and engineering-physics laboratory class in which students in groups of two work largely on their own initiative. The student may select experiments from the fields of optics, acoustics, solid state devices, and low temperature physics. Detailed laboratory reports on the experiments are required and students are expected to demonstrate a good grasp of underlying physical principles.

Instructor: M. H. Jericho
Format: lab 6 hours
Prerequisites: Fourth-year standing in physics or engineering-physics, or permission from the instructor.
Enrolment: 12

*PHYC 4020B Special Topics in the History and Philosophy of Science:

Instructor: R. Ravindra
Format: Seminar 3 hours
Prerequisites: 3rd year standing or above
Enrolment: 10
*This class will not be given in 1991/92

*PHYC 4100A/B Electrodynamics: Topics include the wave equation and solutions, waves at metallic boundaries, the inhomogeneous wave equation, radiation from moving charges, scattering and dispersion.

Instructor: D.A. Tindall
Format: lecture 3 hours
Prerequisites: PHYC2010B
Text: Panofsky and Phillips, Classical Electricity and Magnetism.
Enrolment: 20

*PHYC 4110B Special Relativity: Topics include Lorentz transformations, Minkowski space-time diagrams, 4-tensor formulation and applications of the basic laws of mechanics, optics and electrodynamics.

Instructor: C. G. White
Format: lecture 3 hours
Prerequisites: PHYC2000A/2010B and PHYC2005A/2015B
Text: Rindler, Introduction to Special Relativity.
Enrolment: 20

PHYC 4151A Quantum Mechanics: General formulation of quantum-mechanics, illustrated by spin system and one-dimensional problems; simple harmonic oscillation, coherent states; variational methods, WKB approximation.

Instructor: D. Klang
Format: lecture 3 hours
Prerequiste: PHYC 3140A
Text: Sakurai, Modern Quantum Mechanics
Enrolment: 20

PHYC 4152B Quantum Mechanics: This is a continuation of PHYC4151A. Path integral approach to quantum mechanics, angular momentum theory and applications; density operators, systematic development of time-independent peturbation theory; identical particles; and scattering theory.

Instructor: D.J.W. Geldart
Format: lecture 3 hours

Science

Prerequisites: PHYC4151A
Text: Same as for PHYC4151A
Enrolment: 20

PHYC 4160A Mathematical Methods of Physics: Topics discussed include: complex variable theory, Fourier and Laplace transform techniques, special functions, partial differential equations.
Instructor: J. G. Cordes
Format: lecture 3 hours
Prerequisites: MATH3110A/3120B, or permission from the instructor.
Text: Arfken, Mathematical Methods for Physicists, 3rd ed.
Enrolment: 20

PHYC 4170B Topics in Mathematical Physics: This class is a continuation of PHYC4160A and deals with special topics in mathematical physics selected from areas such as the Green's function technique for solving ordinary and partial differential equations, scattering theory and phase shift analysis, diffraction theory, group theory, tensor analysis, and general relativity.
Instructor: J. G. Cordes
Format: lecture 3 hours
Prerequisite: PHYC4160A or permission from the instructor.
Text: Same as for PHYC4160A

PHYC4180A or B Nuclear and Particle Physics: This is an introductory class. Topics discussed include: nucleon-nucleon interactions, nuclear structure, gamma transitions, alpha decay, beta decay, nuclear reactions and elementary particle physics.
Instructor: D. Kiang
Format: lecture 3 hours
Prerequisite: PHYC3140A
Text: Cottingham & Greenwood, An Introduction of Nuclear Physics
Enrolment: 20

***PHYC 4220A Microcomputer-Based Instrumentation:** Subject material: instrument design; analog to digital and digital to analog techniques; custom interfacing to sensors; algorithms; parallel and serial output data links; software testing and debugging; hardware testing and debugging; research project.
*This class is not offered every year.
Instructor: B. E. Paton
Format: lecture 3 hours
Prerequisite: PHYC3140A
Text: Zaks, Microcomputer Interfacing
Enrolment: 20

PHYC 4230A/B Introduction to Solid State Physics: An introduction to the basic concepts of solid state physics which are related to the periodic nature of the crystalline lattice. Topics include crystal structure, X-ray diffraction, phonons and lattice vibrations, the free electron theory of metals, and energy bands.
Instructor: D. A. Tindall
Format: lecture 3 hours
Prerequisite: PHYC3140A or permission from the instructor.
Text: Kittel, Introduction to Solid State Physics, 6th ed.

PHYC 4311A/4312B Fluid Mechanics I/II: An introduction to the theory of fluid dynamics, with some emphasis on geophysically important aspects. Topics include: flow kinematics, equations of motion, viscous flow, potential flow and basic aerodynamics in the first term, and open channel flow, compressible rotating and stratified flows, hydrodynamic stability, convection and turbulence, in the second term.
Instructor: C. Garrett
Format: lecture 3 hours; some laboratory experiments on stratified and rotating flows are included in the second term.
Prequisite: A knowledge of mathematical physics
Cross-listing: OCEA4311A/4312B
Enrolment: 15

PHYC 4411A Dynamic Meteorology I: The basic laws of fluid dynamics are applied to studies of atmospheric motion, including the atmospheric boundary layer and synoptic scale weather disturbances (the familiar highs and lows on weather maps). Emphasis will be placed on the blend of mathematical theory and physical reasoning which leads to the best understanding of the dominant physical mechanisms.
Instructor: G. Lesins
Format: lecture 3 hours
Prerequisite: Permission of the instructor
Text: Holton, An Introduction to Dynamic Meteorology
Cross-listing: OCEA4411A
Enrolment: 15

PHYC 4412B Dynamic Meteorology II: The approach is the same as PHYC4411A with emphasis placed on synoptic-scale wave phenomena, frontal motions, and global circulation. An introduction to numerical techniques and their use in weather forecasting models and studies of climate is included. Additional special topics are covered at the discretion of the instuctor.
Instructors: G. Lesins/O. Hertzman
Format: lecture 3 hours
Prerequisites: PHYC4411A or permission from the instructor
Text: Same as for PHYC4411A
Cross-listing: OCEA4412B
Enrolment: 15

PHYC 4460A/B Optics: A continuation of PHYC3440A, dealing with coherence, polarization, scattering by matter, the electromagnetic properties of matter, including crystals, reflection, refraction and double refraction.

Format: lecture 3 hours
Prerequisites: PHYC3440A or B; registration requires prior departmental consent.
Enrolment: 15

PHYC 4480A/B Applied Group Theory: This inter-disciplinary half-class is intended for third and fourth-year undergraduates and first-year graduate students in Chemistry, Mathematics and Physics. Topics include: review of matrices, fundamentals of groups, normal subgroups, homomorphisms, representation, character, orthogonality, symmetry groups in crystallography, role of symmetry groups in quantum physics and chemistry, normal modes and molecular vibrations. For students enrolled in PHYC4480, there will be some additional reading.

Format: lecture 3 hours
Prerequisites: MATH2000, 2030
Cross-listing: MATH3320A
Enrolment: 15

PHYC 4500A Atmospheric Physics I: Main topics covered in this class are atmospheric thermodynamics and atmospheric radiation.

Instructor: D. F. Goble
Format: lecture 3 hours
Prerequisites: At least one 3rd year physics class
Text: Reference: Iribarne & Godson, Atmospheric Thermodynamics
Cross-listing: OCEA4500A
Enrolment: 15

PHYC4 510B Atmospheric Physics II: The major topic covered in this class is cloud physics. Other topics include atmospheric optics, atmospheric acoustics, lightning and radar techniques.

Instructor: D. F. Goble
Format: lecture 3 hours
Prerequisite: PHYC4500A
Text: Reference: Rogers, A Short Course in Cloud Physics; Battan, Radar Observation of the Atmosphere; Atmospheric Physics Readings from Scientific American
Cross-listing: OCEA4510B
Enrolment: 15

PHYC 4520A Introduction to Meteorology: This class provides the student with an understanding of the thermal structure of the atmosphere, air mass and frontal theory, and weather generating physical processes and their consequences. Other topics include microscale phenomena, local wind systems and applications of meteorology to problems in air pollution control, hydrology and agriculture.

Instructor: Staff
Format: lecture 3 hours
Prerequisite: Permission from the instructor
Text: Wallace & Hobbs, Atmospheric Science (An Introductory Survey)
Cross-listing: OCEA4520A
Enrolment: 15

PHYC 4530B Introduction to Radiation and Climate: This class provides the student with an understanding of the origin, composition and thermal structure of the atmosphere and radiative transfer through clear and cloudy atmospheres. There will be some discussion of the general atmospheric circulation, radiative transfer at the ocean surface, and climate change.

Instructor: P. Chylek
Format: lecture 3 hours
Prerequisite: Permission from the instructor
Text: Liou, An Introduction to Atmospheric Radiation
Cross-listing: OCEA4530B
Enrolment: 15

PHYC 4540A Synoptic Meteorology I: This class introduces principles and techniques of meteorological analysis, diagnosis of weather systems and prognosis of system motion and development. A brief review is presented of meteorological instrumentation, observational procedures, codes and analysis techniques essential to the study of the main subject matter. Atmospheric systems and processes are carried out during the tutorial-laboratory period.

Instructor: Staff
Format: lecture 2 hours, tutorial-laboratory 3 hours
Prerequisite: At least one third-year physics class
Enrolment: 15

PHYC 4550B Synoptic Meteorology II: This class extends the analysis and diagnosis of atmospheric dynamics and weather processes introduced in PHYC4540A. Modern statistical and computer methods and satellite techniques are discussed. Case studies of atmospheric systems and processes are carried out during the tutorial-laboratory period.

Instructor: Staff
Format: lecture 2 hours; tutorial-laboratory 3 hours
Prerequisite: PHYC4540A
Enrolment: 15

***PHYC 4650A/4660B Relativity and Cosmology:** The first half of the course is devoted to the development of tensor analysis and the general theory of releativity. Einstein's field equations are developed and some applications of models, based on these equations, are discussed. Topics include linearized gravitation and gravitational radiation,

the experimental foundations of relativity, orbit theory, and black holes. The second half is devoted to understanding the theoretical and observational basis of modern physical cosmology in the light of the previously developed theory.

Instructor: Staff
Format: lecture and tutorial 3 hours
Prerequisite: PHYC2005A and 2010B; MATH3050R, or the consent of the instructor.
Cross-listing: MATH4831B
Enrolment: 15
*This class is not offered every year.

PHYC 4800C Research Project: Students with a good academic record and an interest in original research are encouraged to undertake a research project under the direction of an individual faculty advisor. Interim progress reports and a formal final report are required. The class grade will be based on an evaluation of these reports.

Instructor: Staff
Format: Independent research
Prerequisite: High academic standing and permission of the Chair of the Physics Department

PHYC 8890 Co-op 2nd Year Seminar (non-credit)

PHYC8 891 Co-op Work Term I

PHYC 8892 Co-op Work Term II

PHYC 8893 Co-op Work Term III

PHYC 8894 Co-op Work Term IV

Psychology

Location: Life Sciences Centre
Telephone: (902) 494-3417

Chairperson of Department
R.E. Brown

Student Advisors
Advisors are listed below under "Degree Programmes". To be put in touch with an advisor, go to the Information Desk in the Psychology Department, or phone (902) 494-3417.

Honours Advisor
D.P. Phillips (494-2383)

Professors
R.E. Brown, BSc (Victoria), MA, PhD (Dal)
P.J. Dunham, MA, PhD (Missouri)
J.C. Fentress, BA (Amherst), PhD (Cantab.)
W.K. Honig, BA (Swarthmore), PhD (Duke)
R.M. Klein, BA (SUNY), MA, PhD (Oregon), Graduate Studies Coordinator
M. Leiter, BA (Duke), MA, (Vanderbilt), Ph.D (Oregon)
V.M. LoLordo, AB (Brown), PhD (Penn.)
P. McGrath, BA, MA (Ottawa), PhD (Queens)
J.A. McNulty, MA, PhD (Tor.)
I.A. Meinertzhagen, BSc (Aberdeen), PhD (St. Andrews)
D.E. Mitchell, BSc, M.App.Sc. (Melb.), PhD (Berkeley)
S. Nakajima, BA (Chiba), MA (Wash.), PhD (McG.)
K.E. Renner, BS (Penn.), MA, PhD (Northwest.)
R.S. Rodger, MA (Edin.), PhD (Belf.)
B. Rusak, BA (Tor.), PhD (Berkeley)
M.G. Yoon, BS (Seoul), PhD (Berkeley)

Associate Professors
J. Barresi, BSc (Brown), MA (S. Calif.), PhD (Wisconsin)
J.W. Clark, MA (McG), PhD (Queens)
A.J. Cohen, BA (McG), MA, PhD (Queens) (SSHRC Canada Research Fellow)
J.F. Connolly, AB (Holy Cross), MA (Saskatchewan), PhD (London)
R.P. Croll, BS (Tufts), PhD (McG.)
B. Earhard, BA, MA, PhD (Tor.) - Undergraduate Coordinator
J. McGlone, BA, MA, PhD (Western Ont.) - (V.G. Hosp.)
B.R. Moore, AB (Emory), PhD (Stan.)
M. Ozier, MA, PhD (Tor.)
D.P. Phillips, BSc, PhD (Monash) (NSERC University Research Fellow)
S.R. Shaw, BSc (Lond.), PhD (St. Andrews)

Assistant Professors
P. McMullen, M.Sc. (Tor), PhD (Waterloo)
C. Moore, BA, PhD (Cantab)
M. Sullivan, MA, Ph.D. (Concordia)

Adjunct Professors
J. Backman, MA, Ph.D. (Carleton)
C. Bilsbury, BSc, PhD (Liverpool)
S.E. Bryson, BA (Guelph), Ph.D. (McG)
J.M. Byrne, MA, Ph.D. (Kansas)
C. Ellsworth, MA, Ph.D., (Queens)
J. Fisk, BSc, MA, PhD (Western Ont.)
G.W. MacDonald, BA (St. F.X.), MA, PhD (Windsor)
C.C. Mate-Kole, BSc (Bruner), PhD (Leicester)
P. O'Neill, MSc, PhD (Yale)
S. Pigott, BA (Western), PhD (McG)
G. Pretty, BSc, MSc (Acadia), PhD (Western Ont.)
P. Ritvo, MA (Calif State), PhD, (Cal Sch Prof Psy)
M. Schwartz, BSc (McG.), MA, PhD (Waterloo)
T.M. Vallis, BSc (Dal), MA, PhD (Western Ont.)
J.R. Mathews, BSc (Syracuse), MSc (S.M.U.), MA, PhD (Kansas)

Cross-Appointments

R.P. Croll, BSc (Tufts), PhD (McG)
A.M. Fine, AB (Harvard), Vet.MD, PhD (Penn)
D. Rasmussen, BA (Colo C), MA, PhD (Dal)
H.A. Robertson, MSc (Western), PhD (Cantab)
K. Semba, BEd, MA (Tokyo), PhD (Rutgers)

Senior Instructors

R.S. Hoffman, BSc (Col. Coll.), MA (Dal)
G.A. Eakes, BA, PhD (Berkeley)

Instructor

J. Leary, BSc (Dal), MSc (Memorial), PhD (Adelaid)

Postdoctoral Fellows

H. Abe, PhD (Hiroshima)
B. Alsop, MSc, PhD (Auckland)
H. Brandattter, PhD (Graz)
A. Kingstone, PhD (Manchester)
C. Ryan, PhD (Carlton)
D.A. Williams, BA (Manitoba), PhD (Minn.)

Research Associates

A. Frohlich, Diplom, Dr. rer. Nat.(Freie Universitt Berlin) (Mt. St. Vincent)

Introduction

Psychology is an experimental science; its purpose is to discover the conditions which control the activities of animals and people, to measure these conditions and the responses they produce, and to use this knowledge to invent ways of predicting behaviour and changing it. It is a subject for inventive but also scientifically rigorous people, better suited to those who want to find out for themselves than to those who want to be told what to believe.

Psychology at Dalhousie treats behaviour as a natural phenomenon, and in that sense shares much with the other life sciences. Today, for example, the boundary that historically has separated psychology from zoology, physiology, or even cellular biology has begun to blur. On the other hand, important ties are being made to such disciplines as anthropology and sociology. The student will find that the diverse subject matter includes three major levels of analysis: the organism, the organism's biological machinery, and the broader social-environmental context in which particular behaviour patterns are expressed. Meaningful integration of these diverse levels and forms of analysis is an intellectual challenge of major proportions. Similarly, the time perspectives of immediate causation, development, evolution, and function all contribute to the modern approach to behavioural science; each must be evaluated in relation to the others.

General Interest Classes

Non-majors are encouraged to enroll in Psychology 1000 or 1010 and all 2nd year classes except 2000 and 2500, which are restricted to majors and honours students in Psychology.

Degree Programmes

The department offers the 15- and 20-credit BA or BSc Major degrees, and the BA or BSc Honours degree. While these programmes are described below, a more detailed and up-to-date description is available from the Psychology Information Desk in a pamphlet titled "A Student's Guide to Psychology Classes".

NOTE: Students who major in Psychology cannot use cross-listed Neuroscience classes for their minor or as electives.

BA or BSc with Honours in Psychology

Students enrolled in the honours programme must take at least nine and no more than eleven full credits beyond the introductory level in their area of concentration. Requirements for the Honours Degree in Psychology are listed below.

It is recommended that students in this programme take 2000A and 2500B and as many classes from the core programme (see requirement 3 below) as possible in the second year. Honours students are advised to complete Psychology 3500 prior to the fourth year. 4000-level seminars may be taken in the third and fourth years. 2000- or 3000- level classes may be taken at any time provided that the student meets the necessary prerequisites.

Although there is considerable flexibility for the student, it is important to plan carefully (this is especially true for those considering graduate work in Psychology). If you would like to be admitted to the honours programme or if you need advice in planning your programme, see Dr. D. Phillips. The Psychology Department also offers a BSc honours degree in Neuroscience, described elsewhere in this calendar.

Requirements:

1. A grade of C or better in Psychology 1000 or Psychology 1010
2. Psychology 2000A (with a grade of B or better) and Psychology 2500B
3. At least four more 2000-level classes (either full or half credits).
4. Psychology 3500.
5. At least two full-credit classes at the 3000-level, one of which is a laboratory class.
6. Psychology 4500 (Honours Thesis)
7. At least one full credit of 4000-level seminars
8. At least one more full credit of Psychology at the 3000- or 4000-level.

Combined Honours

It is possible for students to take an honours degree combining psychology with a related arts or science subject. In such a combined honours programme the student must take eleven full credits beyond the 1000-level in two areas of specialization, with not more than seven full credits in either area. The student in the combined honours programme normally writes a thesis (or the equivalent) in the elective major area in which the majority of classes are taken. Any student intending to take a combined honours degree should consult with the two respective departments to arrange programme details.

Major (15- or 20-Credit) BA or BSc

The required classes for students who intend to major in psychology are listed below. Although there is considerable freedom of choice, the prospective major should plan carefully and obtain advice from one of the student advisors. At the Psychology Information Desk the student can be put in touch with an advisor.

Requirements:

1. A grade of C or better in Psychology 1000 or Psychology 1010
2. Psychology 2000A
3. For the 15-credit major, at least an additional 3.5 credits in Psychology of which two or more must be from 3000-level classes
4. For the 20-credit major, at least an additional 5.5 credits in Psychology of which three or more must be from 3000- and 4000-level classes
5. For all majors, one of the advanced Psychology credits must be a laboratory class. (A list of laboratory classes in included in the "Students Guide to Psychology Classes" available at the Information Desk.)

Other Programmes

A variety of other programmes is available in cooperation with other departments. These programmes are designed to meet the needs of students whose specific interests may lie in areas other than those covered by the major and honours programmes offered by the department. Interested students should contact Dr. R. Brown for further information.

Classes Offered

Classes marked * are not offered every year. Please consult the current timetable on registration to determine if this class is offered. Classes marked A or B are half-credit classes, offered in one term only, not both.

PSY 1000R Introduction to Psychology: Students interested in the biological and social bases of behaviour in both humans and animals may complete the class with an understanding of how the senses work and of how, for instance, we learn to see; of the different kinds of memory, how they operate, and how they are affected by disorders of the brain; of the way in which hereditary and environmental factors interlock to produce these complex sequences of behaviour which distinguish one species from another; of the way in which children learn their native language; of how the form of an animal society can be predicted from a knowledge of a limited number of ecological facts. Psychology 1000 meets three hours a week for lectures. The grade is based on a number of examinations given at intervals throughout the year.

Format: lecture 3 hours
Instructor: Staff

PSY 1010R Introduction to Psychology: The content of Psychology 1010 is similar to that of Psychology 1000 but the manner of teaching is different. In Psychology 1010 there are no lectures, and there is no fixed pace for mastering the material in the class. Students work through the chapters of the text at their own pace, and when they think they have mastered the content of each unit, they write a quiz consisting of questions that they have seen in advance. They then review and discuss their quiz with a tutor. If the student's understanding of the material is adequate, he or she proceeds to the next unit. If the tutor judges the student's knowledge of the unit to be inadequate, he or she takes another quiz on the same material, and has to pass that before proceeding to the next unit. The grade for the class is based entirely on the number of units the student completes during the academic year.

Format: Tutorials 3 hours
Instructor: W. Honig

PSY 2000A Methods in Experimental Psychology: An introduction to the methodological tools research psychologists use to study behaviour. Emphasis is placed on experimental design and the legitimacy of inferences derived from experimental results. Lectures proceed from a discussion of the general problems of using the scientific method in studying behaviour to a more specific examination of the analytic procedures commonly employed to investigate human and animal behaviour. Students conduct and analyze in written reports a series of experiments in the laboratory that illustrate important concepts

discussed in class. Students taking Psychology 2000A must attend the first lecture session.

Format: lecture 2 hours, lab 2 hours
Instructor: P. Dunham and Staff
Prerequisite: A grade of C or better in Psychology 1000 or 1010

PSY 2020A/B Psychological Aspects of Social Issues: Most of the important social issues of our time have implications for human adjustment, for the forms of our social institutions, and for the relationships between people and between people and their institutions. Topics vary according to current issues. Selected topics are examined in greater detail to provide a context for formulating general psychological concepts and theoretical issues. The logical implications of the analysis for prescriptions for the future are pursued.

Format: lecture 3 hours
Instructor: K.E. Renner
Prerequisite: Psychology 1000 or 1010

PSY2071A Introduction to Neuroscience: This class introduces a number of aspects of this field emphasizing analyses which are precise at the neuronal level. A general introduction is provided by the vertebrate visual system, concentrating upon the analysis of visual information in the mammalian visual cortex. This is followed by consideration of muscle spindles and other receptors of the motor nervous system; a brief treatment of the anatomy of the mammalian brain and a more detailed analysis of the cerebellum; the other major components of the motor pathways to the spinal cord; spinal reflexes and the integrative action of neurons.

Format: lecture 3 hours
Instructor: I.A. Meinertzhagen
Prerequisite: Psychology 1000 or 1010, Biology 1000 or 2020, or consent of instructor

PSY2072B Cellular Neurobiology: Building on the knowledge of holistic aspects of brain function gained in Psychology 2071A, this class explores the neuronal basis of activity in all nervous systems. Starting with an analysis of the structure of neurons, the function of nerve cells will be explored with respect to the ionic and molecular basis of resting potentials and of electrical activity in nerve cells; synaptic transmission; the release and postsynaptic action of synaptic transmitters; aspects of the neurochemistry of synaptic transmitters and of drug action; and glial cells. Cellular phenomena relevant to neurological dysfunction will be discussed.

Format: lecture 3 hours
Instructor: S.R. Shaw
Prerequisites: Psychology/Neuroscience 2071 or consent of instructor

PSY 2080A/B Social Psychology: Some major issues in social psychology are introduced through a critical analysis of theories and research in which the actions of individuals are seen as products of their social context. Both the lectures and the textbook are intended to promote a close and sceptical evaluation of our knowledge of our obedience and rebellion, our affections and hostilities, our willingness to help and injure, our attempts to explain ourselves and others, our erotic orientations and gender roles. Questions on such matters are given to the students to work on out of class and the examinations are composed of some of those questions.

Format: lecture 3 hours
Instructor: J.W. Clark
Prerequisite: Psychology 1000 or 1010

PSY 2090A/B Developmental Psychology: People change with age. This class examines the changes that occur in humans from conception through adolescence. Biological, social, cognitive, and linguistic aspects of development are considered. Theory, research, and practical implications are integrated throughout the class.

Format: lecture 3 hours
Instructor: C. Moore
Prerequisite: Psychology 1000 or 1010

PSY 2120A/B Clinical Psychology: An introduction to the use of psychological principles to define, assess and treat abnormal human behaviour. Topics covered include: the nature and history of clinical psychology; training in clinical psychology; research methods; psychological functions and dysfunctions; assessment methods; and intervention techniques. The functions of clinical psychologists in various settings such as general hospitals, mental health clinics, industry and the justice system are presented. Attention is given to issues of diagnosis from both psychiatric and psychological perspectives. Assessment of personality as well as intellectual and neuropsychological functioning is discussed. Intervention techniques such as behavioural and cognitive therapies are examined. The emphasis of the course is on the experimental psychology foundations upon which clinical psychology rests; experimentally verified assessment and intervention procedures are given particular attention. Different theoretical orientations to abnormal behaviour (e.g. the medical model and the behavioural/ psychological model) are examined.

Format: lecture 3 hours
Instructor: J. Connolly
Prerequisite: Psychology 1000 or 1010
Restriction: This class may not be taken concurrently with Psychology 3121 or 3129

PSY 2130A/B Introduction to Cognitive Psychology: Lectures focus on the processes involved in transforming sensory information into the meaningful, coherent world of everyday experience we know. Initially, emphasis is on the visual system, and how information within that system is structured and organized, followed by a consideration of the character of the internal representations used in thinking and remembering.
Format: lecture 3 hours
Instructor: B. Earhard
Prerequisite: Psychology 1000 or 1010

PSY 2140A/B Learning: Traces the experimental study of learning from the turn-of-the-century research of Pavlov and Thorndike to the present. Development of the field of animal learning is described in terms of the ways in which particular conceptions of the learning process have guided experimentation, and have in turn been revised on the basis of the outcomes of that experimentation. Some important concepts discussed are: association, attention, biological constraints on learning, classical conditioning, discrimination, expectancies, law of effect, learning-performance distinction, operant conditioning, S-S and S-R bonds, and stimulus control. The value of various approaches is discussed with respect to several goals: (1) providing general principles of learning; (2) understanding the behaviour of particular species; (3) direct application to human problems. Emphasis is on understanding why researchers in animal learning do what they are currently doing (given the goals and the historical context), rather than on learning a number of facts about animal learning.
Format: lecture 3 hours
Instructor: V. LoLordo
Prerequisite: Psychology 1000 or 1010

PSY 2150A/B Perceptual Processes: Perception deals with the way in which our senses provide us with information about our environment. This class focuses on the process by which sensory experiences are coded, how they are interpreted by the nervous system, and how experience modifies perception.
Format: lecture 3 hours
Instructor: J. McNulty
Prerequisite: PSY 1000 or 1010 or BIOL 1000

PSY 2160A/B Animal Behaviour: An examination of the natural and, to a lesser extent, the laboratory behaviour of several intensively-studied groups of animals. Foraging and communication, predation and defense, sex and aggression, homing and migration are studied as they occur in such organisms as bees and ants, moths, bats, various birds, and chimpanzees.
Format: lecture 3 hours
Instructor: B.R. Moore
Prerequisite: PSY 1000 or 1010 or BIOL 1000

PSY 2170A/B Hormones and Behaviour: An introduction to the endocrinological bases of mammalian social behaviour. Emphasis is on the mechanisms by which the hormones of the hypothalamus, pituitary gland, gonads and adrenal gland control sexual, aggressive and maternal behaviour. Other topics covered are: hormone receptors in the brain; the menstrual cycle and human reproduction; puberty; sex differences in the brain; the pineal gland; neuro-transmitters; pheromones; crowding and social stress.
Format: lecture 3 hours
Instructor: R.E. Brown
Prerequisite: Psychology 1000 or 1010 or Biology 1000.

PSY 2190A/B Language and the Brain: An introduction to the processes in the use of language by human beings. The main topics are: 1) the structure of the language; 2) the function of language; 3) the process of comprehension; 4) the process of production; 5) acquisition of language; and 6) language disorders and brain damages.
Format: lecture 3 hours
Instructor: M. Yoon
Prerequisite: Psychology 1000 or 1010

PSY 2270A/B Human Neuropsychology: This class explores not only normal but also abnormal brain function, as revealed by the consequences of trauma, disease, and surgical intervention. Aphasia, epilepsy, the role of brain chemicals in behaviour, cerebral asymmetry, and localization of brain function are examples of the topics covered.
Format: lecture 3 hours
Instructor: M. Ozier
Prerequisite: Psychology 1000 or 1010

***PSY 2280A/B Personality:** In this class a person is treated as a unified whole. Personality deals with questions such as: Is a science of persons possible? What forms can it take? Are there types of personalities, or is each individual's personality unique? Is an individual's life history an expression of his or her personality, or is personality description merely a summary statement of behaviour whose cause lies elsewhere?
Format: lecture 3 hours
Instructor: J. Barresi
Prerequisite: Psychology 1000 or 1010

PSY 2370A/B Drugs and Behaviour: An introduction to behavioural psychopharmacology. The lectures involve basic anatomy, physiology, and chemistry of the nervous system. Behavioural effects and underlying mechanisms of various psychoactive drugs will be discussed. Specific topics will cover alcohol, tobacco, amphetamines, cocaine, opiates, hallucinogens, tranquilizers, and antipsychotic drugs.

Format: lecture 3 hours
Instructor: S. Nakajima
Prerequisite: Psychology 1000 or 1010

PSY 2460A/B Adaptive Behaviour: Adaptation between organisms and their environments is a common theme that can be used to link research in the behavioural and biological sciences. In this course three basic issues are addressed: (1) How do we evaluate the balance among internal and external events that define adaptive behaviour? (2) How do we separate individual properties of adaptive control systems while also determining rules by which these properties fit together? (3) How do genetic substrates and developmental events combine to set the boundaries of adaptive performance? Answers to these questions rest upon the dual tendencies for adaptive systems to be both interactive and self-organized. Underlying issues here are examined with current data from behavioural and biological disciplines, in which different specific adaptations, different levels of organization and different time frames of operation are compared.
Format: lecture 3 hours
Instructor: J. Fentress
Prerequisite: PSY 1000 or 1010 or BIOL 1000

PSY 2500B Contemporary Research Problems in Psychology: As a continuation of Psychology 2000A, this class introduces prospective honours students to the design, execution and analysis of independent research. Each student works with a supervisor on a one to one basis preparing a research project which the student then conducts. The lecture periods are devoted to an introduction to the design and statistical analysis of experiments. In the lab meetings, the student will give oral reports on the proposed research. At the end of the course formal oral reports will be given in an all-day conference for the entire class. A formal written report on the research is submitted at the end of the term. Students other than honours students may only take the class with permission of the instructor.
Format: lecture 2 hours, lab 2 hours
Instructors: R.S. Rodger, R. Hoffman, G. Eakes and Staff
Prerequisite: 2000A, with grade of B or better

PSY 3000R Independent Research in Modern Psychology: Primarily for students wishing further experience and understanding of psychological research. A student in the class chooses a member of staff who serves as an adviser throughout the academic year, and under whose supervision independent research is conducted.
Format: lab 4 hours
Instructor: Staff
Prerequisites: Psychology 2000A and previous or concurrent enrollment in two other 3000-level classes; and the prior consent of the instructor

PSY 3010R Advanced General Psychology: For the advanced student, a review of general psychology with the aim of consolidating the student's knowledge. The method is unconventional. With the assistance of the instructor, the student prepares the material assigned to Psychology 1010 at a level which enables him or her to instruct introductory students in individual tutorials. Ideally, prospective students should consult with Dr. W. Honig in the spring of the preceding year.
Format: lecture 2 hours, tutorials 3 hours
Instructor: W. Honig
Prerequisite: Advanced classes in psychology and consultation with the instructor

PSY 3020R Community Psychology: A cooperative relationship is established with local community and social action groups in which current issues or problems become the focal point for a field laboratory course. Topics vary from year to year. Classroom work centres on concepts of community psychology and on teaching field research skills and techniques.
Format: lecture 1 hour, lab 2 hours
Instructor: K.E. Renner
Prerequisites: Psychology 2000A, and 2020

***PSY3040R Learning and Motivation:** An examination in detail of selected topics within the field of learning and conditioning. The emphasis is on identification and clarification of fundamental processes, their boundaries, biological significance and evolutionary history.
Format: lecture 2 hours, lab 2 hours
Instructor: Staff
Prerequisite: Psychology 2000A and 2140

PSY 3050R Perception: This class considers the way in which information about the world is provided by the senses and how we use this information in our behaviour. The material falls into four sections. (1) The methodological and theoretical problems peculiar to the study of sensation and perception; (2) The transformation of physical stimulus energy into neural energy; (3) The physiological and psychophysical analysis of the sensory systems with particular emphasis on vision; and (4) The development of perception and its relation to the anatomical and physiological development of the sensory pathways. The experimental work has been selected for its importance in the theoretical understanding of perceptual processes and consists of a general introduction to the apparatus and methods used in perceptual research.
Format: lecture 2 hours, lab 3 hours
Instructor: D.E. Mitchell
Prerequisite: Psychology 2000A and 2150

PSY 3070R Physiological Psychology: Physiological psychology is concerned with the biological explanation of psychological phenomena. Students should have a working knowledge of concepts and methods in experimental psychology. Emphasis is on psychological issues with the answers sought in physiological terms. Labs will involve stereotaxic surgery on the rat.
Format: lecture 2 hours, lab 3 hours
Instructor: S. Nakajima
Prerequisite: Psychology 2000A and permission of the instructor

PSY 3071R Physiological Psychology: Students in this class attend the same lectures as students in Psychology 3070R, but submit term papers rather than participate in laboratory work. The class is designed for students who wish to learn about physiological aspects of psychological issues, but who do not require the laboratory experience. Thus, this class does not meet the departmental laboratory requirement.
Format: lecture 2 hours, seminar 1 hour
Instructor: S. Nakajima
Prerequisite: Psychology 2000A

***PSY 3080R Experimental Social Psychology:** This class involves the study of individual behaviour as a function of social stimuli with emphasis on extensive student research projects and class presentations. The class develops from discussion of research designs and methods to the study of basic processes such as person perception, social comparison, and social influence, including behaviour within groups and the relations between groups.
Format: lecture 3 hours, lab 1 hour
Instructor: J. Barresi
Prerequisite: Psychology 2000A

PSY 3091A/B Methods in Developmental Psychology: Students learn how to conduct research on changes in behaviour from infancy through to senior years. They carry out projects representing different methodologies including a longitudinal observational study of an infant over the duration of the school term, two class experiments that focus on perceptual, cognitive or social development of different age levels, and a final independent project designed by the student. Class time is divided among lecture, demonstration, class laboratory work, group discussion, and oral presentation.
Format: lecture 1 hour, lab 2 hours
Instructor: Staff
Prerequisite: Psychology 2000A

PSY 3092A/B Early Development: This class examines development in infancy and early childhood. There are two main parts to the class. Firstly, we consider the nature of infancy and attempt to answer the question, how does the psychologically almost inert newborn become transformed in two short years into the running, talking, laughing toddler? Secondly, we consider the major changes associated with the preschool period focusing especially on the development of the child's understanding of the physical and social world.
Format: lecture 3 hours
Instructor: C. Moore
Prerequisites: Psychology 2000 and 2090 or consent of the instructor

PSY 3121A/B Adult Psychopathology: This class is concerned with the disorders of psychological functioning seen in adults. A wide range of disorders will be touched upon. Particular attention is given to disorders as they highlight current theory and controversy. Schizophrenia, mood disorders, anxiety disorders, organic syndromes and dementia are examined with regard to both biological and psychological mechanisms. Assessment and research techniques are discussed with emphasis on recent advances in brain imaging techniques.
Format: lecture 3 hours
Instructor: Staff
Prerequisite: Psychology 2120

PSY 3129A/B Childhood Psychopathology: This class examines a wide range of behaviour disorders in children (e.g., reading disability, autism, attention deficit disorder). The goal is to gain a better understanding of the nature of these disorders by exploring empirical findings from both the social and physical sciences. Discussion will focus on problems of definition, and the relative merits of different theoretical accounts. Data on therapeutic outcome and ethical issues regarding intervention will also be considered.
Format: lecture 3 hours
Instructor: P. McGrath
Prerequisite: Psychology 2120

PSY 3130R Cognitive Psychology: Cognitive psychology deals with how we gain information about the world, how such information is represented and transformed as knowledge, how it is stored and how that knowledge is used to direct our attention and behaviour. It involves the processes of perception, memory, attention and thinking. This class focusses not only on what is known about human cognition, but also on techniques cognitive scientists have developed to discover this knowledge.
Format: lecture 2 hours, lab 2 hours
Instructor: R. Klein
Prerequisites: Psychology 2000A, and either 2130, 2150, 2270 or consent of instructor

PSY 3150A/B Introduction to Hearing and Speech Mechanisms: Hearing and speech are two behavioural capacities of fundamental importance to normal human communication. This lecture

Science

class is designed to provide a basic understanding of the peripheral and central neural mechanisms of hearing, and of some psychological and physiological processes involved in speech production and speech perception. The class is intended for those students anticipating more advanced training in neural mechanisms of hearing, speech science, human communication disorders and/or audiology. The class emphasizes normal hearing and speech mechanisms, but will address pathology where evidence from pathological subjects is pertinent to understanding normal function. Class content: introductory acoustics; structure and function of the outer and middle ears; structure and function of the cochlea; hair cell physiology and sensory transduction; coding of simple and complex sounds in the auditory nerve; sound localization mechanisms as an example of the correspondence between the physical properties of the stimulus, neural sensitivity and behavioural performance; theories of speech production; theories of speech perception; acoustic and linguistic contributions to speech perception.

Format: lecture 3 hours
Instructor: D. Phillips
Prerequisites: Psychology 2150 or 3050; Psychology 2071A strongly recommended

PSY 3160R Ethology: Ethology is the biological study of behaviour. It uses psychology, genetics, physiology, ecology and evolutionary theory to solve problems in the development, function and causation of behaviour across all animal species. These diverse approaches to the study of animal behaviour are presented in naturalistic and experimental situations. In laboratory exercises qualitative and quantitative records of behaviour are made in the field and in the laboratory. There are several group research projects (first term) and an individual research project (second term).

Format: lecture 2 hours, lab 2 hours
Instructor: J. Fentress
Prerequisites: Psychology 2160 or Biology 1000; Psychology 2000A is recommended

PSY 3197A/B Human Communication: An introduction to the cognitive and social processes of communication among human beings by the use of language or other symbols as abstract mental tools. The main topics are: 1) the nature of linguistic signs; 2) mental representation; 3) deixis; 4) implicature; 5) presupposition; 6) speech acts; and 7) structure of conversation.

Format: lecture 3 hours
Instructor: M. Yoon
Prerequisite: Psychology 2000A and 2190 or 2130

PSY 3260A/B Biological Rhythms: The temporal structure of animal and human physiology is governed by both homeostatic mechanisms and by a system of biological clocks. These internal clocks generate rhythms with various periods in virtually every physiological and behavioural system. Daily (circadian) clocks are the most prominent; they generate rhythms in sleep, reproduction, intellectual performance and many other functions. This class examines the nature of these biological clocks and their physiological substrates, with an emphasis on the neural mechanisms involved in rhythm generation and synchronization in a variety of species. It also explores the hypothesized role of circadian mechanisms in sleep disorders, jet lag and depression.

Format: lecture 3 hours
Instructor: B. Rusak
Prerequisite: Psychology 1000 or 1010 or Biology 1000

PSY 3270A/B Developmental Neuroscience: This class introduces students who are already familiar with the structural organization and functional properties of the mature nervous system to aspects of neural development, especially at the cellular level. The first part of the class will link the early events of neural development to general embryonic development. Cell determination, pattern regulation, cell production, cell-lineage analysis, and neuronal differentiation, movement and migration will be discussed. Special attention will then be given to later developmental events such as neuronal growth cones, cell death, growth factors, neuron-neuron interactions and synapse formation using invertebrate and vertebrate examples.

Format: lecture 3 hours
Instructor: I.A. Meinertzhagen
Prerequisite: Psychology/Neuroscience 2071A and 2072B

PSY 3370A/B Neuroscience Laboratory E (same as Neuroscience 3370) The two classes 3370 and 3371 (see next entry) are coordinated and provide introduction to several techniques used in contemporary neuroscience. The following information applies to these classes as a pair, within which the exact distribution of experimental approaches may vary from year to year according to availability of equipment and material, and numbers enrolled. Usually, electrical recording methods from several types of preparation are emphasized in 3370, while detailed neuroanatomically-based approaches are favoured in 3371. Regularly scheduled labs with students working in groups of 2 or 3 under supervision are supplemented by occasional lectures, in both classes. Students become familiar with electrical recording and stimulation methods and related techniques, currently using both sensory and motor system preparations. Neuroanatomical analysis is introduced by way of techniques usually

selected from the following: Golgi impregnation of neurones, immunocytochemistry, dye-tracing of connections, and electronmicroscopy of the visual system or central nervous system. Lab II (3371) usually runs in the second term for selected, advanced students, building upon foundations laid in 3370 but using different practical approaches.
Format: lab 3 hours
Instructor: S.R. Shaw
Prerequisites: Psychology 2000A; Psychology/Neuroscience 2071A and 2072B, or 3270A

PSY 3371A/B Neuroscience Laboratory II: (same as Neuroscience 3371) For a description of this neuroscience lab class, see the entry under 3370 above; usually, 3371 is coordinated closely with 3370.
Format: lab 3 hours
Instructor: Staff
Prerequisites: Psychology/Neuroscience 3370 and consent of instructor

PSY 3390A/B Cognitive Development: In this class we trace the development of the child's knowledge from birth to adolescence. Piaget's theory provides the background for the study of recent progress in our understanding of children's concepts of the physical world.
Format: lecture 3 hours
Instructor: C. Moore
Prerequisites: Psychology 2000A and 2090 or consent of instructor

PSY 3500R Statistical Methods in Psychology: This class is primarily intended for honours students, but other students may be admitted with the consent of the instructor. This class is designed to enable students to understand parametric and nonparametric statistical procedures and their descriptive and inferential application to behavioural research. In addition, students learn to execute computer programmes for data organization and analysis. Class work includes lecture, seminar, and statistical/computer assignments.
Format: lecture 2 hours, practicum 2 hours
Instructor: J. McNulty
Prerequisite: Psychology 2000A and 2500B

PSY 3580R History of Psychology: In writings dating from antiquity to the early years of the 20th century, we explore the understanding of such abiding sources of our curiosity as individual, racial and sexual differences, the distinctions between man and animal, the sources of odd actions, the nature of the brain and of vision.
Format: seminar 3 hours
Instructor: J.W. Clark
Prerequisite: Psychology 2000A or consent of the instructor

PSY 3590A/B Perceptual Development: This class examines the development of visual and auditory capacities in human infants and in a variety of animal species with sensory systems like our own. The neural events that underlie these developmental changes in the various sensory pathways will be discussed. The class will also grapple with the old question of how early sensory experience influences our perceptual abilities.
Format: lecture 3 hours
Instructor: D. Mitchell
Prerequisite: Psychology 2000A

***PSY 3760A/B Neuroethology:** Neuroethology is the study of the neural bases of animal behaviour. The class will emphasize cellular approaches toward understanding the integrative mechanisms of the nervous system which underlie complex behaviours. Feature detectors, command systems and motor programme generators will be examined in depth using examples from vertebrate preparations. Cellular bases of higher order functions such as motivation, learning and choice will be explored if time permits.
Format: lecture 3 hours
Instructor: Staff
Prerequisites: Psychology 2000A or 2160 or 2071 or Biology 2020 or consent of the instructor

4000-Level Seminars

These seminars (4000-4440) are intended for 3rd and 4th year honours students. Third-year students are eligible provided they obtain permission from the instructor, and the needs of all the fourth-year honours students are met. The topics covered in these classes vary from year to year. Consult the department for the specific course descriptions.

PSY 4000A/B Senior Seminar:
Format: 2 hours
Instructor: Staff

***PSY 4001A/B Contemporary Issues in Psychology:**
Format: 2 hours
Instructor: Staff

***PSY 4040A/B Learning Applications in Clinical and Social Psychology:**
Format: 2 hours
Instructor: Staff

***PSY 4050A/B Topics in Perception:** Same as Neuroscience 4050
Format: 2 hours
Instructor: Staff

***PSY 4070A/B Neuroscience Seminar:** Same as Neuroscience 4070
Format: 2 hours
Instructor: Staff

Prerequisites: Psychology 2071, 2072 or 3270, or consent of the instructor

***PSY 4080A/B Topics in Social Psychology and Personality:**
Format: 2 hours
Instructor: Staff

***PSY 4090A/B Development of Social Behaviour:**
Format: 2 hours
Instructor: Staff

***PSY 4120A/B Topics in Clinical Psychology:**
Format: 2 hours
Instructor: Staff

***PSY 4130A/B Topics in Human Information Processing:**
Format: 2 hours
Instructor: Staff

***PSY 4140A/B Animal Learning Topics:**
Format: 2 hours
Instructor: Staff

***PSY 4160A/B Topics in Behavioural Biology:**
Same as Neuroscience 4160
Format: 2 hours
Instructor: Staff

***PSY 4230A/B Human Performance Topics:**
Format: 2 hours
Instructor: Staff

***PSY 4440A/B Topics in Infant Development:**
Format: 2 hours
Instructor: Staff

PSY 4500R Honours Thesis: The purpose is to acquaint the student with current experimental problems and research procedures in experimental psychology. Each student works with a staff member who advises the student about research in the major area of interest, and closely supervises an original research project carried out by the student. Each student must submit a formal report of the completed research in APA style. The final grade is based upon the originality and skill displayed in designing the project and upon the submitted report.
Instructor: Staff
Prerequisites: Restricted to honours students in their graduating year.

Statistics

Location: Chase Building
Telephone: (902) 494-2572

Director of Division
R.P. Gupta (494-3595)

Faculty Advisors
R.P. Gupta (Undergraduate)
G. Gabor (Graduate)

Professors
C.A. Field, M.Sc., Ph.D. (Northwestern)
G. Gabor, M.Sc. Ph.D. (Eotvos)
R.P. Gupta, M.Sc. (Agra), Ph.D. (Delhi)

Associate Professors
J.B. Garner, M.Sc., Ph.D. (Nottingham) (jointly with Comm. Health & Epidemiology)
D. Hamilton, M.A.Ph.D. (Queens)
K. Thompson, M.Sc. (Manchester), Ph.D. (Liverpool) - (jointly with Oceanography)

Assistant Professors
K. Bowen, Ph.D. (Calif.)
K.E. Manchester, M.Sc., Ph.D. (Toronto)
B. Smith, M.Sc., (Calgary), Ph.D. (Berkeley)

Statistical Consultant
W. Stubson, BSc (Manitoba)

Please refer to the entry for the Department of Mathematics, Statistics and Computing Science, [illegible], for a full listing of the members of the Department and information on other programmes offered by the Department.

Degree Programmes

Statistics is the discipline which is concerned with the organization, display and interpretation of data. By a study of the uncertainty inherent in scientific hypotheses, statistics enables us to make inferences based on observations with error about these hypotheses.

There are several honours programmes, a 20-credit advanced major and a 15-credit major programme in Statistics available to students. Any student interested in such a course of study should consult the Director of Statistics, Department of Mathematics, Statistics and Computing Science.

Honours in Statistics

The honours programme in Statistics will provide students with a comprehensive knowledge of both theoretical and applied statistics and will enable students to move easily into challenging employment or graduate work in statistics. The following programme is normally followed by

students who plan to take Honours in Statistics.

Year 1: Math 1000/1010 (or Math 1500), Stats 1060
Year 2: Math 2000, Math 2030/2040 (or Math 2130), Stats 2060, 2050*, 2080*, C.S. 1400/1410*
Year 3: Stats 3340, 3360, 3380, 3460, 3350, Math 3090, one of 3080B, 3100B
Year 4: Stats 4060 and 4620

In addition 2 to 6 further half classes from other Statistics courses offered.

* Some students may take either C.S. 1400/1410 and/or Stats 2050, Stats 2080 in the first year of their degree program.

** Students are recommended to take Stats 2300 and Math 3170 in either second or third year of their degree program.

Honours Comprehensive Examination
Prerequisite: Successful completion of the third year Honours Statistics programme. The student will carry out an independent statistical study or act as a major statistical contributor to a research project under the supervision of a faculty member. In addition the student will participate in the Statistical Consulting service through consulting workshops.

Combined Honours

Students interested in taking honours in Statistics combined with another subject should consult the Director of Statistics through whom a suitable course of study can be arranged.

20 Credit Advanced Major in Statistics

The department is able to offer a major in the 20- credit programme. For further information refer to specific regulations for the 20-credit programmes on pages 70 and 71. The following programme is normally followed by students who plan to take advanced major in Statistics.

Year 1: Math 1000/1010 (or Math 1500), Stats 1060
Year 2: Math 2000, Math 2030/2040 (or Math 2130), Stats 2060, Stats 2080, Stats 2050, C.S. 1400/1410
Year 3: Stats 3340, Stats 3360, Stats 3380, Stats 3460. and in addition 2 to 8 further half classes in Statistices in their 3rd and 4th year.

Note: Some students may take Stats 2050/2080, C.S. 1400/1410 in their 1st year, of their degree programme. Students are recommended to take Stats 2300 and Math 3170 in either second or third year of their degree program.

15 Credit B.Sc. Degree in Statistics

The following programme is generally followed.

Year 1: Math 1000, Math 1010, and Stats 1060
Year 2: Stats 2060, Stats 2050, Stats 2080, Math 2030/2040
Year 3: Stats 3340, Stats 3360, Stats 3380, Stats 3460

Note: Some students may take Stats 2050 and/or Stats 2080 in the spring term of their 1st year if they have taken Stats 1060 in the fall term. Students are also advised to take Math 2000, Stats 2300 and C.S. 1400/1410 in their 2nd or 3rd year.

Co-Operative Education Programme

The Co-operative education programme integrates a 20-credit programme of 8 academic terms with 4 work terms of relevant industrial/laboratory employment. The work terms, each of 4 months duration, are spent in industrial, business and laboratory positions. The work experience helps students see the applicability of their training in mathematics, statistics and computing science and helps them make intelligent career choices. Upon successful completion of the programme the University transcript indicates that the programme was a co-operative one.

Advanced Major students should complete a Co-op degree in 4 and 1/3 years; Honours Statistics students should expect to take 5 years.

Students interested in a Co-op programme in statistics or a combined programme with statistics should consult the Director of Statistics or the Director of Co-op Education in the Department of Mathematics, Statistics and Computing Science, preferably early in their course of study.

More details on the Co-op programme appear in the main entry for the Department in the Calendar, page 230.

Classes Offered

Credit may not be obtained twice for the same class even if the numbers have been changed.

STATS1060A/B Introductory Statistics for Science and Health Sciences: This course gives an introduction to the basic concepts of statistics through extensive use of real-life examples drawn from a variety of disciplines. The first part of the course is about designing experiments properly and then describing and summarizing the results of the studies by using descriptive statistics. From there we move to analyzing relationships between variables. In the final part of the course, we develop the basics of statistical inference explaining how to make valid generalizations from samples to populations. Both estimation and hypothesis testing are carried out for one and two

sample problems for both means and proportions as well as for simple linear regression. Natural sequels for this class are Statistics 2060 and 2080.

Format: Lecture 3 hours, tutorial 1 hour, MLC
Prerequisite: Nova Scotia Mathematics 442 or equivalent
Cross-listing: Same as MATH 1060, Econ. 1106

STATS 2050A/B Exploratory Data Analysis: This course is designed to introduce the student to exploratory data analysis and graphical techniques making extensive use of statistical software such as S or S-plus. Extensive real data sets will be used and the emphasis will be on finding patterns and structure in complex data. The student completing the class will be able to do sophisticated graphing, data reduction and data handling. The skills learned will be very useful in several of the advanced statistics classes.

Format: Lecture 3 hours
Prerequisite: Statistics 1060

STATS 2060A/B Introduction to Probability and Statistics: Rigorous introduction to probability and statistical theory. Subject matter is developed systematically beginning with the fundamentals of probability and following with statistical estimation and testing. The interrelationship between probability theory, mathematical statistics and data analysis will be emphasized. Topics covered include elementary probability, random variables, distributions, estimation and hypothesis testing. Estimation and testing are introduced using maximum likelihood and the generalized likelihood ratio. Natural sequels for this class are Statistics 2080 and 3360

Format: Lecture 3 hours, MLC
Prerequisite: MATH 1000/1010 or 1500
Cross-listing: MATH 2060

STATS 2080A/B Statistical Methods for Data Analysis and Inference: This class introduces a number of techniques for data analysis and inference commonly used in the experimental sciences. The class begins with an introduction to model building in linear models and develops the techniques required for multiple regression. From here we consider analysis of variance, factorial designs, analysis of covariance using the general techniques for linear models. The last part of the class will include techniques for two and three way tables along with logistic regression. The use of a computer package for carrying out the computations will be an integral part of the course. Students will design and carry out a simple experiment as part of this class. A natural sequel for this class is Statistics 3340.

Format: Lecture 3 hours, MLC
Prerequisite: STATS 1060 or STATS 2060
Cross-listing: Same as MATH 2080

STATS 2090A Intermediate Statistics for Health Sciences: This class is designed so that students will be able to select appropriate statistical methods to analyse categorical, ordinal and measurement data to carry out the analysis on the computer using the MINITAB and GLIM statistical languages. Topics to be covered include least squares methods and F-test in multiple regression and analysis of variance via regression, analysis of crossed and nested designs, rank methods, analysis of count or frequency data with log linear models, power of a test.

Format: Lecture 3 hours
Prerequisite: STATS 1060 or equivalent
Cross-listing: Same as Nursing 5000, PE 5003, Pharm 5980, LEIS 5503, KINE 5503, HEED 5503, HEAS 6500
Exclusion: Intended primarily for graduate students; NOT available for credit in the Col of Arts & Sci.

STATS 2300B Introduction to Mathematical Modelling Using Algebra: For description see MATH 2300.

Format: Lecture 3 hours, MLC
Corequisite: Math 2030
Cross-listing: Same as MATH 2300B

STATS 2600A or B Theory of Interest: For description see Math 2600.

Format: Lecture 3 hours, MLC
Prerequisite: Mathematics 1010 or 1110

STATS 3340A Regression and Analysis of Variance: An introduction to regression with emphasis on the practical rather than the theoretical aspects. Topics include; fitting a straight line in matrix terms and fitting of general linear models, analysis of residuals. Transformation of data, correlation, multiple and polynomial regression, weighted least squares, indicator variables, selecting the best regression equation, analysis of variance models and an introduction to non-linear least squares. This class makes extensive use of computer packages.

Format: Lecture 3 hours
Prerequisite: STATS 2080, MATH 2030, MATH 1010 or STATS 2060
Cross-listing: same as MATH 3340

STATS 3350B Design of Experiments: The aim of the class is to develop the fundamental statistical concepts required for designing efficient experiments to answer real questions. The first main subject is unit variation and control. The basic concepts of replication, blocking and randomization are each examined. The second main subject is treatment questions and structure. The ideas of factorial designs, split-plot and incomplete plot designs are presented. We conclude with a look at response surface methodology.

Lecture: 3 hours

Prerequisite: STATS 3340 or consent of instructor

STATS 3360A Probability: An introduction to the basic concepts of probability to illustrate the great variety of practical applications of probability in science and industry. Topics include: (a) Fundamentals; (b) the classical models; binomial and hypergeometric, the multinomial, the Poisson, exponential, and the uniform distributions; (c) definitions of random variables, independence, functions of random variables, and distributions of sums of independent random variables; (d) conditional events and their probabilities; their uses; (e) laws of large numbers and the Central Limit Theorem. Examples illustrating the applicability of probabilisitic formulations are taken from the natural and physical sciences.
Format: Lecture 3 hours
Prerequisite: STATS 2060/2080 and MATH 2000
Cross-listing: Same as MATH 3360

STATS 3380A/B Sample Survey Methods: The development of design and analysis techniques for sample surveys. Topics include simple, stratified and systematic random sampling, ratio and regression estimation, sub-sampling with units of equal and unequal size, double-multistage and multiphase sampling, non-sample errors and non-respondents.
Format: Lecture 3 hours
Prerequisite: STATS 2060
Cross-listing: Same as MATH 3380

***STATS 3390A/B Statistical Computing:** (same as CS 3390) The class will provide an introduction to the principal computational methods which are important for data analysis. Major analyses usually require extensive computing; hence techniques which ensure the validity and accuracy of the computations are necessary. Topics covered will include, numerical computations, linear models, Monte Carlo methods and random number generators.
Format: Lecture 3 hours
Prerequisite: STATS 2080, MATH 2040, CS 1210 or 1410

STATS 3460B Intermediate Statistical Theory: This class provides an intermediate level coverage of statistical theory to provide a framework for valid inferences from sample data. The methods developed are based on the likelihood function and are discussed from the frequentist, likelihood, and Bayesian approaches. The problems of point estimation, interval estimation and hypothesis testing and the related topics of sampling distributions, sufficiency, and Fisher Information are discussed.
Format: Lecture 3 hours
Prerequisite: STATS 3360
Cross-listing: Same as MATH 3460

STATS 4060R Advanced Statistical Theory: This class is intended to provide a solid basis in statistical theory. The classical theory of estimation and testing provides a starting point. The Rao-Blackwell theory, Cramer-Rao bound, Neyman-Pearson theory and uniformly most powerful tests will be covered. From here, conditioning and invariance will be used to obtain good procedures in more complex situations. The theory will be developed in the context of specific problems including the general linear model. The basic ideas of robustness will be introduced followed by a discussion of goodness of fit models. The final part of the course will examine the asymptotic behaviour of a number of the statistical procedures developed in the class.
Format: Lecture 3 hours
Prerequisite: STATS 3460

STATS 4070A Multivariate Distributions: This course deals with the distribution theory of the observations on more than one variable. Topics covered include: Multivariate Normal Distribution, The Wishart Distribution, Hotelling's T^2, Distributions Associated with Regression, Canonical Correlations and Discrimminant Analysis.
Format: Lecture 3 hours
Prerequisite: Stats 3460

STATS 4080A/B Statistical Analysis of Spatially Coherent Systems: Techniques for the analysis of modelling of statistical relationships within a spatially coherent system are studied. Practical constraints in the construction of models and of estimation and prediction schemes for natural processes are illustrated with examples from meteorology and oceanography.
Format: Lecture 3 hours
Prerequisite: STATS 3460 or permisison of the instructor
Cross-listing: Ocean 4080

STATS 4090A/B Probability: For description see MATH 4090.
Format: Lecture 3 hours
Prerequisite: STATS 3360 and a third year analysis class
Cross-listing: Same as Math 4090

STATS 4100A/B Survival Analysis: This course is an introduction to survival analysis methods and will cover both the statistical theory behind the methods, and the application of various techniques. Topics to be discussed include survivorship and hazard functions and their relationship to lifetime distributions and densities; modes of censoring; the Kaplan-Meier estimate of the survivorship function; parametric survival time distributions; proportional hazard models and their semi-parametric estimation; log rank tests, including the Mantel-Haenszel test; and goodness of fit measures.

Format: Lecture 3 hours
Prerequisite: STATS 3340 and STATS 3460, or equivalent

STATS 4200A/B Nonlinear Regression: This course is intended to familiarize the student with methods for the design and analysis of experiments using nonlinear regression models. Topics include a review of the geometry of linear regression and its extension to nonlinear regression, numerical methods for finding the least squares estimates, exact and approximate methods for confidence region construction, optimal design for precise parameter estimation, assessing influence, and insights from differential geometry such as curvature measures.
Format: Lecture 3 hours
Prerequisite: Statistics 3340 and 3460 or permission of the instructor

STATS 4210A/B Advanced Topics in Time Series Analysis: Many of the data collected in the physical sciences are in the form of time series: sequences of measurements ordered in time. Using spectral techniques it is possible to analyse individual time series, and the relationships between them, as a function of frequency. This class will cover the estimation of auto- and cross-spectra and illustrate their utility with examples drawn primarily from meteorology and oceanography. A brief description will be given of some spectrally-based techniques such as rotary vector analysis and complex orthogonal function analysis. The course will also cover some specialized topics of interest to meteorologists, oceanographers and applied statisticians, including extremal analysis, optimal interpolation and the design of measurement arrays.
Format: Lecture 3 hours
Prerequisite: STATS 3340, 3460 or permission of the instructor

STATS 4350A/B Applied Multivariate Analysis: The class deals with the stochastic behaviour of several variables in systems where their interdependence is the object of analysis. Greater emphasis is placed on practical application than on mathematical refinement. Topics include classification, cluster analysis, categorized data, analysis of interdependence, structural simplification by transformation or modelling and hypothesis construction and testing.
Format: Lecture 3 hours
Prerequisite: STATS 3340 and MATH 2130 or 2040

STATS 4360A/B Robust Statistics: Robust Statistics are those which provide protection against violation of assumptions underlying the statistical procedure. We will develop basic concepts including sensitivity, influence and breakdown of estimates and tests. Classical procedures will be evaluated in terms of robustness and alternate techniques developed based on weighted least squares and/or median based generalizations. Starting from the location problem, we will move on to regression and to multivariate problems by means of robust covariance estimates. We will also consider robust techniques in time series. Some simple programming will be required to implement various procedures.
Format: Lecture 3 hours
Prerequisite: STATS 3460 & 3340

STATS 4370A/B Stochastic Processes: A development of concepts of (a) Markov chains and continuous time Markov processes, (b) vector independence and the multivariate normal distribution, (c) stationary time series. Emphasis is on practical applications. The ability to translate from a physical context into the language of probability model is stressed. This class is a natural sequel to Statistics 3360. Here, the notions of time and space indexing of probability models are introduced, and conditional probability techniques are developed to deal with models of natural phenomena.
Format: Lecture 3 hours
Prerequisite: STATS 3360

STATS 4390A/B Time Series Analysis and Forecasting: The analysis of univariate time series data is discussed. Topics include stationarity, transformation, differencing, autocorrelation, autoregressive-moving average models, indentification, estimation, diagnostic checking and forecasting. The emphasis will be on model building using the approach of Box and Jenkins. Other topics such as exponential smoothing, seasonal adjustment and multivariate models may also be covered.
Format: Lecture 3 hours
Prerequisite: STATS 3340 & 3460

STATS 4620A/B Data Analysis: Admission to the class is by consent of the instructor. A problem- oriented approach to statistical analysis. The problems discussed are based on real life data. Students are encouraged to develop novel approaches for data analysis problems of case studies. Some general techniques which arise in non-traditional data analysis are presented in this class.
Format: Lecture 3 hours
Prerequisite: Statistical techniques useful as background for this class would include any techniques covered in STATS 2060/2080, 3340, 3360, 3460 or consent of instructor

STATS 8700 Co-op Seminar
STATS 8891 Co-op Work Term I
STATS 8892 Co-op Work Term II
STATS 8893 Co-op Work Term III
STATS 8894 Co-op Work Term IV

School of Education

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B.A. Wood, BA (Tor.), MEd (Ottawa), PhD (Ottawa)

Assistant Professors
M. Crowley, BA (Miami), MAT (Johns Hopkins), PhD (Maryland)
D.A. Manicom, BEd (McG.), MEd (AIE), PhD (Tor.)

Education As a Field of Study

The problems of education have been the subject of serious study since at least the time of Plato and Aristotle. Education is an important and interesting field of study in which historical, psychological, philosophical and sociological inquiries, among others, can be pursued. Many elect to take classes in Education because they are interested in the questions raised for their own sake. Others are interested in education as a programme of professional preparation. Such students include in their programmes classes in methodology and field experience. The study of education should alert the student teacher to the assumptions which lie behind the methods of teaching being considered, and should ensure that these assumptions do not go unexamined.

Affirmative Action Policy
The School of Education has an affirmative action policy for indigenous Black or MicMac applicants for all of its programmes. This policy allows for acceptance as long as the normal minimum admission standards are fulfilled.

Programmes
1. A sequential secondary BEd programme of one year which may be taken by students who have already completed a BA or BSc degree course or otherwise fulfil the requirements for admission to the BEd programme. Part-time study toward the BEd at the secondary level is offered.
2. An integrated programme at the secondary level at the end of which students are awarded simultaneously the degrees of BA or BSc or BA (Honours) or BSc (Honours) and BEd.
3. Dalhousie BA/BSc/BEd for holders of the Nova Scotia Teachers' College Associateship.
4. Dalhousie-Nova Scotia Teachers' College Associateship BEd.
5. A five-year integrated programme at the elementary or secondary level at the end of which students are awarded simultaneously the degrees of BPE and BA or BSc, or BMusEd, and BEd. To enter this programme, students must first be enroled in the Bachelor of Physical Education programme or Bachelor of Music Education program.
6. Classes which may be used for credit toward a BA or BSc. These classes may be chosen from the following areas: Sociology of Education, History of Education, Philosophy of Education, and Educational Psychology. Students intending to take education classes for credit toward a BA or BSc degree should consult Arts and Science regulation 11.2. Some classes are cross-listed with other departments, e.g. French, Theatre, Philosophy, so that a student who

is not enroled in a BEd programme may register for such a class either through the School of Education or the cognate department. Students may not take an Education course as one of their first five credits.

BEd Secondary Programmes

Entry Requirements

1. BA or BSc by September in the year of application. As space in the programme is limited, applicants presenting a 3 yr. BA or BSc degree may not be competitive. Successful candidates often have breadth of academic preparation as represented by a 4 yr. degree, an honours degree or some type of further study. Candidates with other bachelor degrees should enquire from the Secretary, BEd Program.
2. Applications from all students are welcomed. Opportunity to draw attention to strengths is provided by the letter of application.

Application

Upon request, a student receives a Dalhousie University Application form, a School of Education Application form, two reference forms, and further details from the Admissions Office, Dalhousie University, Halifax, Nova Scotia B3H 4H6. All applications must be complete by April 30. The first selections will be made as early as February and the process completed by April 30. Frequently, an interview is arranged with representatives of the School of Education after initial application has been made.

Selection is based on:

1. Academic record. All applicants, including Dalhousie graduates, must ensure that their transcripts are forwarded to the Admissions Office.
   (a) Candidates for the BEd secondary programme normally should have a minimum of a "B" average in their major subject, comprising at least five full credit classes (four beyond the 1000 level). This major should be in a "teachable" subject, i.e. English, mathematics, geography, science, French, or social studies. Psychology and sociology are not teachable subjects.
   (b) Individual methods/field experience professors may have more specific requirements for entry into their respective areas. Candidates should consult the Calendar (under Field Experience), the School of Education Programme Planning Guide or the relevant professor.
2. References;
3. Responses on application form; and
4. Interview, when possible.

Classes in the BEd programme are grouped into four general categories:

Educational Foundations, Special Education, Methods and Field Experience, and Electives.

Educational Foundations

Classes to develop theoretical perspective as a basis for professional performance. There are four main subdivisions in this category - sociology of education, history of education, philosophy of education, and educational psychology. These classes are found in the calendar under course numbers EDUC 4000 to EDUC 4399.

Special Education

Classes in Special Education are designed to create awareness in future teachers regarding special education and the politics behind it. Remedial procedures are also discussed. These classes are found in the calendar under course numbers EDUC 4411A and EDUC 4412B.

Methods and Field Experience

Classes which deal essentially in an applied manner with teaching, learning and the evaluation of learning. These classes are found in the calendar under course numbers EDUC 4800 to EDUC 4999.

Electives

These classes provide supporting experience for other classes in Education, additional academic preparation, or an introduction to areas of potential student interest. Electives may be chosen from any courses offered in the BEd programme or classes in departments of the Faculty of Arts and Social Sciences or Faculty of Science. These classes are found in the calendar under course numbers EDUC 4500 to EDUC 4699.

Secondary Programme Requirements

Candidates for the degree of BEd (Secondary) must complete successfully a 6-credit programme. This consists of the following: a half-credit course in each of the 4 Educational Foundations areas: sociology, history, philosophy and educational psychology; 1 credit in Special Education, as required by the Provincial Department of Education; 1 full credit in a methods course in the teachable subject area; 1 full credit in Education 4900 (Field Experience); and 1 further credit elective approved by the faculty advisor.

Part time study toward a BEd

Once admitted to the BEd programme, students are permitted to take classes on a part-

time basis. Individual timetables must be planned in consultation with the School of Education, Dalhousie.

BA or BSc/BEd Secondary Integrated

In the integrated course, the classes in education are integrated with academic classes in the second, third, fourth, and sometimes fifth years, the first year being confined to the regular classes required for the BA or BSc degree. Students normally enter this programme in their second or third year.

The ten to fifteen classes in Arts and Science taken in the second and subsequent years must meet the requirements set forth in Degree Programmes, section 11.1(b).

Education course requirements for secondary integrated students are the same as those required by sequential students. The year of study in which the various education classes are to be taken is up to the individual. An exception to this is the methods and field experience. The integrated student should plan second, third, fourth, and fifth year classes in consultation with the School of Education so that methods classes and field experience may be accommodated. It is required that all integrated students meet with their Faculty Advisor upon admission to plan a suitable program.

Students admitted into the integrated programme must maintain a minimum of a B average each year in work completed for both degrees.

Enquiries should be made to the Secretary, BEd Programme, Dalhousie University before April 30 of the student's first or second year at Dalhousie University.

Students wishing to obtain a BEd or a BA or BSc with honours should consult the School of Education and the department or departments in which they wish to do their honours work not later than the beginning of their second year in order that a proper sequence of classes may be arranged. Five years from senior matriculation are normally sufficient to complete this course of study.

BPE or BMusEd/BEd Integrated (Five-Year) Course

The BEd part of the programme consists of a minimum of five full credits:

1. 2 full credits in foundations including a half credit in each of Sociology, Philosophy, History, Psychology of Education.
2. 1 full credit in Special Education.
3. Secondary: 1 full credit in Teachable subject methods.
   Elementary: 1 full credit in Language Arts/Reading methods, one-half credit in Math methods, and one-half credit in methods elective.
4. 1 full credit in field experience.

Co-requirements

Elementary: A student must complete a minimum of 3 full classes from English, History, Math and Science. It is recommended that courses be selected from each area.

Secondary: A student must complete a minimum of 3 full classes above the 1000 level in a teachable subject*.

* Teachable subjects - English, French, History, Math, Biology, Chemistry, Physics, Economics, Geography.

Application, Entry and Continuation in the BEd

1. Complete a School of Education Application form at the end of the 1st or 2nd year of University.
2. The application must be supported by the Director or Chairperson of the other degree (BPE or BMusEd) programme.
3. To continue in the integrated programme, students must maintain a minimum of a B average each year in the Education and Teachable subject Arts or Science classes.

All enquiries should be made to the School of Recreation or Music Department at the end of the student's first year at Dalhousie University.

BEd Degree in Association with Nova Scotia Teachers College

General Description

The programme is available at Dalhousie University to graduates of the Nova Scotia Teachers' College who have completed the three-year Associateship at NSTC. Suitably qualified students may graduate after taking five further classes at Dalhousie. The programme is a fifteen-credit course, comprising six credits in education and nine credits in Arts and Science. A maximum of ten credits may be transferred from NSTC to the joint Dalhousie/NSTC BEd degree, but they must meet Dalhousie's transfer credit regulations. It is available for full time and part time students.

Prerequisites

The applicant must have graduated from the three-year Associateship programme at the Nova Scotia Teachers College.

Program: 15 required credits.

1. Education (6 credits):
   (a) 5 maximum may be taken at NSTC and must meet Dalhousie transfer credit regulations; (b) 1 education class must be taken at Dalhousie.
2. Arts and Science (9 credits):
   (a) 5 maximum may be taken at NSTC and must meet Dalhousie transfer regulations and not be in education;
   (b) 3 must be taken at Dalhousie in Arts and Science subjects other than

education and at least 2 must be above the first year level; (c) 1 class, taken at Dalhousie, must be in consultation with the student's advisor (in the School of Education).

Dalhousie BA/BSc and BEd Degrees for Associates of Nova Scotia Teachers College

General Description

The programme is available at Dalhousie University to graduates of the Nova Scotia Teachers' College who have completed the three-year Associateship at NSTC. Suitably qualified candidates may transfer up to eleven credits from NSTC to Dalhousie. The programme is a twenty-two credit course, comprising seven credits in education and fifteen credits in Arts and Science. All credits transferred from NSTC must meet Dalhousie's transfer credit regulations. Students may complete the programme on a part-time or full-time basis thereafter.

Prerequisites

The applicant must have graduated from the three-year Associateship programme at the Nova Scotia Teachers' College.

Program

Twenty-two credits are required, seven in education and fifteen in Arts and Science.

1. Education (7 credits): (a) 5 maximum from NSTC; (b) 2 further from Dalhousie.
2. Arts and Science (15 credits):
   (a) 6 maximum from NSTC; (b) 9 further from Dalhousie.
3. A subject major must be chosen at registration and must be approved by the Department concerned.
4. Students must maintain a minimum of a B average in work completed for both degrees.

Transfer of Credit

Decisions concerning transfer of credit will be made following consideration of transcripts and students' interested areas of study. A maximum of 3 credits from another university or non-degree status will be allowed for transfer credit towards the BEd. Enquiries should be directed to the Registrar's Office. Students must request that transfer credits be considered before fall registration begins.

Students who wish to obtain the degree of BEd with transfer of previous credit must obtain the degree of BA or BSc and apply for admission to the BEd programme. Graduates of non-degree granting Teachers' Colleges who have a BA or BSc should note that the following guidelines are used in transfer of Education credits: Graduates of an acceptable three-year programme take an additional two and one-half classes. Graduates of an acceptable two-year programme must take an additional three and one-half classes. Graduates of an acceptable one-year programme are required to take an additional five classes. The actual selection of classes is made to suit the needs of each student and you are advised accordingly when your file is examined.

Certification of Teachers

Licenses to teach are issued by the Department of Education, Province of Nova Scotia. According to the regulations of the Province of Nova Scotia, every applicant for a Teacher's license or Professional Certificate must submit with his/her application documentary evidence (in a form prescribed by the Minister of Education) respecting the applicant's moral character, age, health, training and qualifications. Further information may be obtained from the Registrar, Nova Scotia Department of Education. Graduates with senior matriculation are entitled to a Teacher's Certificate, Class 5 in Nova Scotia. All other BEd Graduates should consult the Registrar, Nova Scotia Department of Education, concerning class of Teacher's Certificate. Students from other provinces should consult the appropriate provincial department of education for certification and licensing information.

Certificate Programme in Educational Administration

This non-degree programme may be completed through part-time or full-time study. It is intended for those persons interested in studying in the field of educational administration at an introductory level.

Admission requirement is graduation from a teacher's college/normal school or an acceptable undergraduate degree plus a BEd (or its equivalent). Advanced standing for classes completed in the former Nova Scotia Block Programme will be considered upon application to the programme. The deadline for applying is August 15th for the academic year.

Programme Length is 5-8 credits depending upon qualifications. The minimum programme will usually be prescribed for those holding an undergraduate degree and a BEd (or its equivalent); others may be required to take additional credits depending upon an assessment of qualifications. Full-time students may take a maximum of 6 credits and part-time students a maximum of 2½ credits during a regular session. A maximum of 1 credit may be taken during a summer session (0.5 credit in each half of the summer session).

Programme Requirements are as follows:

Core Classes (compulsory for all students):

1. All of the following classes: School-Community Relations (Ed. 8432), half credit Supervision of Personnel and Programmes (Ed. 8411 and Ed. 8412), half credit Budget and Finance (Ed. 8471), half credit Field Study of Administration (Ed. 8490), Ed. Admin., one credit Implementation and Administration of Curriculum (Ed. 8520), one credit
2. One of the following ½ credit classes: Administrative Roles and Structures (Ed. 8401) Concepts in Educational Administration (Ed. 8402) Philosophy of Educational Administration (Ed. 8451) Educational Ideas and Issues and the Administrator (Ed. 8440) Education and Public Policy (Ed. 8431)
3. One additional credit chosen in consultation with the faculty advisor. Minimum 5 credits.

Elective Classes

Students who are required to do more than the basic 5 credit programme or students who wish to take more than the minimally prescribed programme may select up to 3 credits in additional classes in consultation with the faculty advisor. Total: 3 credits.

Classes Offered

Minor changes to the following listings will be noted in the preregistration material sent to the students who are accepted into the programme.

Certain Education classes are offered in Summer School. Details may be obtained from the Centre for Continuing Education Studies, Henson College.

Educational Foundations (EDUC 4000 - EDUC 4399)

(a) Sociology of Education (EDUC 4000 - EDUC 4099)

EDUC 4011A/B Family, State and Schooling: This class begins with questioning the nature of our knowledge about schools in order to develop a way of thinking analytically about education and schooling. Through readings and discussion, an attempt is made to display sets of relations (both current and historical) that exist among the school, the family, the labour force and various state institutions, particularly as these relations produce and maintain inequalities of class, race, and gender.

Format: Lecture/Seminar, 2 hours
Prerequisite: None
Recommended: Students should have prior experience in researching and writing analytical papers in the Social Sciences.
Enrolment: Limited to students in Education or upper level undergraduate programmes.

EDUC 4012A/B Sociology of Education: In this course, students analyze school practices and assumptions underlying them. They also examine social groupings--particularly social class, race, and gender--as they relate to Canadian education. Some attention is given to the socialization process outside the formal school structure.

Format: Discussion
Enrolment: 30 maximum

EDUC 4021A/B An Introduction to Gender Socialization: Identification and analysis of problems deriving from gender socialization form the core of this class. Attention is given to the influence of education - both formal and informal - in creating and perpetuating these problems.

Format: Lectures, discussion, student participation
Prerequisite: None, but preference is given to Education students and students in Women's Studies.
Enrolment: 30 maximum

EDUC 4022A/B Gender Issues in Education: Central concerns in education include classroom practices, politics and ideology of the curriculum, family-school relations and the transition from school to work. Recent feminist critiques have forced educators to re-examine these areas of concern. This course considers how gender analysis deconstructs and reconstructs our understanding of central economic, social and cultural issues in education.

Format: Lecture/Seminar, 2 hours
Prerequisite: One previous course in sociology or women's studies.
Enrolment: 25 maximum

(b) History of Education (EDUC 4100 - EDUC 4199)

EDUC 4101A/B History of Western Educational Thought: Survey of major developments in educational thought in the ancient, medieval, early-modern, and modern West, as well as a review of contemporary educational thinking in light of the past.

Format: Lecture & discussion
Prerequisite: Grade XII or 1000-level History for non-BEd students.
Enrolment: 35 maximum

EDUC 4121A/B Canadian New Education Movement: Topics include the kindergarten, nature study and Macdonald-Robertson movements; mechanic and domestic science, physical and health education curricular changes;

and the liberal-democratic goals, institutional effects of the new education movement on schooling in Canada between 1890 and 1920.

Format: Lectures and student presentations, 2 hours/week

Enrolment: Limited to (1) Education students first priority; plus (2) Non-education = 30 maximum

EDUC 4132A/B Canadian Progressive Education: Topics include mental testing and mental hygiene movements, structural changes in school administration, professionalization of teachers, the country life movement, technical and vocational education, and the increasing alliance of schooling with the growing welfare state in Canada. Period covers 1920-1940.

Format: Lectures and student presentations, 2 hours/week

Enrolment: Limited to (1) first priority Education students; (2) Non-education students = 30 maximum

EDUC 4141A Issues in the History of Canadian Education: An overview of selected and enduring social, economic and political issues in the history of Canadian education. Representative topics include: child-centred schooling vs. community vs. bureaucratic control; class bias, stratification and social control; teacher professionalism vs. unionism; denominational vs. secular education.

Format: Lecture - 2 hours

Enrolment: Limited to 30 students with priority assigned to BEd sequential programme students.

EDUC 4142B Issues in the History of Canadian Education: An overview of the experiences of ethnic and religious minority groups in the history of Canadian education. Topics in the first part of the course include: 19th century arrangements for minorities, including the BNA Act and immigration agreements; the development of bilingualism policy and minority language schools; the development of multiculturalism policy. In the second part of the course particular groups are profiled, including Acadians, Blacks, Native Peoples and selected cultural-religious minorities (Hutterites, Mennonites, Doukhobors).

Format: Lecture - 2 hours

Enrolment: Limited to 30 students with priority given to BEd sequential programme students.

EDUC 4161C History of Curriculum Thinking: Topics include contemporary curriculum thought, evolution of ideas concerning development, evaluation, implementation, contributions of selected theorists.

Format: Structured seminars (2 hours)

Enrolment: Limited to BEd students

EDUC 4180A: Famous Teachers of the Past - Part One: Lao Tzu to Hypatia: Six masters of the ancient art of teaching are studied in turn: Lao Tzu, Buddah, Zeno, Socrates, Jesus and Hypatia. The methods by which the teachers taught are examined in the light of what they had to say and the society and era in which they found themselves.

Credit: EDUC 4180A is worth half a credit. EDUC 4181B is worth half a credit. Students may take either course on its own, or both courses, as they wish.

Prerequisite: This is a class of general interest for which previous knowledge of educational history and philosophy is not essential.

Assessment: Participants are invited to take part in class discussions and to write essays on three of the six teachers.

Enrolment: Limited to 50 BEd students and 50 non-BEd students. Students from all disciplines are welcome.

EDUC 4181B: Famous Teachers of the Past - Part Two: Muhammad to Gandhi: Six masters of the ancient art of teaching are studied in turn: Muhammad, Hildegard, Francis, Galileo, Florence Nightingale and Gandhi. The methods by which the teachers taught are examined in the light of what they had to say and the society and era in which they found themselves.

Credit: EDUC 4180A is worth half a credit. EDUC 4181B is worth half a credit. Students may take either course on its own, or both courses, as they wish.

Prerequisites: This is a class of general interest for which previous knowledge of educational history and philosophy is not essential.

Assessment: Participants are invited to take part in class discussions and to write essays on three of the six teachers.

Enrolment: Limited to 50 BEd students and 50 non-BEd students. Students from all disciplines are welcome.

(c) Philosophy of Education (EDUC 4200 - EDUC 4299)

EDUC 4201A/B Analytical Philosophy of Education: Topics include: the aims of education, the relevance of philosophy to education, children's rights, and the moral responsibilities of the teacher.

Format: Lectures and discussions (two hours per week)

Enrolment: 30 maximum

EDUC 4221A Introduction to the Philosophy of Education: A class dealing with a broad range of philosophical questions about education including the use of slogans, multiculturalism, teacher education, and the role of the teacher. No prerequisites. Cross-listed with Philosophy 2175.
Format: Lecture/discussion
Enrolment: 40 maximum

EDUC 4222B Issues in Philosophy of Education: An introductory level class dealing with some fundamental issues in philosophy of education, including indoctrination, open-mindedness and bias-free teaching. No prerequisites. Open to students who have taken Education 4221A. Cross-listed with Philosophy 2180.
Format: Lecture/discussion
Enrolment: 40 maximum

(d) Psychology of Education (EDUC 4300 - EDUC 4399)

EDUC 4311A Psychology and Education of the Exceptional Child: Exceptional child, socio-historical foundations, psycho-diagnostic, psycho-social models, genetic and environmental causes, various categories of exceptionality, standardized tests, abuses, myths in special education, remediation.
This course is limited to non-BEd students.
Format: Lectures, Mid-Term Exam, Assignment, Final Exam
Enrolment: Unlimited

EDUC 4312B "Emotionally" Disturbed and Learning Disinterested Children: Emotionally disturbed child, psycho-dynamic, developmental, neurological, behavioral, ecological models, remediation, learning disabled, learning disinterested, various models, remedial hoax, special education myths, politics of special education.
Format: Lectures, Mid-Term Exam, Assignment, Final Exam
Enrolment: Unlimited, for non-BEd students only

EDUC 4322A/B Learning in the Classroom: Topics include: the psychology of learning, setting and implementing learning objectives, and the evaluation of learning.
Format: Lectures and presentations (two hours/week)
Enrolment: 25 maximum

EDUC 4335A/B Childhood into Adulthood: Topics include: intellectual and social development during childhood, characteristics of adolescence, and theories of development during adulthood.
Format: Lectures and discussions/presentations (two hours per week)
Enrolment: 25 maximum.

EDUC 4340R Developmental Psychology: Education 4340R is designed as an introductory course in the area of developmental psychology and is intended for students who do not have a background in the field. Students will be introduced to the major principles and theories which have been instrumental in influencing research and practice in the area of developmental psychology. This course satisfies the educational psychology requirement and one half of the special education requirement for students in BEd programmes.
Format: Lectures/small group discussions
Enrolment: Unlimited

EDUC 4351A/B Psychology for Sex Educators: Topics include: sexuality in contemporary society, theories of sexuality and the development of sexual understanding.
Format: Lectures and presentations (two hours/week)
Enrolment: 30 maximum

EDUC 4371A/B Social Psychology of Education: Topics include: classroom psychological climate, power relationships, authority, obedience, discipline, control, freedom, self-concept.
Format: Lecture and discussion (2 hours)
Enrolment: 30 maximum

Special Education (EDUC 4411A/4412B)

EDUC 4411A - Teacher and Special Need Learners: This course is designed to make future teachers aware of the contemporary issues facing special education. Socio-historical development of special education, I.Q. ideology, uses and abuses of various psychological instruments to generate categories of special need students will be discussed. Mainstreaming special needs students will also be covered.
Format: Lectures, class presentations, assignments, exams
Enrolment: Limited to BEd students

EDUC 4412B - Learning Disinterested and Emotionally Disturbed Children: This course will deal with the psycho-diagnostic and psycho-social models of learning disabled/learning disinterested/emotionally disturbed/disturbing children. Such topics as learning disabilities invention of a disease, screening for deviance, smart pill, attention deficit disorder, split brain model and L.D. children, drug modification of behaviour will be considered. Five models of emotional disturbance and remediation using these models will also be discussed. Resource model of remediation, myths and issues in remedial education will also be considered.
Format: Lectures, class presentations, assignments, exams
Enrolment: Limited to BEd students

Electives
(EDUC 4500 - EDUC 4699)

EDUC 4584C Introduction to the Study of Teaching and Pedagogy: The class is an introduction to contemporary research in teaching and pedagogy. Topics include teacher thought processes and behaviour, classroom organization and interaction, classroom discourse, teaching strategies, and school effectiveness.
Format: Structured seminars
Enrolment: Restricted to BEd students

EDUC 4560R Geography in Education: While of direct value to teachers of social studies, the course is open to all students and without prerequisites. It uses techniques of the geographer to study three basic concepts: spatial form and interaction, interrelationship between people and their environment, and regions. Rural field work is done on weekends in the fall. Local field trips are conducted near the campus at various times during the academic year. Participation in field work is a condition of admission to the course. Evaluation is based on field work, case studies, class tests, and a major research paper.
Format: Lecture-lab 3 hours
Prerequisites: None
Enrolment: 25 maximum

EDUC 4632A/B Measurement and Evaluation: This class focuses on the principles and practices of testing and evaluation that are of primary importance to public school teachers. Areas of study include: the evaluation process, constructing classroom tests; selecting and using published tests; validity and reliability; and abuses of tests and testing.
Format: Lectures/seminars - 2 hours
Enrolment: Unlimited, for BEd students only

EDUC 4634A/B Computers and the Classroom: An introductory class for students with little or no prior computer experience. Emphasis is on developing familiarity with commonly-used software applications, with an aim to assessing their potential in the classroom. Topics include computer-assisted instruction, computer-managed learning, authoring languages, evaluating instructional software, word processing, electronic spreadsheets, and communications via mainframe computer networks.
Enrolment: 25 maximum

EDUC 4637A and EDUC 4638B Creative Writing and the Computer: Topics include: The imaginative use of word processing to write, design, illustrate and publish student work in an educational setting. The use of simple modular programming to write and illustrate inter-active multi-dimensional fiction and animated poetry.
Format: Lecture 1 hour, lab 3 hours
Credit: EDUC 4637A is worth ½ credit. EDUC 4638B is worth ½ credit. Students may take either course on its own, or both courses, as they wish.
Prerequisites: None
Enrolment: Limited to 16. While students from all disciplines are welcome, they should check within their 'home' Faculty to see if these courses are credited towards graduation.

EDUC 4642B Adventure-Based Experiential Education: Outdoor education in one form or another is included as an integral part of most recreational programmes. However, there are values of outdoor adventure activities which go beyond the usual rationale for recreation programmes. These include personal development, citizenship training, leadership development and community service. This class will explore some of the educational philosophies which rely on an experiential base. Included will be an opportunity for hands-on experiences in developing, planning and evaluating an adventure-based programme which has potential beyond the traditional recreation outcomes. A practicum will be included.
Format: Lecture, 3 hours
Enrolment: 40 maximum

EDUC 4661A/B Reading, Writing, and Learning Across the Curriculum: Intentions: I have several goals for this course: (1) to help you develop a greater awareness of the factors that affect learning from text; (2) to help you discover and examine your assumptions about the nature of learning and teaching; and (3) to help you explore the potential of writing as a vehicle for learning. Rather than to prepare you to work as reading specialists, this course is intended to help you become more effective teachers regardless of your areas of interest/expertise.
Enrolment: 30 maximum

EDUC 4684B Physical Activity for Special Populations: For class description see entry for 2384, the Bachelor of Physical Education section of this calendar.
Format: Lecture/practical experience
Enrolment: 20

Methods of Secondary School Teaching
(EDUC 4800 - EDUC 4899)

EDUC 4810R Teaching English in Secondary Schools: In weekly two-hour classes of small and whole group discussions, students concentrate on the theory behind the Nova Scotia Department of Education guideline for English teachers, trying to apply this theory to the classroom. By the end of the year students should have an understanding of the relationship between language and learning

and be able to apply that understanding in developing practical activities which will help their own students become active learners.

EDUC 4820A/4821B Teaching French in Secondary Schools: Open only to students who have demonstrated adequate competence in French language and culture (passing a French language proficiency exam is required). Students taking this class must consult the instructor. A consideration of foundations of second language teaching which moves to a discussion of methodology, techniques, materials (including visual aids), and testing. Emphasis is on developing teaching strategies which enable students to use French as a tool for authentic self-expression, orally and in writing. Directed observation of experienced teachers and practice in the development of teaching skills are integral parts of the class. Evaluation is based upon class participation (micro-teaching, oral reports, contributions to discussions), written projects, lesson plans, and examinations.

EDUC 4830R Teaching Geography in Secondary Schools: The class presents a variety of models for teaching geography, as part of junior high social studies or senior geography courses, and treats the acquisition of skills, concepts, and values. Attention is given early to lesson and course planning and later to aspects of curriculum development. Course evaluation is based on assignments and class tests, essays, projects, and reports, all of which have direct relevance for intending teachers.

Format: Class 2 hours
Prerequisites: Approval of the instructor
Enrolment: 25 maximum

EDUC 4840R Teaching Mathematics in Secondary Schools: The study of a variety of methods relating to the teaching of mathematics at the secondary level forms the framework for this class. Students must read about each technique, participate in discussions about these techniques, and in many cases observe classroom situations where each method is used. A strong emphasis is placed on exploring the curriculum changes occurring in Education. This includes the place of statistics, the computer, the calculator, problem solving, and geometry in a school curriculum. Evaluation is based on one major project, assignments done individually and in groups, class participation, and a final examination.

EDUC 4850R Science Methods: A Process Approach: This course makes the connections between various learning theories and their applications to the teaching of science. Through a close examination of the goals, philosophy and methodologies of the junior high Science Plus programme and of senior high science curriculum, a wide variety of teaching strategies will be discussed and practised. Recent concerns in science technology and society, as well as gender issues in science education, will be examined. In addition, other areas of interests and concerns in science education as identified by the students in the class will be addressed.

EDUC 4860R Teaching Social Studies in Secondary Schools: Skills in curriculum planning and course organization are developed, and a variety of teaching strategies are introduced. Topics include selecting content and methods setting reasonable objectives for teaching, developing fundamental skills in social studies, and evaluating achievement. Assignments will include written and oral presentations.

EDUC 4871A, 4872B, 4873C Further Educational Studies: Students may apply to instructors for permission to undertake either a specially designed reading course in a given area, or to undertake additional work in their first teaching method, for credit. The instructor thus assumes personal responsibility for supervising the work of a student enroled in this half-credit elective course.

EDUC 4891A, EDUC 4892B, EDUC 4893C Additional Curriculum Projects: Students may apply to instructors for permission to undertake additional project work in the area of curriculum design, implementation, and evaluation, for credit. This may be done with prior consent in writing from the instructor(s) to the Coordinator, BEd Programme. The instructor(s) thus assumes personal responsibility for supervising the work of a student enroled in this half credit elective course.

Field Experience (EDUC 4900 - EDUC 4999)

EDUC 4900R, EDUC 4902A, EDUC 4903B Field Experience: It is the primary objective of the field experiences to provide students with opportunities to analyze, compare, and participate in a variety of teacher-learner situations. Students who intend to apply for a Provincial Teachers' Certificate should plan to log the equivalent of 200 hours field experience. All arrangements for field experiences are made by the BEd Coordinator.

EDUC 4901R Elementary Curriculum Study and Field Experience: (This class is restricted to BPE/BEd elementary and BHE elementary students or secondary BEd students with permission of the instructor.)
Conducted partially in the Dalhousie Elementary School, and partially in weekly tutorial sessions, this class will examine the theme study approach to programme planning, will help students design and implement their own unit plans, and will

emphasize throughout whole language strategies and evaluation from a developmental perspective. Evaluation will be based on attendance, class participation and term reports.
The class seminars will take place in the fall term and they will be followed by field experience in the public schools after which a final evaluation will be made.

EDUC 4910S Additional Field Experience: (Available only during the first Summer Session.) Permission of the School is required. This one-half credit class is made available to the BEd students as an elective which they may choose to supplement the basic requirement for field experience. These additional field experiences are acquired through a block of three weeks spent in the schools at the end of the academic year. This class can only be taken with the permission of the major methods instructor and the BEd committee.

Note: 8000-level classes are open only to students registered in the Certificate of Educational Administration Programme. Please consult the School for detailed course descriptions and programme requirements.

8030 Teachers, Their Organizations, and Decision Making in Education

8060 The History of Curricular Thinking

8151A/B Ethics and Education

8162A/B Open-Mindedness and Education

8200 Multiculturalism and Education

8341 Special Education Policy Decisions

8370 Developmental Psychology

Educational Administration Classes

8401A Administration of Public Education in Canada

8402B Concepts in Educational Administration

8411A Administration of Educational Personnel

8412B Administration of Educational Programmes

8431B Education and Public Policy

8432B The Local Government and Administration of Education

8440A Contemporary Issues in Educational Administration

8451A Philosophy and Educational Administration

8460B Law and the Schools

8462B Interest Groups in Education

8471A Educational Finance

8490 Field Study of Administration

8520R Implementation of Curriculum

School of Dental Hygiene

Location: Dental Building, Room 5235
Halifax, N.S. B3H 3J5
Telephone: (902) 494-1672

Director

J. Clovis, Dip D.H., BEd, MSc

Academic Staff

Associate Professors

J. Clovis, Dip. DH (Alberta), BEd (Alberta), MSc(Alberta), Director of the School of Dental Hygiene
K.F. MacDonald, Dip. D.H. (Forsyth), B.S. (Boston), M.Ed. (Dal), Director of Alumni Affairs and Continuing Education

Assistant Professors

G.M. Butt, Dip. DH (Dal), BA (St. Mary's), MEd(Queen's)
T. Mitchell, Dip. DH (Dal), BSc (Dal), MEd (Dal)
N. Prowse, Dip. DH (Dal), BA (Acadia), MEd (Dal)

Lecturers

B. Andrews, Dip. DH (Dal), BSc (Acadia) Leave of Absence
D. Chalmers, Dip. DH (Dal), BSc (Dal)
P.D. Grant, Dip. DH (Dal), BA (St. Mary's)
J. Jardine, B.Sc. (Acadia), Dip. D.H. (Dal)
M.E. Kinnear, Dip. DH (Dal)
P.J. Maillet, Dip. DH (Dal), B.A. (Dal)
H. Middlebrook, BDS, LDS (London), DDS (Dal)

J. Moreside-Kiri, BSc (Acadia), Dip DH (Dal) Leave of Absence
D. Pascher, Dip. DH (Dal)
H.E. Pittman-Locatelli, Dip. DH (Dal) BSc (Dal) Leave of Absence
C.L. Robb, Dip. DH (Dal) BA (Univ of Moncton)
J. Thomas, B.Sc. (Mt. Allison), D.D.S. (Dal)

Instructors

M.L. Boudreau, Dip. DH (Dal) Leave of Absence
J. Elliott-Wellwood, Dip. DH (Dal)
B. Fortune, Dip. DH (Dal)
T. Harris, Dip DH (Dal)
P. Hawksworth, Dip. DH (Dal)
P. Hendry, Dip. DH (Dal)
M. Kennedy, Dip. DH (Dal), RN
C. Keyser, Dip. DH (Dal)
P. Scott, Dip. DH (Dal)
D. Shaffner, Dip. DH (Dal)
C. Thistle, Dip. DH (Dal)

Introduction

Dental Hygiene was first offered as a formal educational programme in 1913 at the Fones School in Bridgeport, Connecticut, USA. Since then the profession has grown steadily and there are now more than two hundred dental hygiene programmes in North America. In recent years, the movement has spread to other countries as well. In 1961 a diploma programme in dental hygiene was established in the Faculty of Dentistry, Dalhousie University.Dental Hygienists are health professionals educated to prevent dental disease and help people maintain oral health. Their activities in dental health promotion are both clinical and educational and take place in private dental offices, schools, clinics, hospitals and other settings in the community.

Most Dental Hygienists are employed in private dental offices. There are, however, other areas of practice such as local governments and schools, provincial and federal government departments, industry, hospitals and teaching in allied dental health programmes.
Courses in the programme in dental hygiene are offered within the Faculties of Medicine and Dentistry. The School of Dental Hygiene is located on Carleton Campus at Dalhousie University.
University regulations applicable to the students of all Faculties are found in the general section of this Calendar.

Provincial Regulations

Students are reminded that the Diploma in Dental Hygiene is not the only requirement for admission to practice in any province. The regulations for admission to practice are established by the licensing board of the province in which the person desires to practice. Information on these requirements may be obtained from the respective licensing boards whose names and addresses may be obtained from the School of Dental Hygiene.

Diploma

The two-year programme leads to a Diploma in Dental Hygiene.

Admission

Applicants must have completed before June of the year of expected entry to Dental Hygiene, at least five full year university classes*, including full-year classes in biology, psychology, sociology, an approved writing course and one elective. Applicants must have Nova Scotia grade 12 Chemistry or its equivalent.

* a combination of two one-term academic classes in the same discipline is considered equivalent to one full-year academic class.

Applicants who have completed the entrance requirements and are members of a minority group, are 25 years of age or older, and/or have significant related health profession background may apply as "special category" applicants and may submit additional information (forms provided in application package) in support of their application for review by the Admissions Committee.

Selection of accepted candidates is primarily based on academic performance in the required classes and overall academic standing in university. The Admissions Committee also makes significant use of non-academic factors in the selection process (eg. interviews and information submitted by "special category" applicants). Males are encouraged to apply to the Dental Hygiene programme.

Admission of Applicants from other Countries

Further information can be obtained by writing to the Registrar's Office at Dalhousie.

Application Procedure

Persons who have satisfied the entrance requirements may apply for admission. Applications must be made on the regular application forms, and must be submitted to the Office of the Registrar by February 1st in order to be considered for admission in the following academic year. Applications must be complete with academic grades by February 1 to be considered by the Admissions Committee. However, applications filed by the deadline can be completed any time up to June 30th and will be considered when completed if unfilled places remain in the entering class. Preference will be given to residents of the Atlantic Provinces. Up to 10% of first year positions may be allocated to applicants from outside the Atlantic Region.

A new application form must be submitted each year in which application is made. Official transcripts in support of the academic record must be forwarded by the institution or institutions at which the applicant completed pre-profession studies. If the applicant is still engaged in university studies, an interim transcript should be submitted. However, a final transcript must be forwarded on completion of these credits. Dalhousie University regards an applicant's failure to disclose all his/her previous academic experiences to be an academic offence which could lead to subsequent dismissal from the University. Applicants must ensure that all successful or unsuccessful high school and/or university attendance is indicated on the application form.

To ensure physical and mental fitness, medical and dental certificates must be completed on behalf of each applicant on forms provided during the admissions process.

An application will not be considered if the applicant has been required to withdraw from studies at any other School of Dental Hygiene at the request of the Faculty of that institution, unless the application is supported by a recommendation from the Director of that School. In exceptional circumstances, certain of these regulations may be waived or modified by the Faculty Admissions Committee.

Applicants may be requested to make themselves available for an interview and/or orientation programme.

Academic Year

The academic year for the first year in Dental Hygiene begins in early September and continues until the latter part of May. The academic year for the second year in Dental Hygiene begins early September and continues until the latter part of April. Classes begin immediately after the regular registration date. Late registration will be permitted only under exceptional circumstances and with the approval of the Dean.

Class Work and Promotion and Graduation

Students must prepare such exercises, reports, etc., as may be prescribed, and in classes involving laboratory or practical work they must complete such work satisfactorily before any credit for that class can be given. If Faculty deems it advisable, students must be given the opportunity to clear any deficiencies by means of remedial programmes.

First-year students are not normally promoted unless they have passed all subjects and obtained a grade point average of 2.0. If a student has a grade point average of 2.0 or greater, and, after supplemental examinations are completed, has not more than one failure, the student may register for that one course and any courses in which the final grade (supplementals excepted) was D in the next regular session. If a grade of D or better is earned in the repeated course(s), the student will be promoted to second year. A student thus repeating a course(s) is not permitted to register concurrently for any other courses offered by the School of Dental Hygiene. Before proceeding to second year, the student must demonstrate an appropriate level of competence in clinical skills.

Students in second year cannot graduate unless they have passed all subjects, obtained a grade point average of 2.0 in all clinical subjects and a grade point average of 2.0 in all didactic subjects. If a student has an overall grade point average of 2.0 or greater and, after supplemental examinations are completed, has not more than one failure, the student may register for that one course and any courses in which the final grade (supplementals excepted) was D in the next regular session. If a grade of D or better is

earned in the repeated course(s), the student will be recommended for graduation. Such students must make arrangements for and demonstrate continuing clinical competence.

Examinations

In order to qualify for admission to examinations, candidates must attend the prescribed classes of the curriculum regularly and punctually. Under ordinary circumstances, candidates will not be considered qualified for admission to examinations if absences have exceeded 10% of the prescribed class hours.

Course Grades

Upon completion of a course a student is awarded a grade of A, B, C, D, FM, or F. In this system A is the highest passing grade and D is the lowest passing grade; FM is a failing grade that allows an otherwise qualified candidate to take a supplemental evaluation; F is a failing grade disqualifying the student from further evaluation without repeating the course.

The Faculty concerned is responsible for defining the requirements for grades, A, B, C, D, FM and F. If Faculty also wish to award one of the grades\: A+, A–, B+, B– in a clinical course, definitions of these requirements must be available as well.

Grade Point Equivalents and Averages

Grade point equivalents are used to calculate grade point averages.

Grade	Point Equivalent
A (A+, A–)	4
B (B+, B–)	3
C	2
D	1
FM, F	0

Calculation of Average

Each course is assigned a weight based on its length and the mix of lecture, laboratory or clinical components. An individual student's point equivalent for each course is multiplied by the course weight. The student's grade point average is calculated by adding up the weighted grade point equivalents earned for all the separately numbered courses for the academic programme year and dividing by the sum of the course weights for all classes.

Supplemental Examinations

A candidate who has received FM grades in not more than two subjects of any year and who has attained the required grade point average of 2.0 is entitled to supplemental examinations in such subjects, provided she/he is qualified in attendance and class work for admission to examination.

Supplemental examinations are held on the day specified in the academic Calendar, and during the regular examinations in the Spring, but at no other times and are written at Dalhousie unless approval is obtained to do otherwise.

Other forms of supplemental evaluations may be prescribed for different aspects of the programme such as laboratory and clinical assignments. These are carried out in periods determined by the Faculty.

Application for admission to a supplemental examination must be made on or before July 15th on the application form which may be obtained from the School of Dental Hygiene Office and must be accompanied by the proper fees.

On passing a supplemental examination or evaluation the candidate receives no higher than the lowest passing grade.

Instruments, Equipment, Textbooks

All instruments, equipment, and supplies are provided on loan by the University. Students are responsible for broken or damaged equipment and instruments. There is a $250.00 fee for the use of instruments. The cost for textbooks, manuals, project fees and miscellaneous items is approximately $670 for first year and $295 for second year not including the cost of uniforms or lab coats. (Based on 1990/91 costs)

Students desiring further information may write to the Director, School of Dental Hygiene, Dalhousie University. Those desiring to submit applications for admission should write directly to the Office of the Registrar, Studley Campus, Dalhousie University, Halifax, Nova Scotia, B3H 3J5.

Academic Programme

DHYG 2803A Oral Anatomy: A study of the gross anatomy and morphology of the structures of the mouth, with emphasis on primary and permanent dentitions, tooth development, eruption patterns, and occlusion.

DHYG 2801R Fundamentals of Clinical Dental Hygiene: An introduction to the knowledge, concepts, and skills necessary to understand and practice clinical dental hygiene as a process of care involving assessment, planning, implementation, and evaluation. The course is competency based, with an expectation of mastery of didactic material and specified laboratory and clinical competencies. Students are required to be certified (or recertified) in First Aid (St. John Ambulance) and CPR.

DHYG 2806B Dental Biomaterials Science: Study of materials used in dentistry; lectures, demonstrations, and laboratory exercises. The

class on Dental Biomaterials for dental hygiene students is approximately 40 hours. Emphasis is placed upon instructing the student as to the reasons why specific materials are employed, and the ways in which these materials react to the oral environment.

DHYG 2809B Applied Nutrition for Preventive Dentistry: This course provides information and an opportunity for discussion on nutrition, how it impacts on our way of life, our health and dental hygiene. The learner will be exposed to the Canada Food Guide, the Recommended Nutrition Intakes for Canadians, and will interpret food intakes in relation to a healthy eating style.

DHYG 2807R Oral Biology: The objective of this class is to introduce the subject of craniofacial embryology and histology and to make it clinically relevant by correlating developmental, microscopic, anatomic and clinical aspects of the subject. Both developmental and pathologic correlates are discussed. The class is offered jointly by the Department of Oral Biology, Faculty of Dentistry and the Department of Anatomy, Faculty of Medicine for both first year dental students and first year hygiene students jointly.

DHYG 2805B Periodontics: An introduction to Periodontology, the study of diseases affecting supporting structures of the teeth.

DHYG 2804B Radiology: A series of lectures, laboratory exercises and clinical training, covering the technical aspects of radiology and the hazards and safety of radiation.

DHYG 2802B Dental Hygiene Restorative Techniques: This class includes lecture and laboratory procedures in the placing, contouring, and finishing of plastic restorations in prepared teeth, placement of temporary restorations, and related supporting procedures.

DHYG 2808R Communications: This course presents theoretical concepts and opportunities for practice in communication skills, theories of motivation, principles of learning, interviewing and counselling, and aspects of psychology which are fundamental to dental hygiene practice.

ANAT 102A and 103B: This class is taught by the Department of Anatomy in the Faculty of Medicine and designed especially for Dental Hygiene students. Scope and sequence are coordinated with Physiology 1010R which is taken concurrently. Term one deals with gross anatomy of body systems, the eye and ear, and basic microanatomy; term two deals with detailed gross anatomy of the head and neck.

Physiology 1010R: This class is taught by the Department of Physiology and Biophysics in the Faculty of Medicine. The lectures are coordinated with Anatomy 102A and 103B which is taken concurrently.

Microbiology 1100A: Study of microorganisms

Second Year

DHYG 3001R Dental Hygiene Theory/Clinic: Clinical practice in dental hygiene, utilizing the dental hygiene process of care model as a focus, together with lectures and seminars dealing with associated concepts and procedures.

DHYG 3007B Pharmacology: A broad overview of the drugs which are used frequently in dental practice, and drugs used by dental patients which influence choice of treatment, may have significant interactions, may lead to complications during dental/dental hygiene treatment.

DHYG 3006R General & Oral Pathology: The study of the basic principles concerning disease in general and those affecting the hard and soft tissue structures of the oral cavity in particular. Rotation to the Mouth Clinic and clinical aspects of diseases of the mouth are included in this class.

DHYG 3004A Periodontics: Continuation of the study of oral manifestation of disease affecting supporting structures of the teeth, commenced in the first year.

DHYG 3005B Professional Issues: A study of the ethical, legal and practice management issues related to dental hygiene practice and regulation.

DHYG 3002R Community Oral Health: An introduction to the promotion of oral health and the prevention of oral disease through organized community-based programmes. Course requirements include practical experience in community settings such as health centres, schools, and extended care facilities.

DHYG 3003A Care of Exceptional Patients: A lecture and seminar course discussing preventive dental care for exceptional populations including the visually, hearing and intellectually impaired, the medically compromised, and people receiving treatment for cancer.

DHYG 3008A Human Development: An overview of physical, psychological and social aspects of human development from birth with special reference to topics related to oral health.

DHYG 3009R Dental Specialties: Five specialties of dental practice, particularly as they relate to the active role of the hygienist in a collaborative practice setting, and to the specific needs of the patient.

DHYG 2601B Table Clinic: Second Year Students will prepare and present a table clinic on a topic they have chosen. The topic may be based on an aspect of clinical practice or on a research project that the student has completed. The presentation is graded on a pass/fail basis and is also judged for prizes during a public presentation.

In addition to the courses listed, students are required to obtain a certificate in First Aid (St. John Ambulance) and to be re-certified in CPR.

Faculty of Health Professions

Introduction

The Faculty of Health Professions consists of the School of Nursing, College of Pharmacy, School of Recreation, Physical and Health Education, School of Physiotherapy, School of Occupational Therapy, School of Human Communication Disorders, the Maritime School of Social Work and the School of Health Services Administration. The various undergraduate programmes are described in the College and School sections of the Undergraduate Calendar. Details of the graduate programmes offered in the College and the Schools are described in the calendar of the Faculty of Graduate Studies.

Officers of the Faculty

Acting Dean of the Faculty of Health Professions

Zakariasen, Kenneth, DDS, MS, PhD

Administrator

Cole, Lorna J.

Administrative Coordinator

Read, Della H.

Regulations Affecting Undergraduate Students

Note: It has long been the policy of the University that a student is governed by the regulations in place at the time of initial enrollment, and that subsequent changes in regulation shall apply only if the student so elects. Students entering a new degree programme in the Spring of 1991 or later will be evaluated using the 4.3 Grade Point Average (GPA) scale. The regulations that apply to these students are identified as "New in 1991". All other students will continue to be evaluated using the 4.0 GPA scale until April 1995. The regulations that affect them are identified as "Prior Regulations". Beginning in May 1995, all students' work will be assessed using the 4.3 GPA system.

In addition to the University regulations in the Undergraduate Calendar, the Faculty regulations apply to all undergraduate programmes in the Faculty of Health Professions. Certain special regulations are listed in the Calendar entries for the College and the various Schools. Students should realize that if the Faculty does not cite a regulation or indicate to the contrary in its regulations, the College of Arts and Science Undergraduate Regulations will apply to undergraduate students in the Faculty of Health Professions.

Admission Requirements

General admission requirements and procedures with the exception of those for Mature Students are the same as those for the College of Arts and Science (see section 5., also 7. Admission to Classes, 9. Registration and ID Card all in the College of Arts and Science section of the Undergraduate Calendar). For special and additional admission requirements and procedures, consult the relevant School or College section of the Calendar.

Mature Students

Regulations concerning admissions are not applied rigidly. Applications from persons who lack the normal qualifications, particularly those who have been out of school for some years, are invited. Acceptance may be granted if the admissions committee is satisfied that their standing is such that they may be suitable for, and expected to benefit from, university work. Applicants should submit information about previous studies and relevant experience. Interviews may be required.

This regulation applies to all mature students wishing to enter undergraduate programmes in the Faculty or Health Professions with the exception of the Bachelor of Social Work programme where the School Admission Requirements will apply.

Mature students are advised to contact Henson College at 494-2526

Special Students "No Degree"

See the University definition on page 10.

Special students: Students who are not candidates for a degree or diploma but who wish to take university classes which may be allowed for credit. This is not the same as auditing a class. Special students must satisfy normal admission requirements.

Students requesting special status must provide evidence of their academic or high school record to date and declare whether or not they have previously applied to a degree programme in the Faculty and whether they were rejected.

a. Students wishing to enroll as special students in classes that form part of degree programmes in the Faculty of Health Professions must have the signed approval of the Chair of Admissions of the degree programme. Students wishing to enroll as special students in Social Work classes should refer to Maritime School of Social Work regulation for off-campus classes.

b. Students who have applied for admission to a degree programme in the Faculty of Health Professions and have been rejected or have been dismissed or asked to withdraw from

a degree programme will not be allowed to enroll as special students in any classes that form part of any of its degree programs. Such students who wish to enter or continue their chosen area of study must reapply for admission as regular full-time or part- time students. If they wish to change their programme of study they must apply for admission to that programme as a regular full-time or part-time student.

c. Students who have been signed into classes by professors in Departments or Schools without the approval of the Chair of the Admissions Committee of the particular degree programme, in which the class forms a part, will not be granted special status or be allowed to register in the class.

Faculty Regulations 1991-92

1. Counting of Classes for Two Undergraduate Degrees

A student who already holds an undergraduate degree from Dalhousie, or another recognized university, and who wishes to obtain an undergraduate degree from the Faculty of Health Professions, must fulfill the requirements of the second degree and meet the following stipulations:

(a) Only classes that are applicable to the course of study for the degree from the Faculty of Health Professions may be counted for credit;

(b) Each class carried forward must bear a grade of C (or equivalent) or better;

(c) Grade requirements of the School or College must be met in all new classes;

(d) No more than half the classes required for an undergraduate degree in Health Professions may be carried forward from an earlier degree.

2. Transfer Credit

(a) To obtain a first degree from the Faculty of Health Professions all or most of the advanced work of the programme (i.e. at least half the classes taken in the second and subsequent years of study) must be taken at Dalhousie.

(b) No classes taken at another institution will be counted towards fulfilling the requirement of a Bachelor degree in the Faculty of Health Professions without advance approval from the Department, School or College concerned.

See also the College of Arts and Science section of the calendar - 13. Transfer Credit, which applies to undergraduate students in the Faculty of Health Professions with two exceptions: that half of the classes, including at least half in the field of concentration, need not be taken at Dalhousie; and classes taken at another institution may be counted towards fulfillment of the concentration requirement of a program.

3. Advanced Placement

Advanced knowledge of a subject is not to be confused with transfer credits from another university. Advanced knowledge grants exemption for a past class but requires substitution for another. Transfer credit grants credit for a class and does not require substitution.

4. Class Changes

Class changes will be permitted during the first two weeks of classes in the regular session. Deadlines for class changes appear in the Schedule of Academic Dates. Students must complete the appropriate class change form which must be approved by the instructors of the classes concerned, the advisor in the School or College, and submitted to the Registrar's Office.

5. Part-time Students

5.1 Restriction

Because of the restriction in the duration of undergraduate studies (see Regulation 8), the opportunity for part-time study is limited in the majority of programmes in the Faculty of Health Professions.

The exceptions are the undergraduate programmes in the School of Recreation, Physical and Health Education, the Maritime School of Social Work, the Bachelor of Science (Nursing) programmes for Registered Nurses and the Bachelor of Science (Physiotherapy) for students who hold a diploma in Physiotherapy.

5.2 Full-time to Part-time Status

A registered student who wishes to drop classes and thereby change from full-time to part-time status must obtain written approval from the College or School.

6. Audit of Classes

Students registered at Dalhousie may, with the permission of the instructor concerned, audit any class in the Faculty of Health Professions, provided that it is clearly understood that they will not be eligible to write examinations in the class and will not in any circumstances be granted credit for it. See College of Arts and Science Regulation 16. Special students "no-degree" see Admission Requirements.

7. Workload

For normal workloads in the Faculty, see the individual School or College section of the Calendar. Written permission from the School or College Committee on Studies is required if the normal workload is to be exceeded. Applications from students who give good reasons for wishing to take an overload, and who in the preceding year completed a full programme in good standing, will be considered. Such permission will not normally be granted to any student in the first year of study, or to any student who, in the preceding academic year, obtained a grade point average of less than 2.7.

8. Duration of Undergraduate Studies

With the exception of the undergraduate programmes in the School of Recreation, Physical and Health Education and the Maritime School of Social Work to which the College of Arts and Science Regulation 22 Duration of Undergraduate Studies applies, students in the Faculty of Health Professions are normally required to complete their undergraduate studies within six years of first registration in professional classes or within five years in the post-diploma degree programme in Physiotherapy. This rule applies to such classes for transfer credits as well. The Faculty Committee on Studies after a hearing by the School or College Committee on Studies may grant permission to continue studies beyond this period subject to conditions specified by the Committee.

9. Assessment

The College of Arts and Science Regulation 23. Assessment and its subsections 23.1 to 23.8 apply to the Undergraduate programmes and students in the Faculty of Health Professions apart from the following exceptions and differences:

9.1 Examinations and Tests

No tests or examinations may be held between the end of classes and beginning of the official examination period, with the exception of those activity modules and laboratory classes in which special facilities are required.

9.2 Submission of Grades

On completion of a class, the instructor is required to submit grades to the Registrar.

9.3 Incomplete

College of Arts and Science Regulation 23.5. Incomplete applies with the following exceptions. These are classes which require field work during the summer months. At the present these are Health Education 1295; Leisure Studies 4496; Physical Education 3398 and 3402; Nursing 2220, 3240 and 3250; Pharmacy 3000B, Occupational Therapy 2221B, 3320, 3321B and 4420A/B; Social Work 3020R/B, 4020R/B, and 4030R/B; and Physiotherapy 3500B. Students taking any of these classes in their final year should note that they will not be able to graduate at the Spring Convocation.

For required professional classes in the Faculty of Health Professions a grade of INC is recorded if a student fails a final exam worth 40% or more but earns a grade of C or better for term work. Additional work is to be completed and grade submitted by February 1/June 1.

10. Academic Standing

10.1 Grade Point Average (GPA) - New in 1991

The Grade Point Average is the weighted sum of the grade points earned, divided by the number of classes in which grade points were earned, in accordance with the grade scale in 10.1.1. Classes with fewer than six credit hours earn proportional grade points (e.g. in a half-credit class, a C would yield one point).

10.1.1 Scale

Grade		Grade Points
A+		4.3
A		4.0
A-		3.7
B+		3.3
B		3.0
B-		2.7
C+		2.3
C		2.0
C-		1.7
D		1.0
F		0.0
INC	(Incomplete)	0.0
W	(Withdrew after deadline)	0.0
ILL	(Compassionate reasons/illness)	Neutral
P	(Pass for credit classes)	Neutral
T	(Transfer credit on admission)	Neutral

10.1.2 Grade Points Other Institutions on Admission

Transfer credits on admission count as credits without grade points, i.e. they are neutral in the calculation of the GPA.

10.1.3 Grade Points on Letter of Permission

The grade earned in a class taken at another institution on a letter of permission is recorded and the appropriate Dalhousie grade points are assigned. For institutions which do not use letter grades, the Registrar's Office translates the grade into a Dalhousie grade and assigns the corresponding grade points.

10.1.4 Repeating Classes

With the permission of the School or College concerned, a student may repeat any class for which a passing grade has previously been awarded. The original passing grade will nevertheless remain on the transcript and a second entry will be recorded with the new grade and the notation "repeated class." No additional credit will be given for such a repeated class, but both grades will be included in the calculation of the sessional and cumulative GPA.

10.2 Grade Point Average (GPA) - Prior Regulations

The GPA is computed as follows: the number of grade points is multiplied by the number of credit hours for that class; the sum of these products is then divided by the total number of registered credit hours to obtain a GPA for the year's performance.

10.2.1 Scale

Grade	Grade Points
A+, A, A-	4
B+, B, B-	3
C+, C, C-	2
D	1
FM, F	0

10.2.2 Repeating Classes

With approval of the School or College Committee on Studies a student may repeat a class or sit a remedial examination. If a student repeats a class for which a fail or pass grade has been received, or sits a remedial examinaiton, only the most recently obtained grade will be used for the purpose of calculating grade point averages. The original grade will be remain on the transcript along with the new grade. For scholarship, the Dean's List, and University Medal considerations, and the granting of a degree with distinction, all grades will be used.

10.2.3 Grade Points from Other Institutions

The amount of credit but no grade points is recorded for a Health Professions or Arts and Science class transferred from another institution with the following exception: Where an external class is taken to pursue a programme of study and the class is approved in advance by the School/College Committee on Studies the grade will appear on the transcript but will not be used to calculate the grade point average.

11. Probation - New in 1991

11.1 Students with a cumulative GPA of less than 2.0 and greater than or equal to 1.7 who have completed at least four full classes will be placed on academic probation.

11.2 Students on probation are allowed to continue to register on probation provided that their sessional GPA is at least 1.7. Students on probation who do not achieve a sessional GPA of 1.7 will be academically dismissed.

11.3 Students require a cumulative GPA of 2.0 to graduate. Therefore, no one will be allowed to graduate while on probation.

12. Required Withdrawal

12.1 Academic Dismissal - New in 1991

12.1.1 Students with a cumulative GPA of less than 1.7 who have completed at least four full classes will be academically dismissed.

12.1.2 Students on probation who do not achieve a sessional GPA of 1.7 or greater will be academically dismissed.

12.1.3 Students who have been academically dismissed will not allowed to re-apply for at least twelve months.

12.2 Required Withdrawal - Prior Regulations

12.2.1 GPA Requirements and Minimum Standing

Each School or College has individual grade point average requirements and minimum standing. Refer to the specific School or College section of the Calendar for further details.

12.2.2 **Student Progress Review**

The Committee on Studies of each School or College regularly review each student's performance. A student's performance may also be reviewed by the Faculty Committee on Studies. Students whose work is unsatisfactory may be required to withdraw from their present course of study, reduce their course load, withdraw from the class or classes concerned, or be excluded from the relevant examinations.

12.2.3 **Failure to Meet Academic Requirements**

A student has not fulfilled the requirements for a class when the minimum accepted grade set by the School or College has not been met. This minimum grade could be a D in some cases and a C or B⁻ in others.

12.2.4 **Required Withdrawal**

Any student who has not met the minimum grade point average requirements at the end of the Spring term is considered to have failed the year and is required to withdraw from the School/ College and Faculty. Such students should also consult their School/College calendar which might have additional School or College specific information on Required Withdrawal.

13. Readmission after Required Withdrawal

Subject to the regulations of the School or College, a student who has failed a year may apply for readmission. Since there is a limited enrolment in most programs, the decision to readmit will be made by the School or College.

A student who fails a year on two occasions will not be eligible to return to the School or College in which the student was registered as either a full-time or part-time student. An appeal against the application of this rule may be addressed to the Faculty Committee on Studies but will be allowed only if illness has seriously interrupted the student's studies and this is established by submission to the Chairperson of the Faculty Committee of a medical certificate from the physician attending the student at the time of the illness, or in other very exceptional circumstances.

14. Withdrawing from Classes

The last dates for withdrawing from "A", "B", "C", and "R" classes without academic penalty are published in the Schedule of Academic Dates at the front of the calendar. After these dates all classes for which a student remains registered will be recorded. A grade of W for withdrawal after the deadline will be treated as an F when the grade point average is calculated and in determining the pass list. To withdraw from classes, students must complete the appropriate class change form which must be approved by the instructor concerned and signed by the Director and submitted to the Registrar. (The withdrawal will be effective only when the class change form is received by the Registrar). Additional conditions include: (a) no classes may be dropped after the last day to withdraw, as indicated in the Schedule of Academic Dates, (b) classes may not be added to replace withdrawn classes after the second week of the term in which that class begins except in special circumstances, and (c) students may not transfer from full to part-time status by withdrawing from classes after the deadlines listed in the Schedule of Academic Dates.

15. Withdrawing from the University or Changing to Part-time Status

Registered students who wish to withdraw from the University, or who wish to change from full to part-time status by dropping classes, must obtain written approval from the School or College and submit the appropriate forms to the Registrar. Students should not discontinue attendance at any class until their application has been approved.

Students must be aware of the fact that non-attendance, by itself, does not constitute withdrawal.

16. Off-Campus, Summer School and Correspondence Classes

16.1 **Required Standing and Equivalence**

In all cases, off-campus, summer school and correspondence classes offered by other institutions must have been passed at an adequate level and can be accepted only if they are closely equivalent in content to classes normally given at Dalhousie as confirmed by the particular Department at Dalhousie.

16.2 **Limits on Credit (Summer School and Correspondence Classes)**

Provided regulation 16.1 is observed, up to six credits (36 credit hours) from summer school and correspondence classes may be accepted towards the requirements of a degree. No student may receive more than two full credits (12 credit hours) by correspondence courses.

16.3 Limits on Credit (Off-Campus Classes)

A maximum of three credits (18 credit hours) classes may be taken as off-campus classes, whether offered by Dalhousie or taken at another university under a concurrent registration.

16.4 Maximum Workload (Summer School)

Students may not take classes totalling more than one and one-half full credits in any one summer session (nor may the workload in any one week exceed one-quarter of a credit). Not more than two and one-half full credits can be obtained at Summer School in any one academic year. In all cases, permission to exceed the maximum workload must be obtained in advance from the School or College Committee on Studies.

16.5 Credit for Summer School Classes at Other Universities

Students who wish to take a Summer School class at other Universities to be counted for credit towards a Dalhousie degree must:

(a) obtain a Letter of Permission form from the Registrar's Office at Dalhousie University;
(b) obtain a Summer School Calendar from the University which the student hopes to attend;
(c) make an application to the Director of the School or College;
(d) submit to the School or College the calendar indicating the class the student wishes to take;
(e) obtain the approval in advance from the Director of the School or College.
(f) Spring/Summer classes will be included in the cumulative GPA. A sessional GPA will not be calculated.

17. Classes Taken at Other Universities Under Concurrent Registration

Students who wish to take classes at other institutions while registered at Dalhousie, whether in the academic year or in summer sessions, must obtain approval in advance on a form available at the Registrar's office. A letter of permission will be provided if approval for the classes is given. The workload at the other institution must conform to the workload limitations at Dalhousie. The class fee will be paid by Dalhousie University if:

(a) the student is registered and pays fees as a full-time student at Dalhousie University;
(b) the classes are approved as part of the student's program; and
(c) the class is not part of a summer school programme.

Classes taken elsewhere on a Letter of Permission are treated as transfer classes for purposes of record. The grade will appear on the transcript and will be used to calculate the grade point average in accordance with Faculty Regulation 10.1.3.

18. Awards for Academic Excellence

18.1 Dean's List

18.1.1 Dean's List - New in 1991

Students who have completed first, second, third or fourth year (year equals number of classes/credit hours considered by School/College as normal student workload per year in a particular degree programme) and have achieved a sessional GPA of at least 3.7 in the last five classes or equivalent credit hours will be placed on the Faculties Dean's List and the term "Dean's List" will be noted on the student's transcript. Normally, fewer than fifteen percent of students are on the Dean's List.

18.1.2 Dean's List - Prior Regulations

Full time

The Faculty of Health Professions recognizes students with good academic records by placing their names on the Dean's List. Full-time students* are considered annually for the Dean's List using the following criteria:

(a) The recipient will have satisfactorily completed at Dalhousie University, the regular minimum credit hours and non-credit courses required by a School or College during the regular academic year and prior to September registration;
(b) When Dalhousie University Summer School courses are taken, these will be included in the calculations of the grade point average for the academic year (September 1 - August 31) in which they are taken;
(c) The recipient must obtain a grade point average of 3.66 or better.
(d) Normally only the top 15% of students in each School/College will be eligible for the Dean's List

provided the Grade Point Average of 3.66, or better, is met.

Part-time

Part-time students will be eligible for Dean's List when they have completed the number of credits equivalent to full-time* programme year as designated by the respective School or College.

For calculation purposes, credits will be considered in order of their appearance on the marks printout following completion of Summer School courses and the satisfactory completion of all required clinical or work placements. When more than the required credit hours have been accumulated during a normal period of consideration, the appropriate portions of credits will be used for calculations.

The recipient must obtain a grade point average of 3.66 or better.

Normally only the top 15% of students in each School/College will be eligible for the Dean's List provided the Grade Point Average of 3.66, or better, is met.

* Consult each School or College section of the Calendar for the details of what constitutes full-time status in any one year.

18.2 Degree with Distinction

18.2.1 Degree with Distinction - New in 1991

(a) The candidate must fulfill the requirements for obtaining a degree as detailed in the Calendar by a School or College of the Faculty of Health Professions.

(b) The candidate must have a cumulative grade point average of 3.7 or better.

(c) Classes taken on a Letter of Permission while at Dalhousie will be included in the cummulative GPA.

18.2.2 Degree with Distinction - Prior Regulations

(a) The candidate must fulfill the requirements for obtaining a degree as detailed in the Calendar by a School or College of the Faculty of Health Professions.

(b) All credits earned at Dalhousie University towards the baccalaureate degree are included in the calculation.

(c) The candidate must have a cumulative grade point average of 3.66 or better.

19. University Medal

A University Medal is awarded once a year normally at Spring Convocation to a graduating student in Nursing; Pharmacy; Recreation, Physical and Health Education; Physiotherapy and Occupational Therapy who meets the following requirements:

1. has completed, as a minimum, credit hours equivalent to the final three years of study within a given School or College of the Faculty of Health Professions and
2. has a cumulative G.P.A. of 3.80 or better (all credits taken at Dalhousie towards the degree will be used for calculating the cumulative G.P.A.)and
3. has the highest cumulative average of those candidates who fulfill the previous two criteria. (Letter grades will be converted to numerical values based on the Sinclair Formula.)

20. Appeal

Students may appeal decisions pertaining to the College's or a School's interpretation of academic rules and regulations to the Faculty of Health Professions Committee on Studies. Normally, appeals to this committee occur after appeal procedures at the School or College level have been exhausted.

In the case of appeals initiated by students the following procedures shall normally be followed:

1. The student prepares and presents a written statement to the Dean requesting an appeal hearing and stating clearly which regulation is in question and the remedy being sought. The statement is to contain an outline of the circumstances that necessitate the appeal to the Faculty level and the expectations of the appellant. The student will also provide a telephone number and address through which the student can be reached.
2. The request for an appeal must be presented by the student to the Dean of the Faculty of Health Professions within thirty calendar days of notification of the student by the School/College of the disputed academic decision. The Dean will then ensure that the request for an appeal is forwarded to the Chairperson of the Committee on Studies within two business days.

3. Before acting upon the request for an appeal, the Chairperson of the Faculty Committee on Studies shall determine if School/College appeal procedures have been exhausted and that all the evidence presented to him/her has in fact been considered by the School/College Committee on Studies. If the Chairperson of the Committee on Studies is from the appellant's School/College, the Vice-Chairperson will preside over the appeal process.
4. When the Chairperson of Vice-Chairperson has determined that the Faculty Committee should hear the case, he/she will place the matter on the agenda of the next regularly scheduled meeting, unless in the judgement of the Chairperson there is reason to hold the hearing at an earlier date. The case must be heard within thirty calendar days of receipt by the Dean of a written request for appeal.
5. The Chairperson shall notify the student by telephone and by registered mail of the date, time, place of the appeal hearing, and of the student's right to appear before the Committee, either alone or with an advocate of his/her choice.
6. Documentation in support of the appeal must normally be distributed to the Committee with the agenda seven days prior tothe meeting. The chairperson is to ensure that an identical package of all materials is made available to the appellant, the appellant's advocate and the School/College.
7. The members of the Committee whose decision is under appeal have the right to be present and to make representations before the Faculty Committee with, or without, an advocate of their choice and/or other School/College personnel.
8. After the student's appeal has been heard, the Committee will continue the meeting in camera to reach a decision. Other persons from the School/College (as noted in 7 above) and the appellant and his/her advocate will be required to leave prior to the in camera deliberations.
9. The decision of the Faculty Committee on Studies will be dispatched directly to the appellant by the Chairperson of the Faculty Committee on Studies in writing witin 72 (seventy-two) hours of the hearing by registered mail. A copy of the decision will also be sent to the Director of the School/College in question and to the Dean of the Faculty.
10. Should the Committee decide against the student's appeal, the Chairperson of the Faculty Committee on Studies will advise the student of the right to appeal to Senate.
11. In the case of appeals initiated by the School/College on behalf of a student, the School/College will be responsible for providing all documentation. Correspondence or communications from the Chairperson of the Faculty Committee on Studies, as described in procedures 3, 5, 6, 10 and 11 above, shall be with the Director of the School/College.

School of Nursing

Location: Forrest Building
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Academic Staff 1990-91

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Norma J. Murphy, BN (Dal), MScN (UBC), RN
Florence Myrick, BN (Memorial), MScN (Western), RN

Lecturers
Keith Cockerell, Dip. OP & CHN (Dal), BPharm (UBradford), RN
Ruth Martin, Dip. OP & CHN (Dal), RN
Rosemarie A. Pogoda, Cert. CHN (Man), RN
Josefina Richard, BN (Dal), MN (Dal), RN
Gail Tomblin Murphy, BN (Dal), MN (Dal), RN
Adele R. Vukic, BN (Dal), RN

Senior Instructors - Skills Laboratory
Eloise Bethune, BScN (MSVU), RN
Barbara Bleasdale, BN (Dal), RN

Special Lecturer
Elisabeth Gold-Smith, MD (U Tor), MHSc, CCFP

Honorary Appointments
Margaret Jean Bayer, BN (Dal), MEd (Acadia), PhD (Dal)
Hope Beanlands, BN (UNB), MN (Dal)
Janet Braunstein, BScN (Cornell), MPH (Minnesota)
Alan Donald, BSc (Simon Fraser), MSc (Queens), PhD (Western)
Marlene Grantham, BScN, MSc (A), PHN (Western), RN
Janet Knox, BN (UNB), MN (Dal)
Sheila Ross, BN (McG), MN (Dal)
David Whitehorn, BSc (Mich), MScN (Yale), PhD (U Wash)
Heather Young, BN (Memorial), MScN (Western)

Cross Appointments
Karen Mann, BScN (Dal), MSc (Dal), PhD (Dal), RN
- Director, Medical Education Unit, Faculty of Medicine
Jerome Singleton, BA (U Waterloo), MS (Penn State), PhD (U of Maryland)
- Associate Professor, School of Recreation, Physical & Health Education

Preceptors
Many nurses, health-care professionals and persons in other disciplines give of their time and expertise to assist in the education of the nursing students in all years of all programmes. These valuable preceptors are too numerous to list, but are a vital part of the programme. Names can be obtained by contacting the School of Nursing.

The School of Nursing was organized in 1949. In 1961 the School of Nursing became a constituent part of the newly established Faculty of Health Professions. Currently the School offers an undergraduate programme for basic and Post RN students, a Masters of Nursing programme and a 15 month programme leading to a diploma in Outpost and Community Health Nursing.

Bachelor of Science (Nursing) Degree Programmes

The challenges of the health care system have reached a technological and social level such that nurses have recognized the need for university level education in order to practice within that system. The purpose of baccalaureate nursing education is to prepare professional nurses to provide research-based care to clients in a variety of settings. Baccalaureate nursing encompasses promotion of health, prevention of disease and intervention in health and illness problems. Nursing is an art and a science centering on nursing courses. It is complimented by required and support courses in biological sciences, social sciences and humanities. The four year basic degree programme is for students with no previous nursing knowledge and experience. Students who have a diploma in nursing (Post-RN students) are also admitted to the Bachelor of Science (Nursing) programme but have a shorter programme as described later.

Programme Objectives

The graduate of this baccalaureate programme will be prepared to:

1. Use scientific knowledge in the application of the nursing process when caring for clients in different stages of health and illness.
2. Use therapeutic communication in the development of a professional helping relationship with clients.
3. Use critical thinking in nursing.
4. Serve as an advocate to protect the rights, diversity and worth of clients.
5. Use the process and products of research to enhance clinical practice.
6. Collaborate with others in the delivery of health care.
7. Demonstrate leadership in nursing and within the health care delivery system.
8. Use knowledge of the process of change within the political, social and health care systems in the practice of nursing.
9. Assume responsibility and accountability for learning and competency in her/his nursing practice.

All undergraduate degree programmes are coordinated by the Associate Director of Undergraduate Programs.

Bachelor of Science (Nursing) for Basic Students

The Bachelor of Science (Nursing) degree is a four year programme. Graduates are eligible to write examinations for membership in the Registered Nurses' Association of Nova Scotia.

Admission Requirements

A satisfactory completion of Nova Scotia Grade XII is required, including:

- Grade XII English, Chemistry and Mathematics.
- Grade X, XI or XII Biology (at least one high school level biology).
- A 70% overall average and 70% average in the required subjects.

Prospective applicants must apply via the Registrar's office. Applications close on March 1. Successful applicants will be notified of acceptance after May 1.

Priority consideration will be given:

- first to permanent residents of Nova Scotia and Prince Edward Island.
- second, to permanent residents of other Canadian provinces.
- third to all other applicants.

Immunization

Before commencing studies in first year, students must show proof of current immunization against: tetanus, diphtheria, polio, measles and rubella.

Immunization against Hepatitis B is recommended for all students and is available through Dalhousie Health Services at a cost of $90 (based on 1990-91 cost).

Evidence of tuberculin testing (mantoux) must also be shown each September. TB testing can be done by the Public Health Nurse or is offered yearly by Dalhousie Health Services. This information must be sent to the Admissions Coordinator, School of Nursing. Students failing to provide this evidence will be withdrawn from clinical areas.

CPR, BCLS & Basic First Aid Certification

All students must show proof of CPR and Basic First Aid certification before entering clinical in second year. This proof is to be sent to the Admissions Coordinator, School of Nursing. Taking a cardio-pulmonary resuscitation course and basic first-aid course are the student's responsibilities both in time and cost.

Degree Requirements

A student must obtain a minimum cumulative GPA of 2.0 throughout the entire undergraduate programme. A student must accumulate a minimum of 123 credit hours and have successfully completed all compulsory classes, as well as the necessary number of elective classes. The degree must be completed within 6 years of commencing nursing classes, although credit will be given for Arts and Science, Faculty of Health Professions and Management Studies classes that are up to ten years old by the date the degree is completed.

Grade Point Average Standards (GPA)

The grade point average system is described in the Faculty Regulation. School regulations relating to GPA apply to students whose initial registration in the School was in the Fall of 1990 or earlier. Students entering in the Spring of 1991 and beyond will be governed by revised regulations found in the Faculty of Health Professions section of this calendar.

Grades

The passing grade for all nursing classes is a C grade. Student performance in a class is evaluated by letter grades. Grades in the range of A, B and C are passing grades. Students must attain a C in both the theory and clinical/laboratory components of any given nursing class.

For required professional classes in the Faculty of Health Professions a grade of INC is recorded if a student failed a final exam worth 40% or more but earned a grade of C or better for term work. Additional work to be completed and grade submitted by February 1/June 1.

Requirements for Promotion

Besides meeting the GPA requirements students must meet the following requirements for promotion:

Year I to Year II: A student must pass all first year level classes in order to advance to second year nursing classes.

Year II to Year III: A student must pass all second year nursing classes, Microbiology 1100A and Math 1060A/B.

Year III to Year IV: A student must pass all third year nursing classes with the exception of N3210A/B.

Normal Workload

The programme consists of 123 credit hours (20.5 credits); these are divided to give the following yearly normal workload:

Year I: a normal workload is considered 30 credit hours (5 credits)

Year II: a normal workload is considered 36 credit hours (6 credits)

Year III: a normal workload is considered 28 credit hours (4.5 credits)

Year IV: a normal workload is considered 29 credit hours (5 credits).

Course of Study

The following is an outline of classes that are normally taken each year and includes in brackets the credit hours assigned to each class.

First Year: Chemistry 1430R (6), Anatomy 0101C (3), Physiology 1010R (6), Psychology 1000R (6), Sociology 1000R (6), Nursing 1010C (3).

Second Year: Microbiology 1100A (3), Math 1060A/B (3), N2010A (2), N2020A (2), N2200A (3), N2030B (2), N2040B (2), N2210B (4), N2220B (6) and 9 credit hours of electives chosen from any Faculty. These electives are to be at the 2000 level or above. N2220B is a six week clinical nursing class usually starting toward the end of April.

Third Year: N3010A (2), N3020A (2), N3200A (3), N3210A/B (3), N3220A/B (4), N3030B (3), N3230B (5), N3240B (3), N3250B (3), Human Sexuality Workshop Part I (non-credit). N3240B and 3250B are clinical nursing classes of 3 weeks each that normally start towards the end of April.

Fourth Year: N4010B (3), N4020A (1), N4030A (3), N4200A (4), N4210A/B (3), N4220A/B (3), N4230B (4), one elective in nursing (3), and N4240B (5), Human Sexuality Workshop Part II (non-credit). N4240B is a 5 week clinical class normally starting toward the latter part of the winter term.

Bachelor of Science (Nursing) for Registered Nurses

The Bachelor of Science (Nursing) for registered nurses consists of 77 credit hours of University study distributed as follows: required non-nursing classes, 33 credit hours; required nursing classes, 35 credit hours; electives, 9 credit hours. Students may complete the programme through either part-time or full-time study. The programme can be completed in two calendar years of full-time study provided resources allow required nursing classes to be offered during the summer session. Otherwise, students without transfer credits can complete the programme in two full-time and one part-time academic years (Sept. - April) of study. Part-time students who wish to change their status to full-time must write their request to the Associate Director of Undergraduate Programmes by March 1.

Admission Requirements

The requirements for admission to the BScN for registered nurses are as for the BScN basic programme (i.e. N.S. grade XII or equivalent with English, Chemistry, Math, and Biology and a 70% average). In addition to these requirements, the applicant must: (a) submit evidence of current registration as a nurse in Nova Scotia or the province or country of residence; and (b) present transcript of R.N. examinations.

Admission under mature student status may be granted. Regulations concerning mature admissions are not applied rigidly. Applications from persons who lack the normal qualifications, particularly those who have been out of school for some years, are invited. Acceptance may be granted if the admissions committee is satisfied that their standing is such that they may be

suitable for, and expected to benefit from, university work. Applicants should submit information about previous studies and relevant experience. Interviews may be required. Upgrading in certain required subjects, e.g. Chemistry, Mathematics, may be recommended. Each applicant will be considered individually. Priority will be given to Nova Scotia and Prince Edward Island residents and Armed Forces personnel to be posted in Nova Scotia. Registration requirements are governed by the Registered Nurses Association Act of Nova Scotia (1985). Foreign students applying for admission follow admission requirements as outlined in section 5.2 of the University Calendar. In addition, they must be eligible for registration as a nurse in Nova Scotia in accordance with the Act stipulated above. Applicants may be required to do some aspects of nursing content and practice if insufficiency in these areas are evident and are required for eligibility to register as a nurse in Nova Scotia.

Applications for admission are to be received before June 1st.

Degree Requirements

A student must obtain a minimum cumulative grade point average of 2.0 throughout the entire undergraduate programme. A student must accumulate a minimum of 77 credit hours and have successfully completed all compulsory classes, as well as the necessary number of elective classes. The degree must be completed within six years of commencing the nursing classes, although credit will be given for Arts and Science and Management classes that are up to ten years old by the date the degree is completed.

Grade Point Average Standards (GPA) - Prior Regulations

School regulations relating to GPA apply to students whose initial registration in the School was in the Fall of 1990 or earlier. Students entering in the Spring of 1991 and beyond will be governed by revised regulations found in the Faculty of Health Professions section of this calendar.

The grade point average system is described in the Faculty Regulations. A student must maintain a cumulative grade point average of 2.0 to progress from one year of the programme to the next. The GPA is calculated at the end of each academic year. For part time students the GPA is calculated when 30 credit hours of study are completed. All credits from Dalhousie to be used as credits toward the attainment of a nursing degree are used in the GPA calculation. Failure to meet the GPA requirements as printed in the School regulations in the Undergraduate Calendar or failure in a required class may result in the student being required to withdraw from the School. The passing grade for all nursing classes is a C grade.

Other Regulations

Students must submit proof of current registration as a nurse in Nova Scotia or their province or country of residence each year they are enrolled in nursing classes. All other regulations are as outlined in the BScN Basic stream in the University Calendar, including Immunization, Grades, and Supplemental Exams.

Normal Workload

The 77 credit hours of study may be completed over three academic years of full-time study with a normal yearly workload as follows: Year 1: 25 credit hours; Year 2: 26 credit hours; Year 3: 26 credit hours.

Course of Study

With the help of an academic advisor, each student is able to map out an individual course of study. An individual course of study may be affected by the actual classes given in an academic year as well as in which semester (Fall, Winter, Summer) they are given. Certain classes may have pre-requisites as noted in the class descriptions. Students are encouraged to complete most of the required non-nursing classes before starting nursing classes. N2230A and N2010A are pre-requisites for all nursing classes. Non-clinical nursing required or elective classes may be taken concurrently with N2230A by special permission of the class professor. Anatomy and Physiology are normally pre-, or co-requisites for N2230A. The course of study varies considerably when the student applies accepted transfer credits toward the degree programme. Transfer credit regulations are as outlined under the Arts and Science section of the University Calendar.

The required non-nursing classes are (credit hours in brackets): Anatomy 0101C (3), Physiology 1010R (6), Chemistry 1430R (6), Psychology 1000R (6), Sociology 1000R (6), Microbiology 1100A (3), Math 1060A/B (3). The nine credit hours of electives may be chosen from any Faculty and are to be at the 2000 level or above.

Required Nursing Classes

NURS 2010A Helping Relationships and Nursing (2)
NURS 2230A Advanced Concepts and Skills of Nursing Practice (4)
NURS 3020A Teaching and Learning and Nursing (2)
NURS 3030B Nursing Research (3)
NURS 3220A/B Family Nursing (4)
NURS 4010B Trends and Issues in Nursing (3)
NURS 4020A/B Advanced Skills in Helping Relationships and Interviewing (1)
NURS 4030A Leadership in Nursing Practice (3)
NURS 4200A Community Health Nursing: Theory and Practice I (4)
NURS 4230B Community Health Nursing: Theory and Practice II (4)

Human Sexuality Workshop
Nursing Electives (5)
The 5 credit hours of nursing electives are chosen from:
NURS 2020A Growth and Development and Nursing (2)
NURS 2040B Nutrition and Nursing (2) or
NURS 4800B Interdisciplinary Course in Human Nutrition (3)
NURS 3010A Pathophysiology and Nursing (2)
NURS 3200A Nursing the Adult/Elderly I (3)
NURS 3210A/B Nursing Parents and Newborn (3)
NURS 3230B Nursing the Adult/Elderly II (5)
NURS 3250B Clinical Nursing IV (3)
NURS 4210A/B Nursing the Child/Adolescent (3)
NURS 4220A/B Mental Health and Psychiatric Nursing (3)
or
Nursing and Interdisciplinary electives as offered each year.
Please refer to specific class descriptions.

Post RN students are not required to take N1010C (3), N2030B (2), N2200A (3), N2210B (4), N2220B (6), N3240B (3), and N4240B (5).

Class Descriptions

Required Non-nursing classes

Class descriptions for Chemistry 1430R, Anatomy 0101C, Physiology 1010R, Psychology 1000R, Sociology 1000R, Microbiology 1100A, Math 1060A/B and potential electives can be found in the calendar under specific departments/faculties.

Required Nursing Classes

NURS 1010C Introduction to Professional Nursing: 3 credit hours. Focuses on the development of professional nursing in the context of social and political climates with emphasis on nursing in Canada in the past, present and future. Major concepts and theories are introduced including the role of professional nursing.

Format: 3 lecture hours/week
Prerequisite: None for Basic students
Enrolment: Limited to 1st year Basic students

NURS 2010A Helping Relationships and Nursing: 2 credit hours. Introduces helping relationship theory involving the nurse and individual clients. The dynamics of therapeutic communication are addressed with an opportunity in a laboratory setting for the development of skills necessary to facilitate client exploration and understanding.

Format: 1 lecture and 2 laboratory hours/week
Prerequisite: N1010C, Anatomy 0101C, Physiology 1010R, Chemistry 1430R, Psychology 1000R, Sociology 1000R for Basic students; N2230A co- or pre-requisite for Post RN students. THIS COURSE, PLUS N2230A, IS PRE-REQUISITE TO ALL OTHER REQUIRED NURSING COURSES FOR POST RNS.
Enrolment: Consult department

NURS 2020A Growth and Development and Nursing: 2 credit hours. Examines concepts and theories of normal growth and development of the individual from conception to old age. Roles and developmental stages are analyzed in regards to clients' attaining/maintaining an optimal level of health.

Format: 2 lecture hours/week
Prerequisite: N1010C, Anatomy 0101C, Physiology 1010R, Chemistry 1430R, Psychology 1000R, Sociology 1000R, or with permission of the professor for Basic students; none for Post RN students.
Enrolment: Consult department

NURS 2030B Pharmacology and Nursing: 2 credit hours. Application of general principles of pharmacology to nursing practice. Content areas will include drug actions on body systems and drug actions in specific conditions, as well as potential side effects. Principles guiding the nurse in the administration of drugs are studied.

Format: 2 lecture hours/week or 1 lecture and 2 laboratory hours/week
Prerequisite: N1010C, Anatomy 0101C, Physiology 1010R, Chemistry 1430R, Psychology 1000R, Sociology 1000R, N2010A, N2020A, N2200A for Basic students.
Enrolment: Limited to 2nd year Basic students

NURS 2040B Nutrition and Nursing: 2 credit hours. Introduces the science of nutrition as it applies to nursing. Content is organized around nutritional needs during developmental stages and in situations of health and illness. Environmental factors which influence clients' nutritional status are examined with emphasis on nursing interventions which promote an optimal level of health.

Format: 2 lecture hours/week
Prerequisite: N1010C, Anatomy 0101C, Physiology 1010R, Chemistry 1430R, Psychology 1000R, Sociology 1000R, N2010A, N2020A, N2200A, or with permission of the professor for Basic students; none for Post RN students.
Enrolment: Consult department

NURS 2200A Concepts and Skills of Nursing Practice I: 3 credit hours. Focuses on the role of the nurse in helping the individual meet basic needs and attain/ maintain an optimal level of health. Nursing process is introduced and the assessment phase is covered in depth.

Format: 2 lecture and 2 laboratory hours/week
Prerequisite: N1010C, Anatomy 0101C, Physiology 1010R, Chemistry 1430R, Psychology 1000R, Sociology 1000R for Basic students.
Enrolment: Limited to 2nd year Basic students

NURS 2210B Concepts and Skills of Nursing Practice II: 4 credit hours. Focuses on the role of the nurse in helping the individual who is experiencing an altered ability to meet basic needs and attain/maintain an optimal level of health. Builds and extends directly on the content and theories discussed in N2200A. Assessment of diminished ability to neet basic needs caused by illness and/or hospitalization is also covered.

Format: 2 lecture and 4 laboratory hours/week or 2 lecture and 6 clinical hours/week
Prerequisites: N1010C, Anatomy 0101C, Physiology 1010R, Chemistry 1430R, Psychology 1000R, Sociology 1000R, N2010A, N2020A, N2200A for Basic students.
Enrolment: Limited to 2nd year Basic students

NURS 2220B Clinical Nursing I (Summer Session): 6 credit hours. A clinical nursing experience focusing on the care of the individual with a health problem, who has an altered ability to meet basic needs and attain/maintain an optimal level of health. Gives the students an opportunity to practice and consolidate concepts, theories and skills learned in previous classes.

Format: 40 clinical hours/week x 6 weeks
Prerequisites: N2010A, N2020A, N2030B, N2040B, N2200A, N2210B, Microbiology 1100A for Basic students.
Enrolment: Limited to 2nd year Basic students

NURS 2230A Advanced Concepts and Skills of Nursing Practice: 4 credit hours. Focuses on the development and the role of nursing as a profession through an examination of nursing and other theories relevant to nursing practice. Laboratory and clinical experience provides opportunity to practice comprehensive health assessment skills and study the relationship between theory and practice.

Format: 2 lecture, 2 laboratory and 3 clinical hours/week
Prerequisites: Registration as a nurse and Anatomy 0101C and Physiology 1010R co- or pre-requisite, or with instructor's consent. THIS COURSE, PLUS N2010A, IS PRE-REQUISITE TO ALL OTHER REQUIRED NURSING COURSES FOR POST RNS.
Enrolment: Consult department

NURS 3010A Pathophysiology and Nursing: 2 credit hours. Focuses on pathophysiological alterations from normal health. Manifestations of both acute and chronic illnesses are explored in terms of structural and functional changes from normal physiological functions.

Format: 2 lecture hours/week
Prerequisite: N2010A, N2020A, N2030B, N2040B, N2200A, N2210B, N2220B, Microbiology 1100A, Math 1060A/B. or with instructor's consent for Basic students; N2230A, N20a0A, or with instructor's consent for Post RN students.
Enrolment: Consult department

NURS 3020A Teaching and Learning and Nursing: 2 credit hours. Focuses on the role of the nurse as an educator. Principles and theories of teaching and learning are addressed to help clients acquire knowledge, skills and attitudes that enable them to attain/maintain an optimal level of health.

Format: 2 lecture hours/week
Prerequisite: N2010A, N2020A, N230B, N2040B, N2200A, N2210B, N2220B, Microbiology 1100A, Math 1060A/B for Basic students; N2230A, N2010A for Post RN students.
Enrolment: Consult department

NURS 3030B Nursing Research: 3 credit hours. Focuses on the application of the research process to nursing. Content areas include the logic and thought processes basic to research, research methodology, measurement techniques, ethical and legal implications of nursing research and analysis of the growing body of research based nursing knowledge.

Format: 2 lecture and 2 tutorial hours/week.
Prerequisite: N2010A, N2020A, N2030B, N2040B, N2200A, N2210B, N2220B, Microbiology 1100A, Math 1060A/B, or with instructor's consent for Basic students; N2230A, N2010A, Math 1060A/B, or with instructor's consent for Post RN students.
Enrolment: Consult department.

NURS 3200A Nursing the Adult/Elderly with a Health Problem: Theory and Practice: 3 credit hours. Focuses on family-centered nursing management of adult and elderly clients with short-term acute health problems. Nursing and other relevant theories are applied to the nursing process in the care of individuals. Clinical experiences are mainly on short term surgical units.

Format: 1 lecture and 6 clinical hours/week

Prerequisite: N2010A, N2020A, N2030B, N2040B, N2200A, N2210B, N2220B, Microbiology 1100A, Math 1060A/B for Basic students; N2230A, N2010A for Post RN students.

Enrolment: Consult department

NURS 3210A/B Nursing the Parents and Newborn: Theory and Practice: 3 credit hours. Examines the physiological, psychological and sociological determinants of the childbearing experience and the nurse's role with individuals and families in this phase of their development. Clinical experience involves the pre-natal, intra-partal and post-partal periods.

Format: 1 lecture and 6 clinical hours/week

Prerequisite: N2010A, N2020A, N2030B, N2040B, N2200A, N2210B, N2220B, Microbiology 1100A, Math 1060A/B for Basic students; N2230A, N2010A for Post RN students.

Enrolment: Consult department

NURS 3220A/B Family Nursing: Theory and Practice: 4 credit hours. Students use the nursing process in the care of the family unit. Examines nursing, cultural, sociological and psychological theories and concepts and their relationships to the development of nursing skills necessary for the provision of care to the family unit.

Format: 2 lecture and 6 clinical hours/week or 2 lecture hours/week, 2 laboratory hours/week and 3 clinical hours/week

Prerequisite: Successful completion of 2nd year for Basic students; N2230A for RN's.

NURS 3230B Nursing the Adult/Elderly with a Health Problem: Theory and Practice: 5 credit hours. Focuses on family-centered nursing management of adult and elderly clients with chronic health problems, of a medical nature. Emphasis is placed on theoretically based nursing strategies aimed at helping clients live with a chronic health problem.

Format: 2 lecture and 9 clinical hours/week

Prerequisite: N3010A, N3020A, N3200A for Basic students; N2230A, N2010A for Post RN students.

NURS 3240B Clinical Nursing II (Summer Session): 3 credit hours. Focuses on nursing care of ill adult/elderly clients with problems requiring medical/surgical interventions.

Format: 40 clinical hours/week x 3 weeks

Prerequisite: N3010A, N3020A, N3030B, N3200A, N3210A/B, N3220A/B, N3230B for Basic students.

Enrolment: Limited to 3rd year Basic students

NURS 3250B Clinical Nursing III (Summer Session): 3 credit hours. Focuses on nursing care of clients (individuals, families and aggregates) at various levels of health and illness. The experience offers the student an opportunity to promote health, prevent illness and provide care for the ill and facilitate rehabilitation in community settings. Clinical experiences are with formal health care agencies. Students are required to provide their own transportation and accommodations.

Format: 40 clinical hours/week x 3 weeks

Prerequisite: N3010A, N3020A, N3030B, N3200A, N3210A/B, N3220A/B, N3230B, N3240B for Basic students; N2230A, N2010A, N3220A/B for Post RN students.

Enrolment: Consult department

NURS 4010B Trends and Issues in Nursing: 3 credit hours. Provides the learner with opportunities to develop skills in analyzing contemporary issues in nursing and health care delivery systems that have impact on the profession of nursing. Students consider historical, present and future perspectives of specific issues in order to work toward resolution of issues.

Format: 2 lecture hours/week

Prerequisite: N4030A, N4200A, N4210A or 4220A, or with permission of the professor for Basic students; N2230A, N20a0A for Post RN students.

Enrolment: Consult department

NURS 4020A/B Advanced Skills in Helping Relationships and Interviewing: 1 credit hour. An advanced course in helping relationship theory involving a client population of individuals, families, and groups in a variety of clinical settings. Communication strategies for problem solving in complex health situations are addressed.

Format: 2 laboratory hours/week

Prerequisite: N2010A, N3010A, N3020A, N3030B, N3200A, N3210A/B, N3220A/B, N3230B, N3240B, N3250B, or with permission of the professor for Basic students; N2230A, N2010A for Post RN students.

Enrolment: Consult department

NURS 4030A Leadership in Nursing Practice: 3 credit hours. Focuses on the knowledge, skills and attitudes which facilitate leadership in nursing practice. Introduces theories, concepts and behaviours associated with leadership roles and explores them in relation to nursing.

Format: 2 lecture hours/week
Prerequisite: N3010A, N3020A, N3030B, N3200A, N3210A/B, N3220A/B, N3230B, N3240B, N3250B, or with permission of the professor for Basic students; N2230A, N2010A, or with permission of the professor for Post RN students.
Enrolment: Consult department

NURS 4200A Community Health Nursing: Theory and Practice I: 4 credit hours. An introduction to nursing and public health practice applied to the promotion and preservation of health, and the prevention of illness in client groups and communities. The philosophical basis, role, setting and functions of community health nursing are examined. Emphasis is on assessing and planning nursing interventions with communities and groups.

Format: 1 lecture, 1 tutorial and 7½ clinical hours/week
Prerequisite: N3010A, N3020A, N3030B, N3200A, N3210A/B, N3220A/B, N3230B, N3240B, N3250B for Basic students; N2230A, N2010A, N3220A/B, or with permission of the professor for Post RN students.
Enrolment: Consult department

NURS 4210A/B Nursing the Child/Adolescent with Health Problems: Theory and Practice: 3 credit hours. Focuses on a family-centered approach in the application of the nursing process to the care of children/adolescents with a health problem. Theories and concepts which help the student understand the impact of illness and hospitalization on the client are studied.

Format: 1 lecture and 6 clinical hours/week
Prerequisite: N3010A, N3020A, N3030B, N3200A, N3210A/B, N3220A/B, N3230B, N3240B, N3250B for Basic students; N2230A, N2010A, or with permission of the professor for Post RN students.
Enrolment: Consult department

NURS 4220A/B Mental Health and Psychiatric Nursing: Theory and Practice: 3 credit hours. Focuses on the nurse's role in working with clients (individuals and families) experiencing acute illness, and emotional concerns and disorders. Includes the concepts of mental illness, and psychiatric treatment and rehabilitation. Emphasis is placed on psychiatric nursing theories to promote communiction skills.

Format: 1 lecture and 6 clinical hours/week
Prerequisite: N3010A, N3020A, N3030B, N3200A, N3210A/B, N3220A/B, N3230B, N3240B, N3250B for Basic students; N2230A, N2010A, or with permission of the professor for Post RN students.
Enrolment: Consult department

NURS 4230B Community Health Nursing: Theory and Practice II: 4 credit hours. Builds on the content of Community Health Nursing I with a focus on intervention strategies and evaluation methodology for the practice of community health nursing with client groups and communities. Examines the development of the health care delivery system, its function and the forces affecting its future.

Format: 1 lecture, 1 tutorial and 7½ clinical hours/week
Prerequisite: N4030A, N4200A, N4210A or N4220A for Basic students; N2230A, N2010A, N3220A/B, N4200A, or with permission of the professor for Post RN students.
Enrolment: Consult Department

NURS 4240B Clinical Nursing IV: 5 credit hours. This senior clinical nursing class provides students with an opportunity to consolidate their nursing knowledge and skills with multiple clients as well as practice leadership skills learned in N4030A. Students may be able to choose a clinical setting based on their learning needs and special interest.

Format: 40 clinical hours/week x 5 weeks
Prerequisites: N4010B, N4020A/B, N4030A, N4200A, N4210A/B, N4220A/B, N4230B for Basic students.
Enrolment: Limited to 4th year Basic students

Human Sexuality Workshop: This is a required 15 hour non-credit workshop designed to provide students with an understanding of matters concerning human sexuality in a forum with members of Nursing, Medicine and Theology. The course is taught in the third and fourth years of the basic degree programme. Post RN students normally take the course during their final year of study.

Format: Consult department
Prerequisite: None
Enrolment: Consult department

Nursing Elective Classes

Basic students are required to complete 3 credit hours of nursing electives during their final year. Post RN students must complete 5 credit hours of nursing electives during their programme. NOT ALL NURSING ELECTIVES ARE OFFERED EVERY YEAR. Please consult the

School to ascertain the 1991-92 offerings. When resources allow, the following are offered:

NURS 4310B Advanced Clinical Decision Making in Nursing (3)

NURS 4320B Transcultural Nursing: 3 credit hours. Cultural factors affecting health, health services, practitioners and nursing care will be studied. Principles and tools of transcultural nursing care will be studied using simulated and real cross-cultural nursing situations.

Format: 3 lecture hours/week
Prerequisite: None
Enrolment: Limited to 40

NURS 4330A/B Self-Directed Learning Projects in Nursing: 3 credit hours. Students may carry out an independent study or project related to the theory or practice of nursing, under the direction of the faculty facilitator. Students will be encouraged to systematically identify, plan, execute and evaluate a learning project in nursing that is relevant to nursing practice.

Format: flexible lecture and laboratory hours
Prerequisite: None
Enrolment: Limited to Faculty available

NURS 4340B Death and Dying: Implications for Nursing and Other Health Professions (3)

NURS 4350B Rehabilitation Concepts Applies to Nursing Chronically Ill and Disabled Adults (3)

NURS 4360B Management: The Process in Health Care Agencies (3)

Interdisciplinary Nursing Elective Classes

NURS 4900B/PHAR 4950B/PHYT 3090B/HEED 2250B Interdisciplinary Course in Human Nutrition: 3 credit hours, normally spring term. The class is an interdisciplinary study of the basic principles of nutrition needs throughout the life cycle. Physiological, psychological, socio-economic, physical, educational and cultural determinants are explored to explain why the nutritional status of Canadians can vary and how this variation affects the development of chronic disease. Special emphasis is given to community nutrition in the Atlantic Region.

Format: 3 lecture hours/week
Prerequisite: Biology 1000 or with permission of the professor
Enrolment: Consult department

NURS 4900A ISSA 2060 An Interdisciplinary Approach to Gerontology (Social Perspectives): 3 credit hours. This is a multidisciplinary class in Gerontology with a focus on the presentation of historical and current research studies in the field of social gerontology, primarily from a Canadian perspective. This class represents the wide range of study which is reflected in most of the sciences and humanities.

Format: 3 lecture hours/week
Prerequisite: SSA 1000R, SSA 1050R; SSA 1100R; or SSA 1200R
Enrolment: Limited to 60

NURS 4910B An Interdisciplinary Approach to Gerontology (Health Perspectives): 3 credit hours. This multidisciplinary class in Gerontology focuses on the presentation of health issues and relevant research studies in the field of aging. Various health professionals working with this age group participate to emphasize the interdisciplinary nature of gerontology.

Format: 3 lecture hours/week
Prerequisite: None
Enrolment: Consult department

HLTH 3000B An Interdisciplinary Approach to Health Promotion: 3 credit hours. Intra- and interdisciplinary trends in the conceptualization, empirical investigation and practical implementation of health promotion will be examined. Students will consider historical, present and future perspectives of specific health promotion issues. Learners will have opportunities to develop skills in analyzing factors influencing the delivery of health promotion within the Canadian health care system. The contribution of different health professions to the study of health promotion will be assessed and the effectiveness of a teamwork approach will be evaluated.

Format: 2 lecture hours/week
Prerequisite: None
Enrolment: Consult department

Classes Offered by Other Faculties

Classes offered by other faculties may be found in the calendar of the respective faculties. The following are required classes in the BScN degree.

CHEM 1430R Introductory Chemistry and Biochemistry: 6 credit hours. Material in the first term is given by the Department of Chemistry and includes the fundamentals of general organic chemistry. In the second term medically relevant biochemistry is taught by the Department of Biochemistry.

Format: 3 lecture hours, 2 laboratory/tutorial hours

MICR 1100A: 3 credit hours. This class is given by the Department of Microbiology of the Faculty of Medicine to meet the needs of the students in the Faculty of Health Professions. Elementary bacteriology and immunology includes a study of the structure and physiology of microorganisms, the ways microorganisms cause disease in man

and the ways they affect man's well-being. Laboratory work provides experience in the cultivation, isolation and identification of microorganisms and demonstrates their various activities.
Format: 1 lecture hour, 2 laboratory hours

ANAT 0101C: 3 credit hours. This class is taught by the Department of Anatomy and is an introductory anatomy class for health professional students. The class uses a systems approach to examine the microscopic and gross anatomy of the human body.
Format: 2 lecture hours and laboratory TBA

PHYL 1010R: 6 credit hours. This class is taught by the Department of Physiology and is an introductory physiology class for health professional students. The functions of body organs and body systems and the integration of functions in the whole organism are studied.
Format: 2 lecture hours, 1-3 hour tutorial/ laboratory

Diploma Programme for Registered Nurses in Outpost and Community Health Nursing

The 15-month programme in Outpost and Community Health Nurisng prepares registered nurses for positions in Canadian outpost settings where nurses are the only resident health-care professionals. Instruction during the programme is highly individualized and clinically oriented. One academic year, extending over a period of approximately eight months, is spent at the University. This is followed by a 28-week, University-directed internship located in northern Canada. Students are admitted to the programme in September and in January. A shortened stream beginning in August is offered for nurses with a baccalaureate degree in nursing. Students spend one expanded term (approx. 16 weeks) at the University followed by a 21 week internship in Northern Canada. A diploma in Outpost and Community Health Nursing is awarded at the completion of the programme. Current graduates of the programme, who are admitted to the Dalhousie BScN programme for registered nurses, can complete the BScN programme in approximately 16 months.

Admission Requirements

(a) Nova Scotia Grade XII or equivalent;
(b) Current registration in a province or territory in Canada or recognized equivalent;
(c) At least one year of work experience as a registered nurse, recent acute-care hospital experience is desirable;
(d) Admission preference is given to nurses currently employed by Medical Services Branch, Health and Welfare Canada or the Government of the Northwest Territories. Other nurses are considered for admission if they agree to employment with Medical Services upon completion of the programme. All applications must be approved by the Medical Services or the Northwest Territories Government Education Leave Committee;

Fees and a living allowance are paid by the sponsoring agency to all students. In return, all students are committed to a period of employment within an outpost setting with the sponsoring agency after completion of the programme.

Course of Study for Outpost Nursing

First Year: at the University: NURS 0550A, NURS 0551B, NURS 0640B, NURS 0930A/B, NURS 0940A/B, NURS 0950A/B, NURS 0960A, NURS 4800B. HEED 1163A.

Internship: in northern Canada: NURS 0193A/B, NURS 0191A/B, NURS 0196A/B.

Students with baccalaureate degrees in nursing are exempted from NURS 0550, NURS 0551, NURS 0640, NURS 4800, NURS 0191 and possibly HEED 1163.

Classes Offered

All Outpost nursing classes (numbered NURS 0550 through HEED 1163A) are open only to students enrolled in the Outpost nursing programme.

NURS 0550A Community Health Nursing and Health Education: An introduction to theories, concepts, roles, tools and functions of community/public health nursing. Emphasis is on assessing, planning and evaluating nursing interventions with communities and groups in cross-cultural settings. Principles and theories of teaching and learning are examined with a focus on the nurse as an educator.
Format: Lectures, discussion, group exercises, term papers and presentations. 4 hours/week
Instructor: A. Vukic

NURS 0551B Family Nursing: An introductory class examining theories, concepts and nursing skills necessary for the provision of care to the family unit. Man's health needs throughout the lifespan are examined and the influences of social and cultural factors explored. Clinical practice includes supervised home visiting to a family in the community. It offers the student an opportunity to provide nursing care at various levels of health and illness as an individual and a member of the health team.

Format: Lectures, discussion, presentations. 3 hours/week, clinical 2 hours/week
Instructor: A. Vukic

NURS 0640B Mental Health Issues: Mental health, as influenced by cultural, environmental, and developmental factors is addressed. Communication, leadership and problem solving skills are fostered through seminar discussion. Crisis theories and resolutions are explored. Emphasis is on transcultural community health nursing.
Format: seminars, group exercises, lectures, discussions. 2 hours/week
Instructor: A. Vukic

NURS 0930A or B Clinical Medicine: Common medical problems are addressed in seminars, clinical teaching and guided experience at local hospitals under the direction of Outpost Nursing instructors and University Medical School personnel. Skill in taking histories and performing physical examinations is developed. Instruction and supervised practice in basic laboratory procedures is provided by the staff of the provincial pathology laboratory.
Instructors: R. May and R. Martin

NURS 0940A/B Clinical Obstetrics and Gynaecology: A programme of seminars, clinical teaching, and practical experience is conducted under the direction of Outpost Nursing instructors and University Medical School personnel. This class emphasizes the evaluation and care of the normal obstetrical patient and her family. Attention is given to common gynaecological problems. Supervised clinical experience is provided at the Grace Maternity Hospital. Discussion of common abnormal conditions and their recognition is included.
Instructor: R. Martin

NURS 0950A/B Clinical Paediatrics: Common paediatric problems are addressed in seminars, clinical teaching and guided experience at the IWK Children's under the direction of Outpost Nursing instructors and University Medical School personnel. Clinical placement in the office of a practicing paediatrician is arranged. Skill in taking histories and examining children is developed. Consideration is given to normal growth and development and the health supervision of the well child.
Instructor: R. May

NURS 0960A Clinical Surgery: This class is designed to prepare the student to care for patients with minor surgical problems and to recognize and provide emergency care for patients with more serious conditions. An introduction to commonly encountered eye problems is included. This class is directed by Outpost Nursing instructors and University Medical School personnel.
Instructors: R. May and R. Martin

NURS 0191A or B Field Experience in Community Health Nursing: A six week period of supervised field experience in community health nursing is arranged at a northern health centre for outpost nursing students during their internship. It is designed to enable the student to practice, in a northern setting, the community health teaching offered previously in the programme.

NURS 0193A or B Hospital Clinical Practicum: A 14-week period of supervised clinical experience at a small northern hospital is arranged for outpost nursing students during their internship. This experience builds on clinical teaching offered previously in the programme and provides opportunity for students to strengthen clinical skills and judgement in a practice setting. Student experience is directed by the medical staff of the hospital and an Outpost Nursing instructor. Assignment to medical-surgical, obstetrical, paediatric, and ambulatory patients is arranged. Students have opportunity, under supervision, to care for women during labour and to conduct normal deliveries.

NURS 0196A or B Nursing Station Field Experience: A six-week period of supervised field experience at a northern nursing station is arranged for outpost nursing students during their internship. This placement is designed to integrate teaching previously given during the programme and also to provide opportunity for students to become familiar with the types of administrative and supervisory roles which a nurse assumes in this setting. Problems relating to living and working within an unfamiliar culture and in a remote area are addressed.

HEED 1163A: See description in Health Education section of the calendar.

NURS 4800 Human Nutrition - Interdisciplinary Course: See above description under this class title.

Graduate Programme

For details of the Master's in Nursing programme, please consult the Faculty of Graduate Studies calendar.

School of Nursing Regulations

1. All students must observe the University Regulations and those of the Faculty of Health Professions.
2. As an academic requirement, students are assessed in each year on their aptitude and fitness for the profession of Nursing. A student who, in the judgement of the faculty, fails to attain a satisfactory standard

in this assessment may be required to withdraw from the School.

3. Students in the Baccalaureate Degree Programmes are responsible for (a) the purchase of uniforms including caps and shoes and a watch with a sweep hand or a digital watch with seconds display, (b) cost of accomodation and travel while on a clinical experience in areas outside the Metro area including the summer clinical. Additional expenses are incurred by the student in the Basic Baccalaureate Degree Programmes for field experience, books, first aid course, CPR course, graduation pin, equipment, and nurse registration examinations. Each student must also purchase name tags and crests from the University.
4. In view of the restriction on the size of classes in the School of Nursing, any applicant who has been advised of provisional acceptance must pay a tuition deposit of $100 within three weeks of such notification. This deposit is refundable if the applicant withdraws before July 1.
5. Also because of enrollment limits on class size, all part-time students who wish to change their status to full-time must present this request in writing to the Associate Director of Undergraduate Programmes by March 1.
6. Adviser-Advisee System. Each student is assigned to a faculty member from the academic advising committee to help them plan their academic programme, to approve class selection and to discuss academic progress or difficulties.
7. Students wishing to appeal a decision based on faculty regulations or decisions should follow the School Appeal Procedure. All students are given a copy of the Appeal Procedure and it is also available from the Admissions Coordinator or the Associate Director of Undergraduate Programs.

School of Occupational Therapy

Location: Forrest Building, Room 215
5869 University Avenue
Halifax, N.S. B3H 3J5
Telephone: (902) 494-8804

Director

Barbara J. O'Shea, DipP & OT (U Tor), BSc (Queen's), MS (Colorado State)

Associate Professors

Barbara J. O'Shea, DipP & OT (U Tor), BSc (Queen's), MS (Colorado State)
Susan A. Esdaile, B. App.Sc.(OT) (Victorian Institute of Colleges), M.Ed.(Prelim. Stud.) (Melbourne), Ph.D. (La Trobe)

Assistant Professors

Elizabeth B. Bell, DipP & OT (U Tor) BSc (Queen's), MS (Virginia Commonwealth)
Elizabeth Townsend, DipP & OT (U Tor), BSc (OT) (U Tor), MAdEd (St FX)

Lecturers

Susan E. Doble, BSc (OT) (Western), MS (Boston)
John W. Grainger, BSc, MSc (U Waterloo)
Mary H. Lloyd, DipOT (U Man), BSc (U Tor), MS (Colorado State)
Sandra E. Taylor, DipOT (Queen's)
Anita Unruh, B.Sc.(O.T.) (Western), M.S.W. (Carleton)

Fieldwork Co-ordinator

Elizabeth B. Bell, DipP & OT (U Tor) BSc (Queen's), MS (Virginia Commonwealth)

Provincial Fieldwork Co-ordinators

New Brunswick: Carol A. Morrison, BSc (OT) (McGill)
Newfoundland: Brenda Head, BSc (OT) (U Alberta)
Nova Scotia: Sandra Taylor, Dip OT (Queen's)
Prince Edward Island: Heather Cutcliffe, Dip OT (U.MAN)

Honourary Appointments

R. William Currie, BSA, MSc, PhD (U Man), Assistant Professor, Department of Anatomy, Faculty of Medicine
Maralynne Mitcham, PhD, OTR/L, FAOTA, Chair and Professor, Occupational Therapy Department, Associate Dean, School of Applied Rehabilitative and Supportive Sciences, College of Health Related Professions, Medical University of South Carolina

Alistair Munro, MD, FRCP(C), Professor and Head, Department of Psychiatry, Faculty of Medicine
Brenda Ryan, BA (St FX), MBA (Dal), Department of Health, Province of Nova Scotia
Jana Sawynok, BSc, MSc (Melb), PhD (Queen's), Associate Professor, Department of Pharmacology, Faculty of Medicine
Margaret Spindler, DipP & OT (U Tor), Director, Motivational Therapy, Nova Scotia Hospital
Joan Veranel, BSc (OT) (U Tor), Director, Occupational Therapy, IWK Hospital for Children

Regional Accredited Facilities Currently Participating in the Fieldwork Programme

Practising occupational therapists in the Atlantic region give their time and expertise to a structured practical fieldwork programme. The following facilities provide fieldwork placements for students:

New Brunswick
Bio-Engineering Institute, Fredericton
Centracare, Saint John
Chaleur Regional Hospital, Bathurst
Dr. Everett Chalmers Hospital, Fredericton
George Dumont Hospital, Moncton
Forest Hill Rehabilitation Centre, Fredericton
Miramichi Hospital, Newcastle
Moncton City Hospital, Moncton
Saint John Regional Hospital, Saint John
Worker's Rehabilitation Centre, Grand Bay

Newfoundland
Bay St. George Senior Citizens Home, Stephenville
Children's Rehabilitation Centre, St. John's
Health Sciences Centre, St. John's
St. Clare's Mercy Hospital, St. John's
St. John's Home Care Programme
Waterford Hospital, St. John's
Western Memorial Hospital, Corner Brook

Nova Scotia
Camp Hill Medical Centre, Halifax
Cape Breton Hospital, Sydney
Eastern Shore Memorial Hospital, Sheet Harbour
Fishermen's Memorial Hospital, Lunenburg
Harbour View Hospital, North Sydney
Izaak Walton Killam Hospital for Children, Halifax
Northwood Centre, Halifax
Nova Scotia Hospital, Dartmouth
Nova Scotia Rehabilitation Centre, Halifax
South Shore Memorial Hospital, Bridgewater
Valley Health Services, Waterville
Victoria General Hospital, Halifax

Prince Edward Island
Home Care O.T., Charlottetown
Division of Aging, O'Leary
King's County Memorial Hospital, Montague
Hillsborough Hospital, Charlottetown
Queen Elizabeth Hospital, Charlottetown

The School of Occupational Therapy is a regional school serving the four Atlantic Provinces. It provides the only occupational therapy educational programme in the region.

What is Occupational Therapy?

Occupational therapy is a health profession concerned with restoring optimal occupational function, both physical and mental, in disabled individuals from all age groups, and assisting them to resume a responsible role in the family and in society. "Occupation" refers to all activities in which someone (child or adult) engages, including self care, home and community activities, work-related activities, and social and leisure activities. The occupational therapist evaluates function through an analysis of human performance, relationships and situations. Occupational therapy engages a person in directed experiential learning and problem solving activities which are appropriate to the individual and which have been scientifically selected to accomplish a specific functional goal. The dysfunctional person is taught to set realistic goals. Through occupational therapy, the person is guided in the acquisition of adaptive skills which enable resumption of a productive and satisfying role in society. Occupational therapy services are best delivered in the community within the normal environment of the client, although initial treatment frequently occurs within a hospital or rehabilitation setting.

Career Opportunities

Occupational therapy practice is broad in scope and offers a wide range of career opportunities for both men and women as it is directed towards preventing or reducing the effects of dysfunction arising from any cause in any age group. Job opportunities exist for occupational therapists in acute and chronic care hospitals, mental retardation facilities, mental health centres, rehabilitation centres, nursing homes and community service agencies. Career opportunities for occupational therapists in schools, government, industry and correctional services are increasing. Occupational therapists may find careers in administration, education, research or consulting. Normally, graduate education would be required for careers in education and research.

Licence to Practice Occupational Therapy

In some provinces, occupational therapists require a licence to practice. The School of Occupational Therapy has no jurisdiction in matters relating to licencing. These functions are

entirely under the control of the provincial licencing body. Information on provincial licencing regulations may be obtained from: the Nova Scotia Association of Occupational Therapists, PO Box 3082 Halifax South, Halifax, Nova Scotia, B3J 3J1; the New Brunswick Association of Occupational Therapists, c/o Occupational Therapy Services, Workers Rehabilitation Centre, PO Box 3067, Station B, Saint John, New Brunswick, E2M 4X7; the Prince Edward Island Association of Occupational Therapists, PO Box 2227, Charlottetown, P.E.I., C1A 3N3; or the Newfoundland and Labrador Association of Occupational Therapists, PO Box 5423, St. John's, Newfoundland, A1C B1B.

Professional Associations

The Canadian Association of Occupational Therapists represents the professional interests of occupational therapists across Canada at the national level. Membership is encouraged for students and graduates. Information on membership may be obtained from the School or by writing directly to: the Canadian Association of Occupational Therapists, 110 Eglinton Ave. W., 3rd Floor, Toronto, Ontario, M4R 1A3. Internationally, occupational therapy standards of education and practice are set and maintained by the World Federation of Occupational Therapists.

Provincial professional organizations represent the interests of occupational therapists within a province. Further information may be obtained by writing directly to the organization. In the Atlantic region, these are: the Nova Scotia Society of Occupational Therapists, PO Box 3381, Halifax South, Halifax, Nova Scotia, B3J 3J1; the New Brunswick Association of Occupational Therapists, c/o Occupational Therapy Services, Workers Rehabilitation Centre, PO Box 3067, Station B, Saint John, New Brunswick, E2M 4X7; the Prince Edward Island Occupational Therapy Society, PO Box 2777, Charlottetown, Prince Edward Island, C1A 3N5; the Newfoundland & Labrador Association of Occupational Therapists, PO Box 5423, St. John's, Newfoundland, A1C B1B.

Programme Objectives

The Bachelor of Science programme in Occupational Therapy at Dalhousie University is designed to prepare generalist occupational therapists to be competent, responsible practitioners in the health care system of the Atlantic region. This honours baccalaureate programme has been designed to emphasize the theoretical foundation and scientific principles which form the basis for occupational therapy practice. With this knowledge base, the students are guided in the development of the skills required by entry level occupational therapists through fieldwork experiences integrated with the academic curriculum.

The School of Occupational Therapy at Dalhousie University is a regional school serving the four Atlantic Provinces. Since many practice settings in the Atlantic region are non-traditional in nature, the programme is designed to provide students with opportunities to apply and practice skills in a variety of settings and with a range of clients from different age and diagnostic groupings. With this background, graduates will be prepared to accept the challenge of expanding the occupational therapy services in the Atlantic region.

The educational approach used in the Occupational Therapy programme at Dalhousie University is one which encourages logical thinking, creative problem solving and the application of scientific principles to the occupational therapy clinical reasoning process. The medium of occupational therapy is presented as purposeful activity in its broadest context. Students have an opportunity to familiarize themselves with a wide range of activities and to become adept at analyzing activities for therapeutic use.

The emphasis on the scientific nature of Occupational Therapy practice culminates in the fourth year of the programme in which students are required to complete a clinical research project in conjunction with their final fieldwork placement. This project addresses a clinical research question pertinent to occupational therapy practice in Atlantic Canada.

The Bachelor of Science (Occupational Therapy) programme embraces the educational standards of the Canadian Association of Occupational Therapists (CAOT) and is fully accredited by that body. Graduates are eligible to take the Certification Examination offered by CAOT. Successful completion of this examination is required for membership in CAOT and for licensure to practice in provinces where practice is governed by statute.

Programme

The degree of Bachelor of Science (Occupational Therapy) requires a minimum of four years of University study. The programme of study requires at least one year of general science followed by three years of occupational therapy. Applicants must successfully complete the prescribed first year course of study in the College of Arts and Science at Dalhousie University or the equivalent programme at another recognized university before they can be considered for admission to the School of Occupational Therapy. These requirements must be completed by May in the year of expected admission to the School of Occupational Therapy.

Fieldwork

Fieldwork is the practical component of the educational programme completed in a variety of clinical facilities in which students have direct contact with patients/clients. It enables students to

integrate theoretical knowledge with practice and to demonstrate their knowledge and professional competence in actual practice situations.

All Fieldwork is completed in full-time blocks which are integrated with the academic programme. The block curriculum design permits full use of clinical facilities throughout the Atlantic region and allows students the opportunity of gaining experience in other parts of Canada as well. The second year of the programme has a normal academic schedule followed by four weeks of fieldwork. In the third and fourth year, a 6-week block and a 7-week block respectively of full-time clinical practice is included within the second academic term. During the 1237.5 fieldwork hours, each student must gain a balance of experience in the treatment of both physical and psychosocial occupational dysfunction. As far as possible, students are placed to gain experience in at least one specialized programme such as programmes for children or elderly people or programmes in the community. Students may be assigned to fieldwork placements in occupational therapy programmes in any of the four Atlantic provinces. Each student must complete at least one regional placement outside the Halifax/Dartmouth area and one 8-week placement outside the Atlantic region for which there is a $25.00 placement fee. Students are responsible for the placement fee and for travel and living costs associated with fieldwork. Placements will be arranged by the School and will be assigned on the basis of the student's previous fieldwork experience and level of preparation.

Fieldwork hours are completed in the following pattern, calculated on the basis of a 37.5 hour week:

- 4 weeks following Year 2: (OCCT 2221) 150.0 hours
- 6 weeks during Year 3: (OCCT 3319) 225.0 hours
- 8 weeks following Year 3: (OCCT 3321) 300.0 hours
- 8 weeks following Year 3 or Year 4: (OCCT 4420) 300.0 hours
- 7 weeks during Year 4: (as part of OCCT 4421R) 262.5 hours

TOTAL: 33 weeks; 1,237.5 hours

Application for Admission

Students considering occupational therapy should consult with the School of Occupational Therapy as soon as possible, preferably before their first registration in Arts and Science. In the College of Arts and Science at Dalhousie University the required first-year classes are: Psychology 1000 or 1010, Sociology 1000, 1050, 1100, or 1200, one elective (writing class), two classes from: Biology 1000, Chemistry 1100, 1110, 1120, or 1200, Physics 1100 or 1300. Although not a requirement for admission, it is recommended that students complete Statistics 1060 (or equivalent) prior to admission. Students who complete the equivalent prescribed first-year programme at any recognized university will be given equal consideration for transfer into the School of Occupational Therapy. Since enrolment in the programme is limited, applicants should note that admission is on a competitive basis with preference given to residents of the Atlantic Provinces. The provincial quota system currently allocates 9 positions to New Brunswick, 8 positions to Newfoundland, 16 positions to Nova Scotia, and 2 positions to Prince Edward Island. Selection is based on completion of prerequisites, academic achievement and personal suitability for occupational therapy. Selection procedures may require an interview and personal evaluation.

Application for admission to the School of Occupational Therapy for the final three years of study is completed through the Registrar's Office using the appropriate forms. An application fee is required of all applicants. Applications must be submitted prior to the closing date published in the Almanac at the front of this calendar but admissions decisions are not made until after this date. It is the responsibility of each applicant to ensure that her/his application file is complete.

A completed application for the School of Occupational Therapy consists of:

1. the completed application form
2. the application fee
3. an official transcript for high school matriculation studies including standing in Nova Scotia Grade XII level mathematics or the equivalent.
4. official transcripts for previous and current university level courses including the prescribed first year Arts and Science classes with interim marks for classes currently in progress. (On completion of studies in progress, applicants must arrange for a final official transcript to be forwarded to the Admissions Office.)
5. an autobiographical letter as described in the application information available from the Registrar's Office.
6. one confidential assessment by a class professor (as described in the application materials) sent by the professor to the Admissions Office.

Regulations

All students are required to observe the University and Faculty of Health Professions regulations as described in this calendar.

School of Occupational Therapy Regulations

School regulations relating to GPA apply to students whose initial registration in the School was in the Fall of 1990 or earlier. Students entering in the Fall of 1991 and beyond will be

governed by revised regulations found in the Faculty of Health Professions section of this calendar.

1. Workload

Students must have their programme approved by their faculty advisor in the School of Occupational Therapy before registration each year. In seeking this approval, students should have determined their eligibility for the proposed classes by having satisfied the prerequisites prescribed. The elective classes must be at the 2000 level or higher. Electives should be chosen to expand knowledge in an area of special interest of relevance to occupational therapy. Electives must be approved by Director or faculty advisor. Except in special circumstances, a student's workload must not exceed the maximum workload described in Course of Study below. A maximum course load is 36, 35, and 34 credit hours respectively in years II, III, and IV (see Faculty Regulation 13). For the purposes of residency and scholarship requirements 30 credit hours is considered a full course load in all years.

2. Methods of Assessment

Examinations may be oral, written, (closed or open book) or practical; under supervision or take-home. To gain credit toward a degree or diploma, students must appear at all examinations, prepare such essays, projects, exercises, reports, etc., as may be prescribed, attend the classes of their prescribed course to the satisfaction of the instructors and, in classes involving field or laboratory work, complete such work satisfactorily. Within two weeks of the first meeting of a class, each instructor shall make available a written description of the method of evaluation to be used in this class including information on the availability of a supplemental examination and the proportion of the grade to which such an examination would apply; within four weeks after the beginning of each term instructors must report to the Director the method of evaluation to be used in each class.

3. Examinations and Tests

Periods of approximately two weeks in the spring and one and one-half weeks in December are set aside for the scheduling of formal written examinations by the Registrar. Instructors wishing to have examinations scheduled by the Registrar for their classes must so inform the Registrar at the beginning of the 3rd week of classes in the fall and spring terms. Instructors may also arrange their own examinations at times and places of their choosing during the formal examination periods, with the understanding that in cases of conflict of examinations for an individual student, the Registrar's examination schedule takes priority. No tests or examinations covering the work of a whole term shall be held during the last two weeks of classes in the term. No tests may be held between the end of classes and the beginning of the official examination period. Students may contact the School for assistance if they are scheduled for more than two examinations on the same day.

4. Grade Requirements for Academic Classes

A student must obtain a grade of at least C (GPA 2.0) in each professional class for that class to be counted as a credit for the degree or as a prerequisite for another professional class. A student who earns a grade of less than C in a professional class but is otherwise still eligible to continue in the School of Occupational Therapy may be eligible for a supplemental examination (Regulation 17). If not the student must repeat that class to obtain a grade of C. Professional classes are all classes with Occupational Therapy numbers.

Passing grade in all non-professional required classes and electives is D. In grade point average calculations a D counts 1 point (see Faculty Regulation 10).

5. Grade Requirements of Fieldwork Classes

Fieldwork is graded on a Pass/Fail system. A student must obtain a passing grade in each fieldwork and placement in order to be eligible to proceed in the programme.

6. Incomplete

See Faculty Regulation 9.3.

7. GPA Requirements

In each year of study in the School of Occupational Therapy, a student must obtain a minimum grade point average of 2.00 and maintain a cumulative grade point average of 2.00 or higher (see Faculty Regulation 10).

8. Requirements for Promotion

Promotion each year is dependent upon satisfactory completion of fieldwork and achievement of academic requirements. The fieldwork requirement is satisfactory completion of OCCT 2221 for promotion to third year, and OCCT 3319 & 3321 for promotion to fourth year. Academic requirements for promotion each year are: (a) a cumulative GPA of 2.00 or higher, (b) a passing grade in all required classes.

9. Degree Requirements

To satisfy requirements for the Degree of Bachelor of Science in Occupational Therapy, a student must:

a) accumulate at least 135 credit hours (or the equivalent for a transfer student) including all prescribed classes, with a cumulative GPA of at least 2.00, and
b) satisfactorily complete 975 hours of fieldwork experience, additional to credit classes (OCCT 2221: 150 hours, OCCT 3319: 225 hours, OCCT 3321: 300 hours, OCCT 4420: 300 hours).

Note: Credit hours are accumulated only when a passing grade has been achieved for a credit class.

10. Duration of Studies

See Faculty Regulation 7.

11. Class Changes

Faculty Regulation 4 applies to all classes in Occupational Therapy with the exception of 4000 level B classes (except 4418B to which Regulation 4 applies).

The last day for adding all other 4000 level B classes in the School of Occupational Therapy is Friday of the first week following study break (see almanac).

The last day for withdrawing from all other 4000 level B classes in the School of Occupational Therapy without academic penalty is Friday of the second week following study break.

12. Degree with Honours Requirements

Academic and fieldwork requirements: All classes taken while registered in the School of Occupational Therapy will be included in the GPA calculation to determine honours standing. Honours standing is achieved by students who satisfy degree requirements with a cumulative GPA of 3.00 or higher, have no grade in an advanced class (2000 level and above) less than B- and achieve a grade of A in OCCT 4421R.

13. Degree with First Class Honours Requirements

Candidates must satisfy the residency requirements stated above. First class honours standing is achieved by students who satisfy degree requirements with a GPA of 3.70 or higher, have no grade in an advanced class (2000 level and above) less than B and achieve a grade of A in OCCT 4421R.

14. Required Withdrawal From the Programme

A student is normally required to withdraw from the programme if at the end of the academic year:

(a) less than 22 credit hours have been accumulated in that year for full time students or less than the number of credit hours in which the student was registered have been accumulated for part-time students or
(b) having accumulated sufficient credit hours the required cumulative GPA is not attained.

A student who fails a repeated class (academic or fieldwork) is normally required to withdraw from the programme.

15. Probation - New in 1991

A student with a sessional G.P.A. of 1.7-2.0 and, for full-time students, who has accumulated at least 25 credit hours during the year, may be granted probationary status at the discretion of the School Committee on Studies. A student granted probationary status must achieve a cumulative G.P.A. of 2.0 for the next year or be required to withdraw from the programme. A student whose grades fall within the probationary level a second time will be required to withdraw from the programme.

16. Appeals

A student wishing to appeal a decision based on School regulations, should in the first instance attempt to resolve the issue with the instructor(s) concerned in academic classes or with the fieldwork coordinator and preceptor in fieldwork classes before proceeding according to School Appeal Procedures, a copy of which may be obtained from the School Office. Briefly, such an appeal should be addressed to the Chairman of the School Committee on Studies and must clearly state the arguments and expectations of the petitioner (see Faculty Regulation 20).

17. Application for Readmission

Students who have been required to withdraw from the School of Occupational Therapy may apply for readmission after being out of the School for a minimum of one year. Since enrolment in the programme is strictly limited, students seeking readmission must convince the Admissions Committee that they merit a place of study in the School. Applicants seeking readmission to the School should follow procedures for application for admission previously outlined.

18. Voluntary Withdrawal

A student withdrawing from the University or intending to discontinue any class must have the approval of the Director of the School of Occupational Therapy and must also notify the Registrar. Students wishing to be readmitted to the programme after having withdrawn voluntarily must apply for readmission through the Registrar's Office. Due to limited enrolment of the programme, readmission cannot be guaranteed.

Course of Study

The prescribed first-year classes are listed in the section describing admission requirements.

Year 2: Anatomy 217R, Anatomy 210B, Physiology 2030R, Occupational Therapy 2207A, 2208A, 2210C, 2213B, 2215B, 2218C, 2221B and Statistics 1060A (if no previous credit in Statistics).

Year 3: Physiology 3110A, Occupational Therapy 3300R, 3302C, 3305B, 3306A, 3307C, 3308C, 3310A, 3318C, 3319B, 3321B, and one 3 credit hour elective in psychology or sociology.

Year 4: Occupational Therapy 4420A/B, 4400A, 4405R, 4406A, 4407A, 4408A 4421R, 6 credit hours of electives in Occupational Therapy, 6 credit hours of electives chosen from Arts and Science, Administrative Studies, Education, Health Professions, or Medicine.

All classes are completed during the normal academic year with the exception of Occupational Therapy 2221B, 3319B, 3321B, and 4420A/B which are completed during the summer months (see class descriptions).

Classes Offered

Required Classes

ANAT 217R Gross Anatomy: The gross structure of the human body is presented by anatomical regions through lectures, dissection, and laboratory study. The class, only open to occupational therapy students, includes practical sessions in surface and functional anatomy as well as lecture/demonstrations in radiological anatomy.

Credit Hours: 6
Instructor: Dr. G. Sinha
Format: Lecture, 3 hours; Lab, 4 hours
Enrolment: 36 (limited to occupational therapy students)

ANAT 210B Neuroanatomy: This class provides the student with an introduction to the organization and integration of the human nervous system.

Credit Hours: 3
Instructor: Dr. D. Hopkins
Format: Lecture, 2 hours; Lab, 2 hours
Corequisite: Anatomy 217R
Enrolment: 36 (limited to occupational therapy students)

STAT 1060A Introductory Statistics for Science and Health Science: For class description, please refer to the Statistics section of this calendar.

PHYL 2030R Human Physiology: The function of organs and body systems is presented through lectures and laboratory work. Special emphasis is on the integration of function in the whole organism.

Credit Hours: 6
Instructor: Dr. J. Dudar
Format: Lecture/Tutorial, 4 hours; Lab, 3 hours (B-term only)
Prerequisite: two classes from Biology, Physics, Chemistry
Co-requisite: Anatomy 217R
Enrolment: 36 (limited to occupational therapy students)

OCCT 2207A Occupatonal Function: Life Span Development: Theories and processes of physical, psychological and social development throughout the life cycle are presented and related to occupational development through the life span. Roles and developmental life tasks are analyzed and discussed with particular reference to facilitation of adaptive occupational function. The course will also focus on the significance of human development to the practice of occupational therapy.

Credit Hours: 3
Instructor: Staff
Format: Lecture, 3 hours
Prerequisite: Psychology 1000 or 1010, Sociology 1000, 1050, 1100 or 1200
Enrolment: 36 (limited to occupational therapy students)

OCCT 2208A Occupational Therapy: Theory and Process: The theoretical base of occupational therapy practice is addressed through the work of Mosey, Kielhofner and other theorists. Students gain an appreciation of the relationship between theory and practice through case problem solving and experiential activities using a generic human occupation frame of reference.

Credit Hours: 3
Instructor: B. O'Shea
Format: lecture 3 hours; lab 2 hours
Prerequisite: Sociology 1000, 1050, 1100 or 1200, Psychology 1000 or 1010
Enrolment: 36 (limited to occupational therapy students)

OCCT 2210C Kinesiology: The scientific approach to the analysis of human movement is introduced. Mechanical principles governing human motion and functional anatomy are discussed and inter-related to develop an understanding of the factors responsible for normal movement. Techniques of analysis of the physical components of activities using observation skills and motion analysis technology are also presented.

Credit Hours: 2
Instructor: J. Grainger
Format: lecture/lab, 2 hours

Corequisite: Anatomy 217R
Enrolment: 36 (limited to occupational therapy students)

OCCT 2213B Occupations - Analysis, Therapeutic Selection and Adaptation: The medium of occupational therapy intervention is activity, defined in its broadest concept. The role of activity in accomplishing life tasks, satisfying physical and emotional needs and restoring physical and mental occupational health is explored. Through independent learning modules and directed laboratory experience, students analyze a range of activities. Analysis of the physical, cognitive, perceptual and psychosocial demands of an activity are related to the therapeutic selection and adaptation of activity to meet defined client goals.
Credit Hours: 3
Instructor: Staff
Format: lecture/lab, 4 hours
Prerequisite: OCCT 2208A
Corequisite: OCCT 2210C, Anat 217R
Enrolment: 36 (limited to occupational therapy students)

OCCT 2215B Functional Measurement and Evaluation: Course focuses on functional measurement and evaluation of human occupation. Measurement theory concepts of standardization, usability, reliability and validity are examined in relation to procedures currently used in occupational therapy as well as to the construction and validation of new procedures. The process of functional measurement and evaluation of human occupation is related to information gathering, goal setting, test selection, planning, administration, scoring, analyzing and interpreting results, and communicating results appropriately and ethically. Self-directed learning is facilitated using an introductory research format to apply concepts and issues to the analysis of a chosen procedure.
Credit Hours: 3
Instructor: Staff
Format: seminar/lab, 5 hours
Prerequisite: Stats 1060A, Psychology 1000 or 1010, OCCT 2208A
Corequisite: OCCT 2210C
Enrolment: 36 (limited to occupational therapy students)

OCCT 2218C Introduction to Clinical Practice: The professional skills and ethics fundamental to the practice of occupational therapy are introduced by means of seminar and practical experience. Both dyadic and group therapeutic interaction are examined using communication skills in a variety of professional relationships. Other clinical practice skills such as professional behaviour, interviewing, and the application of the occupational therapy clinical reasoning process are also taught. Brief field experiences in clinical occupational therapy programmes augment didactic and experiential classroom instruction. These skills are applied during Fieldwork: Level 1.
Credit Hours: 4
Instructor: Staff
Format: seminar/practical, 2 hours
Corequisite: OCCT 2207A, OCCT 2208A
Enrolment: 36 (limited to occupational therapy students)

OCCT 2221B Fieldwork I: This initial four week field experience in an accredited setting in the Atlantic region introduces the student to occupational therapy practice environments. Here, under the on-going direction of their clinical preceptor, students begin to observe and learn professional skills and patterns of behaviour. They practice specific clinical skills with clients in harmony with the stated clinical learning objectives.
Credit Hours: 0
Co-requisite: all other prescribed second year classes except Stats 1060A
Enrolment: 36

Physiology 3110A Neurophysiology: The student is provided with the principles of neurophysiology. Current concepts of the organization and function of the mammalian nervous system are surveyed.
Credit Hours: 3
Instructor: D. Rasmussen
Format: lecture/tutorial, 5 hours
Prerequisites: Physiology 2030R, Anatomy 210B
Enrolment: 36

OCCT 3300R Medical and Surgical Conditions: Physicians and surgeons present the etiology, pathophysiology and medical management of medical and surgical conditions frequently encountered in practice by occupational therapists. Musculoskeletal, neurological, rheumatic, respiratory, cardiac and general medical conditions are covered. Specific management strategies relevant to different age groups are presented. Rehabilitation management of residual dysfunction is discussed in relation to the team role of the occupational therapist.
Credit Hours: 6
Instructor: Staff
Format: Lecture
Prerequisites: Anatomy 217R, 210B, Physiology 2030R, OCCT 2210C
Corequisite: Physiology 3110B
Enrolment: 36

OCCT 3302C Mental Disorders: (OCCT 3302C replaces OCCT 2201B and OCCT 3301A) This course provides an overview of the field of psychiatry and mental disorders. Students learn about legal and ethical guidelines for psychiatric diagnosis and treatment, and about the classification, epidemiology, multiple causation and assessment of mental disorders. The etiology,

symptoms, behaviour, functional problems, treatment, management and prognosis of a variety of mental disorders occurring in persons of all ages including children, adolescents, adults and the elderly are reviewed. The management of mental disorders in those with developmental disabilities and those with chronic mental disorders is discussed. Other management issues such as indications for individual or group, institutional or community treatment are considered.

Credit Hours: 5
Instructor: Staff
Format: Lecture, 3 hours
Prerequisites: Psychology 1000 or 1010, OCCT 2207A
Enrolment: 36

OCCT 3305B Therapeutic Procedures - Biomechanical: The principles and techniques of biomechanical analysis are applied to the development of joint protection programmes and programmes to increase joint mobility, muscle strength and endurance in conditions which result in musculoskeletal dysfunction. Mechanical principles are applied to the adaptation of equipment and procedures to achieve maximum restoration of function. Graduated work conditioning programmes are discussed. Biofeedback is presented as an adjunct to therapeutic programmes.

Credit Hours: 2
Instructor: Staff
Format: Lecture/Lab 4 hours
Prerequisites: Anatomy 217R, Physiology 2030R, OCCT 2200A, OCCT 2207A, OCCT 2208A, OCCT 2210C, OCCT 2213B, OCCT 2215B, OCCT 2220C
Corequisite: OCCT 3300R
Enrolment: 36

OCCT 3306A Therapeutic Procedures - Rehabilitative: The theory and principles of rehabilitation are presented and applied to the management of temporary and permanent disability. Evaluation tools used include functional assessment, vocational and pre-vocational testing and environmental accessibility evaluation. The principle of adaptation applied to performance, equipment, and environment is integrated with the problem solving approach in planning programmes to achieve maximum function at home, at work, at school, and in the community.

Credit Hours: 2
Instructor: Staff
Format: Lecture/Lab, 4 hours
Prerequisites: Anatomy 217R, Physiology 2030R, OCCT 2200A, OCCT 2207A, OCCT 2208A, OCCT 2210C, OCCT 2213B, OCCT 2215B, OCCT 2220C
Corequisites: OCCT 3300R, OCCT 3302C
Enrolment: 36

OCCT 3307C Therapeutic Procedures - Psychosocial: This course is organized into two major sections. In the first section, major psychosocial issues, such as change, loss of meaning, and feelings of incompetence, are discussed in relation to persons whose psychosocial dysfunction stems from psychiatric, developmental, or physical problems. In the second section, selected theoretical frames of reference are discussed. Evaluation tools and treatment strategies are analyzed and applied to persons whose dysfunction is primarily psychiatric in nature. Students will practice identifying problems and planning individual and group treatment programmes which will be designed to restore optimum psychosocial functioning at home, at work, and in the community, for clients at various stages of the life cycle.

Credit Hours: 4
Instructor: S. Doble
Format: Lecture/Lab, 3
Prerequisite: OCCT 2207A, OCCT 2208A, OCCT 2220C, OCCT 2213B, OCCT 2215B
Co-requisite: OCCT 3302C
Enrolment: 36

OCCT 3308C Therapeutic Procedures - Neurodevelopmental: Current theories of the neurodevelopmental approach to the remediation of dysfunction resulting from neurological damage are presented. Theoretical constructs are applied to the development of occupational therapy programmes for clients with congenital, neonatal and acquired neurological defects. Evaluation tools and treatment strategies appropriate for neurological dysfunction are presented and practiced. Among the current theorists discussed are Ayres, Bobath, Brunnstrom and Rood.

Credit Hours: 3
Instructor: Staff
Format: Lecture, 3 hours
Prerequisite: Anatomy 217R, 210B, Physiology 2030R, OCCT 2200A, OCCT 2207A, OCCT 2208A, OCCT 2220C, OCCT 2213B, OCCT 2215B
Co-requisites: Physiology 3110B, OCCT 3300R
Enrolment: 36

OCCT 3310A Rehabilitation Technology: This class addresses primarily three areas of rehabilitation technology, namely orthotics, prosthetics and the use of computerized technical aids in occupational therapy. The principles and current theories of orthotic and prosthetic management of upper and lower limb problems are presented along with laboratory experience in design and construction of static and dynamic orthoses. Technical aids used in occupational therapy range from simple therapeutic computer applications to computerized environmental controls and communication aids. Emphasis is on

problem analysis and design of simple devices and evaluation and selection of technology to solve occupational problems.

Credit Hours: 3
Instructor: Staff
Format: lecture/lab, 6 hours
Prerequisites: Anatomy 217R, Physiology 2030R, OCCT 2208A, OCCT 2210C, OCCT 2213B, OCCT 2215B, OCCT 2218C
Co-requisites: OCCT 3300R, OCCT 3305A, OCCT 3306A

OCCT 3318C Clinical Practice: This course expands on the clinical skills studied in OCCT 2220C and Fieldwork I to include an in-depth perspective of family dynamics pertinent to occupational therapists and a broad understanding of leadership, co-leadership, group dynamics, programme planning for groups, and analysis of group process.

Credit hours: 4
Instructor: Staff
Format: lecture/practical, 2 hours
Prerequisites: All second year classes
Co-requisites: All third year classes except OCCT 3319B and OCCT 3321B
Enrolment: 36

OCCT 3319B Fieldwork II: This six week field experience progresses the development of students' occupational therapy skills. Students continue to develop skills and patters of behaviour and begin to develop role functions through modelling on the behaviours of their preceptor. Students progress in developing their clinical reasoning skills in the context of client-centred problem solving with on-going coaching and monitoring by the preceptor.

Credit Hours: 0
Co-requisites: All third year classes except elective and OCCT 3321B
Enrolment: 36

OCCT 3321B Fieldwork III: In this eight week regional field experience, students assume partial responsibility for a small caseload with regular coaching by their preceptors. Experience is obtained in applying therapeutic principles to clinical problems. Student continue to develop skills and patterns of behaviour and begin to acquire competence in the role of occupational therapist. Students at this level complete a community project that enables the students to explore the community beyond the practice setting.

Credit Hours: 0
Co-requisites: All third year classes except elective
Enrolment: 36

OCCT 4400A Pharmacology: This class covers the effects, side effects, indications and contraindications of major classes of drugs used in selected medical and psychiatric conditions. The issue of compliance is discussed.

Credit Hours: 1
Instructor: Staff
Format: Lecture, 1 hour
Prerequisite: Physiology 3110B, OCCT 3300R, OCCT 3301A
Enrolment: 33

OCCT 4405R Therapeutic Programme Design: Therapeutic programmes are designed within the framework of current theoretical models of occupational therapy practice. Case study methods are used to apply programme design principles to programme planning for clients at varying stages within the life cycle and with problems arising from biological or psychosocial causes. Development of evaluation methods to provide measures of progress and goal attainment is discussed. Topics of needs analysis and cost benefit analysis of programmes are included.

Credit Hours: 6
Instructor: S. Doble
Format: Lecture/case study, 3 hours
Prerequisites: All third year classes
Enrolment: 33

OCCT 4406A Community Occupational Therapy: The roles and functions of occupational therapists in schools, industry, community health care programmes and social services agencies are explored. Consultant, programme director, and direct service provider are community practice roles explored in relation to providing occupational therapy programmes for populations at risk as well as for those with identified dysfunction. Strategies for effective communication with government and social service agencies are addressed.

Credit Hours: 3
Instructor: Staff
Format: Lecture, 4 hours
Prerequisites: All third year classes
Enrolment: 33

OCCT 4407A Scientific Inquiry in Occupational Therapy: Basic research methodology and its application to occupational therapy practice are discussed. Emphasis is on treatment evaluation and clinical investigations based on scientific principles. Students learn to design clinical recording methods to facilitate analysis of treatment effects. Critical analysis and interpretation of research literature is included.

Credit Hours: 3
Instructor: J. Grainger
Format: Lecture, 3 hours
Prerequisites: Stats 1060A, OCCT 3321B
Enrolment: 33

OCCT 4408A Supervision and Management: The development and structure of the health care system and legal and ethical issues are explored in relation to their influence on the management and practice of occupational therapy. The concept and elements of the management cycle are taught with strong emphasis on the importance of effective management of human resources. Credit Hours: 3
Instructor: Staff
Format: Lecture, 3 hours
Prerequisite: OCCT 3321B
Enrolment: 33

OCCT 4420A/B Fieldwork IV: Eight weeks are spent in practice under professional direction. Students develop competence in applying theoretical knowledge and clinical skills to identification and definition of client problems, planning and conducting treatment programmes and measuring goal attainment. Under supervision, students assume responsibility for a caseload of approximately 75% of that of an entry level therapist. Opportunities for involvement in community health care programmes are included. This class would normally be completed in the summer preceding the fourth year.
Credit Hours: 0
Prerequisite: OCCT 3321B
Enrolment: 36

OCCT 4421R Independent Study and Advanced Clinical Practice: Students complete a scientific study of an approved topic under the direction of an assigned tutor. Topics must be relevant to current occupational therapy practice. Seven weeks of fieldwork experience relevant to the topic of study are used to increase knowledge and experience in the area and allow collection of data pertinent to the study. A seminar presentation and typewritten report or journal article are required.
Credit Hours: 6
Instructor: J. Grainger
Prerequisites: Stats 1060A, all third year classes
Corequisites: OCCT 4405R, OCCT 4406A, OCCT 4407A
Enrolment: 33

Occupational Therapy Electives

OCCT 4412B Advanced Neurodevelopmental and Sensory Integration Therapy: An in-depth analysis of advanced theories and techniques of neurodevelopmental and sensory integration therapy. Experience in applying these therapeutic procedures to clinical problems is gained in laboratory sessions and through individual clinical tutoring.
Credit Hours: 3
Instructor: Staff
Prerequisites: Anatomy 210B, Physiology 3110A, OCCT 3308C and OCCT 3321B

OCCT 4416B Vocational Rehabilitation: The role of the occupational therapist in vocational rehabilitation is explored. Job analyses, pre-vocational skills exploration and evaluation, job sample design and evaluation, situational assessment and work adjustment programmes are major topics. Work related aptitude testing and career counselling methods are discussed in relation to individuals experiencing physical, cognitive and emotional dysfunctions. The use of work information indexes and relevant community resources is emphasized.
Credit Hours: 3
Instructor: Staff
Prerequisites: OCCT 3305A, OCCT 3306A, OCCT 3321B

OCCT 4425B/4426B/4427B Directed Study in Occupational Therapy: In this course students may individually or in small groups explore a particular topic within occupational therapy under the direction of a faculty member. The topic and requirements for the class are jointly decided by the students and the professor involved. An outline of the objectives and evaluation methods for the class must be approved by the Committee on Studies before class work begins. A paper or presentation prepared for this class may not be submitted for credit in any other class.
Credit Hours: 3
Instructor: Staff
Prerequisite: Permission of Committee on Studies

OCCT 4417A/HEED 4498A/LHS 4498A/NURS 4900A/PHARM 4960A/PHSE 4498A/ PHYT 4300A/SOSA 2060A Interdisciplinary Approach to Gerontology (Social Perspectives): See NURS 4900A for description.

OCCT 4418B/HEED 4499B/LHS 4499B/NURS 4910B/PHAR 4970B/PHSE 4499B/PHYT 4301B Interdisciplinary Approach to Gerontology (Health Perspectives): See NURS 4910B for description.

Health Professions Electives
HLTH 3000B: Intra- and interdisciplinary trends in the conceptualization, empirical investigation and practical implementation of health promotion will be examined. Students will consider historical, present and future perspectives of specific health promotion issues. Learners will have opportunities to develop skills in analyzing factors influencing the delivery of health promotion within the Canadian health care system. The contribution of different health professions to the study of health promotion will be assessed and the effectiveness of a teamwork approach will be evaluated.

College of Pharmacy

Location: George A. Burbidge Building
5968 College Street
Halifax, N.S. B3H 3J5
Telephone: (902) 494-2378

Academic Staff, 1991-92

R. Frank Chandler, BSc Pharm, MSc (Alta.), PhD (Syd.), Director and Professor

Emeritus Professors

J. Gordon Duff, BSP, MSc (Sask.), PhD (Fla.)

Professors

R. Frank Chandler, BSc Pharm, MSc (Alta.), PhD (Syd.), Director and Professor
Michael Mezei, Dipl. Pharm. (Bud.), PhD (Oregon State)
Ingrida S. Sketris, BSc (Pharm.) (Tor.), PharmD (Minn.), MPA (Dal)
David K. Yung, BA, BSP, MSc (Sask.), PhD (Alta.)

Associate Professors

Isaac Abraham, BPharm, MPharm (UST Ksl.), PhD (Neb.)
Patrick S. Farmer, BSP, MSc (Sask.), PhD (Portsmouth)
Mary E. MacCara, BSc (Pharm.), (Dal), PharmD (Minn.)
Pollen K.F. Yeung, BSc (Pharm.), MSc (Man.), PhD (Sask.)

Assistant Professors

E.I. Butler, BSc (Chem), MSc (Chem), PhD (Colloid Chem) (Bp)
Judith L. Glennie, BSc Phm (Tor), PharmD (Wayne State)
Anne Marie Whelan, BSc (Pharm.), (Dal), PharmD (MUSC)

Lecturers

Margaret L. Ackman BSc (Pharm) (Dal), PhC
Beth Wilson, BSc (Pharm) (Dal), PhC

Externship Administrator

Kathleen A. Shipp, BSc (Pharm) (Dal), PhC

Sessional Lecturers

Susan Beresford, BSc (Pharm) (Dal), PhC
Deborah Burch, BSc (Pharm) (Dal), MBA (Dal)
Bertha E. Etter, BSc (Pharm) (Dal), PhC
Brenda McBean Cochran, BSP (Sask.)
Donald C. Murray, BA (Mount Allison), LLB (Dal)
L. Patrick King, BEd (UPEI), MBA (Dal)
William A. Parker, BSc (Pharm), PharmD (Minn.), MBA (Dal), PhC
Nadine Wentzell, BSc (Pharm) (Dal), PhC

Honorary Appointments

Derek W. Jones, BSc, PhD (Birm.), FICeram, CChem, FRSC(UK), FADM; Honorary Professor, College of Pharmacy; Professor and Head, Division of Dental Biomaterials Science, Faculty of Dentistry
Michael A. Quilliam, BSc (Honors), PhD (Man); Honorary Adjunct Associate Professor, College of Pharmacy; Associate Research Officer, Atlantic Research Laboratory, NRC.
P. Timothy Pollock, BSc, MD, PhD (Western), Staff Physician, Department of Internal Medicine, Victoria General Hospital

Special Lecturers

Dawn M. Frail, BSc (Pharm) (Dal), MSc (Dal), PhC
B. Dillman, BSc (Pharm) (Dal)
Vincent Heighton, Pharm Dip BSc (Dal) PhC
Ann Hiltz, BSc (Pharm) (Dal), PhC
Bonnie Salsman, BSc (Pharm) (Dal), PhC
Roy Steeves, BSc (Pharm) (Dal), PharmD (Fla.), PhC
Wenda MacDonald, BSc (Dal), PhD (Dal), Nova Scotia Commission on Drug Dependency
C. Brian Tuttle, BSc (Pharm.) (Dal), MSc (Tor.), PhC
Donna Wheeler-Usher, BSc (Pharm.) (Dal), MSc (Pharm.) (Oregon State)

Preceptors (1990)

The pharmacist preceptors listed below gave their time and expertise to a structured practical training programme. The programme is administered by the College with the support of the Pharmacy Licencing Bodies in the Maritimes. It requires the third year students to demonstrate their knowledge and professional competency in actual practice situations in community and hospital pharmacy.

Community Pharmacists
Nova Scotia
Charlotte Abbott
Odarka Andrusyshyn
Peter Bakes
Terrance Barrett
Lillian Berry
Shirley Cameron
Stephen Chernin
Margo Corkum
Reg Dalrymple
Lorie Dickey
Sheila Donovan
John Dudar
Junelle Gray
Carolyn Hatcher
Errol Jamieson
Sharon Johns
Marion Kimbull
Alan Kyte
Kim Lam
Bernie Landry

Eileen L. A. Leahey
Kathy MacDermid
Alison MacDonald
Janet MacDonnell
Ian R. MacKeigan
Anita MacKenzie
Alex MacKinnon
Anita MacLean
John McNeil
Denise McPhee
J. R. McQuinn
Michael A. Mercer
Earl Morgan
William Parker
Roberta Paualyshyn
Terrence Ramsey
Byron G. Sarson
Pinky Vinita Shaima
Larry Shipp
Rick Theriault
Malcolm Uhlman
Susan Wedlake
Derek Wentzell
Alexandra Wilson

Community Pharmacists
New Brunswick
Mike Duffy
Faye Hachey
David Henry
Mary Ellen Jackson
Deborah Lacey
Charline Lavigne
Linda LeMesurier
Larry Orchard
Lucille Pelletier
Catherine Purvis
Jacques Richard
Judith Seymour

Community Pharmacists
P.E.I.
Nella Auld
Susanne Essensa
Andrew MacIntosh
Roy Stetson
Andrea Tweel

Hospital Pharmacists
Nova Scotia
Carol Balcom
Shelagh Campbell-Palmer
Nancy Carr
Sharon Conrad
Michelle Crowe
Sandra Dares
Mary Doig
Karen Gullivan
Claudia Harding
George Hatcher
Pauline Hingston
Melanie Holmes
John Hughes
Theresa Johnstone
Geraldine Kearns
Marjorie Keith
Kim Kelly
Jennifer Lovierison
Kelly Ann MacIsaac
Shelley Mann
Tom Mariatt
Hugh McGinn
Georgie McNeil
Judy McPhee
Jill Mosher
Terri Nagle
Joseph Napke
Cindy Offman
Donna O'Leary
Susan Pierce
Jeanne Ramsay
Shelley Richard
Iain Smith
Karen H. Smith
Emily Somers
Lynn Stienbury
Kathryn Walker
Daniel Wright

Hospital Pharmacists
New Brunswick
Diane Baldwin
Alan Cameron
Leonard Cassidy
Ann Forbes
Jacqueline Jackson
Irene Kerr
Marilyn Lewis
Gary Meek
Marie Pennock
Jennifer Saverteis
Darlene Smith
Roy Steeves
Diane Strong
Moira Wilson

Hospital Pharmacists
P.E.I.
Bill Doucette
Valerie Leqault
Beverly Martin
Jim Thorkelson

Clinical Clerkship

The pharmacists listed below have given their time and expertise to the Clinical Clerkship during 1990. During the Clerkship the fourth year students attend conferences and clinical drug rounds at participating hospitals and learn to apply clinical pharmacy principles.

Camp Hill Hospital
Iain Smith
Claudia Hardy
Geri Kearns
Bryan Davis

Cindy Offman
Jennifer Lowerson
Brian Tuttle
Donna Wheeler-Usher
Bonnie Salsman

Canadian Forces Hospital(Stadacona)
Don Rusnak
Rose Dugandzic
Tom Mariatt

Grace Maternity Hospital
Anne Yuill
Melanie Holmes
Shelly Richard

Halifax Infirmary
Gail Tuttle
Anne Gillis
Lynn Steinberg
Terri Nagle
Daniel Wright

Isaac Walton Killam Hospital for Children
Dr. Judith Glennie
Barbara McCully
Catherine Rooney
Shelly Mann

Nova Scotia Hospital
Catherine Bennett
Brian Dillman
Nancy Harris

Saint John Regional Hospital
Joy Steeves
Deborah Burgher
Diane Baldwin

Valley Health Services
Nancy Lawrence
Dennis Leith
Michelagh Campbell-Palmer

Victoria General Hospital
Anne Bishop
Bob MacDiarmid
Judy McPhee
Jill Bulman
Emily Somers
Lorraine Wallbank
Margaret Willan

Yarmouth Hospital
Roberta Baker
Julie Lemieque
Lissy Montgomery
Stephanie Oldfield
Luza Saulnier

Sydney City Hospital
Karen Gallivan

Cape Breton Hospital
Sharon Sobol

South Shore Regional Hospital
Carol-Ann Gray
Suzanne DeLong

History

Formal pharmacy education in the Maritime provinces began in 1908, with evening classes in pharmacy and chemistry conducted in the Nova Scotia Technical College. Success of these classes encouraged the Nova Scotia Pharmaceutical Society to establish the Nova Scotia College of Pharmacy in 1911. The College was affiliated with Dalhousie University in 1912.

The New Brunswick Pharmaceutical Society and the Prince Edward Island Pharmaceutical Association were admitted to affiliation with the College in 1917 and 1950, respectively. With the affiliation of the former society, the College was renamed the Maritime College of Pharmacy.

In 1961, the Maritime College of Pharmacy was admitted into Dalhousie University as the College of Pharmacy, a constituent part of the new Faculty of Health Professions. A four year programme leading to the degree of Bachelor of Science in Pharmacy (BScPharm.) was introduced. The undergraduate programme, which admits 66 students into the first year, has a patient-oriented curriculum in which clinical pharmacy is integrated with the pharmaceutical sciences.

In 1966, a Master's programme was established, followed by a Doctor of Philosophy programme in 1977. More information on the graduate programme may be obtained from the Faculty of Graduate Studies Calendar.

In 1972, a twelve month pharmacy residency programme was initiated by Camp Hill Hospital in cooperation with the College of Pharmacy. Programmes were initiated at the Halifax Infirmary in 1974, at the Victoria General Hospital in 1981 and at the Saint John Regional Hospital in 1982. The programmes orient the resident to various aspects of institutionalized health care with emphasis placed on drug therapy in patient care. They provide an opportunity for the residents to use professional judgement in evaluating drug information, drug therapy and in communicating with members of the health professions and with patients. A certificate is issued to candidates successfully completing the pharmacy residency programme. Programmes at the Camp Hill Hospital, the Halifax Infirmary, and the Saint John Regional Hospital are accredited with the Canadian Hospital Pharmacy Residency Board.

In the fall of 1968, the College of Pharmacy moved into the George A. Burbidge

Pharmacy Building. This building, the former Medical Sciences Building was renamed in honour of the first Dean of the College, in recognition of his contribution to pharmacy education in the Maritimes. Present facilities accommodate approximately 260 undergraduate and 12 graduate students.

The pharmacy library houses 6,584 bound volumes, 9,740 microforms and receives almost 280 subscriptions relating to pharmacy and allied sciences.

Adjacent to the library is an area established for the preservation of pharmaceutical archives. The archives include a collection of historical pharmaceutical implements, containers, records and preparations.

Career Opportunities

Pharmacy is a health science concerned with many aspects of the use of drugs for the health care of the patient. This includes the preparation of suitable materials for use as medicines from natural and synthetic sources, the compounding of drugs and the dispensing of suitable medication, the taking of medication histories, keeping patient drug profiles, counselling patients on their prescribed medication, educating patients on their self-medication habits, monitoring drug interactions, drug side-effects and the patients compliance with their drug treatment and the provision of information on drugs to other health professionals.

Pharmacy graduates have a wide range of career opportunities. The majority enter community pharmacy practice. Hospital pharmacy also provides an interesting challenge for pharmacists, particularly in view of their expanding role within the clinical setting. The pharmaceutical industry provides opportunities for pharmacists in the fields of sales, production, research and quality control.

The increased role of federal and provincial governments in public health has provided opportunities for pharmacists in analytical laboratories and in administrative positions as government inspectors and health supplies officers. Opportunities may also be available in universities as teachers and researchers.

A Bachelor of Science in Pharmacy is necessary for those who wish to practice as pharmacists. For those who wish to enter research or teaching, a Master of Science degree or further postgraduate study is usually required.

Practice Requirements

1. Licence in Pharmacy

The College of Pharmacy, being purely educational, has no jurisdiction in matters relating to licensing or to registration as a Pharmaceutical Chemist (Pharmacist). These functions are entirely under the control of the provincial licensing body concerned. A period of practical training or apprenticeship is required before a graduate in pharmacy is licensed as a pharmacist. Information regarding licensing or registration in each province may be obtained from the respective provincial society: the Registrar of the New Brunswick Pharmaceutical Society, Place Heritage Court, Suite 204, 95 Foundry Street, Moncton, N.B., E1C 5H7; the Registrar of the Prince Edward Island Board of Pharmacy, PO Box 1084, Charlottetown, P.E.I., C1A 7M4; or the Registrar of the Nova Scotia Pharmaceutical Society, 1526 Dresden Row, PO Box 3363, Halifax South Postal Station, Halifax, N.S., B3J 3J1.

2. Pharmacy Examining Board of Canada (PEBC)

The Pharmacy Examining Board of Canada was created by Federal Statute on December 21, 1963, to establish qualifications for pharmacists acceptable to participating pharmacy licensing bodies. The Board provides for annual examinations and issues a certificate to the successful candidate which may be filed with a Canadian provincial licensing body in connection with an application for licence to practice pharmacy under the laws of that province. Baccalaureate graduates from the College of Pharmacy are eligible to write these examinations. Information relative to the dates of examinations, application forms, etc., may be obtained through the Director's Office, College of Pharmacy.

Student Pharmacy Society

The basic aims of the Student Pharmacy Society are to promote a closer liaison with the other societies on campus, to give the pharmacy students a strong position with regard to Student Council activities, to provide a means of communications between students and their respective licensing bodies in the Maritimes, and to provide an organizational body which plans and finances the various unique Pharmacy Society activities.

Membership in the Pharmacy Society includes membership in the Canadian Association of Pharmacy Students and Interns and representation in the Canadian Pharmaceutical Association.

Admissions

1. Admission Requirements

Applicants to the College of Pharmacy must fulfil the requirements of a first year B.Sc. student at Dalhousie University as outlined in section 11.1 of the College of Arts and Science Undergraduate Calendar. Equivalent subjects from other universities will be given equal status for purposes of determining admission.

Classes required for admission must fall within the following guidelines. (a) Chemistry 1100R or equivalent; (b) Mathematics 1000A and 1010B or equivalent (one full year) Calculus; (c) One of Physics 1000R, 1300R or equivalent OR Biology 1000R or equivalent; (d) One Humanities or Language; (e) One Social Science.

One of the above classes must be a writing class as described in section 11.1 of the College of Arts and Science Undergraduate Calendar. The same class/subject cannot be used to satisfy both the Humanities/Language and the Social Science requirement.

Examples of Humanities/Language and Social Science classes are given in sections 3A and 3B of the College of Arts and Science Undergraduate Calendar.

For the 1991-1992 session high school applicants will still be considered for acceptance, although preference will be given to university applicants. In order to be qualified for admission, high school applicants must have senior matriculation standing in Chemistry, English, Mathematics 441 or equivalent, and either Biology or Physics plus one other subject.

Application forms may be obtained from the Registrar's Office of Dalhousie University. Information regarding credit for advanced classes may be obtained from the Registrar. Incomplete applications and applications submitted after the deadline indicated in the Final Dates for Admission will not be considered.

2. Selection Criteria

The selection criteria used by the Admissions Committee include (a) place of residence, (b) academic performance, (c) scores on the Pharmacy College Admissions Test (PCAT), and (d) interviews.

For university applicants, a maximum of 60 admission points PCAT, and 30 admission points to interviews. For high school applicants, the assignments to academic performance, PCAT, and interviews are 55, 15, and 30, respectively. The top 66 applicants constitute the first year class and the next 12 applicants are placed on the waiting list.

Place of Residence

Because this is the only College of Pharmacy for the Maritimes, preference is given to Maritime applicants. Attendance at a Maritime university does not, by itself, constitute having residence in the Maritime provinces.

Applicants are considered to be from the Maritimes if (a) the principal residence of the applicant's parent(s) or guardian is located in the Maritime provinces, or (b) the applicant (or spouse) has been employed full-time in the Maritime provinces for spouse) has been employed full-time in the Maritime provinces for the preceding 12 consecutive months.

Applicants whose parent(s), guardian or spouse do not meet the residency requirements as a direct result of a recent employment transfer either into or out of the Maritime provinces would not necessarily be expected to conform to the above guidelines.

Exceptions to the above guidelines will be considered on an individual basis.

Residency will be determined for each applicant on March 1st of the year for which admissions is being sought.

No more than three students from outside the Maritimes are accepted into the first year class each year.

Academic Performance

Academic marks of applicants and/or the university classes chosen form the basis of the evaluation of academic performance. Applicants should note that admission is on a competitive basis so that the ability to obtain consistently better than average grades would definitely be an asset for the applicant. An academic record containing failures or poor grades makes the prospect of admission very unlikely.

It is the responsibility of the applicant to ensure that official high school and/or university transcripts for all previous and current classes are submitted to the Admissions office. Applications without official transcripts are treated as incomplete applications.

Pharmacy College Admission Test

Applicants must write the Pharmacy College Admission Test (PCAT). Information on test dates, testing centres and test format may be obtained from the Registrar's Office or by writing to PCAT, Psychological Corporation, 555 Academic Court, San Antonio, Texas 78204. Applicants are required to write the test no later than the February sitting.

Interviews

Only those applicants who have obtained a high level of academic performance are invited for an interview.

In the interview, the following non-academic criteria are assessed. (a) Motivation; (b) Ability To Relate To Others; (c) Self-Appraisal; (d) Maturity; (e) Professional Attitude.

Notification

Applicants will be informed of the status of their applications no later than late July. Those applicants who are put on the waiting list may expect to hear about acceptance as late as two weeks into the start of the academic term.

Deposit Fee

Because of the large number of applicants, a deposit is required from accepted applicants to show proof of intent to register with the College of Pharmacy. A non-refundable deposit of $100.00 is payable within three weeks of notification of acceptance. This sum is credited toward tuition fees if the applicant registers.

Special Cases

In exceptional circumstances, special consideration may be given by the Admissions Committee to applicants who do not meet all the admission requirements.

Grading System

College regulations relating to GPA apply to students whose initial registration in the College was in the Fall of 1990 or earlier. Students entering in the Fall of 1991 and beyond will be governed by revised regulations found in the Faculty of Health Professions section of this calendar.

1. Grade Points

Grades are reported using a letter grading system set forth in Faculty Regulation 10, and grade point averages are computed as provided for in the same regulation. The yearly academic performance of all students is assessed by June 1st each year, with the exception of Pharmacy 3000B.

2. Credit Hours

A passing grade in a credit class must be achieved in order to accumulate credit hours.

For classes offered by the College of Pharmacy, one credit hour is defined as one hour of lecture per week per term, or three hours of laboratory per week per term.

3. Summer School Classes

The grade that a student receives in a summer school class is used in calculating the GPA of the next academic year.

4. Requirements for Degree

To satisfy the requirements for the degree of Bachelor of Science in Pharmacy a student must:

- accumulate at least 134 credit hours (or its equivalent for transfer students), with an overall (cumulative) GPA of at least 2.00 in the prescribed classes; and
- accumulate at least 104 credit hours (or its equivalent for transfer students), with an overall (cumulative) GPA of at least 2.00 in the prescribed professional classes.

Note: For lists of prescribed and professional classes see the sections "Classes of Instruction" and "Prescribed Classes."

5. Duration of Studies

See Faculty Regulation 7.

Regulations

University Regulations

All students must observe the University Regulations as outlined in this Calendar.

Faculty of Health Professions Regulations

All students must observe the Faculty of Health Professions Regulations as outlined in this Calendar.

College of Pharmacy Regulations

There is, within the College of Pharmacy, a Committee on Studies that assesses the academic performance of each student in the College.

Academic Requirements - Prior Regulations

1. In each year of studies, a student must obtain a minimum grade point average (GPA) of 2.00 and accumulate at least 18 credit hours. If enroled as a part-time student, the number of credit hours registered and accumulated must be the same.
2. At the end of the second and subsequent years, a student must also have a minimum cumulative GPA of 2.00.
3. A student must obtain a grade of at least C in each professional class for that class to be counted as credit for the degree or as a prerequisite for another professional class. A student who earns a grade of less than C in a professional class but is still eligible to continue in the College of Pharmacy must repeat that class until a grade of C or better is obtained.
4. Any student failing a professional class for the second time must withdraw from the College of Pharmacy.
5. Students are required to attend class to the satisfaction of their instructors. Attendance is mandatory in laboratory, tutorial and seminar classes and externship programmes offered by the College of Pharmacy unless otherwise specified by the instructor. Regulation 8 of the Faculty of Health Professions and Regulation 19 of the College of Arts and Science apply to undergraduates of the College of Pharmacy.
6. When the work of a student becomes unsatisfactory or his/her attendance irregular, the student may be required to discontinue and be excluded from the class concerned.

7. If laboratory work or assignments are not completed in a satisfactory manner in any class or classes, credit for the class is withheld until all work has been satisfactorily completed.
8. In the case of failure in the laboratory portion of a pharmacy class, the laboratory, together with the corresponding lecture portion of the class, must be repeated.
9. At the beginning of January, the results obtained by each student will be reviewed. Any student who has not shown reasonable proficiency in the Christmas examinations may be required to withdraw from the College of Pharmacy for the remainder of the session or to reduce the number of classes being taken.
10. As an academic requirement, students are assessed in each year on their aptitude and fitness for the profession of pharmacy. A student who, in the judgement of the faculty, fails to attain a satisfactory standard in the assessment may be retired from the College of Pharmacy.
11. A student withdrawing from the University or intending to discontinue any class or classes must have the approval of the Director of the College of Pharmacy and must also notify the Registrar.

ailure to Meet the Requirements - rior Regulations

Students who fail to meet the yearly academic requirements may be allowed to proceed on probation for the next academic year, providing their yearly GPA is at least 1.80 (1.60 in first year) and they have accumulated at least 18 credit hours in their current year of study; otherwise they must withdraw from the College of Pharmacy.

A student whose marks fall to the probation level for the second time must withdraw from the College of Pharmacy. If subsequently readmitted the student must maintain a minimum GPA of 2.00 or withdraw from the College.

Students who fail to meet the cumulative GPA requirements must withdraw from the College of Pharmacy.

Students required to withdraw from the College of Pharmacy are not allowed to register in any Pharmacy classes unless they have been readmitted or approval to take the classes has been granted by the Faculty of the College.

Students who have been required to withdraw from the College of Pharmacy will not normally be considered for readmission until they have been away from the College for one year. Application forms for readmission must be submitted not later than July 7. If subsequently readmitted the student will be on probation and must maintain a minimum GPA of 2.00 or withdraw from the College.

6. Failure in Pharmacy 3000B (PTP) results in the student having to repeat the course at its next regular offering.

Remedial Examinations Prior Regulations

A student who has met the yearly academic requirements but has a D in one professional class, and no failures, at the discretion of the Committee on Studies and the professors of the class, may be allowed to raise the grade to an acceptable level by doing remedial work recommended by the professors of the class and then writing the remedial examinations. When the class in question is a half-class held in the first term and is a prerequisite for a class scheduled for the second term, the student may explore the possibility of sitting for the remedial examination before the end of January. Such a remedial examination will be permitted only if all other first-term grades are C or better and the first-term grade point average is 2.00 or above.

Remedial examinations are subject to the following regulations:

1. Remedial examinations will be allowed for not more than six credit hours of class work in a student's programme.
2. Remedial examinations will be written at a time specified by the department offering the examination. However, this must be before September 1 immediately following the class.
3. On successful completion of a remedial examination, a grade of C is entered on the student's record along with the notation that the C was earned by examination. In the case of a failure an F is entered. The final mark recorded will be used for grade point average calculations, for the past academic year. However, the original grade of D also remains on the transcript.

Reassessment of a Grade

See College of Arts and Science Regulation 23.7. In all cases of reassessment, the calculations used to arrive at the final grade will be checked. In those classes where the student has had ample time to consider marks obtained for all work done, except for the final examination, reassessment in such classes shall be done on the final examination only. For other classes, a reassessment shall include the results from all work not previously available to the student during the term.

Appeals

Students wishing to appeal a decision based on faculty regulations should request from the Director the appeal procedure.

Prescribed Classes

All classes offered are within the normal academic year with the exception of Pharmacy 3000B. Pharmacy 3000B includes a practical training programme which the student must complete on a full-time basis in a pharmacy, normally during the month of May following the third year of study.

The following are descriptions of classes which are expected to be offered in the academic year 1991-92:

Year 1:	Pharmacy 1100R, Pharmacy 1700B, Anatomy 101A, Chemistry 1120R, Statistics 1060A, Mathematics 1000B and an elective.
Year 2:	Pharmacy 2110A, Pharmacy 2120B, Pharmacy 2130R, Pharmacy 2500B, Chemistry 2400R, Microbiology 3020R and Physiology 2010R.
Year 3:	Pharmacy 3000B, Pharmacy 3100B, Pharmacy 3250A, Pharmacy 3300C, Pharmacy 3310A, Pharmacy 3500R, Biochemistry 3101A, Biochemistry 3102B and Pharmacology 3470R or 3480R.
Year 4:	Pharmacy 4100C, Pharmacy 4500R, Pharmacy 4700A, Pharmacy 4710B, Pharmacy 4930B, Pharmacy elective and an approved elective.

Classes Offered

Professional Classes

PHAR 1100R - Introduction to Pharmacy: An introduction that includes a description of the role and the responsibilities of a pharmacist in practice, the prescription, pharmaceutical calculations, an introduction to communication skills, and a programmed text approach to medical terminology. The major topics are solid and semi-solid dosage forms and compounding and dispensing techniques. Laboratory work concentrates on compounding and dispensing of examples of the dosage forms discussed in class. Dispensing labs and communication skills seminars are compulsory parts of this class. Failure to complete the labs or the communications portion will result in a grade of incomplete on the transcript.

Credit Hours:	9
Instructor:	B. Wilson
Format:	3 hours; lab 3 hours or seminar 2 hours; tutorial 1 hour

PHAR 1700B - Pharmacy Administration I: An introduction to the history of Pharmacy, pharmacy organizations, law, and business management.

Credit Hours:	3
Instructor:	N. Wentzell
Format:	Lecture 3 hours
Enrolment:	Limited to pharmacy students

PHAR 2110A - Liquid Dosage Forms: A continuation of Pharm 1100R dealing with the compounding and dispensing of liquid dosage forms. Introductions to sterile preparations and to drug information are also included. Laboratory work concentrates on compounding and dispensing examples of the dosage forms discussed in class. Dispensing lab is a compulsory part of this class and failure to complete the lab will result in a grade of incomplete on the transcript.

Credit Hours:	2
Instructor:	B. Wilson
Format:	Lecture 2 hours; lab 3 hours; tutorial 1 hour
Prerequisite:	Pharm 1100R

PHAR 2120B - Biopharmaceutics: The course deals with the application of physicochemical and physiological factors in the design and delivery of drug dosage forms. Topics include: drug design and drug development, routes of drug administration, membrane structure and transmembrane transport of drug molecules, theories of drug absorption, physicochemical factors in drug absorption, distribution and elimination, biopharmaceutical consideration of new drug delivery systems.

Credit Hours:	2
Instructors:	I. Abraham, M. Mezei
Format:	Lecture 2 hours
Prerequisites:	Pharm 1100R, Chem 1120R, Math 1000B
Corequisites:	Pharm 2130R

PHAR 2130R - Physical Pharmacy: Fundamentals: atomic and molecular structures, states of matter, basic thermodynamics. Properties of solutions. Solubility and distribution. Kenetics fundamentals, chemical stability of drugs. Accelerated stability analysis. Diffusion. Dissolution of drugs. Interfacial phenomena: (a) surface tension, wettability; (b) absorption at various interfaces; (c) electrokinetic phenomena. Colloid systems: macromolecules, association colloids and dispersion colloids. Kinetic stability of dispersions, drug preparations. Particle size determination. Rheology. Coarse dispersions: suspensions, emulsions. Physical properties of drugs - measuring methods. Physical pharmacy and drug product design. Drug delivery systems. Physicochemical factors in controlled drug therapy.

Credit Hours:	6
Instructor:	E. Butler
Format:	Lecture 3 hours, 1st term; lecture 2 hours, lab 3 hours/2nd term
Prerequisites:	Chem 1120R, Stats 1060A, Math 1000B, and Pharm 1100R

Corequisites: Chem 2400R, Pharm 2110A, Pharm 2120B
Recommended: Continuous study following the guidelines distributed for each topic. Participation in tutorials weekly.

PHAR 2500B - Introduction to Therapeutics: An introduction to therapeutic and prophylactic use of prescription and over-the-counter (OTC) drugs. Patient counselling is emphasized with knowledge of drug products and disease states.
Credit Hours: 2
Instructors: M. Ackman, M. Mezei
Format: Lecture 2 hours, tutorial 1 hour
Prerequisite: Anatomy 101A
Co-requisite: Physiology 4403R, Microbiology 3020R

PHAR 3000B - Practical Training Programme: A structured practical training programme consisting of five consecutive weeks to be completed in May, after the third year academic programme. This programme studies prescription compounding and dispensing in both community and hospital pharmacies and is conducted in the presence of a practicing pharmacist preceptor. As well, nonprescription drugs and accessories, patient counselling and communications, laws and regulations, management and administration, are all stressed.
Credit Hours: 0
Instructor: K. Shipp
Format: 5 weeks (175 hours)
Prerequisite: Completion of third year

PHAR 3100B - Compounding and Dispensing: This class is concerned with the proper compounding and dispensing of pharmaceutical products, and communication techniques used in recommending non-prescription drugs.
Credit Hours: 2
Instructor: S. Beresford
Format: Lecture 1 hour, lab 3 hours
Prerequisite: Completion of second year

PHAR 3250A - Pharmacokinetics: Course is designed to acquaint students with the quantitative aspects of drug absorption, distribution, metabolism and excretion. Topics are related to the application of the principles of the one-and-two-pharmacokinetic models in the analyses of drug concentration-time data in body fluids and tissues after single and mutiple doses.
Credit Hours: 2
Instructor: I. Abraham
Format: Lecture 2 hours
Prerequisites: Pharm 2120B, Pharm 2130R
Co-requisite: Phcol 3470R or 3480R

PHAR 3300C - Medicinal Chemistry: Applications of the content of areas of chemistry to organic medicinal agents, and the design, chemistry, therapeutics, and pharmacological action of organic compounds used in medicine and the correlation of physiochemical properties and physiological action.
Credit Hours: 5
Instructors: D.K. Yung, P.S. Farmer
Format: Lecture 2 hours, lab 3 hours 2nd term
Prerequisite: Chem 2400R

PHAR 3310A - Pharmaceutical Analysis: Topics include gravimetric, volumetric, chromatographic, and spectrophotometric methods of analyses of drug products, and principles and methodology of drug product quality assurance.
Credit Hours: 3
Instructor: D.K. Yung
Format: Lecture 2 hours, lab 3 hours
Prerequisite: Chem 2400R
Recommended: Review of general chemistry

PHAR 3500R - Therapeutics I: Therapeutic and prophylactic use of prescription and OTC drugs are discussed. Patient interviewing and counselling are emphasized, along with knowledge of drug products and disease states.
Credit Hours: 9
Co-ordinator: P.S. Farmer
Instructor: Staff
Format: Lecture 3 hours, tutorial 1 hour
Prerequisite: Pharm 2500B
Co-requisite: Pharm 3250A, Pharm 3100B, Micro 3020R and Phcol 3470R or 3480R

PHAR 4000R - Pharmaceutical Investigation: Library, laboratory and/or field investigations related to an area in pharmacy, carried out by an individual or a small group of students under the supervision of one or more faculty members. Presentation of a seminar on the completed project is required. Where appropriate, a bound thesis is submitted. A paper or a presentation which is prepared for this class may not be submitted for credit in any other class.
Credit Hours: 6
Instructor: Staff
Format: 6-8 hours of independent study per week
Prerequisites: Approval of the project by the Committee on Studies before registration in the class Projects should be presented for consideration before the end of the previous academic term.

PHAR 4010A, 4020B, 4030C - Directed Study in Pharmacy: For a description of these half classes, see the full class Pharm 4000R.
Credit Hours: 3
Instructor: Staff

Format: 6-8 hours of independent study per week for Pharm 4010A and 4020B. 3-4 hours of independent study per week for Pharm 4030C.
Prerequisites: Approval of the project by the Committee on Studies before registration in the class. Projects should be presented for consideration before the end of the previous academic term.

PHAR 4100C - Pharmaceutics: Class deals with topics in clinical pharmacokinetics, radiopharmaceutics and drug interactions. Topics in clinical pharmacokinetics include the use of pharmacokinetic principles in the management of patients with renal and hepatic malfunction, pharmacokinetics of pharmacological response and non-linear pharmacokinetic systems.
Credit Hours: 5
Instructors: M. Mezei, I. Abraham, A. Hiltz
Format: Lecture 2 hours 1st term, 1 hour 2nd term
Prerequisite: Pharm 3250A

PHAR 4150A/B - Computer Dispensing and Prescription Management: Topics include inventory control, nursing home package, accounts receivable, various management tools as well as basic dispensing techniques using a computer.
Credit Hours: 3
Instructor: B. Etter
Format: Lecture 3 hours, lab 1-2 hours
Prerequisite: Pharm 3100B or consent of instructor

PHAR 4230A - Dermopharmacy: Topics include skin diseases and topical therapy.
Credit Hours: 3
Instructor: M. Mezei
Format: Lecture 2 hours
Prerequisite: Consent of instructor

PHAR 4250B/5250B - Advanced Pharmacokinetics: Course is designed for students with research career interests in pharmacokinetics, pharmaceutical dosage form development, clinical pharmacology, drug metabolism and toxicology.

Topics include application of Laplace Transforms in solution of linear mammillary compartmental models, physiologically-based (perfusion) models, drug absorption models, concept of drug clearance and distribution, noncompartmental analyses of pharmacokinetics data based on statistical moment theory; nonlinear pharmacokinetics; absorption kinetics of sustained-release medications.
Credit Hours: 3
Instructor: I. Abraham
Format: Lecture 2 hours
Prerequisites: Pharm 3250A, Pharm 4100C, Math 2000R or consent of instructor
Note: The course is given every other year, check with the College.

PHAR 4330B - Herbal Remedies: Herbal remedies, "health foods", and pharmaceutical agents of plant origin are examined with respect to history, traditional usage, constituents, pharmacology and toxicology. An introduction to the chemistry, pharmacology and toxicology of the major plant constituents is presented. The course emphasizes safety and efficiency of herbs and formulated herbal products.
Credit Hours: 3
Instructor: R.F. Chandler
Format: Lecture 3 hours
Prerequisite: Consent of instructor
Recommended: Some knowledge of organic chemistry, human physiology and pharmacology is strongly recommended.
Enrolment: Limited to 20 students, with preference to senior pharmacy students.

PHAR 4340C - Drug Design: The increasing role of biochemical knowledge in lead generation in drug design is emphasized, followed by consideration of available methods for lead exploitation. The subject is studied by reviewing examples of drug discovery.
Credit Hours: 3
Instructor: P.S. Farmer
Format: Tutorial 2 hours 1st term, term paper 2nd term
Prerequisites: Pharm 3300C or consent of instructor
Enrolment: min 2, max 10 students

PHAR 4500R - Therapeutics II: A discussion of the application of pharmaceutical sciences to various diseases, therapeutic use of drugs and drug induced disease is presented. Case studies and clerkship are conducted in participating hospitals in conjuction with instruction and application of clinical pharmacy principles.
Credit Hours: 13
Coordinator: I. Sketris
Instructor: Staff
Format: Lectures 6 hours, 1st term, 4 hours 2nd term, case studies, workshops and clerkship
Prerequisites: Biochem 3101A and 3102B, Phcol 3470R or 3480R, Pharm 3500R and Pharm 3250A consent of instructor.
Enrolment: Limited to Pharmacy students in the final year of the programme.

PHAR 4550B - Pharmacy Home Health Care: Topics include operation of a pharmacy-based home health care centre and the use of durable medical equipment, surgical supplies and applicances, health supports and orthotic fittings,

home diagnostics, electromedicals, sports medicine, incontinence/urologicals, and nutritional support.
Credit Hours: 3
Instructor: W.A. Parker
Format: Lecture 3 hours
Prerequisites: Consent of Instructor
Co-requisites: Pharm 4500R

PHAR 4700A - Pharmacy Administration IIA: This course is intended to provide introductory business training to prepare the student to manage a retail or hospital pharmacy. Students will be exposed to financial analysis, capital budgeting, marketing, organizational behaviour and decision making.
Credit Hours: 3
Instructor: P. King
Format: Lecture 3 hours
Prerequisite: Pharm 1700B

PHAR 4710B - Pharmacy Administration IIB: Consideration of socioeconomic factors that affect the practice of Pharmacy. A review of ethics, standards of practice and pharmacy legislation, followed by student presentations on current socioeconomic topics. Each presentation is evaluated by a panel of students and practicing pharmacists.
Credit Hours: 3
Co-ordinator: D. Murray
Format: Lecture 3 hours

PHAR 4750A - Social, Behavioral and Environmental Aspects of Pharmacy Practice: Growth and development of the present state of pharmacy practice, with emphasis on the forces of education, professionalization, attitude modification, and the changes occurring as a product of legal and organizational forces in society. Social-psychological factors in drug use, abuse, or nonuse by the patient and practitioner. Role of the pharmacist as health practitioner within the profession, in relation to other health practitioners, and in relation to the general public.
Credit Hours: 3
Instructor: W.A. Parker
Format: Lecture/Seminar 3 hours
Prerequisite: Consent of instructor

PHAR 4x00R - Hospital Pharmacy: Topics include the organization and management of a hospital pharmacy department and the specialty areas of drug distribution, intravenous admixture services, handling antineoplastic drugs, total parenteral nutrition, total nutrient admixtures, quality assurance programmes and drug information services.
Credit Hours: 6
Instructors: D. Burch
Format: Lecture 2 hours, lab 2 hours
Prerequisites: Successful completion of third year pharmacy classes
Enrolment: Limited to 16 students, consent of instructor

PHAR 4900A/B - Drug Information: Topics include sources of drug information, how and when these sources should be used and comparisons of the information found in each, formulating and communicating responses to drug information requests, evaluation of drug literature, drug utilization review, evaluation of drug advertisements and research methods.
Credit Hours: 3
Instructor: M. MacCara
Format: Lecture 3 hours, lab: PDIS, Camp Hill Hospital
Prerequisites: Pharm 3500R, Phcol 3470R or 3480R
Corequisite: Pharm 4500R
Enrolment: Limited to 16 students, consent of instructor

PHAR 4910A/B - Advances in Drug Metabolism and Disposition: Topics include methods for isolation and characterization of drugs and their metabolites in biological samples, immunoassays and their applications, kinetics and dynamics of drugs and their metabolites and their clinical relevance.
Credit Hours: 3
Instructor: P. Yeung
Format: Lecture 2 hours
Prerequisites: Bioch 3101A and 3102B, Phcol 3470R or 3480R, Pharm 3500R, Pharm 4930B, or consent of instructor.

PHAR 4930B - Introductory Drug Metabolism and Toxicology: Topics include chemical and biochemical aspects of drug metabolism, factors influencing drug metabolism, toxicity related to drug metabolism, treatment of poisoning, drug disposition and aging, forensic toxicology, toxicological testing methods and toxic agents.
Credit Hours: 2
Instructor: P. Yeung
Format: Lecture 2 hours
Prerequisites: Bioch 3101A and 3102B, Phcol 3470R or 3480R, Pharm 3500R, Pharm 3300C, Pharm 3310A or consent of the instructor.

PHAR 4950B (Nurs 4800B/HE 2250B/PT 3090B) - Interdisciplinary Course in Human Nutrition: See Nurs 4800B for description of class.
Credit Hours: 3
Instructor: E. Lambie (Nursing)
Format: Lectures 3 hours
Prerequisites: Biol 1000R or consent of instructor

PHAR 4960A (NURS 4900A, OT 4417A, PE, HE, REC 4498A, PT 4300A)-An Interdisciplinary Approach to Gerontology: See Nurs 4900A for description of class.
Credit Hours: 3
Instructor: B. Keddy (Nursing)
Format: Lecture 3 hours

PHAR 4970B (NURS 4910B, OT 4418B, PE, HE, REC 4499B, PT 4901B)-An Interdisciplinary Approach to Gerontology: See Nurs 4910B for description of class.
Credit Hours: 3
Instructor: B. Keddy (Nursing)
Format: Lecture 3 hours

HLPR 3000B - An Interdisciplinary Approach to Health Promotion: Intra- and interdisciplinary trends in the conceptualization, expirical investigation and practical implementation of health promotion will be examined. Students will consider historical, present and future perspectives of specific health promotion issues. Learners will have opportunities to develop skills in analyzing factors influencing the delivery of health promotion within the Canadian health care system. The contribution of different health professions to the study of health promotion will be assessed and the effectiveness of a teamwork approach will be evaluated.
Credit Hours: 3
Coordinator: M. Stewart (Nursing)
Instructor: Staff
Format: Lecture 2 hours
Prerequisites: Consent of Coordinator

PHAR 4570A/B - Pharmacology of Drug Abuse: The education objectives of this class are to extend the student's knowledge of the pharmacology of drugs of abuse, to enable the student to develop an insight into the biochemical mechanism and consequences of abuse, and to develop in the student an appreciation of the pharmacological basis for the use of drugs during rehabilitation.
Credit Hours: 3
Instructor: G.M. McKenzie
Format: Lecture 2 hours
Prerequisite: Pharmacology 3470R

ANAT 101A - Human Anatomy: Taught by the Department of Anatomy and designed exclusively for students in the Health Professions and Dental Hygiene.
Credit Hours: 3
Instructor: P. Jackson
Format: Lecture 4 hours

BIOC 3101A - Biological Chemistry for Students of Pharmacy: Students will first be introduced to the structures and functions of proteins and nucleic acids, including an outline of the topic of genetic engineering. Next, the phenomena of enzymic catalysis will be examined in some detail. Finally, the topic of biological membrane structure and the chemical forms of energy storage will be explored.
Credit Hours: 3
Instructor: D.W. Russell
Format: Lecture 3 hours, lab 2 hours, tutorial 1 hour
Prerequisite: Chem 2400R
Note: Bioch 3101A is a prerequisite Bioch 3400B (a fourth year elective).

BIOC 3102B - Metabolism for Students of Pharmacy: The class, using the chemical background gained in Bioch 3101A, will examine the generation, storage, liberation, and uses of biological energy.
Credit Hours: 3
Instructor: D.W. Russell
Format: Lecture 3 hours, lab 2 hours, tutorial 1 hour
Prerequisite: Bioch 3101A

PHYL 2010R - Human Physiology: A class dealing with the physio-chemical basis of the physiological processes in man.
Credit Hours: 6
Co-ordinator: J. Dudar
Instructor: Staff
Format: Lecture 3 hours, tutorial 1 hour
Prerequisite: Anat 101A

MICR 3020R - General Microbiology: For class listing see under Microbiology in the Science section of this calendar.
Credit Hours: 6
Instructor: S.H.S. Lee
Format: Lecture 2 hours, labs 3 hours

PHAC 3470R - The Influence of Chemical Agent on Living Organisms: An introduction to the actions of drugs on physiological and biochemical functions of man and lower animals. The basic mechanisms of actions and structure-activity relationships of various groups of pharmacological agents are stressed and wherever possible, discussed at the molecular and macro-molecular level of cell organization. Factors influencing the absorption, distribution, biotransformation, and excretion of drugs are discussed, as are potential uses.
Credit Hours: 6
Coordinator: M. MacKenzie
Instructor: Staff
Format: Lecture 3 hours

PHAC 3490R - The Influence of Chemical Agents on Living Organisms: The lecture class Phcol 3470 is augmented by a practical laboratory class designed for student participation in the demonstration of basic principles of pharmacology.
Credit Hours: 6
Instructor: Staff
Format: Lecture 3 hours, lab 2½ hours
Prerequisite: Consent of Instructor

Other Prescribed Classes

Note: For class descriptions of the following classes, see under the respective departmental sections of the Science segment of this calendar.

CHEM 1120R - General Chemistry
CHEM 2400R - Introductory Organic Chemistry
STAT 1060A - Introductory Statistics for non-Mathematicians
MATH 1000B - Differential and Integral Calculus

Electives

The first year elective may be any approved credit class. The student should discuss the available electives with his or her faculty counsellor. Electives for the fourth year of study must be approved by the Committee on Studies.

School of Physiotherapy

Location: 5869 University Avenue
Forrest Building, 4th Floor
Halifax, N.S. B3H 3J5
Telephone: (902) 494-2524
Fax: (902) 494-1966

Director

Joan M. Walker, Certs. Phys. Ther.(N.Z.), Dip TP, BPT (Man.), MA (Man.), PhD (McM), Professor

Faculty Advisors

George Turnbull, (Admissions) Chair
L. Makrides, (Entry-level) Co-ordinator

Academic Staff, 1990-91

Professor

David A. Egan, MCSP, Dip TP, MSc (UWO)
Joan Walker, Certs. Phys. Ther.(N.Z.), Dip TP, BPT (Man.), MA (Man.), PhD (McM), Professor

Associate Professors

Giovanni De Domenico, MCSP, Dip TP, Grad. Dip. (PT), MSc (Aston), PhD (UNSW)
Lydia Makrides, MCSP, BPT (Sask.), MSc (Ottawa), PhD (McM)
G.I. Turnbull, MCSP, Dip TP, BPT (Man.), MA (Dal)

Assistant Professors

Cheryl L. Kozey, BPE (UNB) MSc (Waterloo)
Sandra L. Curwin, Dip PT (Dal), BSc (Dal), MSc (Dal), PhD (UCLA)
Marilyn MacKay-Lyons, BSc (PT) (Tor), M.Sc. (PT) (USC)

Lecturer

Gail Wainwright, BSR (UBC)

Faculty Honorary Appointments To Clinical Facilities

Cheryl L. Kozey, BPE (UNB), MSc (Waterloo), (Nova Scotia Sports Medicine Clinic)

Honorary Appointments

R.A. Fox, MD, FRCP (C), Professor, Department of Medicine
Kenneth C.W. Hill, MCSP, Dip TP, MSc (Dal), Associate Professor
T.J. Murray, MD, FRCP (C) Professor, Department of Medicine
W.D. Stanish, MD, FRCS (C), Associate Professor, Department of Surgery

Cross Appointment

J.M. Walker, Certs, Phys. Ther. (N.Z.), Dip. TP, BPT (Man.), MA (Man.), PhD (McM), Associate Professor, Department of Anatomy, Faculty of Medicine

Sandra L. Curwin, Dip Physioth (Dal), BSc (Dal), MSc (Dal), PhD (UCLA), Dept. of Surgery, Faculty of Medicine

Special Lecturers

A. Lea, Dip PT (Dal), BSc (PT) (Dal)
B. Little, BSc (Physio) (Dal)
S. MacKinnon, BPE (UNB), MSc (Dal)
M. Merlin, BPT (McGill), MHSA (Dal)
S. Sanford-Smith, BSc (Dal), BSc (PT) (Dal)
J. Tasker, BSc (PT) (Dal)
G. Dechman, BSc (Physio), (Queen's)

Provincial Clinical Co-ordinators

J. O'Dea, BSc (PT) (McGill) Newfoundland
N. McKay, BSc (PT) (Dal) New Brunswick
T. Nicholson, BSc (PT), Prince Edward Island

Overseas Clinical Co-ordinators

I. Glencross, Queen's College, Glasgow, Scotland
K. Dick, Queen Margaret College, Edinburgh, Scotland
P. Drummond, Univ. of Ulster, Jordanstown, Ireland

Clinical Research Associates

J.W. Kozey, MSc (Waterloo)
Dr. R. Stalker, MD (Dal)

Clinical Associates

Nova Scotia

J.G. Brachaniec, MCSP - Camp Hill Medical Center, Halifax
S.E. Quackenbush, Dip. Phys. Ther. (Dal) - IWK Hospital, Halifax
J.L. Schaffner, BSc PT (McGill) - N.S. Rehabilitation Centre, Halifax
V.I. Zwerling, Dip. Phys. Ther. (Dal) - Victoria General Hospital, Halifax
B. Lynch, Dip. Phys. Ther. (Alta.) - Dartmouth General Hospital, Dartmouth
A. de Gooyer, BSc (Phys.) (Dal) - N.S. Rehabilitation Centre, Halifax
L. Langley, BSc (PT) (Dal) - Physiotherapy Atlantic, Halifax
J. Everett, BSc (PT) (McGill) - Northwood Care Centre Inc., Halifax
N. Demetre, Dip Phys. Ther. (Dal) - Victoria General Hospital, Halifax
M. Fogarty, Dip. Phys. Ther. (Dal) - Sydney Community Health Centre
S. Evely, - Sydney City Hospital, Sydney
S. Liengme, Dip. (CSP) - St. Martha's Hospital, Antigonish
A. Waterbury, Dip. Phys. (Dal) - Valley Health Services, Kentville
J. Cameron, BSc (PT) (Dal) - Aberdeen Hospital, New Glasgow
H. Osborne, - IWK Hospital, Halifax

New Brunswick

P. Greechan, Dip. (CSP) - Chalmers Hospital, Fredericton
M. Thomson, Dip. (CSP) - St. John Regional Hospital, St. John
S. Bosca, BSc (Phys.) (Dal) - Chaleur General Hospital, Bathurst
J. Hughes, Dip. Phys. Ther. (Dal) - Moncton City Hospital, Moncton

Newfoundland

M. Mulholland, Dip. (CSP) - St. Clare's, St. John's
Barry MacLeod, Dip. (CSP) - Grace General Hospital, St. John's
Ann Vivian-Beresford B.Sc. (Phys) (Dal) - Dr. Charles A. Janeway Child Health Centre, St. John's
J. Squires, BSc (PT) (Boston) - Children's Rehabilitation Centre, St. John's
K. Ambler, Dip. (CSP) - Western Memorial Hospital, Corner Brook

Prince Edward Island

J. Rogers - Charlottetown

Part II - Clinical Instructors

Nova Scotia

W. Roberts (MCSP) St. Vincent Guest House, Halifax
M. Sutton, The Physioclinic, Halifax
K. Field, Dip. Phys. Ther. (Dal) South Shore Regional Hospital, Bridgewater
D. White, Dip. Phys. Ther. (Dal) Highland View Regional Hospital, Amherst
D. Murrant, St. Martha's Hospital, Antigonish
J. Poole, BSc (Phys.) (Dal) Yarmouth Regional Hospital, Yarmouth
D. Trickett, Glace Bay Community Hospital, Glace Bay
A. Ratchford, Northside Harbour View Hospital, Sydney Mines
B. Langille, Colchester Reginal Hospital, Truro
B. Tomie, Renova Physiotherapy Ltd., Bedford
C. Clark, Cobequid Multi-Service Centre, Lower Sackville
D. O'Leary, Fisherman's Memorial Hospital, Lunenburg
N. Franko, Soldiers' Memorial Hospital, Middleton
T. Helm-Neima, BSc (PT) (Dal), Camp Hill Hospital, Halifax

New Brunswick

S. Banks - Carleton Memorial Hospital, Woodstock
B. Cormier, BSc (Phys.) (Dal) - Sussex Health Centre, Sussex
C. Dumont - Campbellton Regional Hospital, Campbellton

E. Jones - St. Joseph's Hospital, Saint John
M. Laviolette - Dr. George Dumont Hospital, Moncton
E. Morrison - Miramichi Hospital, Newcastle
S. Paquin - Hotel Dieu Hospital, Chatham
C. Pelletier - Edmundston Regional Hospital, Edmundston
B. Roberts - Worker's Rehabilitation Centre, Saint John
M. Hunter - Forest Hill Rehab Center, Fredericton
M. Jackson-Kyle - NB Extra Mural Hospital, Fredericton
K. Salmon - Renova/Mt. Pleasant Physiotherapy, St. John
K. Warren - Fredericton Physiotherapy, Fredericton
C. Bedard - Hotel Dieu de St. Joseph, Tracadie
Y. Laurendeau, Hopital de Lameque, Lameque
N. Martin - Hopital Stella Maris de Kent, Ste. Anne de Kent

Newfoundland and Labrador
G. Russell, Dip (MSCP) - Central Newfoundland Regional Health Centre, Grand Falls
J. Bennett, Dip (Phys) (Dal) - General Hospital, Health Sciences Centre, St. John's
C. Snow, B Sc (Phys) (Dal) - James Paton Memorial Hospital, Gander
C. Wright, BSc (Phys.) (Dal) - Carbonear General Hospital, Carbonear
L. Vardy, Dip. Phys. (Dal) - Nova Physiotherapy, St. John's
A. Kavanagh, Dip. Phys. (CSP) Physiotherapy Assoc., St. John's
B. Ellis, Dip. Phys. (MSCP) Therapeutic Services, St. John's
L. Hardinan, BSc (Phys) (Dal) Green Bay Health Centre, Springdale
B. Forsey, BSc (Phys) (Dal) - Melville Hospital, Goose Bay, Labrador
L. Garvin, BSc (Phys) (Dal) - Burin Peninsula Health Centre, Burin
L. Ritchie, Dip. Phys. (MCSP) - Captain William Jackman Memorial Hospital, Labrador City
C. Whelan, BSc (Phys) (Dal) - Dr. Charles L. LeGrow Health Centre, Port-aux-Basques
L. Porter, Dip. Phys. (CSP),- Sir Thomas Roddick Hospital, Stephenville

Prince Edward Island
L. Gallant, BSc (Phys) (McGill) - Prince County Hospital, Summerside
M. Rogers, BSc (Phys) (Dal) - Summerside Physiotherapy Clinic
V. Handren, Dip. Phys. (Dal) - Island Physiotherapy, Charlottetown

Introduction

The School of Physiotherapy was established in 1963. A two-year programme leading to a Diploma in Physiotherapy was offered by Dalhousie, the course of study being followed by a compulsory five-month internship period prior to eligibility for licence to practise physiotherapy. This Diploma programme was terminated at the end of the 1976-77 academic year. In 1975 the Senate of Dalhousie approved the implementation of a four-year programme leading to a Bachelor's Degree. The BSc (Physiotherapy) degree which replaced the Diploma programme comprises a general Arts and Science first year with required subjects followed by three professional years of study as outlined. During this course of study clinical training is undertaken. In addition to the major commitment to graduate academically and clinically, highly qualified physiotherapists, the school also offers non-credit workshops and seminars as part of a continuing education programme for graduates in Physiotherapy.

The School also offers a post-diploma programme which enables Diploma holders to obtain a BSc (Physiotherapy) degree, however the last students were admitted in the 1990-91 academic year.

Affiliated Institutions

At present clinical instruction and practice during the course of study is undertaken with the guidance of clinical instructors in a variety placements including clinics in Newfoundland, New Brunswick, Nova Scotia and P.E.I. See preceeding list for affiliated institutions. Clinical experience is also obtained in other centres across Canada and in the U.K.

Field Experience

Throughout the course of study students learn to apply their academic knowledge in a variety of situations. During the summer following the second year of study a compulsory brief period of orientation is undertaken to familiarize the students with the practise of physiotherapy. During all clinical placements, students are engaged in clinical practice under the guidance of clinical instructors. During these clinical placements the student's performance is evaluated by the staff of the Physiotherapy Department in which they are practising and students must maintain a satisfactory level of performance together with demonstrated suitability to pursue a career in Physiotherapy. A compulsory period of clinical practice between the third and fourth years offers the student the opportunity to obtain experience across Canada and in Britain. The students choose specific placements from amongst clinical facilities associated with Dalhousie's School of Physiotherapy.

Clinical practice is also a requirement of the fourth year of study.

Career Opportunities

The profession of Physiotherapy (or Physical Therapy) offers a varied, interesting and worthwhile career to both men and women in a

variety of settings. Upon graduation most Physiotherapists work in hospital-based departments rotating through various areas of interest prior to becoming more deeply involved in any specific area. Opportunities are available in rehabilitation centres, extended care units, special schools, or with local government agencies, industrial health units, sports clubs and private clinics. Alternatively, experienced physiotherapists may operate a private practice. Interested persons can pursue Graduate Degrees in related areas leading to careers in teaching and/or research. A number of graduate programmes in Physiotherapy are available at universities in Canada.

Licence to Practise Physiotherapy

Physiotherapists practising in Canada must be licensed with the appropriate Provincial Licensing Body. The school itself has no jurisdiction in matters related to licensing, and Dalhousie University cannot accept responsibility for changes in licensing regulations which may occur from time to time.

The Canadian Physiotherapy Association (CPA), the national professional organization, recommends minimum academic and clinical curriculum content for membership. The degree course at Dalhousie University is designed to fulfill the present requirements by the time the students graduate. Currently, membership or eligibility for membership in the CPA entitles the Physiotherapist to apply for Provincial licensing through the appropriate provincial body. At present an examination for registration is not necessary for graduates of Canadian Physiotherapy Schools, however a national examination is planned to be implemented for all graduates in 1993.

Students' Society

The Physiotherapy Students' Society gives incentive to the students to participate in school, campus and community activities and to participate in both local and national professional activities.

Regulations

See also University and Faculty Regulations.

1. All students are required to observe the University regulations and the Faculty regulations as described in this Calendar.
2. Regular and punctual attendance at classes is required of all students. When the work of a student becomes unsatisfactory or if attendance is irregular, the student may be required to withdraw from the School.
3. Promotion each year is contingent upon satisfactory academic <u>and</u> clinical performance.
4. Students whose clinical performance is repeatedly unsatisfactory may be required to withdraw from the School.
5. Except in special circumstances students may not carry a course load in excess of the normal load as set down in the calendar of the School of Physiotherapy. A full course load in each of the three professional years is normally 36 credit hours. The minimum full course load is 36, 30 and 30 credit hours in Years II, III and IV respectively.
6. Students are normally required to complete the requirements for their degree within six years of initial registration in the School of Physiotherapy (see Faculty Regulation 9.3).
7. Supplemental Privileges

   A maximum of one INC can be permitted in any one year, and a maximum of three can be permitted throughout the whole course of study. Students who fail their year may be required to repeat the whole year or withdraw from the School of Physiotherapy.

   Students who fail a class on two occasions are not permitted to repeat the class and thus must withdraw from the School of Physiotherapy.

Failed Year

The student is considered to have failed the year if the student has failed to meet the required GPA for that year.

Students who fail their year may be required to withdraw from the School or to repeat their full year of study.

Credit Hours

Each full class is assigned a value of six credit hours, and each half class is assigned a value of three credit hours except where otherwise stated.

Grading System

The passing grade is D except in PT 3500B and PT 4060R clinical practice, where a minimum of C is required. See Faculty Regulation 10.

Grade Point Average Requirements-Prior Regulations

School regulations relating to GPA apply to students whose initial registration in the School was in the Fall of 1990 or earlier. Students entering in the Fall of 1991 and beyond will be governed by revised regulations found in the Faculty of Health Professions section of this calendar.

A student must obtain a minimum yearly GPA of 2.0 and a cumulative GPA of 2.0 or higher in the School of Physiotherapy (see Faculty Regulation 10). To satisfy the requirements for the Degree of Bachelor of Science in Physiotherapy, a student must accumulate at least

138 credit hours (or its equivalent for transfer students).

Withdrawal

Students who voluntarily withdraw, having satisfactorily completed courses toward the BSc (Physiotherapy) degree, with the intention of returning at a later date are advised that re-acceptance is contingent upon there being an available place.

Appeal

A student wishing to appeal a decision based on School regulations should in the first instance attempt to resolve the issue with the instructor(s) concerned, before proceeding as per Health Professions Regulation 20.

Discipline

See University Regulations. Students should be familiar with "Examples of Academic Offenses".

Degree with Distinction

See Faculty of Health Professions Regulation 18.

Association Membership

Information regarding membership in the various Physiotherapy Associations can be obtained from the following sources: The Canadian Physiotherapy Association (890 Yonge St., 9th Floor, Toronto, Ontario, M4W 3P4); The Chartered Society of Physiotherapy (14 Bedford Row, London, WC1R 4ED, England); The American Physical Therapy Association (1111 North Fairfax St., Alexandria, Virginia, 22314, U.S.A.); The World Confederation of Physical Therapy, Secretary General (16/19 Eastcastle Street, London, W1N 7PA, England); The Canadian University Service Overseas, (CUSO) 151 Slater Street, Ottawa, Ontario, K1P 5H5).

Degree Programmes

BSc (Physiotherapy) Degree Programme

The programme for the BSc (Physiotherapy) Degree is composed of a minimum of four years of study at University.

Application for Admission

The minimum academic requirement for entry into the first Professional Year of the BSc (Physiotherapy) programme is successful completion of first year in the Faculty of Arts and Science at Dalhousie University or the equivalent at another University (see Academic Requirements). Previous elective academic work transferred to the BSc (Physiotherapy) programme must be not more than 10 years old at the time of graduation from the programme. Prospective candidates are strongly advised not to include classes of similar description and content as those offered in the second, third and fourth (professional) years. Students seeking exemption from classes are assessed on an individual basis. A limited number of places may be made available for students who already possess a graduate degree in a discipline, considered by the Admissions Committee, to be relevant to Physiotherapy and whose course work may not include the prerequisite courses as described below. Such candidates are evaluated on an individual basis.

The deadline for receipt of applications for admission to the School of Physiotherapy is March 1, 1992. The Admissions Committee will determine each year which applicants who will be required to attend an interview. Only a small number of interviews are held each year. In addition, all applicants must undergo a medical examination to assess their fitness for the study and practice of Physiotherapy. Since the demand for admission exceeds the resources available, candidates are judged on a competitive basis. The decision of the admissions committee is final. Applicants are required to make arrangements to have an official copy of their final transcript for the current year sent as soon as it becomes available. It is stressed that it is the applicant's responsibility to see that all necessary documents are received by the School of Physiotherapy as soon as possible. Applicants with incomplete files will not be considered. At present, owing to the limited enrollment and the large number of applicants, only residents of the Atlantic provinces can be considered for admission to the School of Physiotherapy. Residency must be established by March 1 in the year for which application is being sought.

Quota System

The School of Physiotherapy at Dalhousie University is the only School serving Atlantic Canada. Due to the serious shortage of physiotherapists in the Atlantic provinces, a provincial quota system has been implemented. The provincial quota system means that a specified number of places will be allocated to each Atlantic province. 16 positions are allocated to Nova Scotia, 18 to New Brunswick, 12 to Newfoundland, and 2 to Prince Edward Island for a total of 48 positions.

Deposit

Because of the large number of applicants, a non-refundable deposit of $100.00 (applicable to tuition fees) is required from accepted students as proof of intent to register with the School of Physiotherapy. The $100 is payable within three weeks of notification of acceptance.

Transfer Students

See also Undergraduate Regulations.

Students who wish to transfer to the School of Physiotherapy from another University course in Physiotherapy must submit a written request for transfer to the Chair of the Admissions Committee of the School of Physiotherapy and enclose official transcripts from all colleges and universities attended as well as the calendar descriptions of all courses taken. Such requests are assessed on an individual basis. Admission is subject to the availability of a place. In order to obtain the BSc (Physiotherapy) degree from Dalhousie University, any transfer student admitted into the School must conform with Faculty Regulations.

Academic Requirements

First Year

During this year students are registered in the College of Arts and Science at Dalhousie or in an equivalent course of study at another University. Applicants are advised that a minimum C standing in each class (Dalhousie or equivalent) is required for consideration for admission into the School of Physiotherapy. An overall average of at least 70% is required. Possession of the minimum standing does not, however, guarantee admission owing to the competition for the limited number of places in the programme.

College of Arts and Science

The required course of study includes five full classes comprising two science classes (Chemistry, Physics or Biology), one social science class (Psychology, or Sociology and Social Anthropology), and two electives. All prerequisite courses must be completed by the end of the normal academic year preceding the year of anticipated admission to the School of Physiotherapy. It should be noted that in order to fulfill the science requirement the two classes must be in different areas of science, i.e. both cannot be concentrated in one area. Applicants with prerequisite courses that are over 10 years old are advised to take all prerequisite courses in order to qualify for admission consideration. Applicants with prerequisite courses that are between 6 and 10 years old are advised to take a prerequisite course in order to qualify for admission consideration.

Year 1: The pre-requisite courses at Dalhousie University are as follows: Two courses from Chemistry, Physics, or Biology. Acceptable courses are: Chemistry 1100 or 1110 or 1120 or 1200; Biology 1000 or 2000 level; Physics 1000 or 1100 or 1300. One course from Psychology or Sociology and Social Anthropology. Acceptable Dalhousie University courses are Psychology 1000 or 1010: Sociology and Social Anthropology 1200. The equivalent of two full Arts or Science electives. Students studying at Universities other than Dalhousie are requested to ensure that the pre-requisite courses they are taking are equivalent to the courses listed above by contacting the Registrar's Office. CPR (Cardiopulmonary Resuaitation) Certification must be completed by the end of Year 2.

Second, Third and Fourth Years:

Students must obtain a minimum GPA of 2.0 in each of the final three years of study and an overall final GPA of at least 2.0. Additionally, promotion to the fourth year of study is contingent upon a satisfactory clinical report (passing grade "C" required) with regard to the summer clinical placement between the third and fourth years of study (PT 3500B).

Faculty of Health Professions
Required Classes

Year II: Physiology 2030R, Anatomy 2170R, Anatomy 2160A, PT 2021A, PT 2041B, PT 2051B, PT 2061C, PT 2070A, PT 2080B, PT 2100B. Four week summer clinical orientation.

Year III: PT 3000A, PT 3010A, PT 3020B, PT 3030B, PT 3050A, PT 3061A, PT 3062B, Physiol 3110B, Physiol 3120A, Psychology 2120A, Elective, PT 3500B.

Year IV: PT 4021A, PT 4022B, HSA401A, PT 4060R, PT 4050B, PT4070A, PT4071B, Statistics 1060A, Elective.

Electives

All electives must be approved by the School of Physiotherapy. The required fourth-year elective is expected to be beyond the 1000 level and must be taken in the Fall Term.

Admitted students who have four full years of university study may be allowed elective credit up to a maximum of two classes. Students with three full years of university study may be allowed one elective class credit.

Students who have successfully completed, prior to admission, classes equivalent to the required classes in the programme of study may apply for exemption by submitting the course outline to the School office (see Arts and Science Regulation 14. "Advanced Placement"). If granted, the student will be required to replace all such classes and these must be approved by the School.

Clinical Practicum

After the second year, students engage in a four week clinical orientation (May/June). Throughout the third and fourth years, students engage in clinical practice under the guidance of clinical instructors. A compulsory full-time period of clinical practice is undertaken for approximately seventeen weeks between the third and fourth

years (PT 3500B). A compulsory period of clinical practice (PT 4060R) is a requirement of fourth year. Students will be assigned clinical placements throughout the Atlantic provinces and in some cases across Canada. The cost of travel and lodging are the responsibility of the student. However, in some instances, a nominal stipend may be provided. Students must successfully complete all clincial placements in the sequence outlined herein. Students must have settled all financial obligations to the University prior to undertaking any period of clinical practice.

Post-Diploma Programme

In 1977, the Senate at Dalhousie University approved the implementation of a course of study which enables Diploma holders in Physiotherapy to obtain the BSc (Physiotherapy) degree. This programme is being phased out. The last year for admission to this programme was 1990-91.

Successful completion of this course of study does not automatically confer eligibility to license and practice physiotherapy. All admitted students are strongly advised to consult with appropriate licensing agencies regarding requirements for licensure or re-licensure.

Course of Study

The total number of credit hours required in the existing BSc (Physiotherapy) degree is 138. Students with a Diploma in Physiotherapy are allowed a total of 78 credit hours, and must therefore take 60 credit hours to complete the requirements for the degree. The course of study is normally completed within 5 years from the date of initial enrollment. A break in registration is permitted but does not extend the five-year limit (see Faculty Regulation 7). A minimum overall C average (cumulative GPA 2.0) must be achieved.

Required Classes	Credit Hours
Elective	3
PT 4010B Human Locomotion	3
PT 4021A Research Methods	3
PT 4022B Research Methods	3
PT 4030/HSA401A Physiotherapy Management and Professional Issues	3
PT 4120/4280/ Option or PT4070A	3
PT 4150/4130/ Option or PT4071B	3
PT 3120B Exercise Physiology	3
PT 3110A Neurophysiology	3
1 Statistics	3
2 Electives	6
Sub total	36
Plus 4 approved Electives	24
Total	60

All students must obtain approval of their total proposed course of study from the School. Students who possess university classes in addition to their Diploma may apply for transfer credit. A minimum of five full classes must be taken at Dalhousie University. No work overload (more than 6 full courses) is permitted during an academic year. The School cannot guarantee that credits taken at another University will be equivalent to Dalhousie course offerings and therefore accepted as part of the degree requirements. See Faculty Regulation 2, College of Arts and Science Regulation 5 and School Regulations - Application for Admission.

Classes Offered

Year II Required Classes

PHYL 2030R: A full class in Physiology offered by the Department of Physiology, comprised of a lecture and laboratory series, which will be closely integrated with Anatomy 2170R.

Instructor: J. Dudar
Format: Lecture/Lab 5 hours
Prerequisite: Year I
Enrolment: Restricted

PHYT 2021A Clinical Physiotherapy I: Introduction to movement and the principles of therapeutic exercise including mobility, strength, and endurance.

Instructor: M. MacKay-Lyons
Format: Lecture/Lab 5 1/2 hours
Co-requisite: PT 2061C; Anat 2170R
Enrolment: Restricted

PHYT 2041B Clinical Physiotherapy II: A continuation of PT 2021A with increasing emphasis on clinical problem solving and progressive exercise design.

Instructor: M. MacKay-Lyons
Format: Lecture/Lab 5 1/2 hours
Prerequisite: PT2021A
Co-requisite: PT 2061C; Anat 2170R
Enrolment: Restricted

PHYT 2051B Kinesiology: This course will provide the student with the basic concepts associated with the study of human movement. The emphasis will be on the mechanical and physiological factors affecting normal human movements, although clinical examples are used to stress important concepts.

Instructor: C.L. Kozey
Format: Lecture (3 hours), Lab
Co-requisites: PT2061C, Anatomy 217R
Enrolment: Restricted

PHYT 2061C Clinical Structure & Function: Knowledge of gross anatomy of the human body and associated surface anatomy is used to appreciate the relationship of anatomical structures during functional activities.

Instructor: J. Tasker
Format: Lecture/Lab 3 hours alternate weeks

Co-requisite: Anatomy 2170R
Enrolment: Restricted

ANAT 2170R Gross Anatomy: 6 credit hours. The gross structure of the human body is studied region by region through the use of lectures, dissection and demonstrations in Radiological Anatomy.
Instructor: R.E. Clattenburg
Format: Lecture/Lab 7 hours
Prerequisite: Admission to School
Enrolment: Restricted

PHYT 2070A Microbiology: An introductory class in Microbiology offered by the Department of Microbiology within the Faculty of Medicine. Consult Department for further details.
Instructor: Staff
Co-requisites: Physiology 2030R, PT 2061C, Anatomy 217R.

PHYT 2080B Pathology: An introductory class in Pathology offered by the Department of Pathology within the Faculty of Medicine. Consult department for further details.
Instructor: Staff
Format: 1 credit hr

ANAT 2100B Neuroanatomy: A class in Neuroanatomy offered by the Department of Anatomy.
Instructor: D. Hopkins
Format: lecture/lab 3 hrs
Prerequisite: Anat 2160A
Co-requisite: Anat 2170R

ANAT 2160A Human Histology: A histology class for physiotherapy students covering cells, tissues, and selected organs.
Instructor: H. Dickson
Format: lecture 2 hrs/lab 3 hrs
Co-requisite: Anat 2170R

Summer clinical orientation:
Co-ordinator: G. Wainwright
Format: 4 weeks, 0 credit hrs

Year III Required Classes

PHYT 3000A Assessment: This course presents the student with both theory and practice in the physiotherapeutic aspects of the clinical assessment of musculoskeletal disorders.
Instructor: TBA
Format: lecture/lab 5 hrs
Prerequisites: PT2021A, PT2041B, PT2061, Anat 2170R
Enrolment: Restricted

PHYT 3010A Clinical Therapeutics I - Orthopaedic Conditions: This course will provide the student with an overview of common orthopaedic conditions and their medical/surgical and physiotherapeutic management.
Instructor: S. Curwin
Format: lecture 36 hrs/practical 18 hrs/seminar 6 hrs; 4 credit hrs
Prerequisites: PT2070A, PT2080B, PT2021A, PT2030R,PT2041B, PT2051B, PT2061C, ANAT 217R,PT2100B, PT2160A, 4 wks clin orientation
Enrolment: Restricted

PHYT 3020B Clinical Therapeutics III - Rheumatology/Amputees: This course is designed to prepare the student for the understanding and physiotherapeutic management of patients with rheumatoid disease and the rehabilitative needs of patients with amputations.
Instructors: S. Sanford-Smith, B. Little
Format: lecture/lab 5 hrs
Prerequisites: PT 2021A, PT2041B, PT2061C
Enrolment: Restricted

PHYT 3030B Clinical Therapeutics IV - Neurological Conditions: This course provides the student with a foundation of knowledge and specialized techniques to employ in the physiotherapy assessment and management of clients with disorders of the nervous system.
Instructor: G. Turnbull
Format: lecture/lab, 3 hrs; 4 credit hrs
Prerequisites: PT2070A, PT2080B, PT2021A, PT2030R, PT2041B, PT2051B, PT2061C, ANAT 217R, PT2100B, PT2160A & 4 week clinical orientation
Enrolment: Restricted

PHYT 3050A Clinical Therapeutics II - Cardiorespiratory: This class provides the student with the knowledge and skills necessary for the management of patients with cardiac and respiratory conditions.
Instructor: L. Makrides
Format: lecture, Lab and clinical sessions; 4 credit hrs
Prerequisite: Successful completion of the Year II, B.Sc. (PT) course of study and 4 weeks of clinical orientation
Enrolment: Restricted

Classes designated as Clinical Therapeutics I, II, III, IV, include lectures from the teaching staff of the Departments of Medicine, Surgery, Paediatrics, Neurosurgery, Obstetrics and Gynecology of the Faculty of Medicine, and these are integrated with the Physiotherapeutic procedures taught by the Faculty of the School. The topics covered include conditions commonly encountered in orthopaedics, rheumatology, spinal cord injury and disease, central and peripheral nervous system lesions, medical and surgical chest conditions, vascular diseases, ante- and post-natal care together with the prevention and treatment of post-surgical complications.

PHYT 3061A Electro-Physical Agents in Physiotherapy: This course is designed to assist students to acquire skills and knowledge in the area of electro-physical agents. Topics covered include: The theoretical and practical application of superficial heating and cooling, deep heating and ultrasound. The course will cover the applied physics, physiological basis and effects, indications and contra-indications and the dangers and precautions of wax, moist heat, cryotherapy, infrared radiation, microwave diathermy, shortwave diathermy and ultrasound.
Instructor: G. De Domenico
Format: lecture 2 hrs, lab 3 hours
Prerequisite: Anatomy 217R; Physiology 2030R; PT 2061C
Enrolment: Restricted

PHYT 3062B Electro-Physical Agents in Physiotherapy: This course builds on knowledge and skills acquired in PT 3061A. The course is designed to cover various types of electro-stimulation and phototherapy. Course material will include: The theoretical and practical application of electro-diagnosis, electrical stimulation and biofeedback, including the applied physics, physiological basis and effects; indications and contra-indications; dangers and precautions of electro-diagnostic testing, therapeutic electrical stimulation, ultraviolet radiation and laser bio-modulation.
Instructor: G. De Domenico
Format: lecture 2 hrs, lab 3 hrs
Prerequisite: PT 3061A
Enrolment: Restricted

PHYL 3110B Neurophysiology: The principles of neurophysiology and survey of current concepts of the organization and function of the mammalian nervous system are provided.
Instructor: R. Croll
Format: lecture/lab 4 hours
Prerequisite: Physiol 2030R

PHYL 3120A Exercise Physiology: The student is given a thorough understanding of skeletal muscle physiology and insight into the short and long term response to work. The material is related to normal and pathological conditions.
Instructor: H. Wolf
Format: lecture/lab 4 hrs
Prerequisite: Physiol 2030R

PHYT 3500B Clinical Practicum: Summer clinical practicum. All students must undertake at least 7 weeks between Years III/IV in an approved clinical setting. Satisfactory clinical performance is mandatory (passing grade C required).
Co-ordinator: G. Wainwright
Format: 0 credit hrs

PSY 2120B Clinical Psychology: Consult Department

Year IV Required Classes

PHYT 4021A Research Methods: The course is designed to familiarize students with the research process and includes developing a research proposal.
Instructor: C. Kozey
Format: lecture 3 hrs
Pre/corequisite: An approved course in statistics
Enrolment: Restricted

PHYT 4022B Research Methods: The course familiarizes students with the research process through the undertaking of a research project.
Instructor: C. Kozey
Format: seminar 3 hrs
Prerequisite: PT4021A
Enrolment: Restricted

HSA 401A Health Services Management: The purpose of the course is to develop a basic level of knowledge and management skills and organizational principles.
Instructor: P. O'Brien
Format: lecture 3 hrs
Prerequisites: Required Year II and III PT Courses
Enrolment: Restricted

PHYT 4070A Clinical Therapeutics V - Part I: The purpose of this course is to further develop the ability to formulate and implement a reasoned physiotherapy management plan for patients with a variety of musculoskeletal problems. The course will focus on spinal and peripheral joint disorders and aims to develop expertise in patient assessment and management in specific areas by the expansion of knowledge and skills related to etiology, mechanisms, pathophysiology, treatment and other health care procedures.
Instructors: D. Egan, S. Curwin
Format: Lecture 4 hrs, Lab 2 hrs
Prerequisites: PT3000, PT3010, PT3020, PT3061, PT3062, PT3500
Enrolment: Restricted

PHYT 4071B Clinical Therapeutics V - Part II: This course builds on knowledge and experience gained in PT4070A. The purpose of this course is to further develop the ability to formulate and implement a reasoned physiotherapy management plan, in the specific areas of paediatric, geriatric, neurology and cardiovascular patient care. The course aims to further develop expertise in patient assessment and management in specific areas by expansion of knowledge and skills related to etiology, mechanisms pathophysiology, treatment and other health care procedures.
Instructors: J.M. Walker, G.I. Turnbull, L. Makrides

Format: Lecture 4 hrs, Lab 2 hrs
Enrolment: Restricted

PHYT 4050B Psychiatry: An understanding of common psychiatric disorders that students will meet in clinical practice is developed. The class is given by members of the Department of Psychiatry in the Faculty of Medicine.
Instructor: S. Devarajan
Format: lecture 3 hrs
Prerequisite: Psych 2120B
Enrolment: Restricted

PHYT 4060R Clinical Practice: All students must undertake at least 8 weeks in the practice of Physiotherapy in an approved setting. Satisfactory clinical performance is mandatory prior to graduation (passing grade C required).
Co-ordinator: G. Wainwright
Format: 6 credit hrs
Prerequisite: PT 3500B

STATS 1060A Introductory Statistics: Consult Department

Elective Classes

HLPR 3000B: Intra- and interdisciplinary trends in the conceptualization, empirical investigation and practical implementation of health promotion will be examined. Students will consider historical, present and future perspectives of specific health promotion issues. Learners will have opportunities to develop skills in analyzing factors influencing the delivery of health promotion within the Canadian health care system. The contribution of different health professions to the study of health promotion will be assessed and the effectiveness of a teamwork approach will be evaluated.

PHYT 3070A/3080B Directed Study: Under the guidance of a member of Faculty of the School of Physiotherapy a student may undertake a detailed study related to the theory or practice of physiotherapy or associated topics. A variety of subjects ranging from detailed literature surveys to more clinically oriented areas are available to the students; evaluation is based upon the collection and presentation of the material.
Co-ordinator: L. Makrides
Format: Independent study - no scheduled hours
Prerequisite: Restricted to 3rd and 4th year physiotherapy students
Enrolment: Restricted

PHYT 3090B/NURS 4800B/PHAR 4950B/HEED 2250B Interdisciplinary Course in Human Nutrition: For class description see NURS 4800B

PHYT 4300A/4301B/NURS 4900A/4910/BOT4417A/4418B/ PHSE, HEED, RECR 4498A/4499B/PH4960A/4970B An Interdisciplinary Approach to Gerontology: See N4900A and N4910B for description.

Option Classes - Available to Post Diploma Students Only

Each Post Diploma student may take 2 option classes or PT4070/4071. These classes are related to detailed study of specific areas in Physiotherapy or related fields. Not all option classes are offered every year. Option classes are only available as distance education courses, to students located off-campus.

PHYT 4120A Gerontology and Geriatrics: This course explores the place of physiotherapy in the health care and health promotion of elderly persons.
Co-ordinator: A. Lea

PHYT 4130A/B: This course provides the student with the opportunity to develop a reasoned approach to the treatment of selected joint disorders which are commonly encountered in practice. The philosophies of a variety of clinicians, detailed clinical examination and treatment will be studied, discussed and practised.

PHYT 4140B Sports Physiotherapy: This course introduces students to sports medicine physiotherapy and encompasses prevention, management and rehabilitation, both in the clinic and on the field.

PHYT 4150B Cardiac Rehabilitation: This class provides the student with the knowledge and skills necessary to prescribe an appropriate level of exercise for a cardiac patient and to examine the role of cardiac rehabilitation in the management of patients with coronary heart disease.
Co-ordinator: L. Makrides

PHYT 4280 Pediatric Development and Assessment: Examination of prenatal and postnatal development with emphasis on motor development, and assessment procedures in the infant and child.
Co-ordinator: J. Walker

School of Recreation, Physical & Health Education

Location: 6230 South Street
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A. Richards, Dip. PE (Carnegie School of Physical Education, England), Teach. Cert. (Trent Park Col.), MSc (Dalhousie U.), EdD (U. of Colorado). Head of the Leisure Studies Division.
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Assistant Professors

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L.A. MacGregor, BPE (Dal), MS (U Illinois). Coordinator of the field experience programme in Physical Education
D.P. McGuire, BA (Wright State), MA (U Cincinnati). Head of the Health Education Division
J.A. Scott, BPE (U Calgary), MS (U Oregon). Co-ordinator of the Activity Programme in Physical Education
A.D. Yarr, BPE, MPE (UBC)

Lecturers

J.A. MacKillop, BPE (Dal), MA (Bowling Green State)
C. E. Rathbun, BSc (HE) (Dal)

Special Lecturers

J.W. Catano, BSC (Drexel Inst. of Tech.), MSc (Dal)
R.L. Kirby, MD (Dal), FRCP(C).
J.F. MacDougall, BA, BEd (St. FX), Dip. Physical and Health Education (Dal), MEd (Ontario Inst. for Studies in Educ.)
B. Neumann, BA (U Tor), MA (York)
H.A. Noble, BSc (Springfield Col.), AIE (U London), DPE (Acadia), LLD (Dal)
R.E. Stalker, MD (Dal)

Sessional Lecturer

N.W.P. Munro, BSc (UNB), MA (Carleton)

Purposes of the School

The School of Recreation, Physical and Health Education assumes the responsibilities for undergraduate studies in the Divisions of Health Education, Physical Education and Kinesiology and Leisure Studies, and for the conduct of graduate education and research.

Information about the graduate programmes available in Kinesiology, Health Education and Leisure Studies is available in the Calendar of the Faculty of Graduate Studies.

Admissions

The admission requirements outlined for each of the programmes represent a minimum standard and final selection rests with the School. Applicants should be aware that all programmes offered in the School have limited enrolments.

Regulations

1. All students must observe the University and Faculty regulations described in this Calendar.
2. All students must attend the classes of their prescribed course regularly and punctually. When the work of a student becomes unsatisfactory or attendance is irregular, the student may be required to discontinue the class concerned.

   Note: Regulations 3 to 7 below apply to students whose initial registration in the School was in the Fall of 1990 or earlier. Students entering in the Fall of 1991 and beyond will be governed by revised regulations found in the Faculty of Health Professions section of this calendar.
3. Undergraduate Grade Point Average Standards

   To remain in good standing, a student must obtain a minimum grade point average (GPA) of 2.00 in his/her first year of study (September - April). This will be computed using all those classes taken during this period. In the case of transfer students from Dalhousie, the first year of study (for GPA calculation purposes) will include those classes completed prior to admission to the School and accepted for degree purposes. In the case of part-time students, the required GPA will be calculated only after they have completed 12 credit hours. These first 12 credit hours will be included in the calculation.

   Thereafter, the student must maintain a minimum cumulative GPA of 2.00, which will be calculated at the end of each academic year and based on final grades (normally April). The minimum cumulative GPA of 2.00 will be necessary to qualify for the BPE, BRec, BSc (Health Education) or BSc (Kinesiology) degrees.

   Failure to meet these standards will result in the student being placed on probation (see Regulation 6 - Undergraduate Calendar) or being required to withdraw from the School.

   Students expecting to receive a BSc (Kinesiology) degree with honours are required to maintain a GPA of 3.0 or better over the last 3 years and all grades counting toward an honours degree must be C or better.
4. Computation of Grade Point Average

   The point value of letter grades and their use in GPA calculation are explained in Faculty Regulation 10.
5. Incomplete

   Students are expected to complete class work by the prescribed deadlines. Only in special circumstances may an instructor extend such deadlines. Incomplete work in a class must be completed within four weeks of the required date for submission of grades in that class to the Registrar's Office.

   Exceptions to this rule will normally be extended only to classes that require field work after completion of the Spring term. Currently these are Health Education 1495/1595, Leisure Studies 4496, Physical Education 3398 and Physical Education 3402.
6. Probation and Retirement from the School Prior Regulations

   Any student (including part-time students who have completed 12 credit hours or more) who has not met the GPA standard of 2.00 but has greater than 1.50 shall be allowed a probationary period until April of the following year. At this time, the student must have a cumulative GPA of 2.00 or better. Students failing to achieve a cumulative GPA of 2.00 or better in their probationary year will be retired from the School for a minimum of one academic year.

   Students who have not attained a cumulative GPA of at least 1.50 will be retired from the School for a minimum period of one academic year without the opportunity of probation.

   Any student is permitted to be placed on probation only once. Failure to meet the minimum cumulative GPA a second time will automatically result in retirement from the School.

   Application for re-admission to the School can occur after a minimum of one year. Each application must be accompanied by all transcripts and written evidence that the applicant is capable of completing university level work at a standard acceptable to the programme in question. Each application will be considered on a case by case basis and the final decision will be made by the Committee on Studies of the School.
7. Failure to Attain GPA Standards Prior Regulations

   Any student who fails to meet the yearly GPA standards as defined in Regulation 3 above must withdraw from the School. Provisions for being re-admitted are provided in Regulation 6 above. However, a student who has been declared as having failed the year on any two occasions is not eligible to return to the School.
8. Academic Appeals Procedures

   8.1 Appeals to Division Committee on Studies:

   In each of the divisions in the School of Recreation, Physical and Health Education (Health Education, Physical Education and Kinesiology, Leisure Studies) a Committee on

Studies exists for the purpose of hearing initial student appeals of academic decisions.

The student appellant is responsible for the preparation of all documentation in support of his/her appeal.

The student must submit the appeal to the appropriate division head who will convene a meeting of the Committee on Studies.

The student has the right to appear before the Committee on Studies and he/she should notify the division head of his/her desire to do so. The student also has the right to be represented by an advocate of his/her choice.

The decision of the divisional Committee on Studies shall be conveyed to the student, in writing, by the division head immediately after the conclusion of the appeal. This notification should include information about procedures to appeal to the School's Committee on Studies.

If the student's appeal is denied, the student may appeal to the School's Committee on Studies by the procedures identified below. This appeal must be presented to the School's Director within 30 days of notification from the division head of the result of the appeal at the division level.

If the student's appeal is upheld, two things may happen:

In the case of division regulations, the matter need go no further and implementation is Carried out by the division head.

In the case of the School/Faculty regulations, the division head is responsible for presenting the case to the Committee on Studies of the School of Recreation, Physical and Health Education.

8.2 **Appeals to the Committee on Studies of the School of Recreation, Physical and Health Education:**

As noted above it is the responsibility of the student to forward the necessary documentation to the School's Committee on Studies when the appeal is initiated by the student. Otherwise, it is the responsibility of the division head.

As Chair of the School's Committee on Studies, the Director will inform the student of his/her right to appear before the Committee. The student will also be informed of his/her right to be represented by an advocate of his/her choice. The decision of the School's Committee on Studies shall be conveyed in writing to the student by the Director immediately after the conclusion of the appeal. If the student's appeal is denied this notification shall include information about procedures to appeal to the Committee on Studies of the Faculty of Health Professions. It should be noted that this appeal to the Faculty of Health Professions Committee on Studies must be presented within 30 days of notification from the School of the disputed academic decision.

If the student's appeal is supported, two things may happen: In the case of School regulations, the matter need go no further and implementation is carried out by the Director of the School.

In the case of Faculty of Health Professions regulations, the Director of the School is responsible for presenting the case to the Committee on Studies of the Faculty of Health Professions.

9. **Degree with Distinction**

The Degree of Bachelor of Physical Education, Bachelor of Recreation or Bachelor of Science (Health Education) with Distinction is awarded under circumstances of Faculty Regulation 18.2.

10. **Student Advisory Programmes**

Although many classes are compulsory in the School's programme, considerable latitude exists for the development and extension of individual interests. To help in planning a total personal programme each student is assigned an adviser from the teaching staff. Advisers can help students to select classes, avoid common pitfalls, choose activities, interpret regulations and solve various types of problems. Although students are responsible for their own programmes and for maintaining high academic standards, they should consult their advisor regularly and whenever problems may occur.

11. **Student Exchange Programme**

A reciprocal exchange programme operates between the School and several colleges of physical education, leisure studies and recreation in England and the United States. Students of good academic ability may apply to participate in this study opportunity in their second or third year.

Course of Study for Bachelor of Science (Health Education)

Overview

The Bachelor of Science in Health Education is a four year degree programme offered by the Health Education Division since 1975. The goal of health education is to promote, maintain or improve individual, family and community health through educational processes.

The responsibilities of health educators include: assessing health education needs; planning, conducting and evaluating health education programmes; coordinating health education activities and resources; promoting health education throughout the community; and professional development.

The BSc (HE) programme guides students in attaining: 1. knowledge, attitudes and practices conducive to a healthy lifestyle, 2. professional preparation for a career in school or community health education, and 3. academic preparation for advanced study and research in health education or health-related fields.

Employment and Further Study

Graduates of the BSc (HE) programme are qualified for employment with government departments, health agencies, health and fitness centres, health promotion businesses, industries, medical care centres, professional organizations, schools and senior citizens' centres.
Some graduates qualify to pursue further study in fields such as business administration, education, health administration, health education, health promotion, medicine, nursing, public relations and other areas concerned with health promotion.

Admission Requirements

Applicants should have completed Nova Scotia Grade XII (or equivalent) with an average of 70% in five university preparatory subjects, including English and biology or chemistry. While Grade 12 Mathematics is not required for admission, Mathematics 441 will be essential if students are required or elect to take mathematics, science or computing science classes in their programmes.
Students already engaged in university programmes can transfer into the Health Education programme, and experienced persons in the workplace can be admitted as mature students. Inquiries about admission to this programme should be directed to the Head of the Health Education Division.

Transfer Credits

Applicants to the Bachelor of Science (Health Education) programme who have earned another degree or diploma, or who have successfully completed courses toward another degree, may be eligible to receive transfer credits. Such students should consult the Head of the Health Education Division.

Description of the Programme

BSc (Health Education) students earn their degrees by completing at least 120 credit hours of studies. They elect to major either in School Health Education or Community Health Education.

The Division requires those who major in School Health Education to minor in another subject that is applicable to a subject taught in the public schools. There are several ways to meet this Divisional requirement, and further information is available from the Division. In all cases, meeting the requirements for a "teaching minor" involves classes outside the Faculty of Health Professions.

Graduates who majored in School Health Education qualify for a Nova Scotia Teacher's Certificate (Level 5). Nova Scotia's officials have reciprocal agreements with counterparts in several other provinces to recognize teachers' certificates, thus improving the job mobility of teachers within Canada. Because Dalhousie University is one of the few institutions in Canada where school health education specialists are prepared, these agreements have special importance for these BSc (Health Education) graduates.

The Division requires Community Health Education majors to choose between two minor areas of concentration: Administration & Evaluation and Lifestyles Education. As is true of School Health Education majors, Community Health Education majors meet the Division's requirements by taking a variety of classes that take them beyond the Faculty of Health Professions' boundaries. Students who minor in Administration & Evaluation choose among classes in Accounting, Organizational Theory & Behaviour, Introduction to Statistics, and Research Methods. Students who minor in Lifestyles Education complete classes such as Psychological Aspects of Social Issues, Physiology of Exercise, Physical Fitness Assessment & Programme Design, Applied Anatomy & Kinesiology, Adventure-Based Experiential Education, Leisure & Special Populations, and Interpersonal Communications.

Health Education Classes Offered

HEHD 1395 Introduction to Health Education: While students are developing a fund of knowledge, understandings, attitudes and appreciations related to health and professional health education, they will be improving skills in library research, scholarly writing, information storage and retrieval, and public speaking. In addition to the regular classroom meetings, the class includes a series of seminars.

Instructor: E. Belzer
Format: Lecture/discussion/seminar, 4 hours per week for the first 2/3 of the Fall term; 2 credit hours
Enrolment: Restricted to Health Education majors

HEED 1495 Fundamentals of School Health Education: Through readings, presentations and discussions, students learn about the major components of the school health programme, including health services, provision of a healthful environment and school health instruction. Writing skills are emphasized. In addition to the regular classroom meetings, the class includes a concurrent series of seminars and a school health education field experience. The field experience occurs for two weeks following the University's spring examination period.
Instructor: Staff
Format: Lecture/discussion/seminar/field experience, 4 hours per week for the last 1/3 of the Fall term and the first 1/3 of the Spring term, plus the Spring field experience; 2 credit hours
Enrolment: Restricted to Health Education majors

HEED 1595 Fundamentals of Community Health Education: Students become familiar with the role of a community health educator. Topics include needs assessment, programme planning and evaluation. Skills stressed in HE 1395 and HE 1495 will continue to be developed. In addition to the regular classroom meetings, the class includes a concurrent series of seminars and a community health education field experience. The community health education field experience occurs for two weeks following the school health field experience that is part of HE 1495.
Instructor: W. Mitic
Format: Lecture/discussion/seminar/field experience, 4 hours per week in the last 2/3 of the Spring term, plus the Spring field experience; 2 credit hours
Enrolment: Restricted to Health Education majors

HEED 1230 Human Growth and Development: For class description, please consult the BSc (Kinesiology) programme section of this calendar.
Instructor: N. Kemp
Format: Lecture, 3 hours
Enrolment: Limited to 110

HEED 2204 Consumer and Environmental Studies: This class introduces students to factors that cause changes in the environment and consequently affect health. The concepts of ecology and consumerism are examined and students are expected to apply these in their personal environments. The consumer's role and responsibilities in relation to personal health status are perused.
Instructor: Staff
Format: Lecture/discussion, 3 hours
Enrolment: Limited to 30

HEED 2250/N4800B/PH 4950B/PT 309B Interdisciplinary Course in Human Nutrition: For class description, see Nursing 4800
Instructor: E. Lambie
Format: Lecture, 3 hours
Prerequisite: Biology 1000 or at the discretion of the professor

HEED 2350 Drug Use in Society: International, national and regional issues of promotion, prevention, treatment and legislation of substance use and abuse are examined. Emphasis is given to health promotion strategies conducive to reducing drug abuse.
Instructor: W. Mitic
Format: Lecture, 3 hours
Enrolment: Limited to 180

HEED 3000B An Interdisciplinary Approach to Health Promotion: Intra- and interdisciplinary trends in the conceptualization, empirical investigation and practical implementation of health promotion will be examined. Students will consider historical, present and future perspectives of specific health promotion issues. Learners will have opportunities to develop skills in analyzing factors influencing the delivery of health promotion within the Canadian health care system. The contribution of different health professions to the study of Health Promotion will be assessed and the effectiveness of a teamwork approach will be evaluated.
Instructor: Staff
Format: 2 lecture hours/week plus lab

HEED 3225 Mental Health: Concepts and issues of mental health (biological, psychological and sociological) are explored through an examination of related theories, research, writings and practices. Emphasis is placed on mental health promotion, but mental illness and its treatment is included. Additional information is provided about the role of community mental health organizations and agencies. Some experiential techniques are used to demonstrate the function of self-awareness and interpersonal communication in mental health.
Instructor: D. McGuire
Prerequisite: Psychology 1010R and KIN 1230 or Psychology 2090
Format: Seminar, 3 hours
Enrolment: Limited to 30

HEED 3351 Safety Education and First Aid: Students are introduced to the causes and effects of accidents and to strategies for reducing accidents through safety education. Upon successful completion of the first aid segments of the class students are certified in first aid and cardiopulmonary resuscitation.
Instructor: Staff
Format: Lecture/discussion/simulated practical experiences, 3 hours.
Enrolment: Limited to 30

HEED 3395 Community Health Education Planning: Issues and methods involved in the process of community health education planning are studied. Community analysis, goal and objective setting, developing education strategies and programme implementation and evaluation techniques constitute the components of planning covered in this class.
Instructor: L. Maloney
Format: Seminar, 3 hours
Enrolment: Limited to 30

HEED 3480 Introduction to Statistics: For class description please consult the Leisure Studies section of this calendar.
Instructor: Staff
Format: Lecture, 3 hours
Enrolment: Limited to 40

HEED 4401 Selected Communicable Diseases: Interactions among people, their environment, and the causal agents of communicable diseases are explored. Specific communicable diseases are examined in order to discuss the role of health education in disease prevention.
Instructor: L. Barnes
Format: Lecture/discussion, 3 hours. Offered in alternate years beginning in 1991-92.
Prerequisite: Microbiology 1100A or Biology 1000R
Enrolment: Limited to 30

HEED 4402 Selected Chronic Degenerative Diseases: The causes, effects and prevention of significant degenerative diseases and chronic conditions are perused. Attention is paid to the health needs of people with these conditions. The role of teachers and community workers is emphasized.
Instructor: Staff
Format: Lecture/discussion, 3 hours. Offered in alternate years beginning in 1992-93
Enrolment: Limited to 30

HEED 4412 Human Sexuality: This class is concerned with basic knowledge and understandings regarding biomedical, psychological, historical, legal, religious, semantic and comparative cultural aspects of human sexuality from conception to senility. Consideration is given to adjustment needs and problems of children and adults in contemporary Canadian society and to educational efforts to help with them.
Instructor: B. Belzer
Format: Lecture/discussion, 3 hours
Enrolment: Limited to 180

HEED 4425 Group Dynamics: Group dynamics, including leadership, decision making, group goals, communication, controversy, creativity, conflict, use of power, cohesion, group norms and problem solving, comprise the content of this class. The approach to learning is experiential. The potential of students will be utilized and each one is expected to function as a teacher and helper, as well as a learner.
Instructor: W. Mitic
Format: Seminar, 3 hours
Enrolment: Limited to 20

HEED 4440 Seminar - Research Interpretation and Undergraduate Paper: For class description please refer to the BSc (Kinesiology) Programme section of this calendar.
Instructor: Staff
Format: Lecture/discussion with lab to be arranged, 3 hours
Enrolment: Limited to 45

HEED 4493 School Health Education Field Placement: During the first 10 weeks of the Spring term (January -March) students will intern in school settings on a full-time basis. During the concluding three weeks of the term, seminars will be conducted on campus and in community settings. They provide a forum for presenting information, sharing ideas and concerns, evaluating internships and preparing to find a job. This class is available to students who have completed an educational methods class in a subject taught in the public schools of Nova Scotia.
Instructor: Staff
Format: Field Placement/Seminar, 9 hours
Enrolment: Restricted to Health Education majors

HEED 4494 School Health Education Planning: Planning curricula for school health education is the focus of this class. Such planning includes: clarifying one's point of view about school health education, assessing content needs, structuring needed content, organizing the health instruction programme, stating goals and objectives, developing learning opportunities, assembling resources and selecting evaluation techniques.
Instructor: Staff
Format: Lecture/discussion, 3 hours

Prerequisites: HE 1395, HE 1495, and HE 1595
Enrolment: Restricted to Health Education majors

HEED 4495 Health Education Internship: During the first 10 weeks of the class, students will intern in school or community health education settings on a full-time basis. Details about the internships are contained in the Internship Programme Handbook. Seminars - During the concluding three weeks of the term, seminars will be conducted on campus and in community settings. They provide a forum for presenting information, sharing ideas and concerns, evaluating internships and preparing to find a job.
Instructor: Staff
Format: Field placement/seminar, 15 hours
Enrolment: Restricted to Health Education majors

HEED 4496 Methods and Materials for Elementary School Health Education: If demand warrants, this class will be offered in alternate years. Students examine and develop various health education materials designed for the elementary grades. Resource material and teaching strategies are discussed in connection with drug education, diseases, mental health, consumer health, dental health, family living, safety education, personal hygiene or other emerging topics. Emphasis is on identifying local resources.
Instructor: Staff
Format: Seminar, 3 hours, offered in alternate years

HEED 4497 Methods and Materials for Junior High School Health Education: Students become acquainted with a range of teaching methods and procedures used in junior high school health education. Resource material is discussed and developed in topic areas such as drug education, communicable and chronic diseases, aging, mental health, consumer and environmental health, family living and human sexuality, health counselling and guidance. Emphasis is on the use of local resources and materials.
Instructor: L. Barnes
Format: Seminar 3 hours offered alternate years beginning 1991-92.
Prerequisite: An educational planning class

HEED 4498/4499 An Interdisciplinary Approach to Gerontology: For class description, see Nursing 4900A/4910B.
Instructor: Staff
Format: Lecture, 3 hours

HEED 4800C Directed Studies in Health Education: The purpose of the directed study is to allow students to develop an area of specialization with library, laboratory or field research under the tutelage of an appropriate faculty member.
Instructor: Staff
Format: Tutorial, 3 hours
Prerequisites: Fourth year status; a G.P.A. of at least 2.8; a "B" grade in an earlier class in the area of study (where appropriate); consent of advisor; consent of tutor.

Course of Study for Bachelor of Science (Kinesiology)

The BSc programme in Kinesiology is designed to provide students with an opportunity for the scientific study of human movement. Emphasis therefore is placed on course work in exercise physiology, biomechanics and motor performance. In addition, the students have an opportunity to supplement their kinesiology classes with appropriate in-depth courses in the selected areas of science such as biology, psychology, mathematics, chemistry or physics. For example, a student can complete a BSc programme in Kinesiology with an emphasis in exercise physiology and biology, as these are complementary areas of study. Other complementary areas are motor performance and psychology, biomechanics and mathematics/physics. Other combinations of kinesiology and science may also be possible.

Both a general and honours kinesiology programme are offered. There are some differences in course requirements. Within the first three years it is relatively easy to switch between the general and honours programmes. However, those intending to switch from the general to the honours programme will have to choose electives carefully. To remain in the general programme the School's normal academic GPA criteria apply. However, there are special GPA criteria for students in the honours programme. Please refer to Regulation 3. in this section of the calendar.

Students receiving an honours degree must also complete an honours seminar and thesis in the fourth year.

Admission Requirements

All students must observe the University and Faculty regulations described in this calendar. Generally admission from high school requires an average of 70% or better in five grade XII subjects including:

(a) English 441;
(b) a minimum of two of biology, chemistry, mathematics and physics; (Note: Mathematics 441 is a pre-requisite for many classes in Mathematics, science and Computing Science at Dalhousie
(c) The remaining classes may be from those listed above or from Economics, French, Geography, Geology, German, History, Latin, Law, Modern World Problems, Music, Political Science,Sociology, Spanish.

Transfer Students

In order to be admitted to the programme, students transferring from other university programmes are expected to have a minimum GPA of 2.0 (using the Faculty of Health Professions formula to calculate the GPA.) The second year programme requirements for transfer students are as follows:

Anatomy 102	3
KIN 1230	3
KIN 2310	3
KIN 2320	3
KIN 2330	3
KIN 2465	3
Physiology 1010 or 2030	6
Open Elective[1]	16
Total	30

[1]Electives may be chosen from the Faculties of Arts, Science, Health Professions, Management Studies and Medicine. Biology 1000 is strongly recommended.

The third and fourth year programmes for transfer students are the same as those outlined below.

Four Year Bachelor of Science (Kinesiology) General Programme

First Year	Credit Hours
Anatomy 102	3
Physiology 1010 or 2030	6
KIN 1230	3
Open Elective[1]	16
2 Electives only from the following:	12
Biology 1000	
Chemistry 1100 or 1430	
Mathematics 1000/1010	
Physics 1100 or 1300	
Psychology 1000	
Total	30

Second Year	Credit Hours
KIN 2310	3
KIN 2320	3
KIN 2330	3
KIN 2465	3
Arts & Science Electives	12
Open Elective[1]	16
Total	30

Third and Fourth Years[2] (select 30 credit hours each year)	Credit Hours
4 Classes from List A	12
2 Classes from List B	6
Arts & Science Electives[3]	12
Open Electives[1,3]	21
KIN/PE Electives[3]	9
Total	60

[1] Electives may be chosen from the Faculties of Arts, Science, Health Professions, Management and Medicine. Biology 1000 is strongly recommended.

[2] Third and Fourth Year curricula are listed together to permit flexibility in scheduling classes available in alternate years.

[3] Electives must be at the 200/2000 level or above.

List A (Select 4)
KIN 3414
KIN 3419
KIN 4440
KIN 4466
KIN 4476
KIN 4800 (if GPA is more than 3.0)
LST 3480

List B (Select 2)
PE 2220
PE 4410
PE 4497
LST 2110
LST 3157
LST 3420
LST 4490
LST 4494
LST 4498
LST 4499

Four Year Bachelor of Science (Kinesiology) Honours Programme

First Year	Credit Hours
Anatomy 102	3
Physiology 1010 or 2030	6
KIN 1230	3
Mathematics 1000/1010	6
2 Electives only from the following:	12
Biology 1000	
Chemistry 1100 or 1430	
Physics 1100 or 1300	
Psychology 1000	
Total	30

Second Year	Credit Hours
KIN 2310	
KIN 2320	
KIN 2330	
KIN 2465	
Science Electives[2]	1
Open Electives[1]	
Total	3

Third and Fourth Years	Credit Hours
(select 30 credits each year)	
KIN 3414	
KIN 3419	
KIN 4440	
KIN 4466	
KIN 4476	
KIN 4800	
LST 3480	
Computer Science 1200 or 1400	
Required 2-year total from above list	21
Science Electives[2]	12
Open Electives[3]	27
Total	60

KIN 8880 Honours Research and Thesis

1 Electives may be chosen from the Faculties of Arts, Science, Health Professions, Management and Medicine. Biology 1000 is strongly recommended.
2 Third and Fourth Year curricula are listed together to permit flexibility in scheduling classes available in alternate years.
3 Electives must be at the 200/2000 level or above.

Classes Offered - BSc (Kinesiology) Programme

ANAT 102 Basic Human Anatomy: Taught within the Department of Anatomy in the Faculty of Medicine with emphasis on gross anatomy.
Instructor: Staff
Format: Lecture/Lab, 3 hours
Enrolment: Limited to 110

PHYL 1010 Human Physiology: This class is taught by the Department of Physiology and Biophysics and is an introductory physiology class for health professions students. The functions of body organs and body systems and the integration of functions in the whole organism are studied.
Instructor: Staff
Format: Lecture, 2 hours, lab/tutorial, 1 - 3 hours
Enrolment: Limited to 110

PHYL 2030 Human Physiology: The function of organs and body systems is presented through lectures and laboratory work. Special emphasis is on the integration of function in the whole organism. Note: This class is designed for students who have completed at least one year of university study.
Instructor: Staff
Format: Lecture/Lab/Tutorial, 6 hours

KIN 1230 Human Growth & Development: A study of factors influencing human growth and development from birth to maturity, as revealed by observational and experimental studies.
Instructor: N. Kemp
Format: Lecture, 3 hours
Enrolment: Limited to 110

KIN 2310 Physiology of Exercise: This is an introductory class for students with a basic knowledge of anatomy and physiology. It concentrates on the respiratory, cardiovascular and neuromuscular systems in terms of their involvement during exercise, their adaptation to different types of training and how they limit performance during exercise in different environmental conditions.
Instructor: Staff
Format: Lecture/Lab, 3 hours
Prerequisites: Anatomy 102 and Physiology 1010 or Physiology 2030
Enrolment: Limited to 80

KIN 2320 Applied Anatomy and Kinesiology: Emphasis is on application of anatomical and kinesiological information to teaching and coaching experiences. The first half semester involves those bodily systems which produce movement, with emphasis on neuroanatomy. The second half semester consists of application of kinesiological principles so that activities can be interpreted effectively.
Instructor: L. Holt
Format: Lecture/Lab, 3 hours
Prerequisites: Anatomy 102 and Physiology 1010 or Physiology 2030
Enrolment: Limited to 80

KIN 2330 Motor Control & Learning: This class deals with efficiency in completing movements to achieve a desired goal. It involves systematic changes in perception of the environment, decisions about what movements to make, as well as changes in how these movements are carried out. This class covers what is known about these processes as well as how this information can be applied.
Instructor: L. Verabioff
Format: Lecture/Lab, 3 hours
Prerequisite: Psychology 1000
Enrolment: Limited to 80

KIN 2465 Biomechanical Analysis: The focus of this class is on qualitative analyses of human movement from a mechanical perspective. The class is well suited to practitioners, and at the same time the class will provide a solid base for those students wishing to pursue the study of biomechanics in greater depth.
Instructor: C. Putnam
Format: Lecture/Lab, 3 hours
Enrolment: Limited to 80

KIN 3414 Physical Fitness Assessment & Programme Design: Evaluation of various methods of physical fitness assessment, designing fitness programmes for diverse populations and identifying motivational techniques with emphasis on the areas of cardiovascular fitness, weight reduction, pre- and post-natal programmes and the elderly. In addition, laboratory work teaches the techniques of administering various fitness tests.
Instructor: P. Campagna
Format: Lecture/Lab, 3 hours
Prerequisite: KIN 2310
Enrolment: Limited to 45

KIN 3419 Physiological Bases of Sport: Human physiological adaptations to varying levels of exercise are studied. The conceptualization of the physiologic principles operating as the body's oxygen transport system adapts to meet metabolic demands of the working muscles provides the major emphasis. Attention is given to the metabolic, circulatory and pulmonary adjustments to the working state with a section devoted to the problems of acid-base homeostasis during exercise.
Instructor: P. Campagna
Format: Lecture/Lab, 3 hours
Prerequisite: KIN 2310
Enrolment: Limited to 45

KIN 4440 Seminar - Research Interpretation and Undergraduate Paper: For those who plan to pursue graduate studies, the application of the processes of science to the field are discussed in a series of lectures to introduce the student to the language and methods of science in general. The assignments lead to the proposing and conducting of a small investigation appropriate to student interests which is written in the format of a journal appropriate to the question addressed. Selected studies are presented to the class.
Instructor: Staff
Format: Lecture/Discussion/Lab, 3 hours
Enrolment: Limited to 45

KIN 4466 Advanced Biomechanics: This class takes a quantitative approach to understanding human movement, muscle function and the structure of biological tissue from a mechanical perspective. Concepts presented in the class will be illustrated with examples taken from the areas of sport, exercise, sports medicine and rehabilitation. Students will be introduced to several techniques used in biomechanics research.
Instructor: C. Putnam
Format: Lecture/Lab, 3 hours
Prerequisite: KIN 2465
Enrolment: Limited to 45

KIN 4476 Skilled Performance: This class is primarily concerned with examining the main concepts of skilled performance; that is, those factors which appear to be related to the effective and efficient acquisition of pre-determined goals on a regular basis. For the most part this class uses an information processing focus to study motor skills and the potential influences on their performance. However, one consequence of the material should be the recognition that any attempts to isolate skilled behaviour into separate perceptual, cognitive and motor skills can occur only at a superficial level. In addition, an attempt is made to use appropriate examples from sport, industrial and clinical settings to illustrate particular concepts.
Instructor: J. McCabe
Format: Lecture, 3 hours
Prerequisite: KIN 2330
Enrolment: Limited to 45

KIN 4800 A, B, C, R, S or T Directed Studies in Kinesiology: Senior undergraduate students develop an area of specialization under the direction of a faculty member.
Instructor: Staff
Format: Library survey, laboratory experiment or other research study, 3 or 6 hours
Prerequisites: Fourth year status, a GPA of at least 3.0, a "B" grade in an earlier class in the area (e.g., biomechanics, exercise physiology, motor behaviour) in which the project will be conducted (where applicable), consent of advisor, consent of faculty. Intention to register for a Directed Study should be confirmed with the Division Head by April 30th of the preceding academic year.

KIN 8880 Honours Research & Thesis: At the conclusion of an honours programme a student's record must show a grade which is additional to those for the required classes. This grade may be obtained through a comprehensive examination, the presentation of a research paper (which may be an extension of one of the classes) or such other method as may be determined by the School. The method by which this additional grade is obtained is referred to as the Honours Qualifying Examination. A pass/fail grading system will be used. Intention to register for a Directed Study should be confirmed with the Division Head by April 30th of the preceding academic year.

Programme of Study for Bachelor of Physical Education/Bachelor of Education

The combined BPE/BEd programme prepares students for a teaching career. The basis of the BPE/BEd degree therefore consists of both theory classes and pedagogical classes.

Studies in the general education area occupy about one-third of the total curriculum and have three overlapping purposes. The first is

to contribute to a liberal education. The second is to provide background studies of specific importance to Physical Education. The third is to provide for deeper study in another academic discipline. This choice will depend upon the student's interest, although, if a general school teaching qualification is desired, the student must choose a subject being taught in the school system in which he/she plans to teach. Students must complete at least 4 full credits in the minor subject, 3 of which must be beyond the 1000 level.

The theory classes are intended to provide a foundation for understanding the administrative, historical, mensurable, philosophical and scientific aspects of Physical Education.

Admission Requirements for BPE/BEd Degrees

The requirements for entrance into the BPE/BEd programme are generally the same as those outlined for other Health Professions. Generally, admission from high school requires an average of 70% or better in five grade XII subjects including:

(a) English 441;
(b) a minimum of two of biology, chemistry, mathematics and physics; Note: Mathematics 441 is a required pre-requisite for many classes in Mathematics, science and Computing Science at Dalhousie University.
(c) The remaining classes may be from those listed above or from Economics, French, German, Geography,Geology, History, Latin, Law, Modern World Problems, Music, Political Science, Sociology, Spanish. In addition, a senior class in physical education may be considered for admission to the BPE/BEd programme.

Admission with Advanced Standing

Students may be admitted to the undergraduate programme with advanced standing if they have completed arts and science classes at Dalhousie or at a recognized university. However, all graduation requirements of the School ultimately must be met.

Students who have completed the three year Associate of the Nova Scotia Teachers' College, Truro, may be admitted with advanced standing, provided they satisfy the usual admission requirements for the Bachelor's Degrees in Physical Education and Education at Dalhousie. The decision on granting credit depends on whether an acceptable level of accomplishment has already been demonstrated in a comparable class.

Five Year Combined Bachelor of Physical Education/ Bachelor of Education Degree

The programme is jointly administered by the School of Recreation, Physical and Health Education and the School of Education at Dalhousie University. It is considered an integrated programme. Students are therefore expected to meet the BEd requirements before they are accepted into the joint BPE/BEd programme. Students need a B average in their Arts and Science teaching minor, an overall B average in their Arts and Science courses and a C or better average in PE/KIN subjects. The earliest students may apply for admission to the School of Education is at the end of their second year. For consideration at the end of second year, they must have completed at least 6 credit hours at the 1000 level in their minor. Students must have completed the prescribed first two years in Physical Education before applying to Education - in particular, all Arts and Science electives must be completed. Applications must be submitted to the Coordinator of BPE Field Experiences by the end of February for consideration that Spring.

It is recommended that a student select their minor carefully so that it is in a "teachable" subject for the school system - English, French, History, Mathematics, Biology, Chemistry, Physics, Economics, Geography. A minor in a subject area is 6 credit hours at the 1000 level and 18 credit hours above the 1000 level. (If a student takes 6 additional credit hours in the teaching minor, it would be considered a major.) Secondary level students must complete 18 credit hours in their minor before they may take the methods course. Students in the elementary track must complete a minimum of three full classes from English, History, Mathematics and the sciences. It is recommended that courses be selected from each area.

A 'B' average in the minor and a 'B' average overall in Arts and Science is required each year to continue in the BEd programme. Only integrated BPE/BEd students can receive a teaching license from the School of Recreation, Physical and Health Education.

For further information on the BPE/BEd integrated programme, students should consult the BEd Coordinator or the Coordinator of Field Experiences in Physical Education.

Year I	Credit Hours
Physical Education/Kinesiology Classes:	
PE 1195	3
KIN 1230	3
Leisure Studies 2110	3
Anatomy 102	3
Physiology 1010 or 2030	6
Psychology 1000 or 1010	6
Arts & Science Electives[1]	6
Total	30

Year II	Credit Hours
Physical Education/Kinesiology Classes:	
KIN 2310	3
KIN 2320	3
KIN 2330	3
PE 2220	3
PE 2295	3
Education Classes:	
Educational Psychology 4311A or 4312B	3
Arts & Science Electives[1]	12
Total	30

Year III Elementary	Credit Hours
Physical Education/Kinesiology Classes:	
KIN 2465	3
PE 2384	3
PE 3402[2]	6
Education Classes:	
Foundations	
History of Education	3
Educational Psychology	3
Educational Methods at Mt. St. Vincent University:	
Reading/Language Arts	6
Electives:	
Arts, Science, Education	6
Total	30

Year III Secondary	Credit Hours
Physical Education/Kinesiology Classes:	
KIN 2465	3
PE 2384	3
PE 3398[2]	6
Education Classes:	
Foundations	
History of Education	3
Philosophy of Education	3
Educational Psychology	3
Arts & Science Electives[1]	9
Total	30

Year IV Elementary	Credit Hours
Education/ Kinesiology Classes:	
PE 4250	3
PE 4395	3
Leisure Studies 2382	3
Education Classes:	
Foundations	
Philosophy of Education	3
Sociology of Education	3
Educational Methods at Mt. St. Vincent University	
Mathematics	3
Social Studies or Science	3
ED 4901R4	6
Arts & Science Electives[1]	3
Total	30

Year IV Secondary	Credit Hours
Physical Education/ Kinesiology Classes:	
PE 4250	3
PE 4395	3
PE/KIN/LST/HE Elective	3
Leisure Studies 2382	3
Education Classes:	
Foundations	
Sociology of Education	3
Methods in Second Subject Area	6
ED 4903B4	3
Arts & Science Electives[1]	6
Total	30

Year V Elementary	Credit Hours
Physical Education/ Kinesiology Classes:	
PE 4496	12
PE 4497 or LST 4490	3
PE/KIN/LST/HE Electives	9
Arts & Science Electives[1]	3
Education Classes:	
ED 4902A5	3
Total	30

Year V Secondary	Credit Hours
Physical Education/ Kinesiology Classes:	
PE 4496	12
PE 4497 or LST 4490	3
PE/KIN/LST/HE Electives	9
Education Classes:	
ED 4902A[3]	3
Open Elective (Education/Arts/Science)	3
Total	30

[1] Electives may be chosen from the Faculties of Arts, Science, Health Professions (excluding Physical Education, Kinesiology, Leisure Studies and Health Education classes), Management Studies and Medicine.

[2] Includes 4 weeks of teaching internship in the Halifax Metro area at the end of the Spring term, following examinations.

[3] PE 4496 students are assigned full-time to schools in the Metro area as of September 1 or whenever school begins, until approximately November 30. No other classes may be scheduled during this period.

[4] Includes 4 weeks of student teaching in chosen second subject area in the Halifax Metro area at the end of the Spring term, following examinations.

[5] Includes 3 weeks of full-time field experience, beginning approximately at the end of October. The field experiences in PE 4496 and ED 4902 will be at the same school.

Field Experiences

Field experiences in the primary subject area of Physical Education and the second subject area in Education are indicated as part of the courses listed above. These experiences will include observation and involvement in school or community programmes. Students who intend to

gain teacher certification must complete the practice teaching experience successfully.

Students must provide their own transportation for their field work.

Special Considerations

If a student is interested in special programmes such as remedial Physical Education or outdoor education, every effort will be made to provide a relevant field experience.

Classes of Instruction - BPE/BEd Programme

ANAT 102 Basic Human Anatomy: Taught within the Department of Anatomy in the Faculty of Medicine with emphasis on gross anatomy.
Instructor: Staff
Format: Lecture/Lab, 3 hours

PHYL 1010 Human Physiology: This class is taught by the Department of Physiology and Biophysics and is an introductory physiology class for health professions students. The functions of body organs and body systems and the integration of functions in the whole organism are studied.
Instructor: Staff
Format: Lecture, 2 hours, lab/tutorial, 1 - 3 hours

PHYL 2030 Human Physiology: The function of organs and body systems is presented through lectures and laboratory work. Special emphasis is on the integration of function in the whole organism. Note: This class is designed for students who have completed at least one year of university study.
Instructor: Staff
Format: Lecture/Lab/Tutorial, 6 hours

PHSE 1195 Introduction to Teaching: Examines the profession of teaching with emphasis on the area of Physical Education. Purposes of education, teacher roles and a brief introduction to the teaching process are included.
Instructor: L. Verabioff
Format: Lecture, 3 hours
Enrolment: Limited to 60

PHSE 2220 Measurement & Evaluation in Physical Education: An introduction to the fundamentals involved in measurement and evaluation, including writing objectives, designing and administering tests, organizing and analyzing test results. Tests used to measure physical fitness, specific motor skills and health knowledge are investigated.
Instructor: J. Hoyle
Format: Lecture/lab, 3 hours
Enrolment: Limited to 60

PHSE 2295 Instructional Techniques in Physical Education: A continuation of work begun in PE 1195 with emphasis on instructional techniques. Class management and planning will be areas of major concentration. The class includes theoretical content as well as appropriate field work related to teaching.
Instructor: A. Scott
Format: Lecture/field work, 3 hours
Prerequisite: PE 1195
Enrolment: Limited to 60

PHSE 2384 Physical Activity for Disabled Persons: An introductory overview of current practices, philosophies and issues related to physical activity for the disabled. The class emphasizes knowledge and understanding of various disabling conditions in relation to physical activity.
Instructor: L. Holt
Format: Lecture, 3 hours
Enrolment: Limited to 60

PHSE 3398 Practical Studies Secondary: This class is designed for students who wish to specialize in secondary physical education. Students completing the class will have practiced basic skills for teaching team, individual, dual and fitness activities. Analysis of teacher behavior and practice in using a variety of teaching styles receive emphasis. Visits to schools are included. 3 weeks of full-time student teaching are included at the end of the spring term.
Instructor: L. Verabioff
Format: Lecture/lab/field work, 6 hours
Prerequisite: PE 2295
Enrolment: No limit

PHSE 3402 Elementary Physical Education: This class is designed for students who wish to specialize in elementary physical education. Special projects with young children are developed by the class. Class includes field trips to innovative school, preschool and community organization programmes.
Instructor: L. MacGregor
Format: Lecture/lab, 6 hours
Prerequisite: PE 2295
Enrolment: No limit

PHSE 4250 Organization & Administration of Physical Education & Recreation: This class focuses on the administrative and planning processes involved in the development and implementation of recreation and leisure programmes in both community and public school settings. Students will have the opportunity to apply and test programming principles through practical experience in organizing a recreation programme in settings internal or external
Instructor: C. Savoy
Format: Lecture, 3 hours
Enrolment: Limited to 60

PHSE 4395 Curriculum Planning and Development: An introduction to basic curriculum theory and programme development principles. Developing a curriculum philosophy, objectives, course and unit plan and programme evaluation are covered. Appropriate field work is included.

Instructor: A. Yarr
Format: Lecture/field work, 3 hours
Prerequisite: PE 3398 or PE 3402 or permission of instructor
Enrolment: No limit

PHSE 4410 Care and Prevention of Athletic Injuries: The class offers a fundamental understanding of the maintenance of health (personal hygiene, nutrition, prevention of common ailments and injuries). More specifically it will deal with first aid, sports injuries, their prevention and treatment. Students will acquire practical skills in taping techniques and cardiopulmonary resuscitation.

Instructor: Staff
Format: Lecture/lab, 3 hours
Enrolment: Limited to 60

PHSE 4475 Psychology of Sport and Physical Activity: This class offers an awareness and understanding of the phenomena involved in mental preparation in sport and physical activity. It will systematically analyze, investigate and assess psychological skills, attributes and preparation in these areas and their applications in other environments. Emphasis will also be placed upon personal experience and practical application.

Instructor: C. Savoy
Format: Lecture, 3 hours
Prerequisite: KIN 2330 or permission of instructor
Enrolment: Limited to 60

PHSE 4496 Teaching Practicum in Physical Education: During the fall term students are placed in schools for full- time student teaching. Students are expected to obtain experience in applying basic teaching skills as well as becoming familiar with how schools are organized and administered. Being able to analyze teacher behaviour to provide assistance to fellow students is also expected. Seminars will be scheduled to provide opportunities to share student teaching experiences and to discuss topics of relevant interest.

Instructor: L. MacGregor
Format: Seminar/field work, 12 hours
Prerequisite: PE 3398 or PE 3402
Enrolment: No limit

PHSE 4497 Philosophy for Physical Educators: An introduction to "thinking with concepts" provides a foundation for choice analysis in a seminar presentation. An introduction to existentialism is presented, with emphasis on choice, freedom and responsibility.

Instructor: A. Yarr
Format: Lecture, 3 hours
Enrolment: Limited to 60

PHSE 4498/4499 An Interdisciplinary Approach to Gerontology: For class description, see Nursing 4900A/4910B.

Instructor: Staff
Format: 3 hours

PHSE 4800A/B/C/R/S/T Directed Studies in Physical Education: Senior undergraduate students develop an area of specialization under the direction of a faculty member.

Instructors : Staff
Format: 3 or 6 hours
Prerequisites: Fourth year status; a G.P.A. of a least 3.0; a B grade in an earlier class in the area in which the project will be conducted (where appropriate); consent of advisor; consent of faculty.

Programme of Study for Bachelor of Recreation

Programme Objectives

The focus of the Bachelor of Recreation degree is recreation administration. The objectives of the programme are as follows:

1. to provide the student with a broad educational exposure to various social science and humanities disciplines (e.g. Psychology, Sociology, Economics, Political Science, Anthropology, History);
2. to familiarize students with current social science-based research in leisure studies, including an understanding of research methods and statistics;
3. to provide the necessary background to enable students to pursue graduate work in leisure studies, management studies or the social sciences and humanities;
4. to provide the student with the necessary skills and knowledge for entry into the role of leadership, advocacy, consultancy and education in leisure services;
5. to provide the student with the opportunity to design a specific interest area within recreation administration. These specializations will be based on student interest, market demand and availability of appropriate classes. Examples include: leisure and disabled persons, experiential education, arts administration, sport administration, commercial recreation, tourism, municipal administration and leisure counselling. The programme of studies is developed in consultation with the student's advisor.

Admission Requirements and Regulations

1. All students must observe the University and Faculty regulations described in this calendar.
2. The requirements for entrance into the Bachelor of Recreation programme are as follows:

   Basic university admission requirements with an overall average of 70%; one of the subjects must be Biology, Chemistry, Mathematics or Physics.

   Students applying for admission from high school must complete the Experience Background Questionnaire and forward it to the Head of the Leisure Studies Division at the School. Transfer students and mature students must submit an up-to-date transcript or resume. Three letters of reference indicating personal and academic suitability must also be forwarded by mature students to the Head of the Leisure Studies Division.

   The Leisure Studies Division has an affirmative action policy to increase the number of students who are physically disabled or who belong to the Acadian, Black and Native minority groups of the Maritime region.

'ransfer Credit

Credit toward the BRec degree for work ompleted at other universities will be evaluated at e request of the student.

Students transferring from Cabot College ay receive academic credit, subject to the pproval of the Faculty of Health Professions ommittee on Studies. Such students should onsult with the Head of the Leisure Studies ivision.

The first year introductory class LST 1126 equires all students to attend a four day ademic camp. The purpose of this camp is to ient students to the field of leisure studies and ur programme in particular. It provides an pportunity to consolidate students' aspirations nd expectations. The cost of the lab for LST 26 is $150.00. This lab is also open to transfer udents and to first year students from other visions within the School. The lab normally takes ace at the end of the first week of classes.

our Year Bachelor of Recreation rogramme

First Year	Credit Hours
LST 1126A	3
LST 1361B	3
LST 2110	3
LST 2326	3
Psychology 1000R	6
Sociology 1000,1100 or 1200	6
Electives[1]	6
Total	30

Second Year	Credit Hours
LST 2127	3
LST 2128	3
LST 2361	3
LST 2382	3
LST 2384	3
Political Science 1100 or Economics 1100	6
Electives[1]	9
Total	30

Third Year	Credit Hours
LST 3296	3
LST 3360	3
LST 3361	3
LST 3420	3
LST 3480	3
Electives[1]	15
Total	30

Fourth Year	Credit Hours
LST 4495	3
LST 4496	6
Electives[1]	21
Total	30

[1] A minimum of 24 credit hours of electives must be taken outside of the School of Recreation, Physical and Health Education. Twelve (12) credit hours of these must be beyond the introductory level. Of the remaining 27 credit hours of electives a minimum of 9 credit hours must be taken from LST 3157, LST 3491, LST 4362, LST 4363, LST 4426, LST 4482, LST 4490, LST 4492, LST 4494, LST 4498 or LST 4499. Twelve (12) credit hours should be taken to compliment the student's area of special concentration. These electives should be approved by the student's academic advisor. The remaining credit is open.

Classes Offered - BRec Programme

A. Recreation Theory Classes

LST 1126A Introduction to Leisure Studies: An understanding of the place and potential of leisure in Canadian life is essential if we are to move beyond the conviction that only labour is to be valued. This foundation class introduces leisure forms and concepts including play, sport, culture and social leisure. It provides an overview of leisure service delivery and issues related to access to meaningful leisure opportunities. Opportunities for increasing writing skills, library utilization, verbal expression and computer skills are provided. A practicum is included.

Instructor: Staff
Format: Lecture/required lab experience at a cost of $150.00, 3 hours
Enrolment: Limited to 50

LST 1361B Recreation Administration I - Introduction to Recreation Administration & Programme Planning: An introductory course in administrative processes, management theories and the planning and designing of recreational programmes and leisure experiences tailored for community, commercial, therapeutic recreation and park management.
Instructor: N. Ipson
Format: Lecture, 3 hours
Enrolment: Limited to 50

LST 2110 History of Leisure: This class aims to make students familiar with the historical roots of the leisure pursuits of human kind. Sport, dance and recreation in ancient and primitive societies are explained and critically analyzed as are activities in early civilizations.
Instructor: A. Young
Format: Lecture, 3 hours
Enrolment: Limited to 110

LST 2127 Psycho-Social Theory and Leisure: This class will provide an introductory analysis of leisure in modern society from sociological and social psychological perspectives. The role of leisure in the everyday life of individuals will be discussed in terms of social relationships, social interaction and theories of attitude and motivation, etc. In addition, since the role and function of leisure is affected by political, economic and cultural systems, a main-level perspective on leisure will also be provided by focusing on topics such as the influence of modern technology, the commercialization of leisure, the influence of social institutions and of the mass media.
Instructor: S Shaw
Format: Lecture, 3 hours
Prerequisite: SSA 1000 or SSA 1200 and Psychology 1000
Enrolment: Limited to 50

LST 2128 Socio-Cultural Bases of Physical Activity: A variety of attitudes, values and interests, with respect to sport, exist in many cultures of the world. These will be reviewed and provide a backdrop for the study of the place of sport and physical activity in the recreational lives of Canadians. Topics will include: physical activity patterns in contemporary Canada, stratification and discrimination in sport and physical activity, physical activity in schools and theories of physical activity. Practica will be included.
Instructor: Staff
Format: Lecture, 3 hours
Enrolment: Limited to 50

LST 2326 Leisure and the Arts: The purpose of this class is to provide students with a perspective on the variety of artistic and cultural activities enjoyed by participants and spectators, including theatre, music, dance, arts and crafts, photography and mass media. The class will address theoretical and applied questions related to the arts and leisure, including value access, patterns of participation and the pursuit of excellence. A practicum will be included.
Instructor: Staff
Format: Lecture, 3 hours
Enrolment: Limited to 50

LST 2361 Recreation Administration II - Facility & Personnel Management: This course is designed to provide insight into the organizational structure and governance in leisure service agencies, address the process and functions of personnel management, and review trends in facilities design, development and maintenance.
Instructor: N. Ipson
Format: Lecture, 3 hours
Prerequisite: LST 1361B
Enrolment: Limited to 50

LST 2382 Adventure-Based Experiential Education: Outdoor education in one form or another is included as an integral part of most recreational programmes. However, there are values of outdoor adventure activities which go beyond the usual rationale for recreation programmes. These include personal development, citizenship training, leadership development and community service. This class will explore some of the educational philosophies which rely on an experiential base. Included will be an opportunity for hands-on experiences in developing, planning and evaluating an adventure-based programme which has potential beyond the traditional recreation outcomes. A practicum will be included.
Instructor: A. Richards
Format: Lecture, 3 hours
Enrolment: Limited to 50
Cross-listing: EDUC 4642

LST 2384 Leisure and Special Populations: An introduction of current philosophy, issues and practices relating to leisure opportunities for persons who, due to physical, mental and social conditions, have difficulty gaining access to community services. An analysis of leisure behaviours, barriers and needs will be provided through the classroom and a practicum.
Instructor: R. Lyons
Format: Lecture, 3 hours
Enrolment: Limited to 50

LST 3157 History of Dance: This class traces th development of dance in Western Civilization from primitive times to the present day. The changing role of dance in society will be discussed, as will its relationship to the other arti Sample dances from the different periods of history will be taught to illustrate the changing styles and patterns of dance.

:nstructor: P. Richards
Format: Lecture, 3 hours
Enrolment: Limited to 50
Cross-listing: MUS 3361

LST 3296 Leadership and Community Development: The process of communications and social change are applied to the relationship of the recreation professional to individuals and groups in the community. An in-depth analysis of community development strategy and situational leadership theory are provided. A practicum will be included.
nstructor: C. Ballem
Format: Lecture, 3 hours
Prerequisite: LST 1126 or consent of instructor
Enrolment: Limited to 50

LST 3360 Analysis of Leisure Delivery: The organization and delivery of leisure services in Nova Scotia and Canada are examined with emphasis on critical analysis of decision making processes, social impact and alternative planning methodologies.
nstructor: C. Ballem
Format: Lecture, 3 hours
Prerequisite: LST 1126 and LST 2361 or consent of the instructor
Enrolment: Limited to 50

LST 3361 Recreation Administration III - Fiscal Management & Marketing: This course is designed as a fundamental analysis of the budget process and to provide insight into innovative local management, marketing and privatization.
Instructor: Staff
Format: Lecture, 3 hours
Prerequisite: LST 2361
Enrolment: Limited to 50

LST 3420 Introduction to Research Methods: The purpose of this class is to give students a basic understanding of the logic and goals of social science research. The class will focus on factors that need to be taken into account in designing or evaluating research studies. Both qualitative and quantitative methods will be discussed with an emphasis on interview and survey research and on evaluation research.
Instructor: Staff
Format: Lecture, 3 hours
Enrolment: Limited to 50

LST 3480 Introduction to Statistics: This class will provide an introduction to basic statistical concepts through the use of practical examples and hands-on experience. An introduction to the use of computer terminals and social science computer programmes (SPSS) will be given. Both descriptive and inferential statistics will be reviewed, with emphasis on the analysis and interpretation of cross-tabulation tables, correlations and simple regression.
Instructor: Staff
Format: Lecture, 3 hours
Enrolment: Limited to 50

LST 3491 Sociology of Leisure: This will be an advanced undergraduate class on societal influences on leisure. Building on some of the material covered in Psycho-Social Theory and Leisure, the class will discuss various concepts and approaches which provide a framework for understanding the changing role of leisure in Canadian society. Students will be exposed to some of the current theoretical and methodological debates in the field of leisure research.
Instructor: Staff
Format: Lecture, 3 hours offered alternate years beginning 1990-91
Prerequisite: LST 2127 or at least two Sociology/Social Anthropology classes
Enrolment: Limited to 60

LST 4362 Park Management & Natural Resource Development: Basic issues in park management and natural resource development are examined with a focus on planning, design, development and maintenance of the outdoor environment for leisure activity.
Instructor: Staff
Format: Lecture, 3 hours offered alternate years beginning 1991-92
Prerequisite: LST 1126 and LST 2361 or consent of the instructor
Enrolment: Limited to 60

LST 4363 Arts Administration: Styles of management of theatres, arts and cultural centres, museums will be presented along with issues related to opportunities for participation in the arts and cultural activities. Features such as the study of cultural events, communication with performers and establishment of cultural facilities will be discussed. A practicum is included.
Instructor: Staff
Format: Lecture, 3 hours
Prerequisite: LST 2326 or consent of the instructor
Enrolment: Limited to 60

LST 4426 Leisure Enhancement: Ill and Disabled Persons: This class provides students with an understanding of disabling conditions and their leisure implications. It provides instruction in leisure facilitation techniques such as assessment procedures, task analysis, activity analysis and other programme enhancement strategies through classroom lectures and a practicum.
Instructor: Staff
Format: Lecture, 3 hours offered alternate years beginning 1990-91
Prerequisite: LST 2384 or instructor's consent
Enrolment: Limited to 60

LST 4482 An Experiential Approach to Youth Development: Youth as a sector of society and as a stage in human development is of great significance in the study of leisure. Particularly relevant is the issue of unemployment and underemployment which has created a number of problems such as low self-worth, alcohol abuse, teenage suicide, etc. There are programmes being developed to address these problems, many of which are experientially based, e.g., Outward Bound, study service, service learning and national service. This class will study the phenomenon of youth development in the light of experiential educational approaches. During the class there will be an expectation that the students will meet and interact with a variety of youth. Practicum included.

Instructor: A. Richards
Format: Lecture, 3 hours offered alternate years beginning 1990-91
Prerequisite: LST 2382 or consent of the instructor
Enrolment: Limited to 60

LST 4490 Sociology of Sport: A survey class which views the interrelationships among sport, culture and society from a sociological perspective. The class provides the student with a broad overview of selected sociocultural factors which help to explain the incidence, form and regulation of sport and specified recreational elements in contemporary society.

Instructor: Staff
Format: Lecture, 3 hours offered alternate years beginning 1991-92
Prerequisite: SSA 1000 or SSA 1200, LST 2128 or consent of the instructor
Enrolment: Limited to 60

LST 4492 Leisure Counselling & Education: Simply defined, leisure counselling is a helping process which facilitates interpretive, affective and/or behavioural changes in others toward the attainment of their leisure well being. This class will provide students with a basic introduction to leisure counselling and education. It will include an historical perspective, definitions, philosophies, models, issues and an exposure to the education and counselling techniques.

Instructor: R. Lyons
Format: Lecture, 3 hours offered alternate years beginning 1990-91
Prerequisite: LST 1126 and LST 2127 or consent of the instructor
Enrolment: Limited to 60

LST 4494 Canadian Sport History: This class analyzes the historical antecedents of sport in Canadian life. Sports such as football, basketball and track and field are discussed, as well as sport heroes and issues including the historical role of women and minority groups in sport.

Instructor: A. Young
Format: Lecture, 3 hours
Prerequisite: LST 2110 or consent of the instructor
Enrolment: Limited to 40

LST 4495 Leisure Issues Seminar: This senior level class covers a broad range of issues facing leisure studies and professional practice. Students have the opportunity of gaining in-depth knowledge through dialogue about and investigation of selected issues and strategies, and operationalize the techniques learned in the statistics and research methods classes.

Instructor: J. Singleton
Format: Seminar, 3 hours
Prerequisite: LST 3420 and LST 3480 or consent of the instructor
Enrolment: Limited to 40

LST 4496 Internship in Recreation Administration: This is a supervised student placement in an approved community agency for approximately twelve weeks, normally undertaken during the Summer between third and fourth years. The field experience and an in-depth report which includes the student's activities and agency analysis, are required. In addition, students are required to participate in an hour-and-a-half weekly seminar in the Fall term.

Instructor: N. Ipson
Format: Field experience/Fall term seminar, 6 hours
Enrolment: Restricted to Bachelor of Recreation students

LST 4498/4499 An Interdisciplinary Approach to Gerontology: For class description, see Nursing 4900A/4910B

Instructor: Staff
Format: Lecture,3 hours

LST 4800A/B/C/R/S/T Directed Studies in Leisure Studies: Senior undergraduate students develop an area of specialization under the direction of a faculty member.

Instructors: Staff
Format: Library survey or other research study, 3 or 6 hours
Prerequisites: Fourth year status, a GPA of at least 3.0, a "B" grade in an earlier class in the area in which the project will be conducted (where applicable), consent of advisor, consent of faculty.

B. Required Arts and Science Classes

SSA 1000, 1100, or 1200 An Introductory Sociology or Social Anthropology Class: For class description please refer to the Sociology and Social Anthropology Department entry in this calendar.
Instructor: Staff
Format: Lecture, 6 hours

PSY 1000 Introduction to Psychology: For class description please refer to the Psychology Department entry in this calendar.
Instructor: Staff
Format: Lecture, 6 hours

POL Science 1100 Introduction to Political Science: For class description please refer to the Political Science Department entry in this calendar.
Instructor: Staff
Format: Lecture, 6 hours

ECON 1100 Introduction to Economics: For class description please refer to the Economics Department entry in this calendar.
Instructor: Staff
Format: Lecture, 6 hours

Electives

Classes may be taken as electives across divisions with permission from the student's adviser. Classes are described under the programme in which they are designated, i.e., Health Education (HEED), Kinesiology (KIN), Leisure Studies (LST) and Physical Education (PHSE).

The Maritime School Of Social Work

Location: 6414 Coburg Road (at Oxford Street)
Halifax, N.S. B3H 3J5
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Programme Information
Janet Densmore, Admissions Coordinator

Academic Staff
J. Gilroy, BA (DAL), MSW (King's), MA (Tor)
Associate Professor and Director

Professors
R.W. Carlson, BA, MSW (Penn.) PhD (Chicago)
J.E. Cummings, BA (Dal), MSW (St FX), PhD (Tor.)
D.P. Kerans, BA (Loyola), MA (St. Louis), STL (Innsbruck), DRS (Strasbourg)
F.C. Wien, BA (Queen's), MA, PhD (Cornell)

Associate Professors
M.L. Courtney, BA (Dal), MSW (SMU)
G. Fitzgerald, BA (Dal), MSW (King's)
J. Gilroy, BA (Dal), MSW (King's), MA (Tor.)
D. Moore, Dip. Social Studies (London), BA, MA (Dal), PhD (Boston U)
R. O'Day, BA (UBC), MA, PhD (Michigan)
D. Williams, AB (Chico), MSW (U.C. Berkeley), PhD (Brandeis)
R. Williams, BA (Acadia), MA (Tor.). DEd. (OISE)

Assistant Professors
M. Deveau, BA (Ste-Anne), MSW (Dal), (Resident faculty member, Church Point)
J.B. Duplisea, BA, MSW (MtA)
J.R. Harbison, BA, BSS (Dublin, Trinity College), Grad. Dip. SW (Edinburgh)
E. Macdonald, BA (St. Dunstan's), BSW, MSW (Ottawa) (Resident faculty member, Charlottetown)
B.K. Richard, BA (MtA), MSW (Dal)
A. Sexton, BA (Honours), MSW (Dal)
W. Thomas-Bernard, BA (MSVU), MSW (Dal)
E. Whitmore, BA, MA (Boston), PhD (Cornell)

Sessional Lecturers 1989-90
F. Bradley, BA (Dal), BSW (equiv) (Dal), MSW (Dal)
P. Girard, BA (St. FX), MSW (Dal), MPA (Dal)
B. Dugas-LeBlanc, BA (U. Ste. Anne), MA (Ottawa), PhD (Carleton)

Sessional Faculty Field Instructors 1989-90

K. Belanger, BSc (Sp. Grdn.Coll-Philadelphia, Penn), MSW (Dal)
N. Castlebury, BA (Arkansas), MA (Arkansas), MSW (Loyola-Chicago, Il.)
M. MacDonald, BA (St. FX), BJ (Carleton), MSW (Dal)
C. Toomey, BA (St. FX), MSW (Dal)

Field Instructors 1989-90

Halifax, Charlottetown, Church Point, Sydney

Jane Andres
Beverley Bellefleur
Wanda Thomas-Bernard
Marilyn Berry
Dominic Boyd
Alan Buchanan
Cal Bungay
John Campbell
Vernon Chisholm
Patricia Conrad
David Cook
Anna Deveau
Ruth Ann Deveau
Keith Dillman
Lorraine Douglas
Clara Elster
Barbara Fox
Jeanne Fay
Lorna Findlay
Mike Flarity
Pat Forrestall
Graeme Fraser
James Fryday
Paul Gallagher
Elizabeth Gloade
Karl Hall
Margaret Halozan
Donna Hammond
Pamela Hartling
Judy Hayashi
Donna Hepditch
Shirley Hines
H. Hubley
Wayne Hyson
Kathy Jennox
Joan Jones
Linda Jones
Michael Kendrick
Gregg Lambert
Ray Larkin
Bob Lockett
Larry Lommis
Lydia Lucas-White
Sandy Lyth
Carol Martell
George MacDonald
Nancy MacDonald
Hugh MacIntyre
Bill MacLean
Sandra MacNeil
Tom MacNeil
Tana MacPherson
Joan Mendes
Peter Mortimer
Paul O'Hara
Cherry Paris
Nancy Pike
Ronald Pink
Rose Raftus
Linda Roberts
Daneen Robbins
Alphonsine Saulnier
Maureen Shebib
Ada Smith
Elizabeth Sperry
Gordon Steedman
Elizabeth Stoddard
Art Surette
Brian Tapper
Peter Taylor
Carol Wamboldt
Barb Williams
Greg Wiseman
Vicki Wood

The Maritime School of Social Work

The Maritime School of Social Work was founded in 1941 to meet a need for professionally educated social workers in the Atlantic region. The School almalgamated with Dalhousie University in 1969. The undergraduate programme leading to the Bachelor of Social Work degree was introduced in the late 1970's to provide basic professional education in social work. General courses in the humanities and social sciences, and more specialized courses in social policy, professional values, and practice methods equip students with knowledge and skills essential to employment in a wide range of human services. Critical analysis of human behaviour and social environment provides a foundation for the development of helping skills that assist people in solving or coping more effectively with problems, and that support broader social change.

The School also offers a Master's degree programme for advanced, specialized study in Social Work, and a Continuing Education programme of thematic regional workshops.

Both the undergraduate and graduate programmes are accredited by the Canadian Association of Schools of Social Work.

Bachelor of Social Work Degree

The BSW programme requires three years of full time study. Persons with an acceptable undergraduate degree on entry normally may complete the programme in two full-time years. The programme is also available on a part-time basis. Equal consideration is given to part-time and full-time applications.

Enrollment is limited to a specified numbe of places that are offered once a year to the best qualified candidates, selected by the admissions process.

Relationship to the MSW Programme

Admission to the MSW programme normally necessitates that the candidate have a BSW degree and two years of postbaccalaureate social work experience in the area of preferred graduate study concentration.

Full-time and Part-time Studies

A full-time programme of study usually consists of 5 credits (i.e. 30 credit hours) during the regular Fall/Winter session.

Part-time study may consist of ½ to 3 credits (i.e. 3 to 18 credit hours) during the Fall/Winter session.

Required academic courses are generally scheduled in the evenings. Daytime sections for the three Social Work practice classes are also available. Students are required to undertake two field placements during regular daytime working hours.

Off Campus Programmes

A decentralized part-time BSW degree programme offered, in cooperation with Universite Ste. Anne, is presently concluding in Church Point.

Programme Objectives

The BSW programme is designed to enable students to develop a range of basic general skills and theoretical perspectives that are adaptable to a variety of social work job settings. A focus of study is placed on the people, the communities and the service network of the Maritime provinces. Opportunity for the interaction of theory with practice is provided in two supervised field placements, one early in the curriculum and one towards the end of the programme. Graduates are qualified to practice social work throughout Canada and elsewhere.

Students learn to integrate values, theory and practice skills through development of:

- Ability to assess their own learning needs, and to draw wider implications from their practice and life experiences.
- Understanding and appreciation of a wide range of social work roles and interventive methods.
- Understanding of both the psychological and socio-economic forces which impinge on clients' lives.
- Critical, well-founded awareness of the probable impact of various interventions on clients.
- Ability to implement, or cause to implement, a variety of interventive skills.
- Ability to judge which interventive methods are appropriate in each concrete situation.
- Ability to understand and deal with the policies and administrative structures which affect the delivery of social services.

The BSW contains the range of course content required for study at the Master's level.

Special "No Degree" Students and Students in Other Degree Programmes

No degree students are admitted in exceptional cases only and with the permission of the BSW Chairperson. Students in other Dalhousie degree programmes seeking electives may take BSW classes other than the practice-related courses (Social Work 1000R, 3020R, 3030R, 4010R and 4030R) with permission of the Social Work course instructor. Such students should first check the regulations of their Faculty, School or College.

Audit by Agency Field Instructors

The MSSW permits Agency Field Instructors to audit social work courses. Prior permission of the instructor concerned is required.

If the field instructor wishes this audit to show on a Dalhousie University transcript, he/she must abide by the University audit regulation and fee as outlined in the current Dalhousie University Undergraduate/Graduate Calendar.

Admission Requirements

All Applicants

To be eligible for admission to the BSW programme, all candidates are required:

(i) to have completed at least 5 full credits (i.e. 30 credit hours) of undergraduate study at a recognized university or equivalent institution of higher learning, or by certain other institutions for which the work is considered appropriate to an academic programme in Social Work;

(ii) to have a minimum academic average of B- or 65%;

(iii) to show evidence of personal maturity and suitability for social work.

The first five university credits may be taken in any subject area except that of Social Work. A Bachelor of Arts degree programme, including content in the Social Sciences is, however, most appropriate for the study of Social Work. Subject areas that provide useful preparation in the first year include introductory English, Psychology, Sociology and Political Science. An intermediate level course in human growth and development, such as Developmental Psychology, is also recommended.

Further advice on University admission is available from the Dalhousie Admissions Office (494-2450).

Admission of University Students

Obtaining professional training in social work requires a well-developed interest and a willingness to engage in long-range planning. Because enrollment is limited to the most qualified candidates, younger applicants are best

able to compete successfully for admission to the BSW degree programme if they have already completed another undergraduate degree at a B+ or 75% average or better.

Students who complete an initial undergraduate degree before applying to Social Work would normally have 10 social work credits (i.e. two years of full-time study) to complete for the BSW degree.

Work experience in summer or part time jobs, particularly ones related to the provision of social or human services, and/or volunteer experience in similar areas can be important assets.

Students are also advised to consider work or voluntary activities in which there is direct personal contact, preferably with some on-the-job training and supervision.

Admission of Persons Over 25 Years of Age

Persons over 25 years of age are given consideration on a combined basis of academic performance and demonstrated ability for social work practice. Normally completion of five university credits prior to the application deadline date is expected. Demonstrated ability for social work includes the nature and length of current or previous employment in social or related human services, and a positive work reference. Other experience in community services may also be considered.

Mature persons who wish to begin university study but who do not satisfy the usual academic entrance requirements are encouraged to investigate Dalhousie's University Exploration Programme for Mature Entry, which is located at Henson College, 6100 University Avenue. The University Exploration Coordinator is available by appointment (494-2375) to answer questions about admissions and to discuss the prospective students' educational plans.

Application Procedure

Applications for admission are reviewed once a year only. Application packages and instructions are available from the Registrar's Office throughout the year. All required forms and official transcripts should be submitted early in the calendar year and must be received no later than March 1st.

In the case of credits currently in progress, decisions are made on the basis of Christmas grades: acceptances are conditional on the receipt of final transcripts.

Although the Admissions Committee may request an interview as part of the selection procedure, personal interviews are not required.

Affirmative Action Policy

The School has an affirmative action policy to increase the number of qualified social workers who belong to the Aboriginal, Acadian and Black minority groups of the Maritime region.

BSW Curriculum Requirements

The BSW degree programme consists of 15 Social Work credits. The latter are reduced by the amount of transfer credit and/or competency credit for which the student may be eligible. Students generally fit into either a two-year or three-year BSW programme, as follows:

Two-Year or 10-Credit Programme

Entrants with a previous undergraduate degree and a cumulative average of B- or 65% are required to complete 10 Social Work credits (i.e. 60 credit hours), consisting of:

(a) Six and one-half compulsory credits as follows:
- SLWK 1000R Introduction to Social Work (1½ credits)
- SLWK 3020R Field Instruction I (1 credit)
- SLWK 3030R Foundation of Social Work Practice (1 credit)
- SLWK 4010R Advanced Social Work Practice (1 credit)
- SLWK 4030R Field Instruction II (2 credits); and

(b) Three and one-half core credits to be selected from the following in consultation with a curriculum advisor during registration week:
- SLWK 3010R Perspectives on Social Welfare Policy (1 credit)
- SLWK 3040R People in Society (1 credit)
- SLWK 3050A/B Social History of Atlantic Canada (½ credit)
- SLWK 3070A/B Social Service Delivery Analysis (½ credit)
- SLWK 3080R Science and Testing of Practice (1 credit)
- SLWK 3090A/B Social Statistics (½ credit)
- SLWK 3100A/B Political Economy of Social Welfare in Canada (½ credit)
- SLWK 3220A/B Cross-Cultural Issues and Social Work Practice (½ credit)

Three-Year or 15-Credit Programme

Entrants with 5 general credits averaging B- or 65% are required to complete 15 Social Work credits (i.e. 90 credit hours), consisting of:

(a) Six and one-half compulsory credits, as above;

(b) Five and one-half core credits, as listed above; and

(c) Three elective credits, as follows:
Social Work in a Special Field of Practice Elective: (½ credit) Usually an elective offered by the School to provide in-depth study of unmet needs and emerging social work roles in a specific field of practice.

Social Problem Electives: (1 credit or 2 x ½ credits) May be social work electives, or electives offered by other Departments or Schools, to provide in-depth study of contemporary social problem issues. Examples of social problem electives are: Child Welfare, Deviancy, Women's Issues.

Free Electives (1½ credits or 3 x ½ credits). Free electives may be chosen from any subject area, including social work.

Sequencing of Course Credits

All students accepted into the programme are expected to commence their social work credits during the regular academic session which begins in September.

It is the policy of the BSW Committee that:

(i) SLWK 1000R - Introduction to Social Work be completed prior to the commencement of SLWK 4010R - Advanced Social Work Practice, and that

(ii) SLWK 3020 - Field Instruction I, be completed prior to the commencement of SLWK 4030 - Field Instruction II.

The sequencing of course work is otherwise largely dependent on each student's needs within the following guidelines:

(i) 1000R - Introduction to Social Work should be taken at the beginning of a student's programme,

(ii) Students are advised to take 4010R - Advanced Social Work Practice after 3030R - Foundations of Social Work Practice.

(iii) 4030R - Field Instruction II should be taken at the end of a student's programme.

Full-time students in the two-year programme complete SLWK 1000, and 3030 in year 1 and SLWK 4010 in year 2; full-time students in the three-year programme complete SLWK 1000 in year 1, SLWK 3030 in year 2, and SLWK 4010 in year 3.

New Student Advising Sessions

New students are assisted in planning their classes by curriculum advisors from the School who meet with each student during the initial stage of the scheduled Fall registration sessions. Decisions about which social work classes will be covered by transfer credit are usually available at this time. The possible assignment of competency credits to be earned in the coming months is also discussed during this session.

Faculty Advisors

Each student is assigned a faculty advisor for ongoing consultation concerning any issues or concerns that may arise throughout the year. The faculty field instructor also serves as the faculty advisor for students enrolled in SLWK 4030 - Field II. In the off-campus centres the resident faculty member acts as advisor.

Competency Credit

Credit for competency allows certain new students to receive credit for various types of non-formal learning provided that they are able to demonstrate its relevancy to the content of the BSW programme.

A maximum of two credits may be applied for by those students who have had at least 24 consecutive months of full-time paid or unpaid employment in the human services, or equivalent, prior to acceptance. The number of competency credits for which the student may apply is, however, limited by the amount of transfer credit for which he/she is eligible; e.g., a student with a previous degree is normally limited to 1 competency credit (2 half-credits).

New students must apply for competency credit by September 30th of the year of their acceptance to the BSW programme, and are encouraged to apply as soon as admitted. To be eligible, candidates must register in the Fall session of the year of their acceptance.

A fee equal to half the regular course fee is payable upon registration for each competency credit assessment.

Competency credits earned are assigned on an individual basis to classes selected from the social work curriculum, thus reducing the number of social work credits subsequently required.

Transfer Credit

Transfer credit is considered (a) in relation to university courses in an initial undergraduate degree programme taken after the five credits required for admission and/or (b) in relation to certain other qualifications. Transfer credit is not granted on a credit-for-credit basis; rather it is pro-rated, normally on the basis of 1 credit for each of 2 acceptable academic credits previously taken within the limits outlined below. Transfer credits are applied only to the 9½ core and elective Social Work credits. They are granted subject to Faculty of Health Professions Regulation 2 and the following conditions:

(i) Credits accepted for transfer must have been completed within the 10 years preceding the student's projected completion date of the BSW degree programme. An extension of this 10-year rule may be granted by the Faculty Committee on Studies to students who apply to the Chairperson of the School's Committee on Studies. This is usually done at the time of registration.

(ii) Transfer credit is considered only in relation to acceptable credits previously completed at a minimum of 60% and an average of B⁻ or 65%.

(iii) The total amount of transfer credit that may be applied to the BSW degree is standardized by the School for certain specific qualifications, such as a previous undergraduate degree with a B⁻ average or

better, a registered nursing diploma, a social services diploma. For example, accepted candidates who have completed a Bachelor of Arts degree, with the required B⁻ or 65% average, are eligible for a block transfer of 5 credits, in addition to the 5 admission credits also allowed.

(iv) The maximum amount of transfer credit to be recommended is the decision of the transfer credit co-ordinator. Students are limited to one block of transfer credit.

Assessment for transfer credit on an individual basis is also provided as follows:

(a) Students who have extra credits beyond the minimum required 5 non-social work admission credits (with the required B⁻ average), and who have not completed a degree or diploma will be assessed for transfer credit in relation to their extra credits.

(b) Students who have completed a previous undergraduate degree (with the required B⁻ average), and who have also completed further undergraduate or graduate credits or degrees will be considered for possible transfer credit in relation to these additional credits.

It is the student's responsibility to provide course outlines and other documentation required by the School for the purpose of determining eligibility for transfer credit.

Classes Offered

SLWK 1000R Introduction to Social Work: (compulsory). This class is a basic introduction to the study and practice of Social Work. It is primarily a practice class with intensive laboratory-style components, which focus on the ongoing development of communication and interventive skills. An assessment of the students' learning needs and strengths is also carried out. This class is organized in four modules: (1) orientation to the field of social work and social welfare (4 weeks), 10% of overall course value; (2) learning needs assessment (4 weeks), 20% of overall course value; (3) introductory communication and relationship skills (5 weeks), 20% of overall course value; and (4) introductory interventive skills (13 weeks), 50% of overall course value.

Instructors: M.L. Courtney, J. Duplisea
Format: Lecture/Small Groups 3½ hours
Prerequisite: None
Enrolment: 20 - 25

SLWK 3010R Perspectives on Social Welfare Policy: This course provides a survey of the history of social welfare in Canada, with a focus on historical debates which shed light on present-day issues; a survey of a variety of perspectives on social problems and social policy issues, with a focus on the various definitions of human needs; and an initial survey of the spectrum of social welfare programmes available in the Maritimes. Each student will be asked to undertake an analysis of the policies informing a programme of his/her choice.

Instructor: P. Kerans
Format: Lecture/Group Discussions
Prerequisite: None
Enrolment: No limit

SLWK 3030R Foundations of Social Work Practice: (compulsory) Topics include a review of the major theories of human behaviour, and applications of theory to a set of core practice skills.

Instructors: B. Richard, B. Whitmore, Staff
Format: Lectures, Small and Large Group Discussions, Student Presentations, Role Plays
Pre/Corequisite: SLWK 1000 Recommended Background: General Psychology and Sociology
Enrolment: No limit

SLWK 3040R People in Society: An overall theoretical perspective on the personal, organizational and societal problems facing people today is provided regarding (a) the individual, (b) society and its functioning and (c) the interplay between these two. Emphasis is on extrapolating major conceptual elements in order to develop an integrated diagnostic scheme relevant to the wide range of situations typically encountered in social work practice and fundamental to the theoretical base required by a "generalist" social work practitioner.

Instructors: D. Williams, Staff
Format: Seminar 2½ hours
Prerequisite: None
Enrolment: Not offered in 1991/92

SLWK 3050A/B Social History of Atlantic Canada: An analysis of the peoples who settled the region, the problems they have faced and their reactions to them are presented, with a focus that gives historical perspective to contemporary social problems.

Instructors: D. Moore, D. Williams
Format: Seminar 2½ hours
Prerequisite: None
Enrolment: No limit

SLWK 3070A/B Social Service Delivery Analysis: The course develops an appreciation of the social worker's role and responsibility in planning and delivery of social services; an understanding of the ability to apply selected theoretical models of service delivery; proficiency in analyzing and influencing service delivery systems in which social workers participate; and familiarity with some of the recent service delivery innovations in various provinces of Canada.

Instructor: D. Williams, Staff
Format: Lecture/Small Groups 2½ hours
Prerequisite: None
Enrolment: No limit

SLWK 3030R Science and The Testing of Practice: In the first section of this basic research course emphasis is on providing students with a knowledge of the scientific method, a conceptual understanding of the primary terminology of science and the interrelationships between theory, research and practice. In the second section the focus is the pragmatic consideration of evaluating practice.
Instructor: R. O'Day, R. Carlson
Format: Discussion/Group Projects 2½ hours
Prerequisite: None
Enrolment: No limit

SLWK 3090A/B Social Statistics: This course develops an understanding of major basic statistical tools which facilitate interpretation of data derived from social work-related data bases or research. The ability to apply basic forms of analysis to the description of samples, and the ability to draw inferences from samples to populations are provided. Applications rather than mathematical derivations are examined in exploring the practical significance and limitations of statistics. Concepts explicated are: prediction, models, level of measurement, probability, inference, and quantification. Statistics developed include: measures of central location, dispersion, regression, association, confidence intervals, and selected tests of significance with emphasis on multivariate applications.
Instructor: J. Cummings
Format: Lecture 2½ hours
Prerequisite: None
Enrolment: No limit

SLWK 3100A/B Political Economy of Social Welfare in Canada: The structure of government and the nature of bureaucracy; the nature of federal, provincial, municipal relations; the historical development of social policy within a context of federal taxation and provincial initiatives; and aspects of parliamentary forms as related to social policy development are covered. A critical analysis of the welfare state and its functions vis-a-vis social development on the one hand, and social control and economic planning on the other, are central concerns in this course.
Instructors: R. Williams, P. Kerans
Format: Lecture/Discussions 2½ hours
Prerequisite: None
Enrolment: No limit

SLWK 3220A/B Cross-Cultural Issues and Social Work Practice: This core course provides an opportunity to: critically examine theoretical frameworks for viewing minority racial, ethnic and cultural groups in society; examine personal values as they relate to the above groups; develop skills in working effectively with minority groups and understand social policies as they relate to minority groups.
Instructor: W. Bernard
Format: Seminar 2½ hours
Prerequisite: None
Enrolment: No limit

SLWK 4010R Advanced Social Work Practice (compulsory): Social Work practice problems are critically examined from a regional, feminist-structural perspective for the purpose of developing analytical and practical skills in preparation for professional practice.
Instructor: J. Cummings, W. Bernard
Format: Lecture/Small Groups 2½ hours
Prerequisite: SW 1000, SW 3020, SW 3030 (recommended)
Enrolment: No limit

Field Instruction

All part time and full time students are required to make arrangements to undertake the two field placements (SW3020 and 4030R) during regular working hours. The field component of the programme is organized and supervised by the Maritime School of Social Work faculty. There is provision for seminars, workshops and consultations in order to assist the students with testing content from academic classes. Content necessary to a specific field of practice is introduced as required, including such topics as law and social work, housing policy, and employment policy and practice.

Equipment and Insurance

All students should have access to a portable tape recorder for use with library cassettes, and for field instruction. Student may be expected to have the use of a car in order to do their field placements. Full time students (3 credits and above) are covered for Accident Liability Insurance during Field I and Field II through payment of their Student Union Fees ($99.00).

On campus students carrying less than 3 credits pay $10.00 per ½ credit course and $20.00 per full credit course to the Student Union. However, this does not give them Health Benefit and Insurance coverage. In such instances, if the student wishes Accident Insurance coverage during placements, he/she would need to pay the Student Union the difference between what they have paid through course registration and the $99.00.

SLWK 3020R Field Instruction I (compulsory): This initial field placement provides an opportunity for beginning social work practice under supervision of agency personnel in liaison with School faculty. The student develops beginning competencies in direct practice

situations, working with individuals and small groups. Use of agency and community resources, policies and services are studied. Approximate length 200 hours. Students must indicate their intent to the Field Co-ordinator by October 1 if they plan to register for Field I in January of their first year, by January 1 if they plan to register for Field I in the Spring/Summer terms and by March 1 if they plan to register for Field I in September or January of their second or subsequent year(s).

Field I should be completed early in the student's programme.

SLWK 4030 Field Instruction II (compulsory): The major field placement offers a faculty-supervised opportunity for the development of counselling, social change and community action skills sufficient for responsible entry into practice upon graduation. The student becomes increasingly proficient in service situations requiring counselling, and can recognize the need for influencing policy, programme or process within the place of field practice in order to carry out professional responsibilities in the community.

The student must develop a proposal to be submitted to the School and to be approved by the Field Coordinator prior to beginning the practicum. The proposal must be submitted by March 1 in order for students to be able to register for Field II during any period of the following academic year. January 1 is the deadline for submitting proposals if students intend to register for Field II in the Spring/intersession term. Field placements requested in the Spring/Summer sessions are dependent upon the availability of faculty field instructors.

Students who are working in non-social work positions must make arrangements early in their programme to be able to complete their 200 hour Field I placement and their 500 hour Field II placement. The student would normally be expected to request leaves of absences from his/her regular non-social work position. A manual is available to aid the student in its preparation, as well as outlining the expectations for satisfactory completion of the practicum.

Only students paying full time tuition may be covered by the Dalhousie Insurance plan. Part time student may not pay the difference in Student Union fees to obtain insurance coverage. Student needing insurance will need to make private inquiries about short term coverage.

The Field II practicum is done at or near the end of a student's programme. Minimum of 500 hours. Proposals should be sent to: Field II Coordinator, Maritime School of Social Work, Dalhousie University, Halifax, N.S. B3H 3J5.

BSW Credits for Competency

SLWK 2500A Learning Through General Work Experience (½ credit)
SLWK 2510B Self Analysis and Personal Development (½ credit)
SLWK 2520C Specific Social Work Skills (½ credit)
SLWK 2530D Non-credit Structured Learning Experiences (½ credit)
SLWK 2540E Knowledge of Special Field of Practice (½ credit)

Eligible students complete A, and no more than three of B, C, D and E.

BSW Elective Classes

Two elective classes, one in each term, are generally offered each year from the following:

HLPR 3000B Health Promotion
SLWK 3170A/B Feminist Counselling
SLWK 3180A/B Family Counselling
SLWK 3200A/B Law and Social Work
SLWK 3210A/B Social Work in the Medical Field

SLWK 3230A/B Women and Social Change
SLWK 3240A/B Community Work Approaches to Social Work Practice
SLWK 3250A/B Social Work in Corrections
SLWK 3260A/B Social Work in Industry
SLWK 3270A/B Social Work in Addictions
SLWK 3280A/B Social Planning: Theory and Applications
SLWK 3290A/B Counselling in Social Work Practice
SLWK 3300A/B Independent Study
SLWK 3310A/B Rural Social Work
SLWK 3320A/B Social Work and the Aging
SLWK 3340A/B Social Work with Exceptional Children
SLWK 3350A/B Social Work with Groups
SLWK 3370A/B Child Welfare
SLWK 4400A/B Family and the Law

Regulations

All students are required to observe the University and Faculty of Health Professions regulations as described in this calendar.

Grading Requirements

School regulations relating to the GPA apply to students whose initial registration in the school was in the Fall of 1990 or earlier. Students entering in the Fall of 1991 and beyond will be governed by revised regulations found in the Faculty of Health Professions section of this calendar.

(a) **Grade Point Average (G.P.A.) - Prior Regulations**

The Maritime School of Social Work uses the grade point average system (G.P.A.) which is described in Faculty Regulation 10. In each year of study in the MSSW a student must maintain a minimum grade point average of 2.00 and a cumulative grade point average of at least

2.00. The G.P.A. is calculated at the end of each year. For part-time students the G.P.A. is calculated at the School when 30 credit hours of study are completed. All courses, with the exception of field courses, are used in the calculation of the G.P.A. This calculation also includes courses taken by Letter of Permission from other universities.

b) **Grade Requirements for Social Work Courses - Prior Regulations**

A student must obtain a grade of at least a C in each social work course for that course to be counted as a credit for the degree. A student who earns a grade of less than C in a social work course but is otherwise still eligible to continue in the School of Social Work must repeat the course until a grade of at least C is attained. Social work courses are all courses taken under BSW study which are not otherwise designated as admission credits.

c) **Requirements of Field Instruction Courses - Prior Regulations**

Field Practice courses SW3020 and SW4020/ 4030R are graded on a pass/fail system. A student must obtain a passing grade in each Field Practice course in order to be eligible to proceed in the programme. Field courses are not included in the calculation of G.P.A.

Required Withdrawal from the Programme

A student who fails to meet the the yearly G.P.A. standards as defined above must withdraw from the School. As well a student who fails a repeated course (academic or field work) must normally withdraw from the School.

Required Withdrawal from the BSW Programme on the Grounds of Unsuitability

The MSSW acting through its BSW Programme Committee and its Director may require a student to withdraw if judged to be unsuitable in aptitude and fitness for the profession of Social Work. Because of the nature of the study and practice of Social Work, which places clients in a position of special trust in relation to social workers and social work, certain impairments or some types of conduct unbecoming to a member of the social work profession may be grounds for dismissal, or suspension. Aptitude and fitness for the profession of Social Work, as determined by the B.S.W. Programme Committee, are requirements for continuation in the programme.

The following list of examples illustrate the criteria used to assess unsuitability in aptitude and fitness. This list should not be considered to include other such behaviors:

(i) conviction of criminal activity (e.g. assault, sexual assault, fraud and drug trafficking).

(ii) persistent substance abuse (e.g. alcoholism, drug addiction, use of illegal drugs).

(iii) any medical condition which affects an individual's ability to perform as a social worker if that condition is chronic and/or recurring and affects judgement.

(iv) unethical behavior (see C.A.S.W. Code of Ethics, 1983).

The Committee will consider the student's situation in confidence and shall determine whether the sudent is fit for the study and practice of Social Work. The principles of natural justice and due process will be observed in all committee deliberations.

Probation - Prior Regulation

A student with a cumulative G.P.A. of 1.8 - 2.0 may be granted probationary status at the discretion of the BSW Programme Committee. A student granted probationary status must achieve a cumulative G.P.A. of 2.0 for the next year (or following the completion of 30 credit hours of instruction in the case of a part-time student) or be required to withdraw from the programme. A student whose grades fall within the probationary level a second time will be required to withdraw from the programme.

Readmission After Required Withdrawal

Students who have been required to withdraw from the School of Social Work may apply for readmission by the March 1st admission deadline date which follows a minimum of one year's absence from the School. Since enrolment in the programme is limited, applicants must understand that readmission is not automatic.

Readmission After Voluntary Withdrawal

Students who wish to withdraw from the BSW programme should notify the BSW Chairperson of their intention in writing, stating the reasons for their decision.

Students who have withdrawn from the programme for one to three years and who wish to be reinstated are required to submit a new application form, to be returned with a letter to the Chairperson, BSW Committee, requesting re-entry and explaining the reasons for the interruption in their programme, and for the decision to resume their BSW degree studies.

Students who have not registered in the programme for three years or more and who wish to be reinstated are required to reapply, normally by the March 1st admission deadline date. An application form, updated work/volunteer resume form, and related reference forms must accompany a letter explaining the reasons for the interruption in the student's studies and the decision to resume the BSW degree programme.

Because of the relation of the BSW programme to the attainment of professional qualifications, each application is evaluated separately by the BSW Committee, and the student informed by letter of its decision. Due to the competitive nature of the enrollment process, readmission of students is not guaranteed. Curriculum requirements of reaccepted students may be adjusted effective from the date of readmission.

Appeals

A student wishing to appeal a decision based on School regulations, should consult with the Chairperson of the Academic Appeals Committee for advice on appeal procedures (see Faculty Regulation 22).

Duration of Undergraduate Study

Students must normally complete undergraduate studies within 10 years of their first registration. This rule also applies to transfer credit to be used in completing a degree (see College of Arts and Science Regulation 17).

Academic Standing

The absolute limit of credit from all sources is governed by the regulation that persons possessing a Bachelor's degree must complete, under Dalhousie instruction, a minimum of 6 credits, and persons without a Bachelor's degree, a minimum of 7½ credits of the 15 Social Work credits required for the Bachelor of Social Work degree.

Workload Regular Academic Year (Fall-Spring)

Five (5) full credit classes per academic year (except in the first year where 5½ credits are permitted) shall be regarded as constituting a normal workload for a full-time student, and may not be exceeded without written permission from the Committee on Studies of the Maritime School of Social Work. Written permission is also required if the planned workload in any term would amount to six half-credit classes (i.e. 3 full credits).

Maximum Workload - Summer School

See Faculty of Health Professions Regulation 16.4.

Limits on Credits - Summer School and Correspondence Classes

See Faculty of Health Professions Regulation 16.1 and 16.2.

Credits from Other Universities Under Concurrent Registration

Bachelor of Social Work students who wish to take classes at other institutions, whether in the academic year or in summer session, must obtain approval in advance on a Letter of Permission form obtained from the School or Registrar's Office. Students are requested to submit the form well in advance of the starting date of the class requested. A copy of the Letter of Permission will be provided by the Registrar if approval for the classes is given. The workload at the other institution must conform to the workload limitations at Dalhousie. Not more than half of the work of any three or four year degree programme may be by Letter of Permission.

See Faculty of Health Professions Regulation 17.

Discipline

See University Regulations - Discipline.

Plagiarism

See University Regulations - Academic Offences.

Sexual Harassment

See University Resources and Services.

Scholarships, Bursaries and Financial Aid

For information on all prizes, bursaries, scholarships and loans, consult the appropriate section of this calendar. Further information may be obtained from: Director of Awards, Office of the Registrar, Dalhousie University, Halifax, B3H 4H6, Telephone: (902) 494-2450.

Faculty of Management

Location: 6152 Coburg Road
Telephone: 494-2582

The Faculty of Management offers two undergraduate programmes, one in Commerce (BComm), administered by the School of Business Administration, and the other in Public Administration (CPA), administered by the School of Public Administration. Students wishing to enrol in programmes offered by the Faculty should address themselves directly to the Schools concerned for further information or for help in planning courses of study.

NOTE: *It has long been the policy of the University that a student is governed by the regulations in place at the time of initial enrolment, and that subsequent changes in regulations shall apply only if the student so elects.*

Students entering a new degree programme in the Spring of 1991 or later will be evaluated using the 4.3 Grade Point Average (GPA) scale. The regulations that apply to these students are identified as "New in 1991". All other students will continue to be evaluated using the merit point scale until April 1995. The regulations that affect them are identified as "Prior Regulations". Beginning in May 1995, all students' work will be assessed using the 4.3 GPA system.

For definitions of some commonly used terms, see page 9.

Faculty Officers

Dean
James D. McNiven
152 Coburg Road, Telephone 494-2582

Associate Dean
John R. E. Parker
152 Coburg Road, Telephone 494-1830

Director
Gordon E. E. Beanlands
School for Resource and Environmental Studies, 1322 Robie Street, Telephone 494-3632

Director
Mary E. Dykstra
School of Library and Information Studies, 1921 Killam Library, Telephone 494-3656

Director
Dale H. Poel
School of Public Administration, 1229 LeMarchant Street, Telephone 494-3742

Director
Leonard C. MacLean
School of Business Administration, 6152 Coburg Road, Telephone 494-7080

School of Business Administration

The School of Business Administration offers a curriculum of undergraduate and graduate studies designed to equip students to serve the community in business, government, and the professions.

The undergraduate programme includes studies in the humanities and social sciences as well as in the functional areas of business. Recognition is given to the growing emphasis on quantitative and behavioural analysis.

Administrative Staff 1990/91

Director, School of Business Administration
Leonard C. MacLean

Director, Centre for International Business Studies
Philip J. Rosson (on leave 1990-91)

Acting Director, Centre for International Business Studies 1990/91
Mary R. Brooks

Director, Courseware Development Project
Donald P. Sheridan

Co-ordinator, Canada/China Management Education Programme, Dalhousie/Xiamen Linkage
Cecil R. Dipchand

Director, Academic Programmes
Edgar W. Scott

Director, Student Services and Public Relations
M. Eileen MacDougall

Administrative Assistant
Susan M. DeYoung

Academic Staff 1990-91

Emeritus Professors
C.R. Brookbank, BA, MA, PhD (Tor.)
R.E. George, BSc (Lond.), MA (Bristol), PhD (Lond.)

Professors

M.A.H. Dempster, BA (Toronto), MS, PhD (Carnegie-Mellon), MA (Oxford) (on leave 1990-93)
C.R. Dipchand, BComm, (Queen's), MBA (Sask.), PhD (Western)
L.C. MacLean (Director), BA, BEd (St.FX), MA, PhD (Dal)
J.D. McNiven (Dean, Faculty of Management), BA, MA, PhD (Mich.)
M.J.C. Martin, BSc, (Nottingham), PhD (Sheffield)
J.R.E. Parker, (Associate Dean, Faculty of Management), BComm (Dal.), MBA (Wash.), CPhil (Mich.), FCA
G.S. Roberts (Bank of Montreal Chair), AB (Oberlin), MA, PhD (Boston Coll.)
P.J. Rosson, Dip MS (Salford), MA (Lancaster), PhD (Bath) (on leave 1990-91)
Yassin Sankar, BA (McG.), MA (Tor.), PhD (Johns Hopkins)
D.A. Schellinck, BSc, MBA (Dal), PhD (Ill.)

Associate Professors

B.C. Archibald, BA (Queen's), MSc (Stanford), PhD (Waterloo)
R.G. Baltazar, BSc (Ateneo de Manila), MIM (AGSIM)
R.G. Blunden, BComm (Dal), MM (Northwestern)
M.R. Brooks, BOT (McG.), MBA (Dal), PhD (Wales)
R. Carroll, BBA, BEd (St.FX), MBA (Dal), FCGA
D.C. Cherry, BComm (Dal), MBA (McM.), CMA
J.E.D. Conrod, BComm (Dal), MBA (Tor.), CA
F.G. Crane, BA (Acadia), DPA, MPA (Dal), PAdm (ICSAC), PhD (Bradford)
C.J. Dirksen, MBA (Oregon), BS (Santa Clara), PhD (Oregon)
J.F. Duffy, BS, MS, PhD (Iowa)
R.A. Ellison, BSc (UNB), MBA (McM.), PhD (Tenn.)
I. Fooladi, BS (Iran), MA (Tehran), MS, PhD (Oregon)
R.E. Klapstein, BSc (Calg.), BA (Alta.), MBA, LLB (Dal), LLM (Osgoode Hall), CMA
S.O. Larsson, BSc (SGW), MSc (Alta.), PhD (UBC)
R.N. Maddox, BA, MBA, PhD (Ohio State)
L.W. Mealiea, AB, MBA (Rutgers), PhD (Mass.)
Andrews Oppong, BSc (Ghana), MBA (Chicago),PhD (Iowa), CGA
D.J. Patton, BA (UNB), MA (Tor.), DBA (Indiana)
A.C. Peacock, BA, MA, PhD (Western)
R.S. Sandhu, BSc, BCL, LLM (Delhi), LLM (Yale), MBA (Dal)
R.W. Scott, BComm (Dal), MBA (Col.), CA, CMA
Yaghoub Shafai, BSc, MPA (Tehran), MBA, PhD (Mich. State)
D.P.J. Sheridan, CD, BA, BEd, MEd (Admin) (Sask.), PhD (Alta.)
R.A. Street, BComm, LLB (Dal), MBA (Western), LLM (Dal)

Assistant Professors

H.I. Gassmann, Vordiplom (Stuttgart), MS (Oregon), PhD (UBC)
J.K. Grude, BA (Atla.), MSc, PhD (London) B.W. MacLean, BComm, MBA (Dal), CA
F.S. Skinner, BComm (Memorial), MBA, PhD (Tor.)

Visiting Professors

D.I. Riddle, BA (Col), MBA (Ariz), PhD (Duke)

Lecturers

L.P. Hendry, BSc (SMU), MBA (Dal)
C. Ivey, BComm, MBA (Dal), CMA, FCMA

Part-Time Faculty

K. Blotnicky, BA, MBA (SMU)
P.T. Cooke, BSc (St.FX), MBA (Dal)
B. Cottrell
D.G. Harris, BComm, MBA (Dal), CMA
C.H.C. MacKenzie, BBA (UPEI), LLB, MBA (Dal)
H. Marriott, BA, MBA (Dal)
D. Moulton-Barrett, BA (Dal)
D.A. Othen, BA, MA (Ozon.), MBA (Dal), PhD (Alta.)
E.E. Pease, BA, BEd (Dal), MEd (MSV)
D.G. Ross, BBA (Acadia), MBA (Dal)
M.P. Whalen, BSc (SMU), MBA (Dal)
J. Wilson, BBA (UNB), MBA (Dal)

Bachelor of Commerce

The School of Business Administration offers the undergraduate Bachelor of Commerce degree, which is a four-year programme. Starting in September 1991, the Bachelor of Commerce is being changed to a mandatory co-operative education programme which will allow students to combine relevant work experience with academic studies. The schedule for the Bachelor of Commerce Co-op includes seven academic terms (AT) and three work terms (WT), as follows:

Yr/Term	Fall	Winter	Summer
1	AT1	AT2	FREE
2	AT3	WT1	AT4
3	WT2	AT5	WT3
4	AT6	AT7	

Students enroled before September 1991 will be able to continue the regular Bachelor of Commerce programme. However, transitional provisions are being considered that would permit students enroled in September 1990 to opt into the Bachelor of Commerce Co-op. For further information, contact the Associate Dean, Faculty of Management, 6152 Coburg Road, (902)494-2582.

Both the regular and co-op programmes in Commerce require a broad and general range of studies, including required and elective classes provided by the College of Arts Science. Both programmes also allow students to choose a measure of concentration in a variety of special areas, as will be explained later in the Calendar.

The term "Bachelor of Commerce" is used in this Calendar with reference to the programme applicable to students enroled prior to September 1991. The programme of studies for the Bachelor of Commerce Co-op is set forth separately.

Courseware Development Project

The School of Business Administration has undertaken a multi- million-dollar project to introduce computers into all aspects of the School. Prime objectives of the project include the integration of information technology into the curriculum and the development of sophisticated decision support systems for practising managers through research carried out by faculty members in cooperation with industry.

Currently, all faculty members and support staff have their own personal computers and students have access to a computer laboratory with 45 personal computers and 20 terminals. All personal computers and terminals are connected through a data switch to the School's three MicroVAXes and artificial intelligence computer, and are networked with other computer systems on campus providing gateways to international data networks.

The generosity of several Canadian corporations, as well as the support of the Capital Campaign for Dalhousie, has enabled the School of Business Administration to become a recognized world leader in this area.

School of Business Administration Regulations

1. Admission Requirements

Application forms are available from the Registrar's Office, Arts and Administration Building, Dalhousie University, Halifax, Nova Scotia, B3H 4H6, Telephone: (902) 494-2450, FAX: (902) 494-1630.

1.1 Students from Nova Scotia High Schools

At least five senior-level university preparatory classes should be taken in the Grade XII year, as follows:

(a) English;
(b) Mathematics 441 or 442;
(c) at least one of Biology, Chemistry, French, German, History, Latin and Physics;
(d) the remaining classes may be from those listed above or from Economics, Geography, Geology, Law, Modern World Problems, Music, Political Science, Sociology, Spanish, Accounting, Business Organization and Management.

Any special or experimental classes must have been previously approved by Dalhousie if acceptance for admission is to be assured.

A passing grade of at least 50% is required in each class, with an average of at least 70%. An average of at least 75% is required for early admission. A grade of at least 65% is required in both English and Mathematics.

The University does not apply criteria rigidly. Students who do not meet the above requirements, particularly those with high standing, are invited to apply and will be given consideration as special cases.

1.2 Admission from Outside Nova Scotia

Students are accepted from other provinces and countries at levels as shown below, which are considered equivalent for the purpose of admission to Nova Scotia Grade XII:

New Brunswick, Newfoundland and Labrador, Prince Edward Island, Manitoba, Saskatchewan, Alberta, British Columbia: Grade XII, with subject distribution and minimum average as for Nova Scotia.
Québec: One year at CEGEP.
Ontario: O.A.C. credit or Grade XIII.
U.S.A.: U.S.A. Grade XII, SAT or CEEB scores are required.
The United Kingdom, West Indies, West Africa: General Certificate of Education (GCE) with pass standing in at least five subjects, of which one must be English and at least two must be at the Advanced Level.
Hong Kong: GCE as for Great Britain, or University of Hong Kong Matriculation Certificate under same conditions as for GCE.
Bangladesh, India, Pakistan: Bachelor's degree with first or second-class standing from a recognized university; or in certain circumstances, first-class standing in the Intermediate examinations in Arts and Science, provided the candidate has passes at the university level in English, Mathematics, and a language other than English. Note: This standing is not sufficient for admission to the sequential BEd programme at Dalhousie.
Countries not mentioned above: Write to the Registrar's Office, Dalhousie University, Halifax, N.S. B3H 4H6, for further information.

The work term requirements of the Bachelor of Commerce Co-op may involve placement problems for visa students. Subject to approval by the School, students

may be permitted to arrange their own work term positions. Not withstanding, the best interests of most visa students may be better served by seeking admission to a university that does not have a mandatory Bachelor of Commerce Co-op Programme.

1.3 Transfers from Colleges and Other Universities

Students who have begun their post-secondary studies elsewhere, and who are in good standing, may be given credit for work completed elsewhere, subject to the conditions given in section 9.

Admission to the Bachelor of Commerce Co-op may be impractical beyond the beginning of the second year. It will be impossible to admit transfer students into the third or fourth years of the co-op programme.

1.4 Mature Students

Students who do not meet the usual admission requirements may be considered under the mature student category provided that:

1. they are at least 23 years old, and
2. they have been absent from full-time high school study for at least four years.

Prospective students should submit to the Registrar's Office an application form, together with a letter outlining their work experience and other activities. Normally, high school transcripts are required and interviews may be required.

Under exceptional circumstances, the Admissions Committee may agree to admit the student directly to a degree programme if the student's background is deemed sufficient preparation for such admission. Otherwise, the Admissions Committee may admit mature students initially to the University Exploration category until they have achieved grades of C- or better in at least three full-year classes (or equivalent). At that time, they are eligible to apply for admission as regular undergraduate students.

Mature students are advised to contact Henson College at 494-2526 for pre- and post-admission counselling.

1.5 January Admissions

Admission to Dalhousie is normally for classes beginning in September, and the University does not admit full-time, first-year students in January. Part-time students and transfer students, however, may be admitted for classes beginning in January. The deadline for application for January admission is November 15.

1.6 Proficiency in English

Applicants for admission whose native language is not English must give evidence that they are proficient in spoken and written English. Evidence may be provided by the English Language Test of the University of Michigan, or the Test of English as a Foreign Language (TOEFL), normally with a score of at least 580. Both of these tests are administered in various centres throughout the world. Information may be obtained by writing to the English Language Institute, Testing and Certification Service, Ann Arbor, Michigan 48104, U.S.A. or TOEFL Box 899, Princeton, New Jersey 08540, U.S.A.

Certified copies of original documents, or relevant sections of documents (e.g. calendar pages) are acceptable in lieu of originals. Certificates in languages other than English or French must be accompanied by certified translation into English or French.

2. Student Aid, Scholarships and Other Awards

Refer to the appropriate section of this Calendar for relevant information, or consult the Registrar's Office in the Arts and Administration Building for further details.

3. Admission to Classes

3.1 Academic Advice

At Dalhousie, all students are offered academic advice prior to registration. First-year students may wish to consult with the Office of the Registrar or, the Summer Faculty Advisor. Each student must complete a Class Selection Form, obtainable from the Office of the Registrar.

Students can be registered only after the Class Selection Form is completed and submitted. However, please note that the completion and submission of a class approval form does not constitute registration.

Registration is complete only after the registration form, which will be provided to each eligible student, is submitted to the Office of the Registrar and financial arrangements have been made with the Student Accounts Office.

3.2 Numbering of Classes

Classes are numbered to indicate their general level. Those in the 1000 series are introductory and can normally be taken by fully matriculated students without any previous classes at Dalhousie, while classes in the 2000, 3000, and 4000 series are usually first available to students in the second, third, and fourth years, respectively. Often these classes have prerequisites.

The letter following a class number indicates the session in which the class is offered. The letters A and B denote classes given in the first and second terms, respectively. The letters C and R denote classes spread over both terms, i.e., given for the full academic year. An R class carries one full credit or more, and a C class less than one full credit. For summer sessions, A denotes a class given in the first three and one-half weeks, B a class given in the second three and one-half weeks, and R or C denotes a class continuing for seven weeks. Students should consult the timetable to determine which classes are offered in a given year.

It is anticipated that the Bachelor of Commerce Co-op will necessitate some re-numbering of classes in the School of Business Administration. Since this re-numbering has not yet been done, the established numbering system will continue to be used in this Calendar.

4. Workload

Five full credits per academic year will be regarded as constituting a normal workload for a student in the regular year.

Students may not normally take more than one full credit in any summer session, nor may the workload in any one week exceed one-seventh of a credit. This may be increased, with the permission of the Director Academic Programmes, to a maximum of 2.5 credits in summer school in any one year, with a maximum of 1.5 credits in any one summer session.

Students who wish to exceed the normal workload must apply for permission to the Director Academic Programmes, School of Business Administration. Such permission will not normally be granted to any student who is in his first year of study or who, in the preceding academic year, has failed a class, or who had an average of less than B-.

5. Registration

Registration material and detailed information will be sent to all eligible students except those admitted late, in which cases documentation must be completed in person. After the Class Selection Form has been completed (see above) students may register, either in person or by mail.

A student is registered only after finaacial arrangements have been made at the Student Accounts Office.

Upon registration, a receipt will be issued by the Student Account's Office. An ID card, which gives the student access to many campus services and activities, may then be obtained at the ID Unit located in the Office of the Registrar.

All students requesting the release of funds from the Awards Office must present a current valid Dalhousie University ID card. An ID card is also required for use of the Library and the Computer Lab, as well as writing officially scheduled examinations.

6. Withdrawal and Change of Registration

6.1 Responsibility of Registered Students

Those students who withdraw from the University may be entitled to refunds of fees. Withdrawals are not effective until notification is received at the Office of the Registrar. Non-attendance does not, in itself, constitute withdrawal.

6.2 Class Changes

It is recognized that some students may wish to make changes in programmes already arranged. Class changes will normally be completed during the first two weeks of classes.

No change is effective until a change form, available at the Office of the Registrar, is received by that office.

See the Schedule for Academic Dates for deadlines for adding and dropping classes, and Fees for the schedule of refunds.

7. Degree Requirements

7.1 Degree Requirements - New in 1991

The Bachelor of Commerce Co-op is a four-year programme comprising 7 academic terms and 3 work terms. The equivalent of 20 full credits (40 half credits) is required for graduation. Note: all classes are half-credits except those designated as "R", which are full credits.

The classes in the programme are divided into five categories, as follows:

7.1.1 Required Core Area Classes

The equivalent of ten full credits (twenty half credits) Commerce 1000, 1101, 1102, 1501, 2201, 2301, 2401, 2501, 2502, 2601, 2701, 3302, 3501, 4350R; (Economics 1100R, 2200, or 2201; Mathematics 1000 and 1010, or 1110 and 1120*

Note: Mathematics 1110 and 1120 are specifically designed for the Commerce programme, but are normally accepted as the prerequisites for upper level Mathematics or Computing Science classes.

7.1.2 Core Area Electives

The equivalent of four full credits (eight half credits) to be selected from offerings in the core areas of Commerce, Economics and Mathematics (including Computing Science).

7.1.3 Non-Commerce Electives

The equivalent of three full credits (six half credits) to be selected from all classes offered in the university except those designated as Commerce classes.

7.1.4 Free Electives

The equivalent of one and one-half full credits (three half credits) chosen, subject to the approval of the School of Business Administration, from all classes offered in the University.

7.1.5 Work Term Requirements

The equivalent of one and one-half full credits (three half credits) requires the satisfactory completion of three work terms.

Students are expected to ensure that the classes taken comply with the above.

Academic regulations for the Bachelor of Commerce Co-op are currently being finalized. In general, the regulations will be based on or adapted from those applicable to the Bachelor of Commerce degree. The Bachelor of Commerce Co-op, however, is a more structured programme, with most of its classes assigned to specific years and terms. The chart on page 411 summarizes the degree requirements and class sequencing through all seven of the academic terms and three work terms that constitute the Bachelor of Commerce Co-op Programme. It will be noted that Commerce 1000 and Commerce 1501 will be offered in the Spring to provide a safety net opportunity to make up academic deficiencies and proceed to Year II of the Bachelor of Commerce Co-op.

7.1.6 Competency in the English Language

All students in the Commerce programme must satisfy the School as to their competency in the English Language. This requirement is satisfied by successfully completing the Business Communication Course, Commerce 2701, which is a required course in second year. The School recommends, but does not require, that students take at least one course in first year, from their electives, in which written work is considered frequently and in detail. These writing classes are approved by the Writing Across Curriculum Committee and are listed as follows: Chemistry 1000R, Classics 1000R, 1010R, 1100R, German 1000R, 1050R, Political Science 1103R, Russian 2050R, Sociology and Social Anthropology 1001R, 1050R, Comp. Rel. 1301, English 1000, History 1400, 1990, Philosophy 1010, 1030.

7.2 Degree Requirements - Prior Regulations

The BComm requires Four years of study comprising the equivalent of 20 full credits. Not more than the equivalent of eight full credits may be at the 1000 level.

The classes in the programme are divided into four categories, as follows: Note: all classes are half-credits except those designated as "R", which are full credits.

Required Core Area Classes: The equivalent of nine full credits - Commerce 1101, 1102, 1501, 2201, 2301, 2401, 2501, 2502, 2601, 3302, 3501, 4350R; Economics 1100R, 2200, 2201, 2220, or 2221; MATH 1000 and 1010, or 1110 and 1120*.

*Note: Mathematics 1110 and 1120 are specifically designed for the Commerce programme, but are not normally accepted as the prerequisites for upper level Mathematics or Computing Science classes.

Core Area Electives: the equivalent of three full credits to be selected from offerings in the core areas of Commerce, Economics and Mathematics (including Computing Science).

Non-Commerce Electives: the equivalent of five full credits chosen, subject to the approval of the School of Business Administration, from all classes offered in the University, except those designated as Commerce classes. A total of two credits must be follow-up classes, i.e., classes which provide further development of the subject matter introduced in lower level classes (these will most frequently be classes at the 2000 level and above). Classes which do not have a lower level prerequisite are not considered follow-up classes.

Note: Due to the growing awareness of the importance of ethics in the education of business managers, the School highly recommends that students take Philosophy 2080R (Ethics in the World of Business) as part of their Commerce programme. This class would qualify as a non-Commerce elective follow-up if the student has taken any class in Philosophy at the 1000 level, even though there are no formal prerequisites listed for Philosophy 2080.

Free Electives: the equivalent of three full credits chosen, subject to the approval of the School of Business Administration, from all classes offered in the University.

Students are expected to ensure that the classes taken comply with the above requirements.

7.2.2 First-Year Programme

Students entering the Bachelor of Commerce programme from high school in September 1991 will be enroled in the BComm Co-op as described earlier in this Calendar. Students registered before September 1991 should normally have completed the following classes: Commerce 1101A, 1102B, 1501A, Economics 1100R, Mathematics 1110B or 1000B, and two non-Commerce electives.

Students transferring from other universities or programmes should consult the Director Academic Programmes for assistance in planning their year in Commerce at Dalhousie.

7.2.3 Honours Programmes

Honours programmes may be designed with an area of concentration in Accounting, Finance, Management, Marketing, and Quantitative Methods, or without an area of concentration. The Honours programme of each student must be approved by the Director of the School of Business Administration or his appointee, usually the Director Academic Programmes.

7.2.3.1 Requirements of Honours

The requirements of Honours programmes are those of the BComm programme, with the following changes:

(a) the student must attain an average grade of at least B⁻ in all classes beyond the first year;
(b) one of the full class equivalents within the core area electives must be designated as an Honours seminar;
(c) the student must obtain a grade of at least B⁻ in the designated Honours seminar, (or in the case of unconcentrated Honours, where two MBA classes are taken in lieu of the Honours seminar, a grade of B must be obtained in each of them); and
(d) to obtain First-Class Honours, students must, in addition to the above requirements, attain an average of A⁻ both (1) for all classes in the core area of Commerce, Economics and Mathematics, and (2) for all 20 classes.

7.2.3.2 Admission to Honours

Students are normally admitted to an Honours programme after completion of three years of the regular programme. Students must meet the following admission requirements:

(a) an average grade of B⁻ in all classes taken in the second and third years of the BComm programme, and
(b) an average grade of at least B⁺ in the group of prerequisite classes to the relevant Honours seminar.

Students failing to meet the foregoing standards for admission to an Honours programme may be given permission in special circumstances to take an Honours seminar as an elective. Such special admission to an Honours seminar does not constitute admission to an Honours programme.

Students wishing to follow an Honours programme without an area of concentration should consult the Director Academic Programmes concerning the requirements for unconcentrated honours.

7.2.4 Competency in the English Language

All students in the Commerce programme must satisfy the School as to their competency in the English language. This requirement is satisfied by successfully completing the Business Communication course, COMM 2701. The school recommends, but does bot require, that students take at least one course from their non-commerce electives, in which written work is considered frequently and in detail. These writing classes are listed below: CHEM 1000R, CLAS 1000R, 1010R, 1100R, COMP REL 1301R, ENGL 1000R, GER 1000R, 1050R, HIST 1400R, 1990R, PHIL 1010R, 1030, POLS 1103R, RUSS 2050R, SSA 1001R, 1050R

8. Counting of Classes Towards Two Undergraduate Degrees

A student who holds a BA or BSc and who wishes to obtain a BComm must fulfil the requirements of the BComm and meet the following stipulations:

(a) only classes that are applicable to the BComm may be counted for credit;
(b) each class carried forward must bear a grade of "C" or higher;
(c) a minimum of 11 new classes must be taken, of which at least eight must be in the core area.

9. Transfer Students

9.1 Transfer Credits

At Dalhousie transfer credits may be granted for classes which are offered by a recognized university or equivalent institution of higher learning and which are judged to be comparable to classes offered at Dalhousie and to be appropriate to a student's academic programme at Dalhousie.

Transfer credits are subject to approval of departments. Transfer credits are not normally granted for classes that are not within the scope of any Dalhousie department. Students may, however, appeal to the appropriate Assistant Dean or to the applicable Academic Studies Committee for transfer credit where they can justify the inclusion of such classes in their proposed programme. Photocopies of calendar descriptions are particularly suitable for this purpose. Such descriptions are not normally included with university transcripts and it is the student's responsibility to provide them.

To obtain a first degree or diploma, at least half of the classes, including at least half in the field of concentration, must normally be taken at Dalhousie.

9.2 No Transfer Credits

No credit will be given for any work used as the basis for admission.

No transfer credit will be granted for any class in which a final mark of less than C (or the equivalent in Dalhousie terms) was obtained.

Credits that are more than ten (10) years old may not be used to fulfil degree requirements unless a waiver is granted.

No classes taken at another institution will be counted towards fulfilment of the concentration requirement of the Bachelor's degree or the principal subject requirement of an Honours programme without specific advance approval from the department concerned at Dalhousie.

No credit will be given for any classes taken at another university while a student is inadmissible at Dalhousie.

9.3 Procedures

As soon as the student's record has been assessed the Office of the Registrar will write to the student informing her/him which credits have been awarded. The number of credits which have been approved, and which Dalhousie classes may not be taken, will be included in the letter. If more credits have been approved than can be applied to the student's programme, the student will be asked to choose the credits to be used. When transfer credits awarded on admission appear on a Dalhousie transcript, they appear as credits only; no marks are shown.

If by registration the student has not received written confirmation of transfer credits, the student should check with the Office of the Registrar. Information, although incomplete, may be available to help in choosing Dalhousie classes.

Before selecting classes the student should consult with the appropriate Department(s) to determine how the transfer credits will fit into the student's specific academic programme at Dalhousie.

10. Advanced Placement

Students possessing advanced knowledge of a subject which was acquired other than at a university will be encouraged to begin their studies in that subject at a level appropriate to their knowledge, as determined by the department concerned, and will be exempted from any classes which are normally prerequisites for the one to which they are admitted. However, such students must substitute for the exempted classes an equal number of other classes, not necessarily in the same subjects (i.e., they must complete at Dalhousie the full number of credits required for the particular credential being sought).

11. Part-Time Study

The School is committed to providing students with the opportunity to obtain a degree through full-time study. However, the School will consider applicants for part-time study.

Part-time students are reminded of University policy that limits programmes of study to 10 years from the date of initial registration. Note also, the regulation below concerning the number of classes that must be completed on campus at Dalhousie.

12. Audit of Classes

Students are permitted to audit many of the classes offered. For those who are not full-time students, fees are payable as indicated in the Fees entry.

A class may not be changed from credit to audit or from audit to credit status after the last date for dropping classes without penalty (see the Schedule of Academic Dates). In order to change from audit to credit prior to the deadline, an additional fee is required. Permitted changes require that the procedures as given in section 6.2 be followed.

13. Classes Taken on Letter of Permission

13.1 Credit for such classes falls under the limitations and regulations described in regulation 17.1.3.

13.2 A student who wishes to take classes at other institutions while registered at Dalhousie, whether in the academic year or in summer sessions or by correspondence, must obtain approval in advance on a form available in the office of the Registrar. A letter of permission will be provided if approval for the classes is given. The workload at the other institution must be acceptable to the School of Business Administration.

13.3 Permission to take a class at another university will not be granted if the student is living in the area and could reasonably be expected to take the class at Dalhousie.

13.4 The class fee will be paid by Dalhousie if:

(a) the student is registered and has paid fees as a full-time student at Dalhousie;
(b) the classes are approved as part of the student's program; and
(c) the class is not part of a summer school programme.

14. Summer School

There are no limitations on the number of credits taken during summer sessions at Dalhousie (subject to normal workload limitations) that may be counted toward the Bachelor of Commerce degree.

15. Duration of Undergraduate Studies

Students are normally required to complete their undergraduate studies within ten years of their first registration, and to comply with the regulations in force at the time of that registration. This is also the normal limit for transfer credits. However, the Director Academic Programmes may grant permission to continue studies for a reasonable further period, subject to such conditions as the Director Academic Programmes deems appropriate and with the stipulation that the student must meet the degree requirements in force when the extension is granted.

16. Assessment

16.1 Method

Examinations may be oral, written (closed or open book) under supervision, or take-home. To gain credit toward a degree or diploma, students must appear at all examinations, prepare such essays, exercises, reports, etc., as may be prescribed, attend the classes of their prescribed course to the satisfaction of the instructors and, in classes involving field or laboratory work, complete such work satisfactorily.

Within two weeks of the first meeting of a class, each instructor shall make available a written description of the method of evaluation to be used in the class.

16.2 Examinations and Tests

Within four weeks after the beginning of each term the department chairperson or the Director Academic Programmes must report to the Dean the method of evaluation to be used by each instructor in each class. Periods of approximately three weeks in the spring and one and one-half weeks in December are set aside for the scheduling of formal written examinations by the Registrar. Instructors wishing to have examinations scheduled by the Registrar for their classes must so inform the Registrar at the beginning of the third week of classes in the fall and spring terms. Instructors may also arrange their own examinations at times and places of their choosing during the formal examination periods, with the understanding that in cases of conflict of examinations for an individual student, the Registrar's examination schedule takes priority. No tests or examinations covering the work of a whole term shall be held during the last two weeks of classes in the term. No tests may be held between the end of classes and the beginning of the official examination period. Students may contact the Dean's Office of the appropriate Faculty for assistance if they are scheduled for more than two examinations on the same day.

16.3 Grades

A letter-grade system is used to evaluate performance. Grades in the A range represent excellent performance, grades in the B range represent very good performance, and those in the C range represent satisfactory performance. A grade of D represents marginally acceptable performance except in programmes where a minimum grade of C is specified. See the calendar entries for specific programmes where a minimum grade of C is specified. F indicates failure. Grades in the ranges of A, B, C, D and P are passing grades. Other grades, including W, INC and F, are non-passing grades (see regulation 19.2.1). ILL (assigned for compassionate reasons or illness) is neutral. Appropriate documentation is needed for this grade (see regulation 16.8).

16.4 Submission of Grades

On completion of a class, the instructor is required to submit grades to the Registrar, such grades to be based on the instructor's evaluation of the academic performance of the students in the class in question. Christmas grades must be submitted to the Registrar in all 1000-level classes in which enrolment on October 1 exceeded 25; Christmas grades are normally submitted in other full year classes.

16.5 Incomplete

Students are expected to complete class work by the prescribed deadlines. Only in special circumstances may an instructor extend such deadlines. Incomplete work in a class must be completed within four weeks of the required date for submission of grades in that class to the Office of the Registrar.

16.6 Correction of Errors in Recorded Grades

Correction of errors in the recording of a grade may be made at any time. Otherwise changes will only be made as in Regulation 16.7 below.

Students are not entitled to appeal for any grade change more than six months after the grades are sent from the Office of the Registrar.

16.7 Reassessment of a Grade

On payment of a fee, a student may appeal to the Registrar for reassessment of a grade in a class. The Registrar will direct the request to the head of the academic

unit concerned, who will ensure that the reassessment is carried out and reported to the Registrar. Written applications for reassessment must be made to the Registrar within two months of the date the grade is sent from the Office of the Registrar. Students have a right to view their marked examination papers by appointment for a period of two months from the date the grades are sent to students from the Office of the Registrar.

16.8 Special Arrangements for Examinations, Tests and Assignments

At the discretion of the instructor, alternate arrangements for examinations, tests or the completion of assignments may be made for students who are ill, or in other exceptional circumstances.

Where illness is involved, a certificate from the student's physician will be required. This certificate should indicate the dates and duration of the illness, when possible should describe the impact it had on the student's ability to fulfil academic requirements, and should include any other information the physician considers relevant and appropriate. To obtain a medical certificate, students who miss examinations, tests or the completion of other assignments should contact the University Health Services or their physician at the time they are ill and should submit a medical certificate to their instructor as soon thereafter as possible. Such certificates will not normally be accepted after a lapse of more than one week from the examination or assignment completion date.

For exceptional circumstances other than illness, appropriate documentation, depending on the situation, will be required.

Requests for alternate arrangements should be made to the instructor in all cases. The deadline for changing a grade of ILL is February 1 for "A" classes and June 1 for "R", "C" and "B" classes. Requests to change grades after these deadlines must be submitted in writing to the appeals committee of the faculty.

17. Academic Standing

17.1 Grade Point Average (GPA) - New in 1991

The Grade Point Average is the weighted sum of the grade points earned, divided by the number of classes in which grade points were earned, in accordance with the grade scale in 17.1.1. Classes with fewer than six credit hours earn proportional grade points (e.g. in a half-credit class, a C would yield one point).

17.1.1 Scale

Grade		Grade Points
A+		4.3
A		4.0
A-		3.7
B+		3.3
B		3.0
B-		2.7
C+		2.3
C		2.0
C-		1.7
D		1.0
F		0.0
INC	(Incomplete)	0.0
W	(Withdrew after deadline)	0.0
ILL	(Compassionate reasons/illness)	Neutral
P	(Pass for credit classes)	Neutral
T	(Transfer credit on admission)	Neutral

17.1.2 Grade Points from Other Institutions on Admission

Transfer credits on admission count as credits without grade points, i.e. they are neutral in the calculation of the GPA.

17.1.3 Grade Points on Letter of Permission

The grade earned in a class taken at another institution on a letter of permission is recorded and the appropriate Dalhousie grade points are assigned. For institutions which do not use letter grades, the Registrar's Office translates the grade into a Dalhousie grade and assigns the corresponding grade points.

17.1.4 Repeating Classes

With the permission of the Director Academic Programmes a student may repeat any class for which a passing grade has previously been awarded. The original passing grade will nevertheless remain on the transcript and a second entry will be recorded with the new grade and the notation "repeated class." No additional credit will be given for such a repeated class, but both grades will be included in the calculation of the sessional and cumulative GPA.

17.1.5 Grade Points in the Spring/Summer Session

Students enroled in classes during the Spring/Summer session will earn grade points which will be included in their cumulative GPA. However, a sessional GPA will not be calculated.

17.2 Merit Points - Prior Regulations

17.2.1 Scale

Merit points are awarded for each class as follows:

Grade	Merit Points
A+, A, A-	3
B+, B, B-	2
C+, C, C-	1
D	0

Note that although D is a passing grade, no merit points are awarded. For fractional credit classes, corresponding fractional merit points are awarded (e.g. in a half-credit class, a B would yield one point).

17.2.2 Repeating Classes

With the permission of the BComm/MBA Co-ordinator, a student may repeat any class for which a passing grade has previously been awarded. The original passing grade will nevertheless appear on the transcript, and a second entry will be recorded with the new grade and the notation "repeated class." No additional credit will be given for such a repeated class, but the higher grade, or point count appropriate to it, will be used for degree purposes. Note that both grades are used in calculating the required merit point total when a degree with distinction is considered.

18. Probation - New in 1991

18.1 Students with a cumulative GPA of less than 1.7 and greater than or equal to 1.0 who have completed at least four full classes will be placed on academic probation.

18.2 Students on probation are allowed to continue to register on probation provided that their sessional GPA is at least 1.7. Students on probation who do not achieve a sessional GPA of 1.7 will be academically dismissed.

18.3 Students who are returning from a 12-month period of academic dismissal are allowed to register on probation. They are allowed to continue to register on probation provided that their sessional GPA is at least 1.7. Students who do not achieve a sessional GPA of at least 1.7 will be dismissed academically for the second time.

18.4 Students require a cumulative GPA of 1.7 to graduate. Therefore, no one will be allowed to graduate while on probation.

19. Required Withdrawal

19.1 Academic Dismissal-New 1991

19.1.1 Students with a cumulative GPA of less than 1.0 who have completed at least four full classes will be academically dismissed.

19.1.2 Students on probation who do not achieve a sessional GPA of 1.7 or greater will be academically dismissed.

19.1.3 Students who have been academically dismissed for the first time are allowed to register on probation after a 12-month period without having to reapply.

19.1.4 Students who have been academically dismissed for the second time will not be allowed to re-apply for at least three calendar years.

19.2 Required Withdrawal - Prior Regulations

19.2.1 Students who have not passed at least half of the classes for which they are registered after the final date for withdrawal without penalty, will be considered to have failed the year, and will be required to withdraw from their programmes.

19.2.2 Readmission After a Failed Year -Prior Regulation

Students who have failed their year on the first occasion in the Faculty of Management may apply to the Faculty for readmission consideration. Students will not normally be considered for reinstatement until they have been out of the programme for at least one year. A student who has twice failed a year, or who has been required to withdraw twice, will be ineligible for readmission to the Faculty as either a full-time or a part-time student. Ordinarily an appeal is allowed only if illness has seriously interrupted the student's studies and this is established by submission to the Registrar of a medical certificate from the physician attending the student at the time of illness.

20. Required Standing

20.1 Required Standing For B.Comm Co-op - New in 1991

20.1.1 In order to qualify for the degree, candidates must have obtained a cumulative GPA of at least 1.7

20.1.2 For the minimum acceptable standing for Honours, see section 7.2.3.1 (above).

20.1.3 A cumulative GPA of at least 3.7 is required for a BComm Co-op with Distinction.

For the purpose of determining whether a student will receive a BComm Co-op with Distinction, all classes taken while at Dalhousie, including repeated classes, and classes for which non-passing grades were obtained, are included. At least half of the classes must be completed at Dalhousie. Classes taken elsewhere while at Dalhousie will be included when determining distinction.

20.2 Required Standing - Prior Regulations

20.2.1 In order to qualify for the degree, candidates must have obtained a minimum of 16 merit points in the 20 classes required. This minimum is adjusted in proportion to the number of Dalhousie credits received relative to the total number of credits required.

20.2.2 For the minimum acceptable standing for Honours, see section 7.2.3.1 (above).

20.2.3 At least 53.5 merit points are required for a BComm with Distinction. The number is prorated upward if more than 20 credits appear on the student's record. For the purpose of determining Distinction, all Dalhousie classes, including repeated classes and classes for which non-passing grades were obtained, are included. At least 15 classes must have been taken on-campus at Dalhousie for the BComm to be awarded with Distinction.

21. Graduation

In order to graduate students must submit a Request to Graduate to the Office of the Registrar by the deadlines indicated below:

Graduation Month	Application Deadline
February	December 1
May	February 15
October	August 15

In cases where requests can be accommodated after the deadline, a $50 fee will be charged.

22. Appeals

Any student suffering undue hardship from the application of any of the regulations of the Faculty may appeal for relief to the Director Academic Programmes and/or the Academic Appeals and Grievances Committee. Normally the request for relief should be made to the Director Academic Programmes, who will make a decision which may be appealed to the Committee.

23. Changes in Regulations

In general, any change which affects a currently registered student adversely will not apply to that student. Any student suffering undue hardship from application of any of the regulations may appeal for relief, as outlined in the Appeals section.

24. Senate Regulations

In addition to the above Faculty Regulations, students are reminded that they must also comply with the University Regulations printed at the front of this Calendar, pages 66-70. Particular attention is drawn to the University Regulation that refers to plagiarism, on page 67.

Dalhousie University Co-op BComm

Year \ Term	Fall Sept./Dec.	Winter Jan./April	Spring May/Aug.
1	Math 1000 or 1110 (1) Comm 1000 (1)	Math 1010 or 1120 (1) Comm 1501 (1)	Free Safety Net
	Econ 1100 (2) 3 NonCommerce Electives (6)		Comm 1000 Comm 1501
11	Comm 1101 (1) Comm 2301 (1) Comm 2401 (1) Comm 2501 (1) Comm 2601 (1)* Seminar	Work Term (1)	Comm 1102 (1) Comm 2201 (1) Comm 2502 (1) Comm 2701 (1) Comm 3302 (1)
111	Work Term (1)	Econ 2200 or 2201 Comm 3501 (1) 3 Core Electives (3)	Work Term (1)
1V	Comm 4350 (2)		
	3 Core Electives (3) 1 Free Elective (1)	2 Core Electives (2) 2 Free Electives (2)	

* Comm 2601 in Year 11 may be interchanged with Econ in Year 111

Programme Guide

The School has developed the following suggested programmes for the guidance of students.

Note: All classes are half-credits except those designated as "R", which are full credits.

Without An Area of Concentration

Year 1: Commerce 1101A, 1102B, 1501; Economics 1100R; Mathematics 1110 or 1000; 2 non-Commerce electives.

Year 2: Commerce 2201, 2301, 2401, 2501A, 2502B; Economics 2200; Math 1120 or 1010; one-half core area elective; 1 non-Commerce elective.

Year 3: Commerce 2601, 3302, 3501; 1.5 core area electives; 1 non-commerce elective; 1 free elective.

Year 4: Commerce 4350R; 1 core area elective; 1 non-Commerce elective; 2 free electives.

With An Area of Concentration

Accounting

Year 1: As for those without an area of concentration.

Year 2: Required core area classes: Commerce 2201, 2301, 2401, 2501, 2502; Economics 2200 or 2201; Math 1120 or 1010. Core area electives: Commerce 2110, 2111, 3112.

Year 3: Required core area classes: Commerce 2601, 3302, 3501. Core area electives: Commerce 3113, 3114, 3120. One non-Commerce elective. Free electives: Commerce 3201 and one-half class chosen from those listed for the fourth year.

Year 4: Required core area classes: Commerce 4350R; 2 non-Commerce electives. Free electives: Commerce 4101, 4102, and 2 of 2602, 3202, 3203, 4113, 4114, 4120 or 4150.

The professional accounting bodies allow certain exemptions in respect of classes taken in the School of Business Administration. These differ from province to province. Particulars can be obtained from the provincial offices of: the Institute of Chartered Accountants, the Association of Certified General Accountants, the Society of Management Accountants, and the Chartered Institute of Secretaries.

Economics

Year 1: As for those without an area of concentration.

Year 2, Year 3 and Year 4: As for those without an area of concentration except for the electives listed below in the programme choices. To ensure that the prerequisite requirements of the 3000 and 4000 level Economics classes are met, students must postpone one or more of the 2000 level Commerce classes to the third or fourth years. The Director Academic Programmes should be consulted in regard to the class(es) to be postponed.

Students may take up to six classes in any of the following programme areas:

Canadian and Inter-national Development Studies: Economics 2250R plus up to 5 classes, including Economics 2200, 3326, 3328R, 3330, 3332,3333 and 3350.

Economic Analysis and Policy: Economics 2200 or 2201, plus up to 5.5 classes from Economics 3324R, 3326, 3328R, 3330, 3338, 3432R, 4408, 4426, and 4431.

Economics and Government: Economics 2200 or 2201, 3324R and 3326, plus up to 4 classes, including 3328R, 3330, 3331, 4408, 4426, and 4431.

Labour and Society: Economics 2200 or 2201, Commerce 3303 and 3304, plus up to 4.5 classes, including Economics 2250R, 3315, 3316, 3324R and 3328R.

Regional and Urban Economics: Economics 2200 or 2201, plus up to 5.5 classes, including Economics 2250R, 3330, 3332 and 3432R.

Further information on these areas may be obtained from the Department of Economics.

Entrepreneurship and Small Business

Year 1: As for those without an area of concentration.

Year 2: Required core area classes: Commerce 2201, 2301, 2401A, 2501A, 2502B, Math 1010 or 1120. Core area electives: 2 of Commerce 2110, 2403, 3409, 3100, 3101, 3303 or 3304. One non-Commerce elective.

Year 3: Required core area classes: Commerce 2601, 3302, 3501; Economics 2200 or 2201. Core area electives: Commerce 3307 and 3 of Commerce 2602, 3201, 3306, 3401, 3402, 3406, 4120, 4534 or 4541, or core area electives listed above but not yet taken. One non-Commerce elective.

Year 4: Required core area class: Commerce 4350R. Three full credit equivalents from the core area electives listed in years 2 and 3, as yet not taken, or non-Commerce electives. One non-Commerce elective.

Finance

Year 1: As for those without an area of concentration.

Year 2: Required core area classes: Commerce 2201, 2401, 2501A, 2502B; Math 1120; Economics 2201. Core area electives: Commerce 2111 or 3100; Economics 2200. One non-Commerce elective.

Year 3: Required core area classes: Commerce 2301, 3302, 2601, 3501. Core area electives: Commerce 3112 or 3101, 3201; one full credit chosen from those listed for the fourth year. One non-Commerce elective.

Year 4: Required core area class: Commerce 4350R. One non-Commerce elective.

Recommended free electives totalling 3 full credits: Commerce 2602, 3113, 3202, 3203, 4120, 4200R (for Honours students), 4201; Economics 3324R, 3326. At least 2 of Commerce 3202, 3203, 4201 must be taken for a concentration in Finance.

Management

Year 1: As for those without an area of concentration. Suggested non-Commerce electives: Psychology 1000R or 1010R, Sociology 1200R.

Year 2: Required core area classes: Commerce 2201, 2301, 2401, 2501A, 2502B; Economics 2200 or 2201; Math 1120. One and one-half non-Commerce electives.

Year 3: Required core area classes: Commerce 2601, 3302A, 3501. Core area electives: Commerce 3303, 3304, 3305. One non-Commerce elective. One free elective.

Year 4: Required core area class: Commerce 4350R. Core area electives: Commerce 3306 plus 1 other credit; one-half credit non-Commerce elective and 2 free electives (Honours students must take Commerce 4300R).

Marketing

Year 1: Required core area classes: as for those without an area of concentration. Two non-Commerce electives, at least one of which should be from the following: Psychology 1000 or 1010, Sociology 1200, Philosophy 1000, 1010 or 1020.

Year 2: Required core area classes: Commerce 2201, 2301, 2401A, 2501A, 2502B; Math 1120 or 1010. Core area electives: Commerce 3401, 3101 and 2403 or 3409. One-half non-Commerce elective.

Year 3: Required core area classes: Commerce 2601, 3302, 3501; Economics 2200 or 2201. Core area electives: Commerce 3404, and 2 of Commerce 2403, 3402, 3403, 3405, 3406, 3407, 3408, 3409. One and one-half non-Commerce electives.

Year 4: Required core area class: Commerce 4350R. One non-Commerce elective. Three free electives, including Commerce 4401 and at least one of the marketing electives listed in year 3. (Honours students must take Commerce 4413 and 4450).

To do a concentration in marketing with a Transportation/Logistics sub-specialty, the above programme applies with the following changes: Commerce 2403 should be taken in year 2; Commerce 3407 and 3408 should be taken in year 3; Commerce 3404 is not required.

Public Sector Management

(a) The 9 required core area classes listed under the general programme.

(b) Four credits in political science including: Political Science 2200, 4240.

(c) Two and one-half credits in Economics, including: Economics 2200 or 2201 (whichever was not taken to satisfy the core area class requirement), Economics 3324R.

Sub-Specialties

I Accounting and Financial Management: Four and one-half credits, including: Commerce 2110, 2111, 3112, 3113, 3201, 3203, 4120.

II Computer Systems: Four and one-half credits, including: Commerce 2110, 2111, 3112, 3113, 3114, Mathematics 2270, Computing Science 2450.

III Finance: Four and one-half credits, including: Commerce 3100, 3101, 3201, 3202, 3203; Economics 3338R.

IV Governmental Marketing: Four and one-half credits including Commerce 3401, 3404, 4401, 3303, 3304, Psychology 1000R or 1010R.

V Management: Four and one-half credits, including: Commerce 3303, 3304, 3305; Psychology 1000R or 1010R, 2120, 2080.

VI Quantitative Methods: Four and one-half credits, including: Commerce 4501, 4537, 4538, 4541; Economics 3338R and one class in Mathematics above the 1000 level.

Quantitative Methods

Year 1: As for those without an area of concentration. Students planning to take further Mathematics or Computing Science courses should take Mathematics 1000A and 1010B.

Year 2, Year 3 and Year 4: As for those without an area of concentration except that suggested Commerce electives are as follows: Commerce 4501, 4537, 4538, 4542.
Students wishing to concentrate in the Quantitative Methods area are advised to consult the Calendar listing of the Department of Mathematics for additional class offerings of interest. For all the prerequisite requirements of the higher level Mathematics classes to be met, students may have to postpone one or more of the 2000 level Commerce core classes to the third or fourth year. The School of Business Administration should be consulted in regard to the class(es) to be postponed.

Computing Science in Commerce

If the student wishes to achieve the equivalent of a minor in Computing Science, the following programme is recommended:

Year 1: Commerce 1101A, 1102B, 1501; Economics 1100R; Mathematics 1000; Computing Science 1400A and 1410B; 1 non-Commerce elective.

Year 2: Commerce 2201, 2401, 2501A, 2502B; Mathematics 1010; Economics 2200 or 2201; Computing Science 2350, 2610; 1 non-Commerce elective.

Year 3: Commerce 2301, 3302, 2601, 2110, 3501; Computing Science 2700, 3250; 1 non-Commerce elective; one-half free elective.

Year 4: Commerce 4350R; one-half Computing Science; 1 non-Commerce elective; 2.5 free electives.

A student wishing to earn the equivalent of a major in Computing Science should take Math 2070 and 2080 in place of Commerce 2501 and 2502 in the second year; another half-class in Computing Science (see list below) elective in the third year; Computing Science 3700 and another half- class in Computing Science as electives in the fourth year. The elective classes in Computing Science can be drawn from 2450, 3090, 3750, 4140, 4250, 4550, 4700, or any other classes listed in the Calendar under Computing Science.

For an accounting orientation, the student should take Commerce 3100 as an elective in year 3, and 3101, 3114, 4114 as electives in year 4. For a Quantitative Methods orientation, the student should take Commerce 3201 as an elective in year 3, and 4501, 4538, 4542 as electives in year 4. Other classes which might be taken as electives to develop more of a concentration in Accounting or Quantitative Methods can be found in the preceding sections of this programme guide.

Classes Offered

Note: Each of the following A/B classes may be offered only as A or B. Check the current timetable to determine in which term the class is offered. It may not be possible to offer all the electives listed below in every year. Students should bear this in mind when planning their programme for the following year.

COMM 1000A Introduction to Business: This course is designed to introduce the student to the various aspects of business and the areas of study within it, including economic systems, entrepreneurship, marketing, management, accounting, and finance. A wide range of teaching-learning methods are applied, including lectures, seminars, computer simulations, case discussion, and business games. The course prepares the student for the more rigorous treatment of functional topic areas in subsequent courses and establishes a business person's perspective.
Format: Lecture 1½ hr. per week
Tutorial/Seminar 1½ hr. per week

COMM 1101A/B Introductory Accounting I: An introduction to the principles and practices used by accountants in processing and communicating data both within and outside the entity. Emphasis is on financial statement accounting and reporting, with the following objectives:

(1) to introduce the theoretical framework upon which financial statement accounting is based, and examine its major underlying principles;
(2) to examine basic financial accounting methodology, and develop the analytical and procedural skills related thereto;
(3) to develop an understanding of the information content of conventional financial statements, and an appreciation of the inherent limitations of accounting information.

Since the class serves as an introduction to business, it is useful for students from all disciplines.
Format: The format of the class will depend upon the instructors. There are two basic approaches: (1) Regular lecture method: two 90-minute lectures per week, plus a 90-minute weekly tutorial, as required. Selected computer exercises are part of the course, requiring some time to be spent in the Computer Lab. (2) Computer-based instruction: In these sections of the class, a large percentage of course material is taught using CAI (Computer-Assisted Instruction). A large number of the assignments are both issued and marked by the computer. Other assignments require the use of computer spreadsheets, computerized accounting programmes, etc. Computer

conferencing is used to communicate assignments, ecture notes, etc., to students, and as a forum where questions are raised and answered. Students who do not have their own, appropriate, computer equipment will have to spend considerable time in he Computer Lab.

COMM 1102A/B Introductory Accounting II: Emphasis is placed on the need for accounting nformation by managers, with the following objectives: (1) to develop an understanding of the inds of accounting information managers need; (2) to introduce managerial accounting nethodology and develop the analytical and procedural skills related thereto; (3) to introduce accounting reports which are useful for management planning, control and decision-making; (4) to develop an awareness of the imitations of managerial accounting information.

Format:	Two 90-minute lectures per week; written and computer-based assignments
Prerequisite:	Commerce 1101

COMM 1501A/B Introduction to Computers in Business Management: The goal of this course is o enable students to be immediately productive within an information processing system. Successful completion of this course will provide tudents with a clear understanding of computers nd how they may be incorporated into a business nvironment, as well as a proficiency with word rocessing, spreadsheets, databases and a fourth-eneration language. The class combines raditional lectures with a completely self-paced, omputer-managed, instructional environment, ncluding tutorials, quizzes and electronic mail. It strongly recommended that students complete his class in their first year of study.

ormat:	Lectures/computer labs, 3 hours

COMM 2110A/B Data Processing Systems: This ms provides a basic understanding of information systems, especially accounting information systems. It builds on material learned Commerce 1501 dealing with various hardware nd software issues not covered in that course. he course emphasizes the topics of systems nalysis, design, control and evaluation, and topics elated to database systems. In addition, the ourse involves instruction in, and the use of, arious computer programmes such as preadsheets, databases and wordprocessors.

ormat:	Ranges from 3 hours of lectures per week to no classroom time, with extensive computer conferencing
rerequisites:	Commerce 1101, 1102, 1501; computer- and accounting-related work experience often provides an adequate background for this class; see instructors for further information.

COMM 2111A/B Intermediate Financial Accounting Procedures: This class and its follow-up, Commerce 3113, are meant to provide an understanding of corporate financial reporting and the related conceptual framework. The course develops technical expertise in various financial accounting topics, some of which were introduced in Commerce 1101 and 1102. The focus is on understanding the implicit inter-relationships in the framework and the environmental factors that work to establish GAAP (generally accepted accounting standards).

Format:	Lecture 3 hours
Prerequisites:	Commerce 1101 and 1102 with a B⁻ average, or permission of instructor
Exclusion:	Commerce 3100

COMM 2201A/B Introduction to Managerial Finance: An introduction to the problems business managers face in the acquisition and effective use of the firm's financial resources, and analytical concepts for evaluating financial decisions. How the firm can achieve successful interaction with its external environment and make an appropriate contribution to the operation of the economy is considered. Topics covered: time value of money; present value; financial ratio analysis; working capital management; and long-term financial decisions.

Format:	Lecture 1.5 hours; tutorial 1.5 hours
Prerequisites:	Commerce 1102; Economics 1100
Recommended:	Business operates and sufficient knowledge of accounting processes and principles to enable the student to use financial data intelligently.

COMM 2301A/B Organizational Behaviour: Insight into human behaviour in organizations and capacity for objective analysis is developed. Research and text material drawn from the fields of sociology, anthropology and psychology are used in the development of understanding and objectivity. Case material and substantive data from the behavioural sciences are considered. Covers such major topics as motivation, group behaviour, individual differences, personality, perception, communications, leadership, inter-group behaviour, conflict management, job design, corporate culture, learning and creativity.

Format:	Lecture 1.5 hours; tutorial 1.5 hours

COMM 2401A/B Introduction to Marketing: The student receives a basic understanding of the character and scope of marketing and its role in business operations and in society, with focus upon the concepts and techniques an organization must employ to anticipate and satisfy consumer needs. Emphasis is placed on the tools available for the marketing manager, the problems to be

confronted, and the development of understanding and analytical ability in the following: the role of the consumer; product-line development; channels of distribution; pricing systems; selling and promotional activities. Case materials and problem sets are used to give insight into the analytical tools used in problem analysis and decision-making.

Format: Lecture/discussion, 3 hours
Prerequisites: Commerce 1102 and Economics 1100, or permission of instructor
Exclusions: students cannot receive credit for both Commerce 2401 and 1401 (as this course was formerly numbered)

COMM 2403A/B Channels of Distribution: Few companies deal with their final customers directly, most relying on a network of distribution channel intermediaries to get their products to market. This requires that producers carefully design, select and manage their distribution channel operations to achieve the desired level of performance. This course reviews theory and practice in this field of management, employing case analysis and projects to enhance student learning.

Format: Lecture/discussion, 3 hours
Prerequisites: Commerce 1102, 2401
Co-requisites: Commerce 2201, 2301
Exclusions: prior to 1988/89, this class was numbered Commerce 2401. Credit will be given for only one of Commerce 2401 (taken prior to 1988/89) and Commerce 2403 (taken after 1987/88)

COMM 2501A/B Statistics for Economics and Business I: An introduction to the principles and applications of statistics relevant to business and economics, with emphasis on making inferences based on observed data. Topics covered include descriptive statistics, probability, random variables, decision theory, estimation, hypothesis testing, statistical software.

Format: Lecture 3 hours
Prerequisite: Mathematics at the 1000 level, or consent of instructor
Exclusions: Mathematics 1060, 2070; Economics 2222

COMM 2502A/B Statistics for Economics and Business II: A continuation of Commerce 2501. Topics covered include ANOVA, chi-square, non-parametric regression and correlation, time series, index numbers, an introduction to the use of statistical packages on the computer, and management uses of statistical data.

Format: Lecture 3 hours
Prerequisites: COMM 2501 or MATH 2070 or ECO 2222 or a grade of C or higher in MATH 1060
Exclusions: MATH 1070, 2080; ECO 2223

COMM 2601A/B Legal Aspects of Business - Contracts: This course provides an appreciation of some of the legal problems that might be faced by the business community. It examines the meaning and sources of law, the machinery of justice, the law of torts, the formation of contracts, capacity to contract, legality of object, mistake, misrepresentation, statute of frauds, privity of contracts, interpretation, breach and discharge of contracts, and the law of agency. Students must make extensive use of the law library in writing reports on a series of cases.

Format: Lecture 3 hours

COMM 2602A/B Commercial Transactions: This follow-up to Commerce 2601 examines the law relating to the sale of goods, bailment, contracts of employment, negotiable instruments, real property, tenants and landlords, mortgages, partnerships, corporations, devices for securing credit and the rights of creditors. Students must make extensive use of the law library in writing reports on a series of cases.

Format: Lecture 3 hours
Prerequisite: Commerce 2601

COMM 2701A/B Business Communication: The goal of this class is to teach students how to properly prepare both written and oral business communications. The stress will be on written communication, specifically business memos, letters and reports, although communication theories and the role of communication in business will be discussed. As well, one oral presentation per student will be required.

Format: Lecture 3 hours
Prerequisite: English Competency Requiremen must be satisfied

COMM 2801B: Work Term one, Bachelor of Commerce Co-op

COMM 3100A Financial Accounting and Investigation: This course is intended for non-accounting students. The approach to the course is analytical rather than procedural, with an emphasis on a user perspective. Topics include an in-depth treatment of liquidity and profitability analysis, pensions, leases, earnings per share, cashflow, accounting for inflation, special industry analysis, and non-profit accounting.

Format: Lecture 3 hours
Prerequisites: Commerce 1101, 1102
Exclusions: Commerce 2111, 3113

COMM 3101B Managerial Accounting: The course applies, through a combination of case analysis and problem-solving, managerial accounting concepts to the planning and controlling activities in organizations. Emphasis will be given to non-manufacturing activities. This course is intended for students not concentrating in accounting.

Format: Lecture 3 hours
Prerequisites: Commerce 1101, 1102, 2201
Exclusions: Commerce 3112 (formerly 2112)

COMM 3112A/B Cost Accounting: The purpose of this course is to provide the student with detailed knowledge of cost/managerial accounting concepts and practices which help organizations in their planning, decision-making and control activities. Topics to be covered include product costing systems, cost behaviour analysis and estimation, cost allocation, standard costs and budgeting. The course is intended primarily for students who plan to concentrate their studies in the accounting area. Students who wish to take a course in cost/managerial accounting beyond the introductory level, but do not plan to pursue a career in accounting, should consider taking Commerce 3101 instead of this course.
Format: Lectures/case discussions, 3 hours
Prerequisites: Commerce 1101 and 1102, with at least a B⁻ average, or permission of the instructor
Exclusions: Commerce 2112 (which was the number for this course prior to 1987/88) and Commerce 3101

COMM 3113A/B Intermediate Financial Accounting Theory: This course and its prerequisite, Commerce 2111, are meant to provide an understanding of corporate financial reporting and the related conceptual framework. The course examines the assumptions underlying topics in the external reporting model, and the consequences of relaxing those assumptions in, for instance, the study of Accounting Measurement Models. Quantitative technical skills are emphasized simultaneously with the qualitative factors governing accounting policy choice.
Format: Lecture 3 hours
Prerequisite: Commerce 2111, or permission of the instructor
Exclusion: Commerce 3100

COMM 3114A/B External Auditing: This course covers the theory and practice of public auditing according to generally accepted auditing standards (GAAS). The first half of the course considers the forces impacting on the setting of standards and the current level of standards. This part includes pronouncements of the accounting profession, reporting standards, professional ethics, private laws, legal liability and responsibilities, standards for examination of internal control in both manual and computerized environments, standards for the quality of evidence, statistical sampling and the sufficiency of evidence, documentation and working papers. The second part of the course considers typical audit programmes for examination of balance sheet and income statement accounts.
Format: Lecture 3 hours
Prerequisites: Commerce 2110, 2111

COMM 3120A/B Information for Organizational Control: The course develops and evaluates in detail management control systems in all types of organizations - profit and not-for-profit, manufacturing and service organizations. Case analysis is used to look at structures such as cost, profit and investment centres. Information requirements of specific control and planning models, such as linear programming, decision theory and forecasting, are also examined.
Format: Lecture/case analysis/problem-solving, 3 hours
Prerequisites: Commerce 3112, 2301, 2502, or permission of instructor

COMM 3201A/B Intermediate Finance: A more intensive study of capital budgeting, cost of capital and valuation theory than that of Commerce 2201. The course is intended to provide an overview of the theory of corporate finance and the application of that theory to the problems faced by a financial manager. Emphasis is on principles of capital budgeting, valuation, investment decisions, financial structure, dividend policy and bargaining for funds vital in financing a business enterprise. Case analysis will be used.
Format: Lecture 3 hours
Prerequisites: Commerce 2201 and one of 2111, 3112, 3100 or 3101

COMM 3202A/B Security Analysis: Introduces the theory and philosophies of investment, and concentrates on investment analysis using computers, machine-readable data and other tools available to the institutional investor. The focus is on common stocks, bonds, and investment trusts. Case material is primarily Canadian and covers stocks, bonds, options and mutual funds. Reading assignments and case analysis provide opportunities to handle investment analysis and portfolio management on a problem-solving basis.
Format: Lecture 3 hours
Prerequisites: Commerce 2201, 2502; Economics 2201 or 2221

COMM 3203A/B Canadian Capital Markets: Canada's capital markets and the flow of funds within them. Main sectors in the capital markets are identified and their historical development and function within the total structure is emphasized. Other areas include term structure and risk structure of interest rates, the risk-return relationship on financial assets and the efficiency of Canada's capital markets. Reading assignments, case analysis, evaluation of available research results and classroom discussion comprise the class.
Format: Lecture 3 hours
Prerequisites: Economics 2201 or 2221; Commerce 2201. The latter may be waived with the consent of the instructor.

COMM 3210A/B Insurance and Risk Management in the Corporate Setting: Basic concepts of insurance, insurance market organizations, types of insurance and the development of programmes for corporate risk management. Problems of implementation and administration are also considered.
Prerequisites: Comm 1102/2201/3302/2502; ECO 2200 or 2201 or 2220 or 2221

COMM 3302A/B Organizational Theory and Design: Surveys both theory and research pertaining to complex organizations with emphasis on design, structure and administrative practices in the environmental setting and how the interaction of these variables relates to organizational performance. Concomitant with this exposure to theory and research, students have the opportunity to apply this knowledge to case studies relevant to complex organizations. Emphasis is on the analysis of case studies and the formulation of general solutions and decisions for action. Covers such topics as bureaucracy, function-product structures, matrix structure, organizational goal-setting, organizational design and ethics, organizational decision-making, communications, control, management of change and innovation, new corporate designs, computer technology and organizational design.
Format: Lecture 3 hours
Prerequisite: Commerce 2301

COMM 3303A/B The Personnel Function: Covers the major aspects of the personnel function: job analysis, human resource planning, selection, training, performance appraisal, compensation, labour relations, safety and health, and human resource information systems. Knowledge of the processes is supplemented by the development of analytical skill in coping with various personnel problems and in the integration of the processes with the many other functions required in the organization. This "system and process" analysis builds upon the skill and knowledge acquired in Commerce 2301. Cases simulate work environments. The role of personnel management and administration of the personnel function are analyzed.
Format: Lecture 3 hours
Prerequisites: Commerce 2301, 3302

COMM 3304A/B Labour - Management Relations: Introduces students to some practical and theoretical aspects of labour-management relations in Canada. Examines historical, legal, behavioural, economic and political background of our system. Emphasis is on the key processes of industrial relations as they impinge on the activities of managers. Cases used are drawn mainly from Canadian sources.
Format: Lecture 3 hours
Prerequisites: COMM2301/3302 or instructor consent

COMM 3305A/B Individual And Organizational Change: Current concepts and methods of individual and organizational change. The primary objective: to develop the student's skills as a change agent and improve performance as a manager, using lectures, exercises and case studies. The opportunity to fine-tune those analytical and decision-making skills necessary for the effective introduction of change into complex organizations, enabling the student to: (1) identify those situations where change is appropriate; (2) develop effective change strategies; (3) implement planned change; and (4) effectively monitor the change process.
Format: Lecture 3 hours
Prerequisites: Commerce 2301 and 3302, or permission of instructor

COMM 3306A/B Interpersonal Dynamics: A more intensive study of the processes and possible problems associated with the dynamic interaction between individuals. Building upon Commerce 3302, such techniques as sensitivity training, structured exercises in interpersonal relations, and case studies are employed.
Format: Lecture 3 hours
Prerequisites: Commerce 2301 and 3302, or permission of instructor

COMM 3307A/B New Venture Creation: This course is about entrepreneurship - the process of creating new businesses. It is designed to expose students to the issues, problems and challenges of creating new businesses and to provide students with the opportunity, within the framework of a formal course, to explore and develop business ideas they have been considering or wish to investigate. Cases are used to permit students to vicariously experience some of the issues entrepreneurs face. Experiential exercises enable the students to better understand themselves, their entrepreneurial potential and the merits of their new venture idea. A major field project requires the development of a detailed business plan for the new venture.
Format: Lecture 3 hours
Prerequisites: COMM 1102/2201/2401, or permission of instructor

COMM 3308A/B Survey of Business Processes and Retail Management: A survey for non-Commerce students who wish to have an overview of the management problems facing the operator of a retail or service business. Primarily designed for Pharmacy students, but open to other students without previous Commerce classes. Commerce 3307 is the class for Commerce students who are interested in this topic.
Format: Lecture 3 hours
Exclusions: Commerce 3307

COMM 3401A/B Buyer Behaviour: In view of the very competitive situation in Western business, the firm that is successful designs and sells products that meet the desires of specific consumer segments. Thus, analysis and prediction of consumer behaviour are increasing in importance and sophistication. An extensive body of research evidence from marketing and the behavioural sciences is explored and evaluated to assess the marketing implications of elements of consumer behaviour. The emphasis of the class is empirical research on an outside project. The theoretical background for the projects and their progress are discussed in class. Students must do a considerable amount of background reading from the text and outside sources.

Format: Lecture/discussion, 3 hours
Prerequisite: Commerce 2401

COMM 3402A/B Marketing Communications: The communication tools of advertising, sales promotion, and public relations are presented as part of the overall marketing mix. Positioning, segmentation, and other marketing concerns will be studied as they relate to the firm's communications situation. Problems of the promotion manager will be presented to help students appreciate those factors which affect promotional decisions. The completion of a marketing communications plan for an outside organization is required, as is group case work.

Format: Lecture/case method/applied project work, 3 hours
Prerequisite: Commerce 3401

COMM 3403A/B Special Topics in Marketing: A special interest seminar for senior level marketing students. The particular topics to be discussed are at the discretion of the instructor. Interested students should consult the School.

Format: Lecture/discussion/seminar, 3 hours
Prerequisites: Commerce 2401, 3401

COMM 3404A/B Marketing Research: The scientific method in solving marketing problems. Emphasis on planning and formulating research problems, research design, application of sampling methods, statistical design of experiments, and analysis of data collected. A real-life research project is required, its nature to be determined considering student interests and backgrounds.

Format: Lecture/discussion, 3 hours
Prerequisites: Commerce 2505, 3401

COMM 3405A/B Export Marketing: The course will discuss reasons why Canadian companies get involved in exporting, and will focus on the development of marketing plans for the export of Canadian goods and services. Also discussed will be barriers faced by companies engaging in international trade, and government agencies providing support services to facilitate international transactions.

Format: Lecture/discussion, 3 hours
Prerequisites: Commerce 1102, 3401; Economics 1100
Recommended: Commerce 3701

COMM 3406A/B Retailing: Retailing is designed to provide an understanding of the functions, problems and practices of retail management. It provides an exposure to location planning, layout, organizational structure, retail personnel management, buying, pricing, retail accounting and control mechanisms. A major component of the course is the completion of a strategic plan for a retail business concept.

Format: Lecture/case method/applied project work, 3 hours
Prerequisites: Commerce 2201, 2403, 3401

COMM 3407A/B Logistics Management: An examination of the decision problems faced by the manager of the channels of distribution, the transportation and storage of products, and the communications and data processing system, in order to minimize the total cost of these activities and satisfy the marketing requirements of the firm and its customers. Topics include: the integrated logistics management concept, customer service, transportation, distribution centres, inventory management, materials management, packaging, purchasing, order processing and information systems, financial control, logistics organization, international logistics, reverse distribution and recycling, and the strategic logistics plan.

Prerequisites: Commerce 2403 and 3501, or permission of the instructor

COMM 3408A/B Transportation Modes and Policy: This course examines the development and operation of various transportation modes and national transportation policy in Canada. Topics include the characteristics, cost structures and pricing decisions of the various modes (air, pipeline, rail, road and water); the National Transportation Act and other relevant legislation; the structure of the industry and government agencies; regulation; subsidies, passenger transportation and tourism, urban and metropolitan transportation; traffic and carrier management; transportation and environmental issues; current and emerging freight and passenger issues (with particular reference to the role of transportation in the Atlantic Region).

Format: Lecture/discussion/seminar, 3 hours
Prerequisite: Commerce 2403, or permission of the instructor

COMM 3409A/B Sales Management: This course is designed to provide an understanding of the tasks and problems facing today's sales manager and to familiarize one with current sales force management practices. Specifically, this class

provides an exposure to the concepts, techniques and procedures in buyer-seller relations, salesmanship, organization of the sales force, personnel management, selection, sales training, motivation, compensation, evaluation and supervision, budgets, quotas, territories and sales control. Extensive use is made of the case method, and classroom discussion is used to extend the basic text material and examine other points of view.

Format: Lecture/case method/field work, 3 hours
Prerequisite: Commerce 2401
Co-requisites: Commerce 2201, 2301, 3101
Exclusion: Commerce 2402 (as this class was formerly numbered)

COMM 3501A/B Production/Operations Management: "Production" is one of the basic functions of any organization, whether it provides goods or services. Consequently, all managers, whatever their specialist interests, should have an understanding of some of the key concerns in managing operations, particularly if they aspire towards senior/general management positions. The purpose of this course is to provide such an understanding. It begins at a basic level by examining various types of production processes and continues by considering key aspects of scheduling, control, materials management and quality assurance. It concludes by examining production planning and strategy.

Format: Two 1.5-hour lectures (or case discussions)
Prerequisites: Commerce 2201, 2301, 2401, 2501

COMM 3601A/B The Law of Business Associations: Modern business operating through various forms of associations, in particular the corporation, raises complex problems: (a) the choice of the form of business enterprise; (b) the nature of the corporate personality; (c) the dual system of incorporation; (d) the corporate constitution; (e) the contracts between the corporation and outsiders; (f) the control and management of a corporation; (g) the capital structure of a corporation in the raising and maintenance of capital; (h) the securities legislation; and (i) organic changes in a corporation through mergers, amalgamations, sale of assets, take-overs, reorganization, receivership and winding up. Improved understanding of the complexities of the field, while providing indispensable minimal skills essential in reaching well-formulated decisions, is the objective.

Format: Lecture 3 hours
Prerequisites: Commerce 2601, 2602

COMM 3602A/B The Consumer and the Regulation of Business: Complexities in the relationships between the consumer, business and government continue to increase. A rapidly expanding body of law designed to regulate these relationships in an effort to promote freedom of contract has developed. Of particular concern are problems relating to quality and safety of goods and services, warranties and guarantees, misleading advertising, unfair trade practices, the regulation of consumer credit, and legal remedies. Some of the more critical problems, the legal remedies available, and the role of administrative tribunals, their jurisdiction, and their procedures and policies are examined.

Format: Lecture 3 hours
Prerequisites: Commerce 2601, 2602

COMM 3701A/B The Firm in the International Environment: As an introduction to international business, this course examines the principal methods of doing business abroad and the dimensions of the international business environment that are important to each. Successful exporting calls for an understanding of, among others, international trade flows, national trade policies, international financial flows and foreign exchange movements. Accordingly, selected aspects of the theories of international trade and finance are presented, as well as the origins and current operations of major international institutions - the GATT, IMF and World Bank Group. Regional trading areas and international commodity arrangements are also covered. As regards the strategic business choice of investing abroad, the course treats the theory of the multinational enterprise, along with methods for analyzing the economic, political and social dimensions of host countries.

Prerequisites: Commerce 1102, 2201; Economics 2200 or 2220 or 2201 or 2221

COMM 3801A: Work term two, Bachelor of Commerce Co-op

COMM 3802: Work term three (May - August) Bachelor of Commerce Co-op

COMM 4101A/B Advanced Topics in Accounting I: This course covers advanced concepts in accounting. Topics include non-profit accounting, current pronouncements, special industry accounting, valuation, capital market and information efficiency, estates and trusts, bankruptcy, as well as an in-depth review of certain topics treated in prerequisite courses.

Format: Lecture 3 hours
Prerequisites: Commerce 2111, 3112 and 3114 or permission of the instructor

COMM 4102A/B Advanced Topics in Accounting II: This class has two objectives: (1) to provide a in-depth study of the interrelated topics of intercorporate investments, business combinations consolidated financial statements and foreign operations, and (2) to develop a framework that may help to resolve controversial issues in

advanced financial accounting.

Format: Lecture 3 hours; extensive use is made of assigned cases and problems

Prerequisites: Commerce 2111 and 3113, or permission of the instructor

COMM 4107A/B International Accounting: Accounting practices in various countries are studied for both internal and external accounting and reporting problems. Foreign currency translation methods for Canadian companies operating in other countries are also reviewed.

Format: Lecture 2 or 3 hours, depending on the instructor and his/her emphasis on research as a supplement to didactic lecturing

Prerequisites: Commerce 3113, 3120

COMM 4113A/B Contemporary Issues in Accounting: Current issues in accounting and recent accounting literature are examined to provide a familiarity with the direction of accounting developments, and as a basis for future study of accounting problems and practices. Difficulties with present practices are explored, along with proposed alternatives.

Format: Seminar 2 or 3 hours, depending on the instructor's emphasis and on enrolment

Prerequisite: Commerce 3113

Recommended: Accounting concentration

COMM 4114B Computer Auditing: This class examines the special considerations when auditing in a computerized environment. Three major areas covered in the class are: (1) Special internal control techniques/requirements and standards for examination of internal control. This includes standards for acquisition, development, implementation, conversion, testing and maintenance of systems, concentrating on the goal of ensuring that good internal control is attained. The course also covers the standards associated with computerized processing of transactions, creation and control over databases, and special planning for interruption of computer operations and re-start. (2) Audit procedures in a computerized environment. For each special internal control technique, there exist a number of possible audit procedures. Audit strategy is considered, including auditing around the system, reliance on and examination of computerized controls, and use of computer-assisted audit techniques. (3) Use of computer-assisted audit techniques, including use in the course of "Interactive Data Extraction and Analysis", a software package from the CICA, developed by the Auditor General of Canada.

Format: Lecture 2 hours; lab 1 hour

Prerequisites: Commerce 2110, 3114

COMM 4120A/B Taxation: An introduction to the taxation system in Canada, with special reference to the provisions of the Income Tax Act (federal) and their effects on business decisions. The measurement processes used to determine the tax base are examined, and the basic elements in the calculation of tax payable for individuals and corporations are discussed.

Format: Two 90-minute lecture sessions, with significant effort directed to the solving of short case problems

Prerequisites: Commerce 1102; Economics 1100

Exclusions: Taxation I in the Law School, if taken recently

Recommended: Business operates, and the ability to work with accounting information

COMM 4121A/B Advanced Taxation: A more detailed examination of the corporate taxation system in Canada. Some examples of how tax awareness and planning can be a significant element in the regular business decision-making process for both individuals and corporations, and especially for private corporations.

Format: Lecture 3 hours per week for part of the term; the remainder consists of seminar presentations of researched topics by students

Prerequisites: Commerce 4120

Recommended: should be taken in the student's senior year

COMM 4150B Research in Accounting: This class provides the opportunity for students to undertake both directed and independent study of selected topics in accounting, and requires a major research paper. This class is available to Honours students only.

Format: Research seminar 3 hours

Prerequisites: Commerce 4113, and an average grade of at least B+ in Commerce 3113, one of Commerce 2111 or 3112, one of Commerce 2110 or 3114, one of Commerce 2201 or 3201, one of Commerce 2602 or 3302, and Commerce 2502

Recommended: All Honours requirements met or currently being completed

COMM 4200R Seminar in Finance: Special seminar restricted to Honours students in Finance. Students are exposed to aspects of financial theory not covered in other classes. Each student prepares an original Honours thesis.

Prerequisites: an average of B+ in Commerce 2201, 2502, 3201, either 3202 or 3203, and Economics 2200 or 2220 or 2201 or 2221

COMM 4201A/B International Financial Management: The factors that affect the financial function when a firm engages in international trade and investment. Topics include the international monetary system, sources of international financing, remitting of funds from foreign subsidiaries, accounting for operations abroad and the foreign exchange market.
Prerequisites: Commerce 1102, 2201, 2502, 3701; Economics 2200 or 2220 or 2201 or 2221

COMM 4300R Seminar in Management: Special seminar restricted to Honours students in Management.
Prerequisites: Commerce 3305 or one-half credit in Psychology at the 2000 level and a B+ average in Commerce 2301, 2502, 3302, 3303, 3304; Economics 2200 or 2201 or 2220 or 2221

COMM 4350R Strategic Management: This is the capstone course of the Commerce programme. It is about general management - the practice of business from the perspective of the general manager. As such, it integrates the concepts and techniques developed in earlier courses. The principal tool of the general manager is strategy, so the primary course concern is the formulation and implementation of strategy. Other issues addressed include: business ethics and the role of personal values in strategy, business-government relations, and managing strategic change. The course exposes students to a wide variety of organizations and contexts through cases, and includes a major field project where students, in small groups, study and advise actual businesses.
Format: Lecture 3 hours
Prerequisites: Commerce 1102, 1501, 2201, 2301, 2401, 3302, and 3501; Economics 1100

COMM 4401A/B Marketing Strategy: This course is intended for marketing majors who wish to deepen their understanding of how marketing strategy is formulated and implemented. This involves high-level, long time-frame decisions, since the product and market strategies are at issue. The course aims to improve decision-making skills in managing product/market portfolios and implementing marketing strategies. As a capstone course, it is designed to permit the integration of learning from other marketing courses, as well as those in finance, policy and management. Instruction is mostly through case study discussions, report writing, and group presentations.
Format: Seminar 3 hours
Prerequisites: COMM 2401/3401/3404 (or 3408 if transportation major) & 1 other marketing course (2403 recom.)
Recommended: Concentration in marketing

COMM 4402A/B Independent Study in Marketing: The content of this class is negotiated with an individual instructor. The class offers the student the opportunity to explore in greater detail any particular area of interest in marketing.
Format: Directed readings and discussions
Prerequisites: Commerce 2401, 3404, and two other half classes in marketing

COMM 4413A Advanced Topics In Marketing: This class carries students beyond the basic tools of Marketing, developing an understanding and appreciation of the value of theory in Marketing. (This is a required class for Honours students in Marketing.)
Format: Discussion/seminar, 3 hours
Prerequisites: Commerce 2401, 3401, 3404, and at least one-half other class in Marketing at the 2000 or 3000 level

COMM 4450B Honours Thesis in Marketing: Students write an Honours thesis demonstrating their ability to gather, analyze, and synthesize data leading to new knowledge useful in understanding Marketing. Special seminar restricted to Honours students in Marketing.
Format: Seminar 3 hours
Prerequisites: Commerce 4413A; an average grade of B+ in all Marketing classes beyond Commerce 2401
Co-requisites: Commerce 4401B must be taken concurrently

COMM 4500R Seminar in Quantitative Methods: Special seminar restricted to Honours students in Quantitative Methods.
Prerequisites: B+ average in Math at the 1000 level, Commerce 2501, 2502 and 3501
Co-requisite: Commerce 4501 must be taken concurrently with this class

COMM 4501A/B Operations Research: The goal of this course is an understanding of the major O.R. techniques and how to apply them, not their theoretical development. Topics included are: linear programming formulation, simplex method, sensitivity, integer variables, transportation, dynamic programming, queuing, simulation. Cases are used to illustrate the main topics, L.P. and simulation.
Format: Two 1.5- hour lectures
Prerequisites: Commerce 1501 and 2502, or permission of the instructor

COMM 4534A/B Managing Technological Entrepreneurship: High technology based industries face unique management problems imposed by the rapid rate of technological change and the often uncertain environmental impacts of technological innovations. This class examines some of the techniques that have recently been

developed to improve management effectiveness in high technology organizations and their responsiveness to environmental concerns.
Prerequisites: All required core area classes, except Commerce 4350, or consent of instructor

COMM 4537A/B Case Applications of Operations Research: A seminar in which case teaching methods are used to explore how O.R. and statistical techniques are applied to "real-life" management problem situations. The class analyzes a series of management problem situations, developing appropriate O.R. models to evaluate alternative management actions.
Prerequisite: Commerce 4501, or consent of instructor

COMM 4538A/B Applied Multivariate Analysis: The convenience of packaged statistical programmes (e.g., SPSS) has opened the area of data analysis to researchers with a wide variety of backgrounds. Since it is possible to operate "canned" programmes without understanding advanced mathematics, there is a need for a class designed around a packaged statistical programme (SPSS) that introduces the user to the basic concepts underlying the techniques. An introductory class in multivariate analysis for students in business and economics. Students use and interpret statistical programmes with data sets from such business areas as marketing, finance and organizational behaviour.
Prerequisites: Mathematics at the 1000 level; Commerce 1501 and 2502, or consent of instructor

COMM 4541A/B Operations Management in Service Industries: A sequel to Commerce 3501 that examines the applications of Operations Management concepts and techniques to service industries. It is management problem/case oriented and based upon material specifically developed for such a class.
Prerequisite: Commerce 3501

COMM 4542A/B Intermediate Production: A sequel to Commerce 3501, this course examines selected topics in greater depth than is possible in an introductory class. As part of the requirements, each student prepares a major report on a subject acceptable to the student and the instructor.
Format: Lecture 2 hours
Prerequisite: Commerce 3501

School of Public Administration

Introduction

The School of Public Administration prepares students for careers in government agencies, public corporations, social service agencies, and para-public organizations. It imparts a knowledge of the substance and processes of public policy and of the machinery of government. It provides an appreciation of, and training in, the techniques of political and economic analysis and evaluation. It develops a capacity for financial and personnel management. It fosters professional attitudes appropriate to public service.

The School's aim in each respect is to promote effective, efficient and accountable management - management of government and management in government. Public managers today must grapple with both new and traditional problems. The public demands economy, effectiveness, efficiency and accountability from the public service. To meet these demands, public managers require an appreciation of, and broad professional training in, the most up-to-date, administrative practices and methods.

These needs are addressed through two graduate programmes - the MPA and the DPA - and the undergraduate Certificate in Public Administration. All three programmes are interdisciplinary in nature and are built around the principle that, though administration is a general, or generic, process, the environment of the public sector is so distinct that public administration should be treated as a field worthy of study in its own right.

Administrative Staff 1990/91

Director of the School

D.H. Poel, BA (Calvin), MA (W.Mich.), PhD (Iowa)

Undergraduate Coordinator

D.H. Poel, BA (Calvin), MA (W.Mich.), PhD (Iowa)

Academic Staff 1990/91

Professors

Peter Aucoin, BA (SMU), MA (Dal), PhD (Queen's)
Herman Bakvis, BA (Queen's), MA, PhD (UBC)
A.A. Kwapong, BA, MA, PhD (Cantab.), (Lester Pearson Professor)
J.D. McNiven, MA, PhD (Mich.), (Dean, Faculty of Management)
A.P. Pross, BA, MA (Queen's), PhD (Tor.)

Associate Professors

Saleh Amirkhalkhali, BA (Shiraz, Iran), MA, PhD (Dal) (at Saint Mary's University)
M.P. Brown, BA (Mt.A), MA (Dal), PhD (Tor.)
D.H. Poel (Director & Undergraduate Co-ordinator), BA, (Calvin), MA (W Mich.), PhD (Iowa)
F.K. Siddiq (Associate Director & Graduate Co-ordinator), BA, MA (Dhaka), PhD (Dal)

Assistant Professors

Marguerite Cassin, BA (Man.), MA (UBC), PhD (OISE)
Don Naulls, BA, MA (Wilfred Laurier), PhD (York)

Adjunct Professor

T.W. Kent, MA (Oxon.), LLD (Dal)

Lecturers

Chris Almon, BSc (Dal), MEd (Slippery Rock), MPA (Dal
Kell Antoft, BA, MA (Dal)
Lawrence Currie, BSc (St. FX), MSW, MPA (Dal)
R.S. Gunn, BComm (Dal), CA
Robert Moody, BComm (SMU), MPA (Dal)
Allan O'Brien, BSc, LLD (Dal)
D.M. Stuewe, BA (Dal), MPA (Carleton)
Terry Vey, CMA

The Certificate in Public Administration (CPA Programme)

The CPA is intended primarily for public servants who do not have an undergraduate degree. The programme consists of undergraduate classes designed to provide a general introduction to the structure and organization of government and the principles of public administration.

Students accepted into the CPA Programme take the following classes:

Political Science 2200R
COMM 1101A, 1102B or POLS 2494R
COMM 2301A
COMM 3302B
PADM 2249A
PADM 2250B
(POLS 2200R, 2494R, COMM 1101A/B, 2301A/B are described elsewhere in this calendar.)

They also take an elective credit class selected from those offered intramurally and approved by the School.

Classes Offered

PADM 2249A Organization Theory for Public Administration: This course introduces students to the study and practice of public administration by way of an examination of the structure, design and behaviour of the complex organizational systems through and within which public administration is practised. It outlines the principal theoretical issues inherent in public administration insofar as the administration of public affairs relates to the ways in which governments are organized, and organize themselves, to perform their multiple and varied functions. The course focuses on public administration but it also draws upon literature that encompasses both private and public administration with relevant comparisons and differences considered where appropriate. In so doing, it acknowledges not only the degree to which organizational theories themselves are generic to all forms of administration but also the phenomena of non-profit organizations in the private sector and commercial enterprises in the public sector. The example, illustrations and cases used for the consideration of actual organization structure, design and behaviour are drawn primarily from the Canadian experience of public administration at all three levels of government.

Instructor: Chris Almon
Format: seminar 2 hours
Enrolment: 25

PADM 2250B Management in the Public Sector: This class is designed for undergraduate students in Public Administration, Commerce, Political Science and the Health Professions who require an introduction to the principles and methods used in the operation of government organizations. The class introduces the student to the management of Canadian government organizations at the federal, provincial and municipal levels. Students are shown how managers in departments work within a framework of government-wide policies of personnel and financial management. In order to understand those policies the class reviews the recent development of public sector management in Canada and then looks in detail at the processes of personnel and financial management.

Instructor: Chris Almon
Format: seminar 2 hours
Enrolment: 25

Application Procedure

Application forms are available from the Office the Registrar of Dalhousie University. Applications should be submitted as early as possible, and not later than July 1 in the academic year in which studies are to commence.

Further information on the Certificate or other programmes of the School of Public Administration may be obtained from:

Administrative Secretary, School of Public Administration, Dalhousie University, Halifax, Nova Scotia, B3H 3J5, (902) 494-3742.

Part-time Study

Students may complete the Certificate through part-time study at the rate of not more than two credits during the academic year. One further credit can be taken in each summer session.

Credits

Normally, four of the five credits in the programme must be taken at Dalhousie University and at least three of the five credits after the student has registered in the programme.

Classes taken for the Certificate may be credited toward a Bachelor's degree, but a student must complete at least five of the subjects required for the degree after the awarding of the Certificate.

The Special Certificate Programme

The Special Certificate programme is a course of studies which give students who do not satisfy the general requirements for admission to the Faculty of Graduate Studies an opportunity to qualify for admission to the DPA and MPA degrees. Individuals with a minimum of 10 years work experience in an administrative position who have (1) completed a full year of university study or (2) achieved a professional designation (e.g., the Certificate in Municipal Administration from Henson College) can be considered.

Successful completion of the Certificate, with an average grade of B+ and with no grade below C, would constitute a basis for a recommendation from the School for admission to the Faculty of Graduate Studies.

Individuals interested in enroling in the Special Certificate Programme should consult the School before filing applications and should include with their applications a resume and a statement of their reasons for wishing to undertake the programme.

Admission Requirements

The programme leading to the Certificate in Public Administration is available to persons who meet the undergraduate admission requirements of Dalhousie University and who are not enroled in a programme leading to a first degree. Those not meeting the formal admission requirements may apply for admission under the "mature student" category. Details of admission requirements are described below.

Mature Students

Students who do not meet the usual admission requirements may be considered under the mature student category provided that:

1. they are at least 23 years old; and
2. they have been absent from full-time high school study for at least four years.

Prospective students should submit to the Admissions Committee an application form, together with a letter outlining their work experience and other activities. Normally high school transcripts are required, and interviews may be required.

Under exceptional circumstances, the Admissions Committee may agree to admit the student directly to a degree programme if the student's background is deemed sufficient preparation for such admission. Otherwise, the Admissions Committee may admit mature students initially to the no-degree category until they have achieved grades of C- or better in at least three full-year classes (or equivalent). At that time, they are eligible to apply for admission as regular undergraduate students.

Mature students are advised to contact Henson College at 494-2526 for pre- and post-admission counselling.

1991

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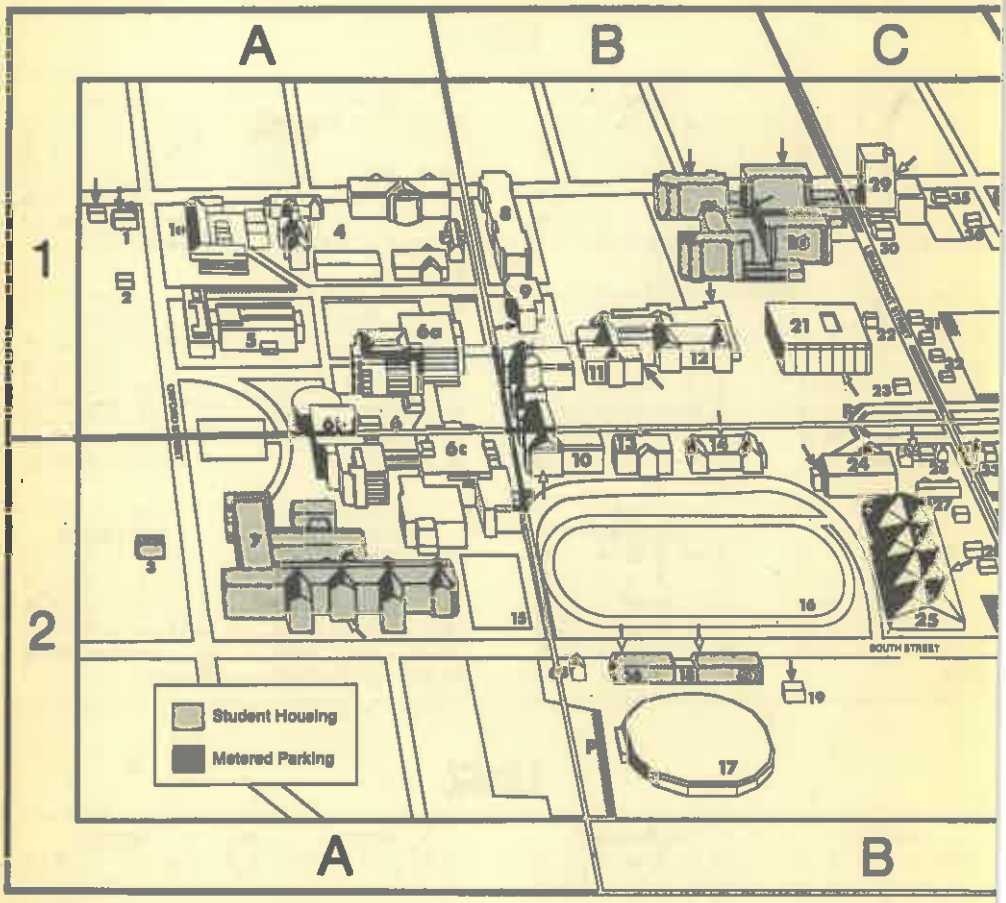
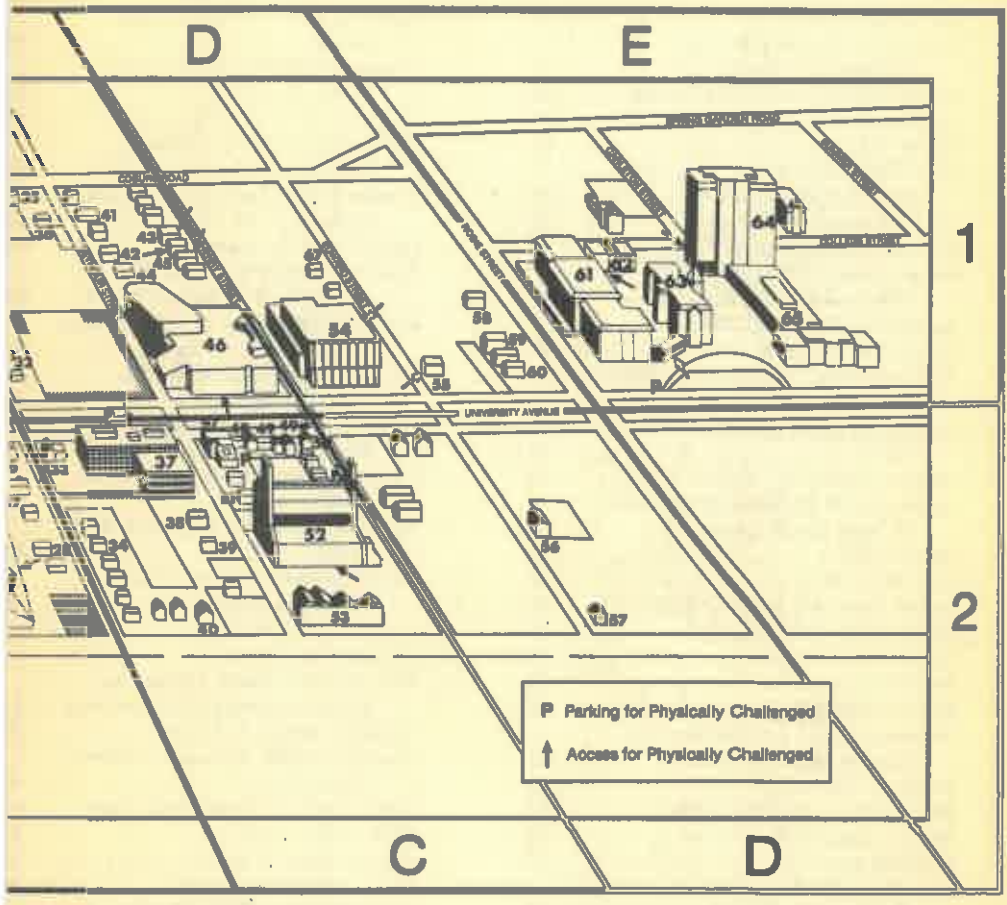


Admissions — 10 (B1, B2)
Alumni Office — 18 (B2)
Arts and Administration Building — 10 (B1, B2)
Arts Centre — 46 (C1)
Biology — 6a (A1)
Bookstore — 37 (C2)
Burbidge Building — 62 (E1)
Business Administration, School of — 29 (C1)
Canadian Studies — 36 (C1)
Central Services Building — 52 (C2)
Chase Building — 9 (B1)
Chemistry — 11,12 (B1)
Classics — 27 (B2)
Comparative Religion — 23 (B1)
Computer Centre — 21 (B1)
Counselling and Psychological Services — 37 (C2)
Dalplex — 17 (B2)
Day Care — 1a (A1)
Dentistry and Dental Hygiene — 61 (E1)
Development Office — 35 (C1)
Dunn Building — 8 (B1)
Economics — 26 (B2)
Education — 14 (B2)
Engineering — 8 (B1)
Eliza Ritchie Hall — 66 (B2)
English — 42, 43 (C1)
Forrest Building — 63 (E1)
French — 23 (B1), 32 (C1)
Geology — 6b (A1, A2)
German — 31 (C1)
Graduate House — 33 (C2)
Henson College — 47, 48, 50, 51 (C2)
History — 41 (C1)
Housing Office — 37 (C2)
Howe Hall — 20 (B1)
International Development Studies — 36 (C1)
International Student Centre — 67 (D1)
Killam Library — 21 (B1)
King's College — 4 (A1)
Law Building — 54 (D1)
Life Sciences Centre — 6a,b,c (A1, A2)
Macdonald Building — 11 (B1)
Mathematics, Statistics, Computing Science — 9 (B1)
Medicine — 64 (E1)
Multidisciplinary Centre — 36 (C1)
Nursing, School of — 63 (E1)
Occupational Therapy, School of — 63 (E1)
Oceanography — 6b (A1, A2)
Part-time Studies and Extension — 48 (C2)
Pharmacy, College of — 62 (E1)



Philosophy — 45 (C1)
Physics — 8 (B1)
Physiotherapy, School of — 63 (E1)
Political Science — 10 (B1, B2)
President's Leadership Class — 68 (B2)
Psychology — 6c (A2)
Public Administration, School of — 34 (C2)
Public Relations — 21 (B1)
Registrar's Office — 10 (B1, B2)
Recreation, Physical and Health Education, School of — 19 (B2)
Resource and Environmental Studies — 60 (D1)
Rink — 25 (B2)
Russian — 22 (B1)
Security and Traffic — 40 (C2)
Shirreff Hall — 7 (A2)
Social Work — 1 (A1)
Sociology and Social Anthropology — 53 (C2)
Spanish — 22 (B1)
Student Union Building — 37 (C2)
Studley Gymnasium — 24 (B2)
Theatre — 46 (C1)
Transition Year Program — 30 (C1)
Tupper Building — 64 (E1)
University Health Services — 20 (B1)
Women's Studies — 36 (C1)

For specific locations of offices and departments, consult the university switchboard, 494-2211, the Halifax-Dartmouth telephone directory, or the Dalhousie telephone directory.

January 1991

Index of Awards, Bursaries, and Scholarships

General Index

FOR FURTHER INFORMATION

write:

THE REGISTRAR'S OFFICE
Dalhousie University
Halifax, N.S.
Canada B3H 4H6
Fax: 902-494-1630

or call:

902-494-2450