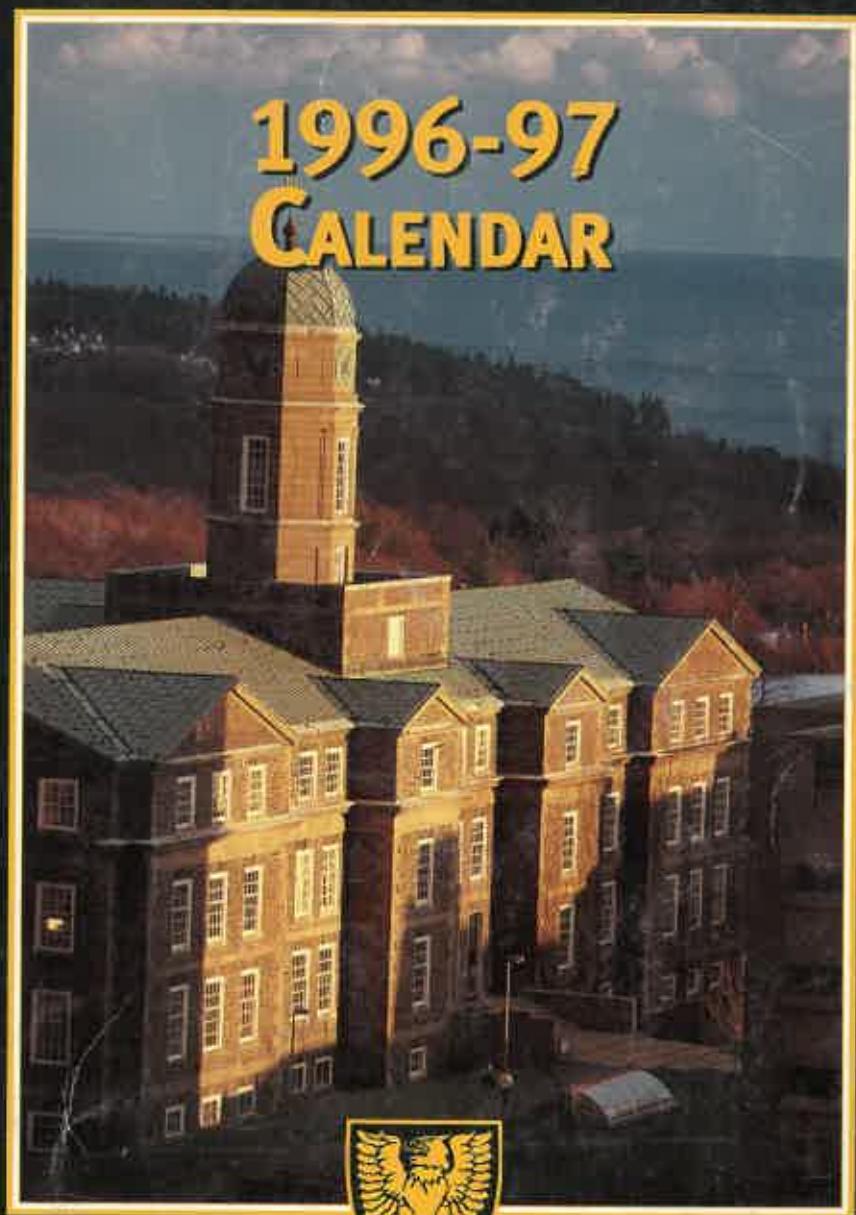


DALHOUSIE UNIVERSITY

1996-97
CALENDAR



GRADUATE STUDIES

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 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. 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

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Schedule of Academic Dates

1996-97

Classes offered at Dalhousie have one of the letters A, B 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 classes are given throughout the entire session

1996

May

- 8 Last day to register without late fee, Spring Session
- 13 Classes begin, Spring session
- 17 Last day to register with late fee, Spring Session
Last day to cancel registration in or to add A and R classes, Spring session
- 20 Victoria Day - University closed
- 21-24 Spring Convocations
- 23 Last day to withdraw from A classes, Spring session

June

- 5 A classes end, Spring session
- 6 B classes begin, Spring session
- 7 Last day to withdraw from R classes, Spring session
- 12 Last day to cancel registration in or to add B classes, Spring session
- 17 Last day to withdraw from B classes, Spring session
- 26 Last day to register without a late fee, Summer session
- 28 Classes end, Spring session

July

- 1 Canada Day - University closed
- 2 Last day to apply to graduate in October
Classes begin, Summer session
- 6 Last day to cancel registration in or to add A and R classes, Summer session
Last day to register with late fee, Summer session
- 11 Last day to withdraw from A classes, Summer session
- 23 A classes end, Summer session
- 24 B classes begin, Summer session
- 26 Last day to withdraw from R classes, Summer session
Last day for those expecting PhD degrees in October to submit one unbound copy of completed thesis and submission form to Graduate Studies and four unbound copies of thesis to department
- 30 Last day to cancel registration in or to add B classes, Summer session

August

- 2 Last day to withdraw from B classes, Summer session
- 5 Halifax/Dartmouth Natal Day - University closed
- 16 Classes end, Summer session

- 25 Last day for those expecting Masters degrees in October to submit unbound theses to departments
- 27 MBA orientation begins
- 30 Last day to register without late fee, Regular session
First installment of fees due
Last day to have Leave of Absence approved by Graduate Studies

September

- 2 Labour Day - University closed
- 4 Classes begin, Law
- 3 Classes begin in Library and Information Studies
- 5 Classes begin, unless otherwise specified, Regular session
Last day for refund on first installment of fees - limited enrolment programmes
Orientation begins, Human Communication Disorders (first year)
- 9 Classes begin, Human Communication Disorders (first year)
- 16 Last day for those expecting to receive graduate degrees in October to submit approved unbound copies of theses to Faculty of Graduate Studies Office
- 19 Last day to cancel registration in or to add A and R classes, Regular session
Last day to register with late fee

October

- 14 Thanksgiving Day - University closed
- 15-18 MBA mid-term week
- 18 Last day to withdraw from A classes
- 19 Fall Convocation

November

- 11 Remembrance Day - University closed
- 30 Last day to change degree or attendance status (PT to FT, or FT to PT), Graduate Studies

December

- 2 Last day to apply to graduate in May
- 4 Classes end
- 9 Examinations begin
- 18 Examinations end
- 20 Last day to submit theses for those registered in the fall term only
Last day to have Leave of Absence beginning in January approved by Graduate Studies

1997

January

- 1 University closed
- 6 Classes resume, second term begins
- 20 Last day to cancel registration in or to add B classes
Last day to withdraw from R classes
- 31 Last day for partial refund of regular session fees
Second installment of fees due

February

- 7 Munro Day - University closed
- 17 Last day to withdraw from B classes

2 Definitions

Last day for those expecting PhD degrees in May to submit one unbound copy of completed thesis and submission form to Graduate Studies and four unbound copies of thesis to departments

24 Study break begins

March

- 3 Classes resume
- 14 Last day for those expecting Masters degrees in May to submit unbound theses to departments
- 28 Good Friday - University closed

April

- 11 Classes end, Regular session
- 14 Last day for those expecting to receive graduate degrees in May to submit approved unbound copies of theses to Faculty of Graduate Studies Office
- 16 Examinations begin, Regular session
- 30 Examinations end, Regular session

May

20-23 Spring Convocations

Class Codes

Numbers

1000 level classes are introductory
2000 - 4000 level classes are advanced level
5000 - 6000 level classes are Graduate level

Term Codes

R - Sept. to April, Spring or Summer session
A - Sept. to Dec. or first half of a Spring or Summer session
B - Jan. to April or second half of a Spring or Summer session

Credit Hour Extension (examples only, other possibilities exist)

.06 credit hours = 1 full credit
.03 credit hours = 1/2 credit
.00 credit hours = non-credit class

Subject Codes

Four letter codes are used to describe the department offering a particular class as follows:

ANAT - Anatomy & Neurobiology	LEIS - Leisure Studies
BIOC - Biochemistry	MARA - Marine Affairs
BIOL - Biology	MATH - Mathematics
BUSI - Business Admin.	MICR - Microbiology & Immunology
CH&E - Community Health and Epidemiology	NESC - Neuroscience
CHEM - Chemistry	NURS - Nursing
CLAS - Classics	OCBA - Oceanography
COMP - Computing Science	PATH - Pathology
ERTH - Earth Sciences	PHAC - Pharmacology
ECON - Economics	PHAR - Pharmacy
EDUC - Education	PHIL - Philosophy
ENGL - English	PHSE - Physical Education
ENVI - Environmental Studies	PHYC - Physics
FREN - French	PHYL - Physiology
GERM - German	PHYT - Phytotherapy
HEAS - Health Services Administration	POLI - Political Science
HEED - Health Education	PSYO - Psychology
HIST - History	PUAD - Public Administration
HUCD - Human Communication Disorders	SOSA - Sociology and Social Anthropology
KINE - Kinesiology	SLWK - Social Work
LAWS - Law	STAT - Statistics
	WOST - Women's Studies

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 sessions:

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

Audit Classes: A student may be permitted to attend classes but not be expected to prepare assignments, write papers, tests or examinations. Credit is not given nor is a mark awarded for classes. Classes appear on the transcript with the notation "Aud". 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.

Continuing Fees: The tuition fees charged to graduate students who have fulfilled their programme fee requirements but have yet to complete all their degree requirements. See Faculty Regulation 4.6.

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.

Full-time Students: Those carrying more than two and one-half (2 1/2) full-credit classes during the 12-month academic year of a student who has not yet completed the minimum number of years of full-time study required for a particular degree programme.

Graduate Student (Regular): A student with a Bachelor's degree, usually with Honours or equivalent, enrolled in a Master's or Doctoral programme, or a graduate diploma programme.

Letter of Permission: A Letter of Permission authorizes a Dalhousie student to take a class(es) at another institution for credit towards a Dalhousie qualification. Such permission must be obtained in advance of taking the class(es).

Non-thesis Programme: A Master's programme of study based on class work which may also include a research project. This includes many of the professional graduate programmes. Some programmes offer a thesis option.

Part-time Students: Those carrying not more than two and one-half (2 1/2) full-credit classes during the 12 months, September to August or a student who has not yet completed the minimum number of years of part-time study required to complete the residency requirement for a particular degree programme.

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

Programme Fees: The tuition fees charged to graduate students completing a degree. The programme fee is based on total tuition for a specified number of years, varying according to academic programme. See Faculty Regulation

4.6 for more details. Students who have not completed their programme after the specified number of years are required to pay a thesis only or continuing fee.

Qualifying Students (Master's only): A full-time or part-time student with a Bachelor's degree or its equivalent in whom a department has expressed an interest as a potential graduate student, but who is without a sufficiently strong academic background in a particular discipline to be enrolled directly in a Master's programme.

Required Withdrawal: A student's required withdrawal from a programme due to unsatisfactory academic performance or failure to meet admission or programme conditions. See Faculty Regulation 2.5.

Residency: The period of time that students are expected to be on campus for fulfilment of their formal programme requirements. In some programmes, part of the residency period may, with permission, include some time off campus (e.g. for fieldwork or research).

Special Student: A student who is not registered in a graduate programme but is taking graduate classes.

Thesis Only Fees: The tuition fees charged to graduate students who have fulfilled programme fee requirements but have yet to complete all their degree requirements. See Faculty Regulation 4.6.

Thesis Programme: A Master's or Doctoral programme of study involving a major research component in the form of a written thesis. Some programmes offer a non-thesis option.

Transcript: A transcript is a complete history of a student's academic record at Dalhousie.

Partial transcripts, e.g. a portion of a student's record pertaining to registration in a particular degree or faculty only, are not issued.

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

Dalhousie University

For over 129 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 11,500 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 Dalhousie 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. 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 is a member of the Association of Universities and Colleges of Canada, the Atlantic Association of Universities, and the Association of Commonwealth Universities.

Executive Officers

President and Vice-Chancellor

Thomas D. Traves, BA, MA, PhD

Vice-Presidents

Academic and Research

Deborah W. Hobson, BA, MA, PhD

Finance and Administration

Bryan G. Mason, BA

4 Dalhousie University

Student Services

Eric A. McKee, BA, MA

External

TBA

Associate Vice-President Research

Robert O. Fournier, BSc, MA, PhD

Deans of Faculties

Arts and Social Sciences

Graham D. Taylor, BA, PhD

Dentistry

William A. MacInnis, DSc, DDS, MEd, F.I.C.D.

Graduate Studies

Peter J. Ricketts, BA, PhD

Health Professions

Lynn McIntyre, MD, MHSc, FRCP(C)

Law

Dawn A. Russell, BA, LLB, LLM

Management

Phillip J. Rosson, DAS, DM, MA, PhD

Medicine

John Ruedy, MDCM, FRCP(C), FACP

Science

W.C. Kimmins, PhD

Henson College of Public Affairs and Continuing Education

Mary Morrissey, BA, MSW, MPA

College of Arts and Science

W.C. Kimmins, PhD, Provost

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 Directors

Computer and Information Services

J. Morven Wilson, BSc, MSc

Instructional Development and Technology

W. Alan Wright, BA, MA, PhD

Lester Pearson Institute

William H. Montgomery, BA, LLB, LLM

Office of Institutional Affairs

Brian Christie, BSc, MA, Assistant to the President for Planning

Directors

Alumni Affairs (Acting)

Marian Gray, BRec

Arts Centre

Robert C. Reinholdt

Athletics and Recreational Services

F.A. (Tony) Martin, BSc, MA

Capital Campaign

William Straitton

Counselling and Psychological Services

Judith Hayashi, BA, MA

Development

Charlotte Sutherland, BA, MEd

Environmental Health and Safety

William J. Louch, PhD

Financial Services

Ian Nason, BCom

Health Services

Joyce Curtis, MD

Housing and Conferences

Heather Sutherland, BSc, MEd

Personnel Services

Michael J. Roughneen, CPIR, BA, MSc, FIPM

Physical Plant and Planning

William Lord, BAsC, PENG

Public Relations

Vacant

Student Resources

A. Susan McIntyre, MPA

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

Sir Graham Day

Chancellor Emeritus

H. Rueben Cohen, CM, QC, DCL, LL.D.

Officers

Dr. Thomas D. Traves, BA, MA, PhD

Mr. Allan C. Shaw, Chair

Mr. James S. Cowan, Vice-Chair

Mrs. Ann Petley-Jones, Honourary Secretary, Vice-Chair

Mr. John C. Risley, Honourary Treasurer

Mrs. Carol Young, Honourary Secretary

Members

Mr. David J. Almon

Mr. Peter Bryson

Mr. Gerald A. Clarke

Mr. David Cox

Prof. Joan Conrod

Mr. J. Dickson Crawford

Mr. Fred Fountain

Ms. Heather Gibson

Dr. Elaine Gordon

Mrs. Patricia Harris

Ms. Margaret Langley

Dr. Frank Lovely

Ms. Bernadette Macdonald

Mr. George W. MacDonald

Ms. Suzan MacLean

The Hon. Jacqueline R. Matheson
 Ms. Josie Richard
 Mrs. Patricia Roscoe
 Mr. Kenneth C. Rowe
 Dr. Donald C.R. Sobey
 Mr. Geoffrey Stewart
 Dr. Colin Stuttard
Secretary
 Joann Griffin
Observer for Faculty Association
 Dr. J. Andrew Wainwright

Senate

Senate consists of the President, Vice-President (Academic and Research), the University Librarian, Deans of Faculties, Dean of Henson College, thirty-nine elected Faculty members, four students elected by the Dalhousie Student Union, a representative of the University of King's College and a representative of the Nova Scotia Agricultural College.

Senate is the academic governing body of the University. Subject to the general approval of the Senate, faculties are responsible for supervision of programmes of study, of teaching and research, and for recommending candidates for degrees, diplomas, and university prizes. In addition, it is responsible for student discipline academic appeals, and faculty appointments, tenure and promotion.

Chair of Senate

Colin Stuttard, BA, PhD

Vice-Chair of Senate

J.E.D. Conrod, BComm, MBA, CA

Secretary of Senate

Marian B. Binkley, BA, MA, PhD

*PHD - Psych ✓
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Academic Programmes

Master of Arts

1 or 2 years with thesis in: Classics, Computing Science, Economics, English, French, German, Health Education, History, Leisure Studies, Mathematics, Philosophy, Political Science, Psychology, Sociology, and Social Anthropology

Master of Science

1 or 2 years with thesis in: Agriculture, Anatomy and Neurobiology, Atmospheric Science, Biochemistry, Biology, Chemistry, Community Health and Epidemiology, Computing Science, Earth Science, Human Communication Disorders (3 years) (Audiology or Speech Pathology), Kinesiology, Mathematics, Microbiology and Immunology, Oceanography, Oral and Maxillofacial Surgery (4 years), Pathology, Pharmacology, Pharmacy, Physics, Physiology and Biophysics, Physiotherapy, Psychology, and Statistics, also Neuroscience (combined with Anatomy and Neurobiology, Biochemistry, Pharmacology, Physiology and Biophysics, and Psychology).

Doctor of Philosophy

2 or 3 years, with thesis in: Anatomy and Neurobiology, Atmospheric Science, Biochemistry, Biology, Chemistry, Classics, Earth Science, Economics, English, French, History, Interdisciplinary Studies, Mathematics, Microbiology, Oceanography, Pharmacology, Pharmacy, Philosophy, Physics, Physiology and Biophysics, Political Science, Psychology and Statistics, also Neuroscience (combined with Anatomy and Neurobiology, Biochemistry, Pharmacology, Physiology and Biophysics, and 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 years, with thesis

Master of Business Administration

2 years

Master of Business Administration with Bachelor of Laws

4 years

Master of Environmental Studies

1 or 2 years

Master of Health Services Administration

2 years

Master of Health Services Administration with Bachelor of Laws

4 years

Master of Health Services Administration with Master of Nursing

3 years

Master of Laws

1 year

6 Special Institutes

Master of Library and Information Studies

2 years

Master of Library and Information Studies with Bachelor of Laws

4 years

Master in Marine Management

1 year

Master of Public Administration

2 years

Master of Public Administration with Bachelor of Laws

4 years

Master of Development Economics

2 years

Master of Nursing

2 years

Master of Nursing with Master of Health Services Administration

3 years

Master of Social Work

1 or 2 years

Graduate 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 Health Promotion Research Centre

Director: Dr. M. Stewart

Co-ordinator: S. Crowell

The AHPRC was established in the spring of 1993 and is dedicated to research which can improve the health of individuals and communities - physically, mentally, socially, and spiritually. The AHPRC provides assistance with the development of health related research ideas. The main goal is to encourage health promotion research initiatives. The AHPRC works with community groups, individuals, academic researchers and health professionals to foster research that improves the quality of life in Atlantic Canada.

Atlantic Institute of Criminology

Director: D.H. 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. Research awards for graduate students in Criminology are available. Seed funding is also available for research relating to the justice system.

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

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

Atlantic Region Magnetic Resonance Centre

Director: Chair, Department of Chemistry

Manager: D.L. Hooper, BSc, MSc, 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 Bruker AC 250 and AMX 400 NMR instruments 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 in the Atlantic Region.

Atlantic Research Centre

Director: H.W. Cook, MSc, PhD

Established in 1967, the Centre conducts basic biomedical research and population studies in the fields of human genetics, cell membranes, neurobiology, and developmental nutrition. 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 metabolic disorders and mental handicap 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 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

Location: 1444 Seymour Street
 Phone: (902) 494-3814/2105
 Fax: (902) 494-2105

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 cooperates with the International Development Studies programme and with the Pearson Institute and International Students Centre.

Centre for Foreign Policy Studies

Director: Timothy M. Shaw, PhD

Established in 1971 the Centre is concerned with teaching, research, publication, policy advice and other professional activities in the various aspects of foreign policy, security studies and international politics. It is funded through the security and defence forum of the Department of National Defence and other foundations, government agencies and contracts.

The Centre's work is concentrated in the area of Canadian and comparative maritime and oceans policy and strategy but it also deals with international political economy and regional and global development. Its geographical specializations include foreign policy in Canada, Europe, the south (especially Africa, Asia and the Caribbean), and the U.S. The Centre encourages activities in these areas by Research & Doctoral Fellows and advances communication among local and international communities in these fields through seminars, workshops, conferences and colloquia, often co-sponsored by local, national and/or international organizations. It publishes occasional papers and monographs plus a monthly Defence Newsletter on Canadian defence and security policy issues.

The Centre is an integral part of the Department of Political Science. Centre faculty offer classes through the Department in foreign and defence policy, international relations and development, and maritime affairs at both undergraduate (majors & honours) and graduate (MA and PhD) levels. They also supervise masters and doctoral theses in these fields.

Centre for International Business Studies

Director: M.R. Brooks, BOT, MBA, PhD

The Centre was established in 1975 and is funded by the Department of Foreign Affairs and International Trade. Its purposes include the provision of specialist training in international business studies, research and outreach activity 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 Earth Sciences, 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 Institute

Interim Director: Robert G. Elgie, QC, BA, LLB, MD, FRCS(C)

The Health Law Institute is an interdisciplinary Institute which conducts, facilitates and coordinates research and teaching in the Faculties of Law and Medicine, and in Dentistry and Health Professions as well. The Director and his Faculty Associate are cross-appointed to the Faculties of Law and Medicine. They work with colleagues in those and other Faculties on grant and contract funded research, teach, facilitate 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 classes for health professionals on a contract basis.

Lester Pearson International Institute

Director: W.H. Montgomery, BA, LLB, LL.M.

Associate Director/ Academic: B. Lesser, BCom, MA, PhD

Associate Director/ Projects and Administration: P. Rodee, BA, MBA

The Lester Pearson Institute (LPI) was founded in 1985 to promote Dalhousie's involvement in international development

8 Special Institutes

activities. In mid-1987, LPI was merged with the Centre for Development Projects and was given responsibility for guardianship of all externally financed international development programmes and projects at Dalhousie. In mid-1994, the Institute's mandate was expanded to also include a broader responsibility of international activities and the internationalization of the University. Toward this end, LPI supports the Dalhousie community's involvement in international activities by facilitating student exchange opportunities with overseas partners and by enhancing networks among those with international experience and interest at the University. LPI also undertakes major activities such as a development education programme for the campus and local community, a lecture and seminar series, conferences, research, and a publications programme. Although LPI is not a degree granting arm of the University, it encourages and supports the study of international issues; serves as a resource centre for students, faculty and staff; houses the Lester Pearson Chair in Development Studies; and maintains a roster of associates known as Pearson Fellows who serve as advisors to the Institute in their particular area of expertise.

Neuroscience Institute

Director: W. Tatton, MD, PhD, FRCPC

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 Sir Charles Tupper Medical Building, 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 the Faculty 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 sponsors a seminar series annually.

Oceans Institute of Canada/Institut canadien des océans

The Oceans Institute of Canada/Institut canadien des océans is a federally incorporated, non-profit organization established in 1976 and dedicated to promoting responsible management of the world's oceans.

The Institute serves the public and private sectors at national and international levels. Work is carried out by a permanent staff and experts drawn from a multidisciplinary panel of associates.

The location of its head office in Halifax promotes full collaboration with many other establishments concerned with ocean affairs, including Dalhousie University. The Institute has a Pacific Office in Vancouver.

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.

Resources and Services

Advisory Committee on Sexual Harassment

Sexual harassment is sexually oriented behaviour of a deliberate or negligent nature that adversely affects the working or learning environment or participation in university life. Sexual harassment can take many forms, from constant joking to assault. It may involve promises of reward, or threats that you could fail in class or lose your job. It may make your work or study environment uncomfortable through continued sexual comments, suggestions or pressures. Sexual harassment may involve unwelcome sexual attention from a professor, a teaching assistant, a staff member, a student, or even a patient or a customer.

Dalhousie University is committed to an environment free from sexual harassment. A policy and procedures exist to deal with complaints of sexual harassment. Responsibility for monitoring the policy and coordinating educational programming rests with the President's Advisory Committee on Sexual Harassment, which includes representation from student, staff and faculty groups.

If you believe you are being sexually harassed at Dalhousie you are encouraged to discuss your questions or concerns with the Sexual Harassment Advisor, Room #3, Basement of the Arts and Administration Building, 494-1137 or 494-1659. Advice and information about the policy and possible options are available.

Persons found to have engaged in sexually harassing behaviour can be subject to a range of penalties, up to and including expulsion or dismissal from the the University.

Alumni Association

The Alumni Association is composed of over 70,000 former students. Chapters scattered across the world keep alumni informed and involved with the Association. It coordinates a number of programmes including homecomings, reunions, branch meetings, sports events, information lectures, a Student Alumni Association, 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 are a great number of fitness, leisure and aquatic instructional programmes.

Recreation facilities on campus include: Dalplex—offering a 50,000 sq. ft. fieldhouse, olympic-size pool, two weight rooms, two hardwood basketball courts, numerous "no-fee" racquet courts, and an indoor jogging track, a golf putting green an driving cage, a cardio-fit area and family-fitness features such as the Fun Zone play area (the largest indoor soft modular play structure in Metro), a babysitting service, and our Family Change Room; the Dalhousie Memorial Arena, Studley Gym, and The F.B. Wickwire Memorial Field (one of the largest artificial playing surfaces in the world). For details on fitness and recreation at Dalhousie contact Dalplex at 494-3372 or the Intramural Office at 494-2049.

Black Students

The Black Student Advising Centre is available to assist and support new, prospective and returning Black Students (African, American, Canadian, Caribbean, etc.) The Advisor may organize programme activities which assist Black students in developing contacts with other Black students both on campus and in the Black Community. The Centre is intended to foster a sense of support and community among the Black students, with other students and to increase intercultural awareness.

The Advisor will provide confidential services and programmes individual and/or group assistance, impartial observation, relevant resource materials, along with a referral service which may benefit your academic, personal and social development on and off campus. There is a small student resource room for meeting, peer support, reading and/or studying. Awards, scholarships, employment, community information and upcoming events are also made available.

The position of the Black Student Advisor was created by Dalhousie University to provide information to prospective students, increase access and promote retention of indigenous Black students.

The Centre may be beneficial to all students, faculty and staff as a means of increasing awareness and sensitivity to Black student issues and presence within the University community.

For further information contact: Office - Black Student Advisor, Student Union Building, Halifax, Nova Scotia, B3H 4J2; phone - (902) 494-6648; fax - (902) 494-2042; World Wide Web homepage URL - <http://www.dal.ca/~acswww/bes.html>; Black Students homepage - <http://www.dal.ca/~acswww/blacks.html>.

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, Presbyterian, and Orthodox traditions and can be reached through the Chaplains' Office on campus. The Chaplains' Office is located on the

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fourth 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 answering machine at 494-2287 to hear emergency numbers.

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, Overcoming Procrastination, Anger Management, 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.

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. In addition to regular office hours, the Centre is open three evenings a week during the academic year. Inquire or make appointments by dropping in or calling 494-2081.

Dalhousie Arts Centre

Designed as a multipurpose facility, the Dalhousie Arts Centre is home to four University departments: Dalhousie Arts Centre (Rebecca Cohn Auditorium), Dalhousie Art Gallery, and the two academic departments of Music and Theatre. The Arts Centre remains, after twenty-one years, an integral part of the cultural experience in our community and stands as the only arts complex of its kind in Nova Scotia.

Of the numerous performing arts spaces in the Dalhousie Arts Centre, the Rebecca Cohn Auditorium, or "The Cohn", as it is affectionately called, is the most familiar and prestigious. The 1040 seat concert hall is the home of Symphony Nova Scotia, as well as the venue of choice for a wide variety of performers ranging from The Royal Winnipeg Ballet to Blue Rodeo, The Chieftains, and Reveen! to name a few. Other performing and visual arts space in the Arts Centre include: The Sir James Dunn Theatre (240 seats), the David MacK. Murray Studio, Studio II, The MacAloney Room, and the Art Gallery.

The Dalhousie Art Gallery offers the public access to national and international touring exhibitions and initiates many ambitious and exciting exhibition programmes.

Further information on the Music and Theatre Departments can be found in their separate listings.

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 at 6136 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. Students have an opportunity to become involved in committees dealing with various student issues. The DSU also offers a full range of clubs, societies and organizations for any student to participate in. All students are invited to satisfy their curiosity by visiting the Student Union Council offices. 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.

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 low. It is therefore very important that students planning to attend Dalhousie think well in advance about their accommodation needs.

Students should be aware of the following points in reference to residence accommodation. You must indicate your interest in residence accommodation on your Application for Admission to a programme of study. Upon admission to a programme of study, those students who have indicated an interest will receive a Residence Application Form. It is important to return the Residence Application Form promptly as the applications will be considered as they arrive. Residence Application Forms will not be distributed to, nor received from, individuals who have not gained admission to a programme of study.

Students with disabilities are encouraged to contact the Residence Office at (902) 494-1054, for information and assistance.

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 offered by the off-campus housing office listing service. For information on housing fees, see the Fees section of the Calendar.

Please Note: Academic acceptance by the University, i.e., admission to a course of study, DOES NOT 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.

As available space in University residences is limited students are encouraged to complete and submit their residence application immediately upon receiving it with their letter of academic admission.

A. Traditional Style On Campus Residence

Howe Hall

Centrally located on campus, Howe Hall, provides accommodation for 520 undergraduate students. The sprawling, grey ironstone complex is divided into five houses: Bronson, Henderson and Smith Houses are co-ed; Cameron, and Studley are for men only. Each house has its own distinctive identity and student government. The ratio of seniors to first-year students is approximately 40/60, except in Henderson house which is predominantly for first year students.

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

Shirreff Hall

The women's residence on the Dalhousie campus, Shirreff Hall, provides accommodation for 445 female students. 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 three houses - Newcombe, Old Eddy and New Eddy (which includes the Annex). Old Eddy and New Eddy have both single and double rooms while Newcombe has single rooms only. The Annex houses only 14 senior students and is distinct from the remainder of Shirreff Hall in that it has a separate outside entrance and is not directly accessible from the main residence.

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.

Eliza Ritchie Hall

Opened in 1987, Eliza Ritchie Hall is a co-ed residence. It provides traditional residence accommodation for 84 students in predominantly single rooms.

This three-storey building 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 facilities 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 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 satellite 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 satellite 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.

Glengary Apartments

Located on the campus on Edward Street, Glengary Apartments is a four-storey brick building offering co-ed accommodation to 52 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 students. The apartments feature two single rooms, a 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.

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Co-ed Apartment Units

Dalhousie has two co-ed apartment buildings which are open to students in graduate programmes. Located on University Avenue, on the main campus, the buildings include bachelor, one and two-bedroom apartments and accommodate a total of 20 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 six residence houses, five of which are now co-ed. All were once single family homes, and have 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 students in graduate programmes or professional schools, a few of the 46 spaces are reserved for undergraduates.

Two of the houses are designated as 24-hour quiet areas for students who want a particularly quiet environment in which to live and study. One of the houses is designated as a French house, reserved for male and female students who would like to live in a French-speaking environment.

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 liaises with the Howe Hall Residence Co-ordinator and Facility Co-ordinator to provide administrative and resident-related services.

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 for viewing 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.
- Acceptance into an academic programme does not mean that application for a place in residence has been approved.
- 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
6250 South Street
Dalhousie University
Halifax, N.S. B3H 3J5
(902) 494-3365

For Howe Hall, Eliza Ritchie Hall, Shirreff Hall and the Residence Houses:

Residence Office
Howe Hall
Dalhousie University
6230 Coburg Road
Halifax, N.S. B3H 4J5
(902) 494-1054

For Fenwick Place, Glengary Apartments and Co-ed Apartment Units:

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

For Off-Campus Housing Assistance:

Off-Campus Housing Office
Student Union Building, Room 120
Dalhousie University
6136 University Avenue
Halifax, N. S. B3H 4J2
(902) 494-3831

Instructional Development and Technology

The Office of Instructional Development and Technology (OIDT) is mandated to initiate, lead, and coordinate activities which encourage reflection upon and improvement in teaching and learning at Dalhousie.

Workshops - To fulfil this primary goal, the OIDT develops and presents a variety of sessions and workshops to faculty and teaching assistants at Dalhousie. Annual events include the Orientation to Teaching at Dalhousie for new faculty and the Graduate Teaching Assistant Orientation for new GTAs. During the year, workshops are presented monthly or bi-monthly and are open to the Dalhousie community. The OIDT also cooperates with other universities in Nova Scotia to disseminate information about teaching improvement.

Publications - Focus on University Teaching and Learning, the OIDT newsletter, is published five times a year. Three other publications - Recording Teaching Accomplishment: A Dalhousie Guide to the

Teaching Dossier; University Teaching and Learning: An Instructional Resource Guide for Teaching Assistants at Dalhousie University; Learning Through Writing: A Compendium of Assignments and Techniques - may be purchased or borrowed from the OI.D.T. The extensive bibliography of materials available for loan includes both print and video resources on topics related to teaching. These may be borrowed by faculty, teaching assistants, and students.

Instructional Media Services - To complement its primary goal, the OI.D.T also has responsibility for the provision of instructional media services to the campus (excluding Medicine and Dentistry). These services include audiovisual equipment, videotaping, photography, and graphics. Facilities for borrowing discipline-specific audio and video tapes are located in the Learning Resource Centre in the basement of the Killam Library.

Distance Education - Through its support for the development of distance education classes, primarily in the Health Professions, the OI.D.T assists Dalhousie to respond to the needs of those who wish to upgrade their education. General inquiries about these classes should be directed to the Registrar's Office.

Information, teaching resources, and private consultations are available through the Office of Instructional Development and Technology. The Office is located in the Killam Library Courtyard (494-1622).

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, Student Union Building, 6136 University Avenue, Room 120, Dalhousie University, Halifax, N.S., Canada, B3H 4J2 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, 1995, the total Dalhousie University Library System holdings include over 1,510,000 volumes of books, bound periodicals, documents, and bound reports, 414,000 microfilm & microfiche, 100,000 maps, and other media. Approximately 9,600 serials titles are currently received, and dead title holdings number over 11,000.

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, University College of Cape Breton, University of King's College, the Atlantic School of Theology and the Victoria General Hospital). Users borrow from Novanet libraries upon presentation of their University ID card.

Ombudsperson's Office

The Dalhousie Ombudsperson's Office offers assistance and advice to students experiencing problems while at Dalhousie, including difficulties associated with finances, academics, or accommodations. The Ombudsperson'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 Ombudsperson can provide information and direction to students on any University-related complaint. Students retain full control over any action taken on their behalf by the Ombudsperson's Office, and all inquiries are strictly confidential.

The Dalhousie Ombudsperson's Office is located in the Student Union Building, Room 403. Regular office hours are posted on the door at the beginning of each Semester. The Ombudsperson's Office can also be reached by calling 494-6583. If no one is available to take a call, students are requested to leave a message on voice mail.

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.

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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.

Services for Students with Disabilities

Services for Students with Disabilities

Dalhousie University Policy on Accessibility for Students with Disabilities

1. Dalhousie University is committed to the goal of providing equal opportunity for qualified students with disabilities. To demonstrate full respect for the academic capacities and potential of students with disabilities, the University seeks to remove attitudinal and environmental restrictions which may hamper or prevent academically-qualified students with disabilities from participating fully in University life. The University understands that persons with disabilities may have different ways of doing things, recognizing that performance is not inferior merely because it is different.
2. The University recognizes, subject to its financial and other resource constraints, that qualified students with disabilities have a right to:
 - 2.1 full access to all educational programmes;
 - 2.2 full access to the educational process and learning environment (including but not limited to classes, laboratories, workshops);
 - 2.3 full access to the University campus; and
 - 2.4 full access to University facilities and services.
3. The University recognizes that qualified students with disabilities have a right to assistance that is individualized with respect to scope and pace, consistent with the student's needs, legitimate academic demands, and the University's capacity to respond.
4. To ensure that qualified students with disabilities may pursue quality post-secondary education, the University shall:
 - 4.1 be proactive in fostering, creating and maintaining a barrier-free environment, including:
 - (a) the provision of support services, within reasonable financial and resource limitations; and
 - (b) promoting an attitude of respect for persons with disabilities, and

- (c) promoting sensitivity to the needs and abilities of persons with disabilities;
- 4.2 inform the University community about the services available to qualified students with disabilities and seek to ensure that such services are delivered in ways that promote equity;
- 4.3 where warranted and without compromising the academic standards, and through the relevant academic authority, modify:
 - (a) workload;
 - (b) examination procedures;
 - (c) other course requirements; and
 - (d) scholarship and other financial assistance requirements; and
- 4.4 take all reasonable steps to consult students with disabilities as fully as possible about decisions relating to matter affecting them.
5. In accordance with provisions in the Human Rights Act, the University may also define essential requirements for professional performance for students in programmes, where these are appropriate, and this policy is not intended to replace or supersede these requirements.
6. Students with disabilities requiring assistance from the University shall:
 - 6.1 initiate contact with the Advisor to Students with Disabilities and make the nature of their disability and/or their needs known; and
 - 6.2 be expected to undertake a reasonable measure of self-advocacy to ensure they are provided with an equal opportunity by Dalhousie University.
7. The responsibility to implement these policies throughout the University rests on all members of the University community, including all faculty, administration, staff, students and the Advisor to Students with Disabilities.

The Advisor to Students with Disabilities should be contacted as early as possible at (902) 494-2836, TTY (902) 494-7091.

Note: Please note that where self-disclosure or prior arrangements have not been made with the University, Dalhousie is not liable to accommodate your special needs due to your disability.

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 receives 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 being challenged by the University less intimidating.

The Advocates may be contacted through:
Student Advocacy Service
Room 402
Dalhousie Student Union Building
Telephone: (902) 494-2205

Student Clubs and Organizations

Students seeking information on clubs and societies should call the Dalhousie Student Union INFOLINE 494-2146. 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 Employment Centre

The main function of the Dalhousie Student 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 9:00am to 4:30pm. Telephone: (902) 494-3537.

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

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

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

Student Services

Located at 1234 LeMarchant Street, Student Services provides a point of referral for any student concern. The Vice-President is the chief Student Services officer and coordinates the activities of Athletics and Recreational Services, the Dalplex, the Bookstore, Student Counselling and Psychological Services, Health Services, Housing and Conference Services, Office of the Registrar, Writing Workshop and the Ombud Office. Student Resources including Black Student Advising, Advising for Students with Disabilities, Chaplaincy, International Student Centre, the Student Employment Centre, Tutoring Services and the Volunteer Bureau are coordinated out of this office as well. 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 University 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 carries an assortment of bestsellers, newspapers, magazines 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 specially 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, class rings, backpacks, novelties, briefcases, and general University paraphernalia. A Special Order department is located in the office area and will order and ship books worldwide.

The Bookstore is situated on the lower level of the Student Union Building on University Avenue, and is open year round, Monday to Saturday (Hours vary throughout the year).

University Computing and Information Services

University Computing and Information Services (UCIS) provides computing and communication services for students, faculty, and staff for instructional, research, and administrative purposes. It is responsible for all centrally managed computing and communications facilities.

UCIS manages a campus-wide communications network which interconnects office systems, laboratories systems, departmental computers, and central facilities. This network is connected to the Nova Scotia Technology Network, which in turn is connected to the national network CA*net which has worldwide connections. UCIS is also responsible for University telephones.

Central computer systems include digital VAX4500 and two IBM RS/6000 computers which are used primarily for academic purposes; an IBM RS/6000 SP2, which is a powerful parallel processing system used for research; and an IBM 4381 and two IBM RS/6000 computers supporting the university's central administrative systems. UCIS also manages numerous micro computer teaching laboratories which are situated throughout the campus, including laboratories in the School of Business, Engineering, English, History, Sociology, Law, Political Science, Physics, Biology, Earth Sciences, Dentistry, Psychology, and at the central Computer Centre in the basement of the Killam Library.

All students may have access to these computing facilities on an individual basis or in conjunction with the classes that they take.

UCIS also manages the campus computer store (PCPC); provides short, non-credit computer related classes in conjunction with Henson College; and offers a hardware maintenance service for micro-computers.

University Health Services

The university operates a medical clinic, in Howe Hall, at Coburg Road and LeMarchant Street staffed by general practitioners and two psychiatrists. Further specialists' services are available 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.

All students must have medical and hospital coverage. 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 Student Accounts office prior to registration. Any student who has had a serious illness within the last 12 months, or who has a chronic medical condition, should contact and advise the Health Service; preferably with a statement from the doctor.

The cost of most medications 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

Financial Aid

General Information

Please note that the contents of this section are subject to change without notice.

The University reserves the right to publicize the recipients of merit awards.

Government Student Loans

Canada Student Loans Plan: Canadian students, other than Quebec residents, are to apply for government 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:

Alberta:

Alberta Students' Finance Board
10th Floor, Baker Centre
10025-106 Street
Edmonton, Alberta
T5J 1G7
(403) 427-2740
fax: (403) 422-4516

British Columbia:

Student Services Branch
Ministry of Advanced Education,
Training and Technology
2nd Floor, 1106 Cook Street
Victoria, British Columbia
V8V 3Z9
(604) 387-6100/6101
fax: (604) 356-9455

Manitoba:

Student Financial Assistance Branch
Manitoba Education and Training
Box 6, 693 Taylor Avenue
Winnipeg, Manitoba
R3M 3T9
(204) 945-6321/6322
fax: (204) 477-4596

New Brunswick:

Student Services Branch
Department Of Advanced Education and
Training
P.O. Box 6000
Fredericton, New Brunswick
E3B 5H1
(506) 453-2577
1-800-667-5625
(Atlantic Provinces, Ontario and Québec only)
fax: (506) 444-4333

Newfoundland:

Department of Education
Student Aid Division
Thompson Student Centre
Memorial University of Nfld.
St. John's, Newfoundland
A1C 5S7
(709) 729-4235/5849
fax: (709) 729-2298

Northwest Territories:

Manager-Student Services

Department of Education
Government of the Northwest Territories
Yellowknife, Northwest Territories

X1A 2L9

(403) 873-7190

or

1-800-661-0793

fax: 1-800-661-0893

Nova Scotia:

Student Aid Office
Department of Advanced Education and
Job Training
P.O. Box 2290, Station M
Halifax, Nova Scotia
B3J 3C8
(902) 424-8420 (metro)
1-800-565-8420 (within province)
fax: (902) 424-0540
(Street location: Trade Mart Building 2021
Brunswick at Cogswell Streets Halifax, N.S.)

Ontario:

Student Support Branch
Ministry of Colleges and Universities
P.O. Box 4500
Thunder Bay, Ontario
P7B 6G9
(807) 343-7260
fax: (807) 343-7278

Prince Edward Island:

Student Aid Office
Department of Education & Human Resources
P.O. Box 2000
Charlottetown, Prince Edward Island
C1A 7N8
(902) 368-4640
fax: (902) 368-4663

Saskatchewan:

Student Financial Assistance Branch
Saskatchewan Education
1855 Victoria Avenue
Regina, Saskatchewan
S4P 3V5
(306) 787-5620
fax: (306) 787-7537

Yukon Territory:

Students' Financial Services
Department of Education
P.O. Box 2703
Whitehorse, Yukon Territory
Y1A 2C6
(403) 667-5310
or
(403) 667-5929
fax: (403) 667-6339

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

Québec:

Residents of Québec apply to:
Ministère de l'enseignement supérieur
et de la Science
Direction générale de l'aide financière
aux étudiants,
1033, rue de la Chevrotière
Québec, Québec

18 Financial Aid

G1R 5K9

(418) 646-5245

Leave brief message, your name, your Code Permanent, and the day/time period you will be "home". Quebec will telephone the student back at that time period.

(514) 864-4505 (24-hour automated service)

fax: (418) 528-0648

Dalhousie Graduate Bursaries

Students who find themselves in financial difficulty due to unforeseen expenses may apply for Dalhousie Graduate Bursary funds. Applications are available from the Faculty office and completed forms may be submitted to that office at any time.

All graduate students currently registered in a degree programme are eligible to apply.

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.

Government Notification

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

Fees

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

Telephone: (902) 494-3998

Fax: (902) 494-2848

E-mail: Student.Accounts@Dal.Ca

Office Hours: 10:00 - 4:30 Monday to Friday (or by appointment)

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, winter and regular 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 with the registration package. A list of miscellaneous fees is included in Table I.

Students should make special note of the registration deadlines contained in the calendar on pages 1 & 2. 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.

Mail Registration

For the convenience of students, registration material and non-cash payments are accepted by mail. Registrations with cheques post-dated to August 30, 1996 will also be accepted. Please allow sufficient time to ensure that material sent by mail is received on or before the specified dates.

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, negotiable cheque, or money order.
- If payment is by cheque and returned by the bank as non-negotiable, there will be an additional fee of \$20.00 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.
- Invoices 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.

- Cash, certified cheque, or money order is required for payment of any account in arrears beyond the current academic year.

Admission Deposit

A non-refundable deposit of \$200 is required by all new students in Specified Limited Enrolment Programmes within three weeks of receiving an offer of a place at Dalhousie. (Please refer to Table II for the definition of Specified Limited Enrolment Programmes.) Further information on the regulations governing the refund of admission deposits is contained in the section below on Changes, Refunds and Withdrawals (page 20).

Foreign Students

Students registering at Dalhousie University who are not Canadian citizens or permanent residents are required to pay an additional fee of \$2,700 referred to as a "Differential Fee". Students registering in their current programme which commenced prior to 1994-95 Academic year will pay \$1,700. There is a proportionate charge for part-time foreign students. The differential fee is payable with the first instalment of fees each year.

Academic Fees

Academic fees are comprised of:

- (a) the tuition fee;
- (b) an incidental fee comprised of Student Union, Society and Athletic fees.
- (c) auxiliary fee (specified Music and/or Theatre classes, Diploma in Costume Studies programme, and Graduate Studies programmes in management studies).
- (d) co-op fee if applicable.

The complete 1996-97 academic fee schedule is not yet available. For your information the 1995-96 fee schedule is included in Table V. Once all fees are approved for 1996-97 the complete fee schedule will be made available. The official schedule will be included in the registration package.

For purposes of this section of the Calendar, a full-time undergraduate student is one who is registered for the regular session for more than three full credits (21 credit hours or more), or, if registered for only one term, for more than three one-half credits.

Changes from full-time to part-time and part-time to full-time status often have cost implications beyond what the student expects (see table VI). Any part-time student planning to add classes, or full-time students who are

considering part-time status (dropping classes) should consult with Student Accounts to determine the impact these changes will have on the fees assessed.

Students registered in more than one programme are required to pay separate academic fees for each programme. Full-time students taking classes not credited towards their degree or programme will be required to pay additional fees for these classes.

Registration

A student is considered registered only after financial arrangements have been made with Student Accounts.

All students:

- a) must submit to the Student Accounts Office on or before the specified registration dates the first instalment of academic fees unless they are receiving a scholarship, fellowship, Canada Student Loan, a fee waiver, or their fees are paid by external organizations;
- b) those holding external scholarships or awards paid by or through Dalhousie University must provide at registration documentary evidence of the scholarship or award;
- c) those whose fees are to be paid by a government or other agency must provide a signed statement from the organization at registration. (Please note: upon request, account status information will be made available to the sponsor.)
- d) those whose fees are to be paid by Canada Student Loan must indicate 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 19. A late registration fee and/or interest will be charged after September 19. Failure to comply or arrange an alternative method of payment may result in deregistration).
- e) those whose fees are paid by a Dalhousie University staff tuition fee waiver must present the approved waiver form and pay applicable incidental fees at time of registration.
- f) those who are Canadian citizens or permanent residents, 65 years of age or over and enrolled in an undergraduate degree programme will have their tuition fees waived but must pay applicable incidental fees.

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 to 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. Students in Graduate and Professional programmes wishing to withdraw should initiate formal action to withdraw at the office of the appropriate Dean.

Payment of Academic Fees

The complete 1996-97 academic fee schedule is not yet available. The Academic Fee Schedule shows the 1995-96 approved fees. Once all fees are approved for 1996-97 the complete fee schedule will be made available. The official schedule will be included in the registration package.

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. (page 20)

- a) Should students prefer to pay in two instalments, the first instalment is due on or before August 30 and the second instalment is due January 31, or the first subsequent working day.
- b) Students registering for either the fall or winter terms only must pay fees on or before August 30 and January 20, respectively.
- c) Scholarships or awards paid by or through Dalhousie University will be applied to tuition and residence fees.
- d) When Canada Student Loan, Provincial Loan or co-payable bursary is presented at the Student Accounts Office, any unpaid academic, residence fees and/or Temporary Loans will be deducted.
- e) Fees cannot be deducted from salaries paid to students who are employed at Dalhousie University.
- f) Any payments received will first be applied to overdue accounts.

Audit Classes

Full-time students may audit classes which are related to their programmes without additional fees. Part-time students auditing a class pay one-half of the regular tuition. 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 their registration to 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 on or before the last day for withdrawal without academic penalty. 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 instalment of fees.

Changes, Refunds and Withdrawals

Please consult Student Accounts for all financial charges and the Office of the Registrar for Academic regulations. Refer also to the Academic Fees section (Table III, IV and VI.)

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

NON-ATTENDANCE AT CLASSES DOES NOT CONSTITUTE WITHDRAWAL.

- a) Written notification of withdrawal must be submitted to the Office of the Registrar.
- b) 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.)
- c) No refunds will be made for 30 days when payment has been made by personal or foreign cheque.
- d) A student who is dismissed from the University for any reason will not be entitled to a refund of fees.
- e) Refunds will not be made to a student who has paid an admission deposit for a Specified Limited Enrolment Programme.
- f) In any Specified Limited Enrolment Programme (See Table II and IV), the first instalment of fees is not refundable after the first day of classes except on compassionate grounds (eg. illness).
- g) Refunds will be made to the Bank if a student has received a Canada or Provincial Student Loan.
- h) Refunds will be prorated on fees paid by Scholarships and/or Fee Waiver.
- i) 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 19 will be charged full incidental fees and may receive a refund of tuition fees on a proportional basis. Please refer to Tables III and IV.

A student withdrawing or changing a class in January will be charged the full first instalment 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 tuition fees for the remainder of the session.

- No refunds will be made to students withdrawing or changing classes after January 31.

Dates for Refund - First Term

A student withdrawing or changing a class after September 19 will be charged full incidental fees and may receive a refund of tuition fees on a proportional basis. Please refer to Tables III and IV.

- No refunds will be made to students withdrawing or changing classes after October 18.

Dates for Refund - Second Term

A student withdrawing or changing a class after January 20 will be charged full incidental fees and may receive a refund of tuition fees on a proportional basis. Please refer to Tables III and IV.

- No refunds will be made to students withdrawing or changing classes after February 17.

Dates for Refund - Commerce Co-op Summer session

A student withdrawing after May 17 will be charged the BComm Co-op fee and may receive a refund of tuition on a proportional basis. Please contact Student Accounts for complete details.

- No refunds will be made to students withdrawing after June 24.

Delinquent Accounts

Accounts are considered delinquent when the balance of fees has not been paid by September 19 (January 20 for students registered for the winter term only). Where payment in two instalments is permitted, the remaining balance is due January 31 or the first subsequent working day.

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 0.98% (11.75% 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 and Dalplex. 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 deregistered.

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 graduation the date is September 1.

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 instalment of fees from a Canada Student Loan should apply to their 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. Please contact the appropriate provincial office to determine eligibility as well as course load requirements. A late fee of \$50.00 will apply if the loan is negotiated after September 19, 1996.

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. Please contact the appropriate provincial office to determine eligibility as well as course requirements for Provincial Bursaries. For more information on Student Loans, Bursaries or Scholarships inquiries should be directed to the Registrar's Office - Information Centre located on the first floor of the Arts & Administration building, Room 123. Telephone (902) 494-6557.

Income Tax Credit from Academic Fees

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

A special income tax certificate will be available at Student Accounts annually no later than February 28. Replacement tax receipts or photocopies will be provided within 2 weeks of the request for a charge of \$5.00 per receipt. On request, a replacement tax receipt will be provided within 2 days for a charge of \$10.00 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 \$15.00 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 wilful damage regardless of whether or not a deposit is required.

Athletic Fee

Membership at Dalplex for 1996-97 is included in the athletic fee for all full-time students at Dalhousie and all part-time students at Dalhousie taking a minimum of three full credit classes. 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

See Fee Distribution details below.

1995 - 96 Student Union Fee

(For Information Only)

	Full-Time (3 credits or more)
General Income	
General Operations	\$41.15
Student Health Plan Insurance	51.00
Contributions to DSU	
Capital Campaign	15.00
CKDU - FM	9.00
Yearbook Fee	5.00
Canadian Federation of Students' Membership	4.00
Students' Union of Nova Scotia Membership	2.60
Gazette	4.00
South African Trust Fund	1.00
WUSC	.50
Women's Centre Fund	2.00
Accessibility Fund	1.75
TOTAL	\$192.00

Table I

Miscellaneous Fees - Quick Reference

<u>Fees</u>	<u>Amount</u>	<u>Payable At</u>
Replacement Tax Receipt	\$5.00	Student Accounts
Priority Replacement Tax Receipt	\$10.00	Student Accounts
Late Registration	\$50.00	Student Accounts
Reinstatement Fee	\$50.00	Student Accounts
Returned Cheque	\$20.00	Student Accounts
Distance Education Fee, per class	\$100.00	Student Accounts
Admission Deposit	\$200.00	Student Accounts
Change of Audit to Credit	\$25.00	Student Accounts
Confirmation of Fee Payment	\$5.00	Student Accounts
Leave of Absence Fee	\$25.00	Graduate Studies
Application Fee	\$35.00*	Registrar
Confirmation of Enrolment	\$5.00	Registrar/Graduate Studies
Late Graduation Application	\$50.00	Registrar
Letter of Permission per class - maximum \$50.00	\$10.00	Registrar
Reassessment Fee	\$25.00	Registrar
Replacement ID	\$15.00	Registrar
Transfer Credit Assessment	\$25.00	Registrar
Transcript	\$5.00	Registrar
Priority Transcript Fee	\$15.00	Registrar
FAX Fees:		
Metro	\$5.00	Registrar
Canadian	\$10.00	Registrar
International	\$15.00	Registrar
Residence Application Fee	\$25.00	Residence

*Except for the following programmes which require payment of a \$55.00 application fee: Occupational Therapy, Pharmacy, Physiotherapy, Recreation, Social Work; Diploma programmes in Meteorology, Outpost and Community Health Nursing, and Health Services Administration; and all programmes in the Faculties of Medicine, Dentistry (including Dental Hygiene), Law, and Graduate Studies.

Table II

Specified Limited Enrolment Programmes:

- Master of Business Administration
- Master of Environmental Studies
- Master of Library and Information Studies
- Master of Public Administration
- All programmes in the following faculties:
 - Faculty of Dentistry
 - Faculty of Law
 - Faculty of Medicine
 - Faculty of Health Professions

Table III

Fee Refunds (Withdrawals)

All Faculties (except Specified Limited Enrolment Programmes, see Table IV), including Graduate Studies

Student Union Fee: Non-refundable after September 19 (Second Term January 20)

Athletic Fee: Non-refundable after September 19 (Second Term January 20)

Society Fee: Non-refundable after September 19 (Second Term January 20)

BComm and Science Co-op Fees: Non-refundable after September 19 (Second Term January 20)

Distance Education Fee: Non-refundable after September 19 (Second Term January 20)

Differential Fee: Non-refundable after November 30

Tuition and Auxiliary Fees: As follows:

Withdrawal Date	Regular Session	Graduate Students	Full-Time & Thesis, 1st Term	Full-Time Thesis, 2nd Term	Part-Time Students ³		
	Full-time ¹	Except Thesis Term	Only ²	Only ²	A Class	B Class	R Class
	Up to Sept 19	100%	100%	100%	100%	100%	100%
Sept 20 - Oct 18	85%	85%	67%	100%	67%	100%	85%
Oct 19 - Nov 8	70%	70%	0%	100%	0%	100%	70%
Nov 9 - Dec 31	50%	50%	0%	100%	0%	100%	50%
Jan 1 - Jan 20	40%	40%	0%	100%	0%	100%	40%
Jan 21 - Jan 31	40%	40%	0%	67%	0%	67%	40%
Feb 1 - Feb 17	0%	0%	0%	67%	0%	67%	0%
After Feb 17th	0%	0%	0%	0%	0%	0%	0%

- ¹ Applicable to undergraduate students registered in regular session (Sept - Apr) taking more than three credits (21 credit hours or more).
- ² Undergraduate students registered in one term only taking more than three one-half credit classes (more than 9 credit hours). Graduate students registered as "Thesis Only" for one term.
- ³ Applicable to undergraduate students registered in regular session (Sept - Apr) taking less than three and one-half credit classes (less than 21 credit hours). Undergraduate students registered in one term only taking three one-half credit classes or less (9 credit hours or less).

Table IV

Fee Refunds - Specified Limited Enrolment Programmes

Admission Deposit: Non-refundable

Student Union Fee: Non-refundable after September 19 (Second Term January 20)

Athletic Fee: Non-refundable after September 19 (Second Term January 20)

Society Fee: Non-refundable after September 19 (Second Term January 20)

Tuition and Auxiliary Fees: As follows:

Withdrawal Date	Regular Session	First Term Only	Second Term Only
Up to September 5	100%	100%	100%
September 6 - January 2	40%	0%	100%
January 3 - January 31	40%	0%	0%
After Jan. 31	0%	0%	0%

Table V - Academic Fees

The 1996-97 academic fee schedule is not yet available. In order to provide some indication of the fee requirements, the schedule below shows the 1995-96 fees. Once fees are approved for 1996-97, a complete schedule showing total academic fees and the minimum instalments will be made available. The official schedule will be included in the registration package.

	For information only 1995-96 figures				For information only 1995-96 figures			
	Tuition	Athletic	DSU fee	Society	Tuition	Athletic	DSU fee	Society
LAW								
Full-time	4,320	55	132	46				
Part-time (4) see examples below								
F class - 6 credit hours	870	-	30	-				
R Class - 4 credit hours	580	-	20	-				
A or B Class - 3 credit hours	435	-	15	-				
Legal Aid Clinic (3)	1,815	55	132	46				
Term after Legal Aid (3)	2,305	55	132	46				
LLM	4,485	55	132	24				
JSD	4,685	55	132	24				
Medicine								
MD	4,725	55	132	30				
Postgrad Interns & Residents	1,125	55	-	-				
Dentistry (3)								
DDS (1)	4,725	55	132	70				
Masters - Oral Surgery	4,895	55	132	24				
Dental Hygiene (2)	3,730	55	132	35				
Graduate Studies								
Arts & Social Science								
Doctorate								
Full-time	3,430	55	132	24				
Masters								
Full-time	3,260	55	132	24				
Part-time	1,090	-	60	12				
Management (3)								
Masters (except MBA and GDPA) (3)								
Full-time (3)	3,645	55	132	24				
Part-time (3)	1,215	-	60	12				
Master of Business Administration (3)								
Full-time (3)	3,645	55	132	35				
Part-time (3)	1,215	-	60	15				
Graduate Diploma in Public Administration								
Full-time	3,295	55	132	24				
Part-time	1,100	-	60	12				
Science (including Interdisciplinary Studies)								
Doctorate								
Full-time	3,920	55	132	24				
Master's								
Full-time	3,750	55	132	24				
Part-time	1,250	-	60	12				
Pharmacy & Human Communication Disorders								
Doctorate								
Full-time	4,330	55	132	24				
Master's								
Full-time	4,360	55	132	24				
Part-time	1,455	-	60	12				
Master of Social Work								
Full-time	3,635	55	132	23				
Part-time	1,210	-	60	13				
Physical Education, Leisure Studies, Health Services Administration, Community Health and Epidemiology, Nursing								
Master's								
Full-time	4,020	55	132	24				
Part-time	1,340	-	60	12				
Thesis Only - All Programmes								
Full-time	890	55	132	24				
Part-time	890	-	66	12				
Full-time Term (7)	445	55	132	24				
Part-time Term (7)	445	-	66	12				
Master of Marine Management								
Full-time	3,295	55	132	24				
Part-time	1,100	-	60	12				
Education								
Doctorate								
Full-time	3,805	55	132	24				
Masters								
Full-time	3,685	55	132	24				
Part-time	1,210	-	60	12				
Qualifying Year, Visiting and Special Graduate Students								
Full-time	3,260	55	132	24				
Full-time Term	1,630	55	132	-				
Part-time								
3 Credit Classes	1,980	55	132	24				
1 Credit Class	660	-	30	-				
1/2 Credit Class	330	-	15	-				

For notes to Fee Schedule see next page.

Fees

Notes to Fee Schedule

- (1) DDS requires instrument fee and \$500 user fee payable with the first instalment.
- (2) Dental Hygiene requires user fee of \$250 payable with the first instalment of fees.
- (3) Students will pay student union, society, and athletic fees only once during the academic term.
- (4) Law students taking less than 18 credit hours (Sept - Apr) tuition fees - \$145 per credit hour plus Student Union \$5 per credit hour.
- (5) Candidates with advanced standing admitted to special programmes in DDS and Dental Hygiene that meet Provincial Professional Qualifications are required to pay twice the tuition fee paid by students in the regular programme.
- (6) Tuition fee includes management studies auxiliary fee of \$350 for full-time students and \$115 for part-time students.
- (7) Approval required from department and Faculty of Graduate Studies.

Foreign Students - Students registering at Dalhousie University who are not Canadian citizens or permanent residents are required to pay an additional fee of \$2,700 referred to as a "Differential Fee". Students registering in their current programme which commenced prior to 1994-95 academic year will pay \$1,700. There is a proportional charge for part-time foreign students. The differential fee is payable with the first instalment of fees each year. Graduate Students please see Section 4.5 of the Graduate Studies Calendar to determine the number of years a student is required to pay the differential fee.

Health Insurance - foreign students 1996-97 rates
 Visa Students Single - \$ 350 Married - \$ 700

Audits - Students auditing a class pay one-half the regular tuition fee.

Changes, Refunds and Withdrawals - For all financial charges contact STUDENT ACCOUNTS, or please refer to Tables III & IV. Please note non-attendance at classes does not constitute withdrawal. Written notification of withdrawal is required. Refer also to Academic Fee section (page 24).

Table VI

Fee Adjustments (Class Changes)

Students contemplating a change in class activity should consider the financial implications as well as academic.

Please contact Student Accounts if you have any questions regarding changes, refunds or withdrawals.

Students changing to part-time² from full-time¹ will be assessed the same percentage of full-time fees as students withdrawing from the University. Please refer to the refund schedule (Table III) to determine the percentage. Fees for classes remaining will be assessed according to part-time fees less the percentage used to calculate the portion owing for full-time fees.

Part-time students² dropping a class will be assessed the same percentage as part-time students² withdrawing from the University. Please refer to the refund schedule (Table III) to determine the cost of classes being dropped. Additions are assessed according to the fee schedule.

- ¹ Applicable to undergraduate students registered in regular session (Sept - Apr) taking more than three credits (21 credit hours or more). Applicable to graduate students with full-time status.
- ² Applicable to undergraduate students registered in regular session (Sept - Apr) taking less than three and one-half credit classes (less than 21 credit hours). Undergraduate students registered in one term only taking three one-half credit classes or less (9 credit hours or less).

Residence Fees

Please note the following are general statements. Given the diversity of residence facilities, available practices vary slightly from locale to locale.

Applications for accommodation in all residences are accepted on the understanding that the student will remain for the whole academic session.

When students who have chosen to live in residence and have secured a room withdraw from residence before the end of the school year, there are serious financial penalties. Written notice to withdraw is always required by the Residence Co-ordinator or Fenwick Facilities Coordinator. Complete information on withdrawal from residence is available from the Residence Co-ordinator or Fenwick Facilities Coordinator and is detailed in the residence agreement to be signed by all residence students. No refund will be made to any resident who is dismissed for misconduct. Discretionary power in exceptional circumstances remains with the Director of Housing and Conferences or designate. Residence Application Forms will not be distributed until the student has been accepted by the University for the coming session. To be considered for accommodation, a completed Residence Application Form and the \$125.00 residence application fee and deposit must be received. All residents, new and returning, who have accepted a room assignment, will be required to pay a second deposit of \$200.00 by June 30 to reconfirm the assigned space. **Failure to make a second deposit by June 30 will result in automatic cancellation of room assignment.** Once the \$200.00 deposit is paid it (along with the \$125.00) is not refundable; it is our guarantee of your intention to live in residence.

Deposits may be made by cheque, bank draft, or money order in Canadian funds and payable to Dalhousie University. No reservations will be held on post-dated or "NSF" cheques. Deposits cannot be deducted from scholarships, fellowships, or similar awards.

Payment of Residence Fees

Payment may be made in full at registration, or for an extra charge of \$10.00, in two instalments. Scholarships may be applied to residence charges only after tuition fees for the full session are paid. The first instalment must be paid in full by September 30. Interest at a monthly rate as set by the University will be charged on all accounts outstanding after September 30 and on any second instalment outstanding after January 31. At the time of printing the monthly rate of interest is 0.85% monthly (10.25% per annum). The student will not be permitted to register for another session until all accounts are paid in full. A student whose account is delinquent for more than 30 days will be denied university privileges including access to transcripts and records of attendance and Dalplex. The student will be reinstated upon payment of the fees outstanding, the arrears interest, and a \$50.00 reinstatement fee.

For Howe Hall, Eliza Ritchie Hall, Shirreff Hall and the Residence Houses fees are paid at the Student Accounts Office. For Fenwick Place and Glengary Apartments and Co-ed Apartment Units fees are paid at Fenwick Place.

Students should make an appointment as soon as possible with the Associate Director of Residence Life, Fenwick Facilities Coordinator, or the Supervisor of Student Accounts if they are having financial difficulties.

Regulations and Additional Charges

The room and board session is defined as being from the Wednesday in September before classes begin in the College of Arts and Science to the last day of regularly-scheduled examinations in the College of Arts and Science in April. Please note that, except at Fenwick Place, students must vacate the residence twenty-four hours after their last exam and that residences are closed over the Christmas holidays.

No reduction in the board charge will be made for meals not taken, except that a rebate of \$200.00 per month may be considered in the case of illness or other cause necessitating absence of four weeks or more.

In Fenwick Place the rental period is based on a 34-week period beginning on Labour Day. For more specific details on dates of semesters, students should contact the accommodations office at Fenwick Place.

In all other cases, an additional fee is payable by all residents who are registered in a Faculty where the academic session commences before or continues after the session of the College of Arts and Science. Special arrangements are to be made with the Residence Co-ordinator or Fenwick Facilities Coordinator for accommodation for periods prior to or following the session as defined above.

RESIDENCE ROOM AND BOARD RATES 1995/1996 ⁽¹⁾

The residence term for Howe Hall, Shirreff Hall, Eliza Ritchie Hall, Glengary Apartments and the Residence Houses cover the time period from the Wednesday in September before classes begin in the College of Arts and Science to the last day of regularly-scheduled examinations 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; and second semester - January 1, 1996, to April 30, 1996. Those students wishing to stay beyond the residence term may do so for a daily or weekly rate. Please contact the appropriate residence for details.

The student has two alternatives for payment after the first and second deposit have been paid:

- 1) Pay the balance in full by September 30th.
- 2) Pay the balance in two equal parts, first half by September 30th and the second half by January 31st, plus a \$10 service charge.

	FIRST DEPOSIT AND APP. FEE ³	SECOND DEPOSIT AT JULY 15 ³	BALANCE IF PAID IN FULL BY SEPT. 30	OR	PAY IN PART BY SEPT. 30	BALANCE DUE BY JAN. 31	TOTAL ⁴ (Includes \$10 Service Charge)
Howe Hall ²							
Single Room	\$125	\$200	\$4,590	Or	\$2,295	\$2,305	\$4,925
Double Room	\$125	\$200	\$4,240	Or	\$2,120	\$2,130	\$4,575
Shirreff Hall and Eliza Ritchie Hall ²							
Single Room	\$125	\$200	\$4,590	Or	\$2,295	\$2,305	\$4,925
Double Room	\$125	\$200	\$4,240	Or	\$2,120	\$2,130	\$4,575
Residence Houses							
Single Room	\$125	\$200	\$2,560	Or	\$1,280	\$1,290	\$2,895
Double Room	\$125	\$200	\$2,190	Or	\$1,095	\$1,105	\$2,525
Glengary Apartments							
Single Room	\$125	\$200	\$2,565	Or	\$1,285	\$1,290	\$2,900
Double Room	\$125	\$200	\$2,215	Or	\$1,110	\$1,115	\$2,550
Bachelor Apts.	\$125	\$200	\$3,660	Or	\$1,830	\$1,840	\$3,995
Fenwick Place ⁴							
2-Person (2-Bdrm)	\$125	\$200	\$3,385	Or	\$1,690	\$1,695	\$3,710
3-Person (3-Bdrm)	\$125	\$200	\$3,660	Or	\$1,825	\$1,835	\$3,985
4-Person (2-Bdrm)	\$125	\$200	\$2,700	Or	\$1,350	\$1,350	\$3,025

Meals Only - Special Rate For Session

3 Meals Per Day	\$1,945
2 Meals Per Day	\$1,880

Meals only plans may be purchased from the Dalhousie Food Services Group office, Student Union Building.

Please note the following:

- (1) The above fees will be superseded on July 1, 1996, when the 1996/1997 residence fee schedule will be published.
- (2) Howe Hall, Shirreff Hall and Eliza Ritchie Hall rates include a residence council membership fee (\$30) and the cost for a 21-meal plan per week. If the 14 meal plan option is chosen, the rates will be reduced by \$65.
- (3) For all residences the prepaid deposit of \$125 includes a \$25 non-refundable application fee.
- (4) At Fenwick Place \$100 of the \$125 prepaid is a damage deposit. See application form for details. The \$10 service charge is not applicable.
- (5) The second deposit due on June 30 is a \$200 non-refundable deposit to confirm the room.

University Regulations

General

1. The Senate is charged with the internal regulations of the University, including all matters relating to academic affairs and discipline, subject to the approval of the Board of 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 on the specific recommendation of the admissions committee of the relevant Faculty or School, which shall take into account all aspects of the applicant's preparedness for the class or programme involved, and which may attach such conditions to the applicant's admission as the committee judges appropriate.
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 who change their name while attending Dalhousie must provide proof of name change to the Registrar's Office.
6. Students taking classes in another Faculty as part of an affiliated course of study 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.
7. In the interests of public health in the University, students are encouraged to have a tuberculin test. This is compulsory for Dentistry, Dental Hygiene, Physiotherapy and Nursing students. Facilities for testing are arranged by the University Health Services.
8. 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 on a student's request to other universities, or to business organizations, etc.
9. Students withdrawing voluntarily from the University should consult the individual faculty regulations and the Fees section of this Calendar.
10. 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.
11. 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 degree/ diploma is to be mailed. Students whose accounts are delinquent on May 1 will not receive their degree/ diploma parchment nor their transcripts. For October graduation the date is September 1.
12. 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.

Official Examination Regulations

1. Candidates will not be admitted to the Examination Room more than thirty 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.

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.

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". The University will not release copies of transcripts if students owe monies to the University.
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

A University should epitomise the quest for intellectual honesty. Failure to measure up to the quest for such a standard can involve either academic offenses 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.

Examples of Academic Offences

1. 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.

2. 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.

3. 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.

4. 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).

5. 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.

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 offenses, see examples above, (as delegated to the Senate Discipline Committee), as well as with certain other offenses that are incompatible with constructive participation in an academic community.
3. 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.
4. 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.

Senate Discipline Committee

Composition

The Committee will consist of two representatives of the faculty of the University, two representatives of the student body, and a chairperson who is a member of the faculty of the University. A student who is a member of the Student Discipline Committee may not at the same time be a member of the Senate Discipline Committee.

Terms of Reference

1. The Senate Discipline Committee is vested with original jurisdiction to consider all complaints or allegations respecting offenses or irregularities of an academic nature, including those relating to admissions procedures and evaluation procedures, and to impose penalties in cases where the Committee finds an offence or irregularity has occurred.
2. The Senate Discipline Committee is vested with the power to discipline a student who, before or during the course of the disciplinary process involving him or her but prior to adjudication, has:
 - (i) been compelled to withdraw academically;
 - (ii) chosen to withdraw from the University prior to being disciplined, or
 - (iii) chosen not to register at the University.
3. The Senate Discipline Committee shall assume jurisdiction when a complaint or allegation respecting offenses or

irregularities of an academic nature are brought to its attention by the Secretary of Senate.

4. The Senate Discipline Committee is required to evaluate the evidence of innocence or guilt of an accused student from the premises that the more senior the student in terms of chronological age, or year of registration at and/or extent to other exposure to university rules and regulations (whether at Dalhousie University or elsewhere), the less credible are assertions of ignorance or innocence and the stronger is the case for a more severe penalty than would be imposed on a less senior student.
5. The Senate Discipline Committee shall report its findings and any penalty imposed to the Secretary of Senate. The Secretary of Senate shall forward a copy of the report to the person or persons whom the Senate Discipline Committee has found to have committed the offence or irregularity, and if the member concerned be other than a student, a copy shall also be sent to the Vice-President (Academic).
6. From the decisions of the Senate Discipline Committee, an Appeal lies to the Senate on such grounds as it determines is appropriate.
7. Where a Faculty, such as Health Professions, wishes to dismiss a student for unethical conduct or unfitness for the Health Professions or any one of them, there is to be no appeal to the Senate Discipline Committee. Instead, there should be an appeal to a Senate ad-hoc committee.

Penalties

The range of penalties which may be imposed by the Senate Discipline Committee be circumscribed only by the requirement that such penalty or penalties be of an academic nature and, without restricting the generality of the foregoing, may include any one or more of:

- (i) notation, for a period of one (1) or more years not exceed five (5) years, on the offender's transcript of the fact of discipline;
- (ii) repeat of the assignment that triggered the discipline;
- (iii) a failing grade or mark on assessment in the piece of work triggering the discipline;
- (iv) failure of the class or seminar or programme;
- (v) failure of the academic year;
- (vi) suspension for an academic term or for the academic year (to a maximum suspension, of three (3) academic years);
- (vii) expulsion from the University;
- (viii) loss of an existing and/or continuing scholarship, or loss of eligibility to receive or to maintain scholarships or prizes or bursaries; and
- (ix) removal from the Dean's List.

Please note: Transcripts will not be issued for a student while a Senate Discipline case is pending.

Code of Student Conduct

A. Definitions

1. In this Code, the word "premises" includes lands, buildings and grounds of the University, or other places or facilities used for the provision of the University's programs or services or for University-approved events and activities.
2. In this Code, "student" means a person:
 - (i) engaged in any academic work or placement which leads to the recording and/or issue of a mark, grade or statement of performance by the appropriate authority in the University or another institution; and/or
 - (ii) registered in, enrolled in, or attending any course or class, or otherwise participating as a learner in any activity which entitles the person to the use of a University library, library materials, library resources, computer facility or dataset.
3. In this Code, the words "Dalhousie University" refer to Dalhousie University and include any institutions affiliated with it, where such inclusion has been agreed upon by the University and the affiliated institution, with respect to the premises, facilities, equipment, services, activities, students and other members of the affiliated institution.
4. Unless otherwise stated, a student will only be liable for conduct that she or he knew or ought reasonably to have known would constitute conduct prohibited under this Code.
5. Nothing in this Code shall be construed to prohibit peaceful assemblies and demonstrations, or lawful picketing, or to inhibit freedom of speech.

B. Offences

The following conduct shall be deemed to be an offence under this Code, when committed by a student of Dalhousie University, provided that such conduct:

- (i) occurs on premises of Dalhousie University or elsewhere in the course of activities sponsored by Dalhousie University or by any of its faculties, schools or departments; and
- (ii) is not specifically assigned to another disciplinary body within the University as in the case of sexual harassment as described in the Policy and Procedures: Sexual Harassment; and
- (iii)
 - (a) has not already been dealt with as failure to meet standards of professional conduct as required by a college, faculty or school; or
 - (b) is not subject to the disciplinary authority of the Dalhousie Student Union; or
 - (c) is not subject to action under a residence discipline policy unless some non-residence University interests are deemed to be involved, in which case the President may specifically authorize proceedings under this Code.

1. Offences Against Persons

- (a) No student shall assault another person sexually or threaten any other person with sexual assault.
- (b) No student shall otherwise assault another person, threaten any other person with bodily harm, or cause any other person to fear bodily harm.
- (c) No student shall create a condition that unnecessarily endangers the health or safety of other persons.
- (d) No student shall threaten any other person with damage to such person's property, or cause any other person to fear damage to her or his property.

2. Disruption

No student shall undertake by action, threat or otherwise, to disrupt, obstruct or adversely affect any activity organized by Dalhousie University or by any of its faculties, schools or departments, or the right of another person or persons to carry on their legitimate activities, to speak or to associate with others.

3. Offences Involving Property

- (a) No student shall take without authorization, mis-use, destroy or damage the property or premises of Dalhousie University, or property that is not her or his own, or information or intellectual property belonging to Dalhousie University or to any of its members.
- (b) No student shall deface the property of Dalhousie University.
- (c) No student shall possess the property of Dalhousie University, property in the custody of Dalhousie University, or property that is not her or his own, if the student knows that property to have been appropriated without authorization.
- (d) No student shall create a condition that unnecessarily endangers or threatens destruction of the property of Dalhousie University or of any of its members.

4. Unauthorized Use of University Facilities, Equipment or Services

- (a) No student shall use any facility, equipment or service of the University, or enter or remain on any premises, to which he or she does not have legitimate access, or contrary to the expressed instruction of a person or persons authorized to give such instruction, unless the student has good reason for doing so.
- (b) No student shall gain access to or use any University computing or internal or external communications facility to which legitimate authorization has not been granted. No student shall use any such facility for any commercial, disruptive or unauthorized purpose, or in any other way that is incompatible with the principles in the Guide to Responsible Computing.
- (c) No student shall mutilate, misplace, misfile, or render inoperable any stored information such as books, film, data files or programs from a library, computer or other information storage, processing or retrieval system.

5. Aiding in the Commission of an Offence

No student shall encourage or aid another student in the commission of an offence defined in this Code, or encourage or aid behaviour by a non-student which, if committed by a student, would be an offence under this Code.

6. Alcohol and Drug Use

No student shall contravene the Liquor License Act of Nova Scotia or a provision of the Campus Alcohol Policy, nor shall any student possess, use or sell a drug to which access is restricted by the Narcotics Control Act.

7. False Information and Identification

- (a) No student shall knowingly furnish false information to any person or office acting on behalf of the University.
- (b) No student shall forge, alter or misuse any document, record or instrument of identification.

8. Unauthorized Possession of a Firearm or Weapon

No student shall possess a firearm or other weapon on the University premises without the specific written permission of the Chief of Security.

9. Contravention of University Regulations

When a rule, regulation or policy of the University prohibits or proscribes certain conduct but does not provide any penalty for breaches of the rule, regulation or policy, breaches shall be dealt with under this Code.

10. Other

No student shall contravene any provision of the Criminal Code or any other federal, provincial or municipal statute on the premises of the University or in the course of the University's programs or services, or University-approved events or activities.

C. Procedures

1. Whenever possible and appropriate, reason and moral suasion shall be used to resolve issues of individual behaviour before resort is made to formal disciplinary procedures.
2. Any person may make a complaint against any student for misconduct. A complaint shall be prepared in writing and directed to the Vice-President, Student Services. Any complaint should be submitted as soon as possible after the event takes place. All complaints shall be presented to the accused student in written form.
3. The Vice-President, Student Services, or designate shall conduct an investigation to determine if the complaint has merit and/or if it can be disposed of informally by mutual consent of the parties involved on a basis acceptable to the Vice-President, Student Services. The Vice-President, Student Services, shall invite the President of the Student Union or his or her designate to participate in any attempts to resolve the matter informally. If an informal disposition of the complaint results, such disposition shall be final and there shall be no subsequent proceedings.

34 University Regulations

4. If the complaint cannot be resolved informally through the procedures described in section 3, or if in the judgment of the Vice-President, Student Services, it is not appropriate for the complaint to be so resolved, the Vice-President, Student Services, shall refer the complaint to the Senate Discipline Committee for a formal hearing.
5. Hearings shall be conducted by the Senate Discipline Committee according to procedures determined by the Committee.
6. The President or designate shall appoint a person to present the complaint.
7. If a student fails to appear at a hearing, the hearing may proceed, provided that the student has been given adequate notice. Except in the case of a student charged with failing to obey the summons of the Committee or University official, no student may be found to have violated the Student Code solely because the student failed to appear before the Committee. In all cases, the evidence in support of the complaint shall be presented and considered.

D. Sanctions

1. In each case in which the Senate Discipline Committee determines that a student has violated the Student Code, the sanction(s) shall be determined and imposed by the Committee.
2. The following sanctions may be imposed upon any student found to have violated the Student Code:
 - (a) **Warning**—A notice in writing to the student that the student is violating or has violated institutional regulations.
 - (b) **Probation**—A written reprimand for violation of specified regulations. Probation is for a designated period of time and includes the probability of more severe disciplinary sanctions if the student is found to be violating any institutional regulation(s) during the probationary period.
 - (c) **Loss of Privileges**—Denial of specified privileges for a designated period of time.
 - (d) **Fines**—Previously established and published fines may be imposed.
 - (e) **Restitution**—Compensation for loss, damage or injury. This may take the form of appropriate service and/or monetary or material replacement.
 - (f) **Discretionary Sanctions**—Work assignments, service to the University or other such discretionary assignments that are considered appropriate by the Discipline Committee.
 - (g) **Conditions**—Conditions may be imposed upon a student's continued attendance.
 - (h) **University Suspension**—Suspension of the student from the University for a specified period of time, after which the student is eligible to return. Conditions for readmission may be specified.
 - (i) **University Expulsion**—Permanent separation of the student from the University.
3. More than one of the sanctions listed above may be imposed for any single violation.

4. Other than expulsion from the University and suspension for the duration of its effect, disciplinary sanctions shall not be made part of the student's academic record, but shall be kept on file in the Office of the Vice-President, Student Services, for use in the event of further breaches of this Code.
5. No student found guilty of an offence under this Code shall refuse to comply with a sanction or sanctions imposed under the procedures of this Code. Such refusal will constitute grounds for the imposition of additional sanctions.
6. The Committee may direct that a sanction be held in abeyance if a student's registration at the University is interrupted for any reason.

E. Interim Suspension

In the following circumstances, the President of the University, or a designate, may impose an interim suspension prior to the hearing before the Committee.

1. Interim suspension may be imposed only:
 - (a) to ensure the safety and well-being of members of the University community or preservation of University property; (b) to ensure the student's own physical or emotional safety and well-being; or (c) if the student poses a threat of disruption or of interference with the normal operations of the University.
2. During the interim suspension, students may be denied access to specified campus facilities (including classes) and/or any other University activities or privileges for which the student might otherwise be eligible, as the President or the designate may determine to be appropriate.
3. A student who is the subject of an interim suspension may request a hearing before the Senate Discipline Committee on the issue of the interim suspension itself. This request shall be submitted in writing, with reasons, to the Secretary of Senate. The Committee shall hear the matter, including submissions by the President or designate, within ten working days, and shall have the authority to confirm, negate, or alter the terms of the interim suspension.

F. Review

This Code and its application shall be reviewed three years after its approval by Senate, or earlier if deemed necessary.

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:
 - (a) using the computer access privileges of others without their explicit approval;
 - (b) accessing, copying, or modifying the files of others without their permission; and
 - (c) 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 programs 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 access privileges.

Final Dates for Receipt of Applications for Admission

Regular Session

College of Arts & Science	
Foreign Students (except USA).....	April 1
Students entering from Canada or USA ¹	June 1
Returning Dalhousie Students.....	August 15
Health Professions	
Pharmacy	February 1
BSc (Nursing), Outpost and Community Health Nursing, Occupational Therapy, Physiotherapy, Social Work	March 1
BSc (Nursing) for Post RN ^{1,7} , Recreation ^{1,7} , BSc (Kinesiology) ⁷ , and Health Education ^{1,7}	June 1
Management	
Foreign Students (except USA).....	April 1
Students entering from Canada or USA ¹	June 1
Internal Transfers⁵	
Fall term	September 27
Dentistry	
DDS.....	December 1
Dental Hygiene	February 1
Medicine	
MD	November 15
Post-Graduate	December 1
Law ¹	March 1
Graduate Studies ^{4,8} (except as below).....	June 1
Non-Canadian Students (Graduate Studies)	April 1
Law (Doctoral level)	January 1
Environmental Studies and Social Work	February 1
Human Communication Disorders	March 1
Nursing	April 1
Health Services Admin. and Law (Master's level)	May 1
Oral and Maxillofacial Surgery ²	June 1

Winter Term

Diploma/Outpost & Community Health Nursing for RN's	October 1
BA and BSc programmes only ³	November 15
BSc (Nursing) for Post RN only	November 15
Returning Dalhousie Students ⁶	November 15

¹ Late applications may be considered up to August 1.

² Of year preceding commencement of programme

³ Part-time and transfer students only

⁴ All supporting documentation must be submitted by the appropriate deadline.

⁵ For students currently registered at Dalhousie wishing to change degree programmes.

⁶ For students returning to BA or BSc programmes, or attending as Special Students in any faculty.

⁷ Effective for students applying for admission for September of 1996, the deadline will be April 1 for all programmes in the School of Recreation, Physical and Health Education, including Kinesiology.

⁸ For Graduate Studies Scholarship consideration applications must be complete (including application, fee and all supporting documents) by March 1.

Note: In order to be considered for entrance scholarships, applications for admission from high school students must be received by April 1.

Faculty of Graduate Studies

Location: Arts & Administration Building,
Room 314, Halifax, N.S. B3H
4H6

Telephone: (902) 494-2485

Fax: (902) 494-8797

E-mail: GRADSTUD@ADM.DAL.CA

Administrative Officers

Dean

P.J. Ricketts, BA (Nottingham), PhD
(Southampton)

Associate Dean

J. G. Rutherford, BA (Cornell), MS (Syracuse),
PhD (SUNY)

Secretary

F.D. Pacey, BSc (McG), PhD (Tor)

Office Administrator

C. Charles, BComm, MBA (Dal)

Admissions and Programme Officer

B.A. Maynard

Assistant to the Deans

J. O'Grady

Council and Standing Committees

The figure following a member's name is that individual's year of completion of term.

Faculty Council

B. Bednaraki, '98 French

J. Jarmon, '98 Sociology and Social Anthropology

C. Lazier, '98 Biochemistry

M. McConnell, '98 Law

F. Neumann, '98 Anatomy and Neurobiology

J. Smith, '98 Political Science

D. Anderson, '97 Agriculture

J. Armon, '97 Human Communication Disorders

N. Burford, '97 Chemistry

I. Fooladi, '97 Business Administration

R. Jamieson, '97 Earth Sciences

P. Keast, '97 Mathematics, Statistics, & Computing Science

J. Kwak, '97 Chemistry

J. Sawynok, '97 Pharmacology

F. Pacey, Secretary, '96 Chemistry

J. Ritchie, '96 Nursing

V. Li, '96 English

B. Rusak, '96 Psychology

T. MacRae, '96 Biology

D. Sutherland, '96 History

A. Ross (DAGS), Business Administration

W. Birdsall, University Librarian

J. G. Rutherford, Associate Dean

P.J. Ricketts, Dean (Chair)

(Each discipline to have only one elected member on Council at a given time.)

Academic Planning Committee of Council

J. Jarmon, '98 Sociology and Social Anthropology

M. McConnell, '98 Law

J. Armon, '97 Human Communication Disorders

J. Sawynok, '97 Pharmacology

J. Ritchie, '96 Nursing

B. Rusak, '96 Psychology

J. G. Rutherford, Associate Dean

P.J. Ricketts, (Chair) Dean

Curriculum Committee

B. Bednaraki, '98 French

I. Fooladi, '97 Business Administration

T.H. MacRae, '96 Biology

H. Melanson, Killam Library

J.G. Rutherford (Chair), Associate Dean

Dalhousie and Killam Scholarship Committee

R. Friedrich, '98 Classics

M. White, '98 Chemistry

N. Brett, '97 Philosophy

J. Parpart, '97 History

M. Kelly, '96 Pharmacology

C. Stutard, '96 Microbiology & Immunology

T. Scassa, '96 Law

J.G. Rutherford (Coordinating Chair), Associate Dean

Killam Postdoctoral Fellowship Committee

I. Folkins, '98 Physics

R. Klein, '98 Psychology

N. Treves, '98 French

M. Wright, '98 Pharmacy

B. Greenfield, '97 English

T.B. Grindley, '97 Chemistry

S. Srinivas, '97 Mathematics, Statistics, & Computing Science

S. Tillotson, '97 History

T. Shaw, '96 Political Science

W. Currie, '96 Anatomy & Neurobiology

C. Marfels, '96 Economics

J.G. Rutherford (Chair), Associate Dean

Research Development Fund Committee (Humanities & Social Sciences)

P. Barber, '98 Sociology and Social Anthropology

S. Wood, '98 Resource and Environmental Studies

S. Burns, '97 Philosophy (Co-chair)

E.J. Fee, '97 Human Communication Disorders

C. Marfels, '96 Economics

D. Middlemiss, '96 Political Science

M. Sandhu, '96 French

P.J. Ricketts (Co-chair), Dean

Research Development Fund Committee in the Sciences

M. Kelly, '96 Pharmacology

B. Mathieson, '96 Anatomy & Neurobiology

Chairperson, Biology
 Chairperson, Chemistry
 Chairperson, Earth Sciences
 Chairperson, Mathematics, Statistics & Computing Science
 Chairperson, Oceanography
 Chairperson, Physics
 Chairperson, Psychology
 J. G. Rutherford (Chair), Associate Dean

Killam Lecture Committee

D. Clairmont (1996 Organizer), '98 Sociology and Social Anthropology
 D. Stairs, '98 Political Science
 A. Coley, '97 Mathematics, Statistics and Computing Science
 F.B. Palmer, '97 Biochemistry
 Representative from Public Relations
 P.J. Ricketts (Chair), Dean

Panel of PhD Defence Chairs

D.R. Arnold, Chemistry
 A.J. Bowen, Oceanography
 D. Braybrooke, Professor Emeritus
 D.M. Cameron, Political Science
 M.S. Cross, History
 J. Fingard, History
 M.W. Gray, Biochemistry
 B.K. Hall, Biology
 D.A. Hopkins, Anatomy & Neurobiology
 R.M. Huebert, English
 R.A. Jamieson, Earth Sciences
 R. Klein, Psychology
 C.B. Lazier, Biochemistry
 K.W. Renton, Pharmacology
 H.A. Robertson, Pharmacology
 S.B. Sherwin, Philosophy
 A.C. Thompson, Mathematics, Statistics and Computing Science
 J.A. Wainwright, English
 J.H.M. Willison, Biology
 J.G. Rutherford, Associate Dean, Coordinator

Human Ethics Review Committee

R. Carlson, '98 Social Work
 B. Greenfield, '98 English
 F. Gregor, '98 Nursing
 H.J. Murphy, '98 Education
 D. Sutherland, '98 History
 N. Brett, '97 Philosophy
 B. Earhard, '97 Psychology
 J. Guernsey, '97 Human Communication Disorders
 J. Harbison, '97 Social Work
 J. McCabe, '97 Recreation, Physical and Health Education
 R. Sandhu, '97 Business Administration
 T. Sinclair-Faulkner, '96 Comparative Religion
 J. Manos, '96 Education
 J. McGlone, '96 Psychology
 D. Ginn, '96 Law
 J.G. Rutherford (Chair), Associate Dean

Academic Appeals Committee

A. Trillo, '98 Pathology
 D. Arnold, '97 Chemistry
 J.G. Morgan (Chair), '96 Sociology and Social Anthropology

Reserve Panel for Academic Appeals Committee

B. Archibald, '98 Law
 J. Baxter, '98 English
 B.E. Gesner, '98 French
 V. LoLordo, '97 Psychology

Studley Audio-Visual Ad Hoc Committee

G. Gabor, Math, Stats, & Computing Science, Faculty Representative

Faculty Regulations

General regulations and administrative procedures are outlined in this section. Please consult the *Faculty of Graduate Studies Manual on Policies, Governance and Procedure* for a complete treatment of these matters.

Detailed information about particular programmes will be found in the Departmental entries in the subsequent sections of this calendar or may be obtained from Departmental publications. It is the responsibility of graduate students to familiarize themselves with the regulations which govern the conditions of their programmes of study at the University. Except where noted, Faculty of Graduate Studies regulations take precedence over Departmental regulations.

1. Degree Programmes

Departments in the Faculty of Graduate Studies offer programmes leading to the following degrees and diplomas:
 Doctor of Philosophy (PhD)
 Doctor of Philosophy/Doctor of Medicine (MD/PhD)
 Doctor in the Science of Law (JSD)
 Master of Arts (MA)
 Master of Business Administration (MBA)
 Master of Business Administration/Bachelor of Laws (LLB/MBA)
 Master of Development Economics (MDE)
 Master of Environmental Studies (MES)
 Master of Health Services Administration (MHSA)
 Master of Health Services Administration/Bachelor of Laws (LLB/MHSA)
 Master of Health Services Administration/Master of Nursing (MN/MHSA)
 Master of Laws (LLM)
 Master of Library and Information Studies (MLIS)
 Master of Library and Information Studies/Bachelor of Laws (LLB/MLIS)
 Master of Marine Management (MMM)
 Master of Nursing (MN)
 Master of Nursing/Master of Health Services Administration (MN/MHSA)
 Master of Public Administration (MPA)
 Master of Public Administration/Bachelor of Laws (LLB/MPA)
 Master of Science (MSc)
 Master of Social Work (MSW)

Graduate Diploma in Public Administration (GDPA)

2. Admission Requirements

The following are minimum requirements for admission to the Faculty of Graduate Studies. Individual Departments may require additional qualifications of their candidates.

2.1 Diploma Programme

Candidates must hold a Bachelor's Degree from a university of recognized standing with an average of at least B.

2.2 Master's Degree Programme

Candidates must hold a Bachelor's Degree from a university of recognized standing with:

- (a) honours or the equivalent of honours standing as granted by Dalhousie University in the area in which graduate work is to be done, or
- (b) with at least four (4) undergraduate classes, or their equivalent (taken at a senior undergraduate level), in the area in which graduate work is to be done, with an average of at least B.

Only candidates with honours or the equivalent of honours standing may be admitted to the one-year programme, but they should expect to take 18-24 months to complete the degree requirements.

2.3 Doctoral Degree Programme

Candidates must hold:

- (a) a Bachelor's Degree from a recognized university with first class honours standing as granted by Dalhousie University, or
- (b) a Master's Degree, or its equivalent, from a recognized university.

Students normally take 4/5 years to complete the degree.

A few departments admit Bachelor's graduates to the Master's programme and recommend them for transfer to the Doctoral programme at the end of the first year.

2.4 English Language Competency

Candidates whose native language is not English must demonstrate their capacity to pursue a graduate-level programme in English before admission. The standard test is the TOEFL. The Faculty sets a minimum acceptable score of 580 for the TOEFL, but some programmes within the Faculty set a higher minimum.

Further information on the test may be obtained from Test of English as a Foreign Language, Box 899, Princeton, NJ, 08540, USA.

2.5 Conditional Admissions

If a conditional admission is approved, the condition (usually a language or other standardized test) must be met within the first year of the programme. If the condition is not met within 12 months of initial registration, the student's registration will be terminated.

2.6 Graduate Examination

Some departments require GRE or GMAT scores of applicants (check departmental listing).

2.7 Advanced Standing

Normally advanced standing cannot be given for classes already counted towards a previous degree but it can be used to reduce a master's programme from two years to one when the student's previous degree and standing markedly exceed the normal qualifications.

2.8 Students with Learning Disabilities

Dalhousie University is committed to providing equal educational opportunity and full participation for students with learning disabilities.

Students with diagnosed learning disabilities, who meet the current admission requirements for Dalhousie University may follow the current admission procedures. All new Dalhousie students will receive in the offer of admission a statement indicating that, if they have a learning disability or any other disability for which they will require accommodations or special assistance, they should contact the Advisor to Students with Disabilities, in order to ascertain the degree to which their needs can be met.

Students with diagnosed learning disabilities who do not meet the current admission requirements or who otherwise wish to have their learning disability considered may apply for special consideration as may all other students who have extenuating circumstances. Such requests for special consideration will be made to the appropriate admissions committee, acting in consultation with the Advisor to Students with Disabilities and other professionals as needed.

The following documentation must be submitted by students who wish to apply for special consideration:

1. Letter(s) of recommendation from the individual(s) most familiar with the applicant's academic performance and/or potential for success at university;
2. A written, oral or electronic statement from the student. In this brief personal statement, students should describe their learning disability, how this affected their grades and the type of assistance they would require while at Dalhousie University;
3. A current (within three years) psychological assessment based on standard diagnostic instruments administered by a registered psychologist documenting the presence of learning disabilities. If a current report is not possible, Dalhousie University may accept an earlier report along with a current opinion (i.e., within the past year) expressed in a letter by a registered psychologist (or individual supervised by a registered psychologist) that the student has a learning disability. This letter should specify the nature, extent and rationale for programme modifications or accommodations that were deemed appropriate in the student's last two years of schooling.

The policy on release of information about students with learning disabilities is consistent with the University Regulation on the Release of Information as detailed on page 30.

Note 1. Where self disclosure or prior arrangements have not been made with the University, Dalhousie is not liable to accommodate your special needs due to your disability.

Note 2. Appeals for students with learning disabilities will follow the usual procedures of the relevant Faculty at Dalhousie.

3. Application

Application for Admission forms may be obtained from the Registrar's Office, Dalhousie University, Halifax, NS, B3H 4H6, and should be returned to that office along with the application fee. All supporting materials should be sent directly to the Department to which the student is applying. In the case of Interdisciplinary PhD applicants, the supporting material should be sent to the office of the Faculty of Graduate Studies (FGS). Application deadlines for admission in September and, in exceptional circumstances, January, are April 1 for non-Canadian applicants and June 1 for applicants from Canada, except where special dates apply (see page 54). Applicants who wish to be considered for scholarship support are strongly advised to apply by January. All eligible Candidates should also apply for external awards. Consult with your chosen department to determine scholarship availability and eligibility.

Applicants who require a student visa and are not funded by the University or a known agency must provide proof of financial ability with their application.

4. Registration

4.1 Registration Procedures

Registration is the process by which the student officially establishes with the University (Office of the Registrar and Faculty of Graduate Studies Office) the degree programme (MA, MSc, PhD, etc.) and status (full-time, part-time, etc.) and pays the appropriate academic fees (Student Accounts). Both aspects of the process (programme/status and fee payment) must be completed before a student can be said to be registered. (Most fees may be paid in two (2) instalments.)

Canadian and continuing visa students may register by mail prior to the September deadline. Such students are reminded that they must inform the Graduate Studies Office and the Registrar's Office of their current address so that forms can be sent to them. Students who do not register by mail (including all new visa students) must register in person on or before the day specified by the Faculty. Continuing students who require an extension to their programme will not receive registration material until the extension has been officially approved by Graduate Studies. Students unable to register on or before the specified date should apply to the Faculty Office for permission to register. A late registration fee will be assessed. Any student who fails to register in September will not be allowed to submit a thesis or obtain any service whatsoever from the University during that academic year.

Note: Students in thesis programmes.

Registration material will not be mailed to returning (3rd year and later) students until the annual progress report form has been received in the Faculty of Graduate Studies Office.

Students who change their registration status by the addition or deletion of classes must report this to the Faculty Office. Changes in status, i.e. part-time to full-time or full-time to part-time, cannot be made after initial registration without permission of the Faculty of Graduate Studies. No changes will be allowed after 30th November. Withdrawal from a degree programme should be reported immediately to the Faculty Office since reimbursement of fees is calculated from the official date of withdrawal.

4.1.1. Late Registration: Students who do not register by mail and who fail to register on the appointed dates are liable to a penalty of \$50 to September 25, and \$100 to November 1. Students may register late only with FGS permission; requests should, therefore, be forwarded from departments to the Faculty Office. Late registrants (continuing students) must apply in writing to FGS outlining the reasons for the failure to register at the appropriate time. Late registration is normally permitted only in unavoidable circumstances such as illness or required absence for research at the beginning of the next academic year (in September), but in all cases the late registration fee must be paid. No registration for September start will be allowed after November 1 for continuing students. New students accepted to begin programmes in January must register no later than January 20.

4.1.2. Failure to Register: Students who fail to register within the appropriate deadlines will not be allowed to submit a thesis nor will they receive any services whatsoever from the University during that academic year.

4.1.3. Withdrawal: Students who withdraw from a programme should immediately inform the Graduate Coordinator for their programme. The immediacy of notification is important since the amount and speed of fee reimbursement is influenced by the date of withdrawal. A withdrawal is not official until it has been approved by the Faculty of Graduate Studies. Under no circumstances will the Faculty of Graduate Studies backdate a withdrawal notice. In any programme designated as a "Limited Enrolment Programme", the first instalment of the fee is not refundable except on compassionate grounds (e.g. illness).

4.1.4. Required Withdrawal: A student may be required to withdraw from a programme (e.g. resulting from course failure). In such cases, the student will be notified by the Faculty of Graduate Studies and informed of the reason for the required withdrawal.

4.2 Registration Categories

All students must register in September of each year of their graduate programme in one of the following categories:

4.2.1. Full-Time: A student who is carrying more than two and one-half (2 1/2) full-credit classes during the 12-month academic year or a student who has not yet completed the minimum number of years of full-time study required for a particular degree programme. A student may register full-time and hold a job simultaneously only if the job involves not more than 16 hours' work per week, including a maximum of 10 hours as a teaching assistant.

4.2.2. Part-Time: A Master's student who is carrying not more than two and one-half (2 1/2) full credit classes during the 12 months, September to August or a student who has not yet completed the minimum number of years of part-time study required for a particular degree programme.

4.2.3. Continuing: A student who has completed the programme requirements (that is, years of residence) but has not yet finished all the degree requirements (usually the thesis). A term fee may apply during the final year in programme if all requirements can be met in the first term. Written permission must be submitted by the department prior to final registration deadlines.

4.2.4. Qualifying (Master's only): A qualifying student is a person with a Bachelor's degree or its equivalent in whom a department has expressed an interest as a potential graduate student, but who is without a sufficiently strong academic background in a particular discipline to be enrolled directly in a Master's programme. Qualifying students can be full-time or part-time; take as little as one half class or as many as ten half classes chosen from undergraduate classes or a mixture of undergraduate and graduate classes. If advanced standing for the graduate classes is anticipated, this information must be specified in the comments section of the application form. Because it is a prerequisite, a qualifying programme cannot be used to reduce the length of a subsequent regular graduate programme. Qualifying students are not eligible for scholarship support and must apply for admission to the appropriate graduate programme in the usual way towards the end of the qualifying period. Qualifying students must pass all the classes and fulfil any other requirements in order to be considered for admission.

4.2.5. Special: Students are sometimes permitted to take a graduate class outside of a programme. Such students, who have not been admitted to a graduate programme, may normally take a maximum of two full-year classes (four half classes) with the permission of the class instructor and the appropriate graduate coordinator. Non-programme students must have records which meet the minimum entrance requirements for a graduate programme and are ineligible to apply if they have been rejected from the programme on account of academic standing. The registration category for non-programme students taking graduate classes is Special Student—Graduate Studies. Students who register in this category do so normally as an enrichment to their professional fields. Students who are trying to qualify for entry to a graduate programme should be encouraged to follow a different

route: either a qualifying programme, if eligible, or a programme of study as a Special Student in an undergraduate faculty.

4.2.6. Summer School: In cases where a student is required by his/her department to take classes offered only during summer school, the fee will be paid by the Faculty of Graduate Studies. One credit is allowed in each of the two Summer School sessions within the limits allowed by the student's programme. Recommendations should be submitted by the department before the beginning of the first summer session.

Registration dates for summer school appear in the almanac in the Graduate Studies calendar. Any student who is entitled to have the summer school fee waived must report to the Graduate Studies office before registration.

4.3 Leave of Absence

Students who need to take leave from their programme of study because of illness or a serious problem outside the student's control, may apply in writing through their department or school for a "leave of absence". If the department or school recommends to the Faculty of Graduate Studies that leave of absence be granted, and if the Faculty of Graduate Studies is also satisfied that the need is justified, such leave will be granted for a period of between four and twelve months commencing September 1 or January 1. An official leave of absence does not count towards time in programme. Students may not hold any Dalhousie Scholarships during a leave of absence.

Applications for leave of absence (normally limited to one leave period) must be made by August 31 for a leave commencing September 1 and December 20 for a leave commencing January 1. If the leave is for four or eight months, the fees will be pro-rated accordingly. Any refund of fees will be governed by university regulations, see Fees Section Table III. During a leave of absence a student cannot study elsewhere for credit at Dalhousie.

Please note: unexpected circumstances and emergencies can be accommodated through a suspension of programme but no fee rebate is possible in such cases.

A leave of absence not only frees you from the necessity of paying tuition fees, it also releases the university from the obligation to provide you with services. These include consultations with professors and student library privileges.

4.4 Maternity Leave

Maternity leave of four or eight months will be granted without prejudice to academic standing or eligibility for financial support. Any refund of fees will be governed by university regulations, see Fees Section, Table III. In exceptional circumstances, paternity leave of 4 months may be granted.

4.5 Readmission of students

A student who voluntarily withdraws or whose registration has lapsed may apply for readmission within ten years of initial registration. Readmission is not automatic because of the competition for places with incoming students. Readmitted students must

pay fees for the years they were not registered, at the current fee rate. Students in thesis programmes who have not maintained registration are normally required to have a satisfactory thesis in hand before they can be readmitted.

Students may be readmitted only once during the course of a programme. Application for readmission must meet normal September application deadlines.

4.6 Fees

Graduate students normally pay "programme fees" for fixed periods either as full-time or part-time students, followed by continuing fees until all requirements have been completed.

All graduate students must maintain their registration status at all times and pay all the required fees (programme and continuing fees). Failure to pay required fees will result in the cancellation of registration.

Full Time Graduate Students pay the programme fee for the periods stated below. The fee is based on the total programme years regardless of the number of formal classes. Payment is not by the class, unless specified.

- Bachelor's degree to Diploma: one year
- Bachelor's degree with Honours or equivalent to MA, MSc, MMM: one year; to MBS: two years
- Bachelor's degree without Honours to MA, MSc, MDE: two years
- Bachelor's degree to MSc (Human Communication Disorders): three years
- Bachelor's degree to MBA, MHSA, MPA, MLIS, MN: two years
- Bachelor's degree in Law to LL.M: one year
- Dental degree to MSc (Oral and Maxillofacial Surgery): three years
- Bachelor's degree with Honours to PhD: three years
- Master's degree to PhD or JSD (from LL.M): two years
- MBA (financial services) pay by class fee only.

Part Time Graduate Students pay the same programme fee as full-time students spread over a maximum of three part-time years of study for every full-time year, except for the LL.M degree where the maximum fee period for a one-year part-time programme is two years. If a part-time student completes the requirements for the degree before the normal full programme fees have been paid, the balance of those fees must be paid prior to graduation. Part-time students may take up to two and one-half (2 1/2) full credit classes in a 12 month academic year.

NOTE: Under the programme or continuing fee, students may take only those classes specified by the department as requirements for the degree.

Differential fees for non-Canadian Graduate Students must be paid for:

- Full-time Master's student (except Oral Surgery) - 2 years (or equivalent)
- Full-time Master's student Oral Surgery - 4 years
- Part-time Master's student - 6 years

- Full-time PhD student (following a Master's degree) - 3 years
- Full-time PhD student (following a Bachelor's degree) - 5 years

4.7 Identification Cards

Full-time, part-time and continuing students in a degree programme, will receive ID cards entitling them to University services.

4.8 Notification of Address

Students are required to keep the Faculty Office, the Registrar's Office, the Payroll Department (for students on funding) and their Department office up to date on changes of address. Notifications from the University will be sent to the most recent address possessed by these offices; students will be held responsible for complying with these notifications, and non-receipt of material because of failure to report a change of address will not excuse students from such responsibility.

5. Conflict of Interest

Faculty members and students are expected to declare any conflict of interest of a personal or financial nature which may influence explicitly or implicitly their participation in graduate programmes and graduate administration. In a small community such conflicts are sometimes unavoidable. It should nonetheless be possible to avoid conflict of interest in the following cases:

Members of FGS committees shall refrain from voting on matters pertaining to their own departments.

No elected committee member shall serve on an award or grant committee (i.e. scholarship, postdoctoral fellowship, research development fund) for more than two consecutive terms.

No faculty member shall evaluate in a teaching context or supervise the thesis or project of a student who is a daughter, son, spouse, partner or other close relative, or a faculty colleague in the same department.

No student or supervisor shall have a financial or family interest in the industry or business in which the student is pursuing his/her thesis research. If a student is employed by the company in which the research is being conducted or the student's research is marketable under terms of the supervisor's grant or contract used to provide support for the student, protection must be given to the student's contribution to the research by means of an appropriate contract, finalized before the research for the degree is commenced and signed by all parties involved.

No graduate student can teach a graduate class without completing all the preliminary programme requirements and then only with the permission of the Dean of Graduate Studies and on the understanding that the graduate student is not the "professor of record". The class must not include any of the graduate students' peers (e.g. a PhD student can teach only Master's students).

All students should read and be familiar with the University policies on Intellectual Honesty, as described in the University Regulations section of this Calendar.

5. Degree Requirements

6.1 Length of Programme

The normal upper time limits for the completion of degrees are:

- One-year Master's, full-time: three years
- One-year Master's, part-time: four years
- Two-year Master's, full-time: four years
- Two-year Master's, part-time: seven years
- PhD and JSD, full-time only: five years

A first extension of one year may be granted on the recommendation of the department. Requests for further one year extensions, to a maximum of two, must include a report of progress in the previous year together with a detailed plan and timetable for completion of the thesis. The third extension will state clearly that this is a FINAL extension. The student is then expected to defend and submit the thesis within that academic year. Under no circumstances can a student be registered in a programme for more than 10 years.

6.2 Requirements for the Master's Degree

Two types of Master's degree are offered: one based on research and the other on formal classes. The course of study for the research degree (MA, MSc, MDE, MRS, MN, LLM) may include graduate classes, seminars, preparation of fields of study, comprehensive examinations, demonstrations of foreign language proficiency, a thesis, and oral defence of the thesis. Requirements vary considerably from programme to programme, and even within the same programme, depending upon students' previous experience. A thesis option is available in the MLIS and MSW.

Non-thesis Master's programmes include the MBA, MHSA, MLIS, MMM, MPA, MSc (Human Communication Disorders) and MSW. A non-thesis option is available in the LLM. The number of classes varies and a project is often required.

6.3 Requirements for the Doctoral Degree

A candidate must demonstrate the ability to carry out research of high quality leading to an advance of knowledge in his/her area of study. In general, at least two (2) years must be spent in full-time study on the Dalhousie campus. The candidate's course of study will be initiated with the advice of a supervising committee of at least three (3) members. The thesis and course of study will be directed by a committee consisting of the research supervisor and at least two (2) other members. The course of study must include a preliminary examination (to be taken not less than one (1) year before submission of the thesis) and preparation and oral defence of a thesis. The course of study may include classes, seminars, comprehensive examinations, qualifying examinations, preparation of fields of study, demonstrations of foreign language proficiency, and any other requirements considered necessary for the clear demonstration of post-Master's-level comprehension, scholarship, and ability in the candidate's particular area of study.

Candidates for graduate degrees frequently have teaching duties which are remunerated through the undergraduate and professional

teaching faculties. The teaching duties of full-time graduate students must not exceed ten hours a week, including preparation.

6.4 Classes

Classes may be full or half year (full or half credit respectively) and may be designated by the candidate's committee as "Required" (pass mark B-) or "Ancillary" (normal undergraduate pass mark). Some departments cross-list postgraduate classes with senior undergraduate classes in which case the requirements for graduate students are more demanding than those for undergraduates.

6.4.1. Grading Policy: Faculty regulations stipulate that graduate students must achieve a minimum, or passing, grade of "B-" in all classes required as part of their degree programme. Any lower grade will be recorded as a failure. All instructors of graduate classes (i.e. designated 5000 and above), with the exception of a few classes for which a pass/fail grading scheme has been approved, will use the grading scheme A+, A, A-, B+, B, B-, FM (Marginal Failure), F.

6.4.2. Ancillary: Undergraduate classes which a department recommends as advisable additional background to the degree programme, but not specifically required for that programme, are termed ancillary classes and must be taken in a department other than the one in which the student is registered. The pass grade in these is the same as for the undergraduate faculty unless otherwise specified by the department. Ancillary classes must be listed on the Programme of Graduate Studies form but do not count towards the required number of classes.

6.4.3. Letters of Permission for Classes Taken Outside Dalhousie: Classes approved by the department (after examination of course descriptions) can be taken at other universities on "Letter of Permission" as part of the graduate degree programme provided the class is not available at Dalhousie. The maximum number of classes taken outside Dalhousie University shall normally be confined to 25 per cent of the class requirements except in those cases where a university-level agreement, governing specific cooperative arrangements, has been negotiated.

Graduate Students must be registered at Dalhousie and have paid appropriate fees before letters of permission will be approved.

Full and part-time students are eligible to apply to take a class on a letter of permission.

Dalhousie will normally pay for tuition for students to take classes by letter of permission that are offered at other Maritime universities, provided the class is not available at Dalhousie. Students who are required to take classes at other institutions outside the Maritimes will be considered on a case by case basis, e.g. if the class is a necessary component of a student's programme.

Students who wish to take classes at institutions within or outside the Maritimes for non-academic reasons may do so at their own expense.

Students who fail a class may not replace a class on a letter of permission.

6.4.4. Audits: Students may take one audit (equivalent of 6 credit hours) for each residency year of their formal programme. Audits must be listed on the Programme of Graduate Studies form. Only audits relevant to the student's programme will be approved. Audits will not be approved as part of a Qualifying programme.

6.4.5. Withdrawal From Classes: The final date for withdrawal from classes shall be: for 'A' classes - 25 October, for 'R' classes - 15 January, for 'B' classes - 12 February; for summer session classes - the mid-point of the class. For withdrawals before these dates, the class and the withdrawal is not recorded on the academic record. After these dates, the student is responsible for the content of the class and receives a grade for it. Students must complete the appropriate registration change form, which must be approved by the instructor concerned.

6.4.6. Incomplete classes: A student who fails to complete the required work for a particular class during the normal period of the class will receive a grade of "R." However, where circumstances warrant it, a grade of "Incomplete" may be assigned. Subsequent completion of the work following the end of the class may result in a change of grade by the class instructor, as long as the work is completed before the following deadlines:

Full Year classes: May 31, or 8 weeks after the end of the class, whichever is the longer period.

A or B classes: January 31/May 31, or 8 weeks after the end of the class, whichever is the longer period.

Summer classes: July 31 (Spring session) and September 1 (Summer session), or 4 weeks after the end of the class, whichever is the longer period.

After these deadlines, an "Incomplete" grade cannot be changed without permission of the Dean and will appear on the official academic record of the student. A late class drop is recorded as a failure. No "W" (withdrawal) category exists for graduate students.

The grade of "In Progress" may be used only to report thesis classes, research project classes, and those designated as "open to independent completion of study." Final submission of grades for project and independent study classes is April 30 for A classes and August 31 for B and R classes.

7. Examinations

7.1 Class examinations

Examinations will normally be the method of grade assessment in graduate classes. There are no supplementary examinations for Graduate Students.

Pass Standard:

- 1) Graduate students must achieve a minimum, or passing, grade of "B-" in all classes required of their degree programme, except those in programmes listed in 2) below. Students who receive an FM are not necessarily assured of readmission and students who receive an F can still be considered for readmission. Any lower grade will be recorded as a failure. A

student who fails to meet these requirements in any year is automatically withdrawn (academically dismissed) immediately from the programme. However, such a student may apply, in writing, to the department for readmission. Readmission to a programme must be approved in writing by the Faculty of Graduate Studies.

- 2) In the following programmes—Business Administration, Health Services Administration, Library and Information Studies and Public Administration—students are allowed one failing grade. However, no credit will be granted for the failing grade and the class must be repeated and a grade of "B-" or better obtained. (Failed core classes must be repeated, electives may be repeated or replaced at the discretion of the department).

7.2 Qualifying Examinations

The PhD qualifying examination/s (variously called qualifying, preliminary, comprehensive) should be taken in the second year of the programme or not later than the beginning of the third year. The examination may be oral, written, or both and covers subjects relevant to the general area of the candidate's research and teaching competency. Departments are required to set out their rules on PhD examinations in writing and to give a copy to each PhD student on or before registration and to the FGS office if the Departmental handbook provides insufficient detail. Failure to pass may result in dismissal. However, the student may be permitted at the discretion of the department to repeat the examination (once) within twelve months. The FGS Office must be notified on the successful completion of the qualifying process.

7.3 Comprehensive Examinations

These examinations in the candidate's area of study are part of both Master's and PhD degree courses of study in some Departments. Refer to particular departmental entries for details. It is the responsibility of Departments to make the necessary arrangements for these examinations.

7.4 Academic Accommodation for Students with Learning Disabilities

Students are expected to self-identify that they have a learning disability with the Advisor to Students with Disabilities as early as possible and preferably before the beginning of the term and to provide the Advisor with a current (within three years) psychoeducational report documenting the presence of a learning disability. They should make this initial contact during office hours and be prepared to discuss strengths, weaknesses and the types of accommodation that may be necessary.

The types of academic accommodation provided for students with learning disabilities may vary depending on the nature of the learning disability and the class content.

It is not unusual for there to be an initial trial and error period of finding the best way to evaluate a student's ability to demonstrate a mastery of class material.

The policy on release of information about students with learning disabilities is consistent with the University Regulation on the Release of Information as detailed on page 30.

Note: Where self-disclosure or prior arrangements have not been made with the University, Dalhousie is not liable to accommodate your special needs due to your disability.

8. Thesis Supervisors and Supervisory Committees

8.1 Qualifications of the Supervisor

A thesis supervisor or co-supervisor must be a member of the Faculty of Graduate Studies.

Depending on the unit, experience on supervisory or examining committees, teaching graduate classes, or acting as a co-supervisor may be necessary before undertaking the role of thesis or project supervisor.

Most natural science departments require faculty research funding as a criterion for supervision.

A doctoral student must be supervised by a faculty member with a PhD or its equivalent. Equivalency must be based on a faculty member's record of research activity. In the case of co-supervision, one of the supervisors must have a doctoral degree or its equivalent. In the event of a dispute over equivalency, the FGS Academic Planning Committee will be the final arbiter.

Members holding post-retirement appointments or active in research in retirement cannot take on new students.

8.2 Co-supervision

The Faculty recognizes four types of co-supervision:

- that dictated by regulation above (A doctoral student must be supervised by a faculty member with a PhD or its equivalent. Equivalency must be based on a faculty member's record of research activity. In the case of co-supervision, one of the supervisors must have a doctoral degree or its equivalent. In the event of a dispute over equivalency, the FGS Academic Planning Committee will be the final arbiter);
- that which arises from the desire of a student to draw equally upon the expertise of two individuals;
- that which introduces a new faculty member to the standards of the department by providing an opportunity to work with an experienced supervisor;
- that which conforms to the Faculty practice regarding external supervisors. An honorary faculty member may be the academic supervisor of a Dalhousie student provided the student also has an internal advisor to handle the administrative details.

8.3 Internal Advisor

Not all units give the internal advisor the status of a co-supervisor. In those units where university-level agreements exist for the cooperative governance of the programme or where successful involvement of an external supervisor (honorary member of FGS) has occurred to the unit's satisfaction, the internal

advisor is not necessarily a co-supervisor, the implication being that in a vote on a thesis, the external supervisor has an independent voice.

8.4 Supervisory Committees

Most departments maintain supervisory committees for graduate students. Committees should meet at least twice a year during the thesis research and writing stages of a student's programme. Normally the agreement of all committee members is required before a department brings forward a doctoral thesis for examination.

8.5 Guidelines for the Supervision of Graduate Students

These guidelines were developed in 1981 at a conference sponsored by the Faculty of Graduate Studies and the Dalhousie Association of Graduate Students. They were reviewed and endorsed by the Dean and Graduate Coordinators in January 1992. They were updated for inclusion in the Manual in 1995 and will be updated again as the need arises. Where appropriate, units can adopt these guidelines for project students and their supervisors but they are designed primarily for thesis students.

8.6 Difference between theses in the Sciences and the Humanities/Social Sciences:

In the Sciences, the MSc thesis may be regarded as a miniature PhD thesis, while in the Humanities and Social Sciences the MA thesis is considered as qualitatively different from the PhD thesis in degree of originality, sophistication of research, and the level of insights and interpretations expected.

In the Sciences a change of supervisor may be more difficult to arrange than it is in the Humanities/Social Sciences, as Science students are generally more dependent upon the research grants of their supervisors. However, every effort should be made to rectify unpleasant situations.

8.7 Selection of Supervisor

In the Sciences, where students are not normally admitted until their research areas have been identified and faculty members have agreed to supervise them, a potential difficulty should be drawn to the attention of new students: some restriction of students' freedom to follow their own lines of research may result from dependence upon supervisors' research grants for a significant portion of their income. In extreme cases, students may feel that they are being used by supervisors for their own ends. When such conflicts of interest arise, the graduate coordinator and the candidate's supervisory committee should play a significant role in overseeing the development of the research and in protecting the student against over-specialization.

In the other disciplines which do not assign supervisors at the time of admission, the selection of a supervisor should be based primarily upon competence in the field of the proposed thesis topic. Within this restriction, the department should seek to accommodate the student's choice of supervisor, although it is not obliged to guarantee the choice. Departments are expected to maintain

guidelines for determining the number of thesis supervisions a faculty member can concurrently undertake.

8.8 Responsibilities of Supervisors

When faculty members accept the supervision of graduate students, they assume several responsibilities:

- to provide reasonable access to students and to be available for consultation at relatively short notice;
- to be as helpful as possible in suggesting research topics and in assisting students to define their theses;
- to tell students approximately how long it will be before written work, such as drafts of chapters, can be returned with comments;
- to be thorough in their examination of thesis chapters, supplying, where appropriate, detailed comments on such matters as literary form, structure, use of evidence, relation of the thesis to published work on the subject, footnoting, and bibliographical techniques, and making constructive suggestions for rewriting and improving the draft;
- to indicate clearly when a draft is in a satisfactory final form or, if it is clear to the supervisor that the thesis cannot be successfully completed, to so advise the student;
- to know the departmental and University regulations and standards to which the writer of a thesis is required to conform, and to make sure that the student is aware of them;
- to continue supervision when on leave, possibly with arrangements also being made for members of the supervisory committee to assist the student for the leave period;
- to advise and help the student to approach other faculty members for assistance with specific problems or even to request the reading of a chapter or section of the thesis.

8.9 Responsibilities of Students

When graduate students undertake the writing of a thesis, they assume several responsibilities:

- to choose a topic (often with the supervisor's help) and to produce a thesis that is essentially their own work;
- to produce a thesis which meets the standards of scholarship required by the University and the department, including demonstration of their capacity for independent scholarship and research in their field;
- to acknowledge direct assistance or borrowed material from other scholars or researchers;
- to realize that the supervisor has undergraduate or other duties which may at times delay the student's access to the supervisor at short notice;
- to give serious and considered attention to advice and direction from the supervisor;
- to submit their work to the judgment of the department and to abide by its decision when any rights of appeal, if exercised, have been exhausted;

- to know the departmental and University regulations and standards to which the writer of a thesis is required to conform.

8.10 Rights of Supervisors

Supervisors have the following rights:

- to expect students to give serious and considered attention to their advice concerning what they regard as essential changes in the thesis;
- to terminate supervision and advise the student to find another supervisor if the student does not heed advice and ignores recommendations for changes in the thesis, or if the student is not putting forth a reasonable effort;
- to have their thesis supervision properly credited by the department as an intrinsic part of their workload so that, in the assignment of duties, they are not overburdened to the point of having their effectiveness impaired as supervisors;
- to have the thesis-writer acknowledge, by footnoting, all portions of the supervisor's own research over which the supervisor wants to retain future rights of authorship;
- to have thesis-writers give permission for the results of their research to be used for the benefit of a larger project when they are working as assistants with their supervisor on research that is part of such a project. This is always with the understanding that students will retain scholarly credit for their own work and be given acknowledgment of their contribution to the larger project.

8.11 Rights of Students

- to have a clear understanding of what is expected in thesis writing (expected length, acceptable methodology, validity of topic, notification of progress);
- to expect help from their supervisor in establishing a feasible topic and in solving problems and assessing progress as the thesis is being written;
- to receive a fair assessment of the completed thesis and explanations of negative criticism;
- to be allowed to have a new supervisor when they can offer convincing reasons to the department for the change;
- to be protected from exploitation by their supervisor or other faculty members if the latter should
 - a) intrude upon the student's right of authorship or fail to give a student authorship credit for team research (where applicable, the department's protocols on authorship should be provided to students before they embark on research), or
 - b) divert the student's efforts from the timely completion of the thesis.
- to submit a thesis even if the supervisor is not satisfied, although such action should be taken only in extreme cases and after full consultation with the department.

8.12 Responsibilities of the Department

- to provide necessary facilities and supervision for each student admitted, and not to accept more candidates than can be offered effective supervision. Therefore departments should consider carefully such

matters as faculty retirements, sabbatical leaves, teaching loads, and library resources before admitting each student with a declared research interest. When, as is often the case in many disciplines, applicants are unable to choose a field of research until they have had some experience in graduate study or in a particular department, the department should still regulate admissions according to the number of faculty members available for supervision.

- to uphold a high academic standard for theses;
- to provide adequate supervision at all times, so that, when a supervisor leaves the University for another permanent position, substitute arrangements are made as soon as possible;
- to allow students to change supervisors if their research interests shift or develop in a new direction and a change of supervisor will not deprive them of financial support;
- to provide procedures which assist and encourage students to complete the thesis, such as early review and approval of topic and methodology, guidelines on access and appeals, oversight of the students' schedule, and a clearly stated system of thesis review and evaluation;
- to regard supervision of graduate students as a major consideration in making replacement appointments for faculty;
- to encourage students to give papers as they proceed, so that they can test their ideas on a wider audience than the supervisory committee;
- to ensure that the graduate coordinator acts as a general overseer of students' progress.
- to instruct all students (or see that they attend Faculty-level workshops) on research ethics;
- to explain to students the University's policies on intellectual property rights.

9. Thesis Regulations

9.1 Ethical Review

All thesis research involving human subjects must be approved by the Human Ethics Review Committee of the Faculty of Graduate Studies. Application forms are available from the Faculty of Graduate Studies Office. Students should allow three weeks for processing during the regular school year, and at least four weeks in the summer months.

9.2 Preparation of Manuscript

Thesis manuscripts must be prepared in accordance with Faculty of Graduate Studies rules. Detailed instructions may be obtained from the Faculty Office (Room 314, Arts and Administration Building).

9.3 Master's Theses

Theses for the Master's degree must be presented to the Department for examination not later than March 15, for Spring Convocation, or August 25, for the Fall awarding of degrees. Five (5) unbound copies are required (original and four copies). The method of examination for a master's thesis is a matter left to departmental decision. However, the thesis must be examined and approved by

at least two readers in addition to the thesis advisor. Not all departments hold oral defences for the examination of the master's thesis. A thesis will normally be graded "approved" or "not approved". A thesis may be accepted as submitted, accepted on condition that specific revisions be made, not accepted with permission to submit a revised thesis, or not accepted. In order to document the point at which a master's student passes or fails a thesis, dated readers' reports must be filed in the student's departmental file, and, where relevant, notification of the degree of failure (i.e. outright failure or failure with the right to resubmit by a specific date) must be sent to the Dean.

9.4 Doctoral Theses

Doctoral theses must display original scholarship expressed in satisfactory literary form consistent with the discipline concerned and be of such value as to merit publication. The subject of the PhD thesis must be approved by the Faculty at least twelve (12) months before the date of final examination.

9.5 Deadline for Graduation

For thesis students the published deadlines for the submission of the copies of the thesis to the Faculty of Graduate Studies in order to be eligible to graduate in May or October are final in all cases.

9.6 Regulations for the Defence of a Doctoral Thesis

All doctoral theses must be examined in a public oral defence, to be conducted by an examining committee appointed by the Chair of the department.

9.6.1. Procedures

1. The candidate shall register the proposed title of the thesis with the Faculty of Graduate Studies, no later than six months before submission of the completed thesis.
2. The Chairperson of the Department shall recommend to the Dean or Associate Dean of Graduate Studies one name (with c.v.), from a list of three names submitted by the thesis supervisor for the appointment of an external examiner at least three months before the anticipated date of completion of the thesis. The persons suggested should be acknowledged experts in the field or discipline of the research being examined in the thesis. Initial contact with the external examiner should be made by the Chairperson of the Department.
3. Of the five copies of the thesis required, the candidate shall submit one unbound copy of the completed thesis (the External Examiner's copy) to the Faculty of Graduate Studies, together with the Thesis Submission Form and a c.v.. The deadlines for submitting unbound PhD theses to departments (see the Almanac in the Faculty of Graduate Studies calendar under August, November and February) are also the deadlines for submission of the one unbound copy (with completed Thesis Submission Form) to the Faculty of Graduate Studies office (see also item 6 below). This copy is then sent to the External Examiner by the Graduate Studies office. At that time the candidate shall

provide a copy of the abstract page from their thesis for publication in a public notice of the defence. ©BILL = 4.

The other four copies of the thesis will be submitted by the candidate to the departmental graduate coordinator, who will distribute them immediately to local members of the examining committee. One copy may be held in the departmental secretary's office for use by other interested faculty and students.

5. No arrangements will be made for the oral examination until all of these requirements are fulfilled. The examination will be held no earlier than four weeks after submission of the thesis, thereby allowing adequate time for the thesis to be read by the external examiner.
6. The Dean or Associate Dean of Graduate Studies will issue a formal invitation to the external examiner and will send a copy of the thesis (see paragraph 3) to him/her at least four weeks before the examination.
7. In consultation with the Chairperson of the Department, the graduate co-ordinator, and the research supervisor, the Faculty of Graduate Studies office will establish a time and place for the examination.
8. The external examiner will normally submit by mail a constructively critical and analytical report to the Associate Dean of Graduate Studies, who will send a copy to the graduate co-ordinator. Normally the external examiner will attend the defence, but in the rare event of the external examiner not attending, the written report should be submitted to the Associate Dean one week before the defence.
9. Notice of the public defence of the thesis will be published and sent to all relevant departments by the Faculty of Graduate Studies. All interested faculty, students, and members of the public will be welcome to attend.
10. Variation of the regulations outlined above may be permitted only with the written permission of the Dean of Graduate Studies.

9.6.2. Oral Examination

The oral examination of a doctoral thesis is the culmination of the candidate's research programme. It exposes the work to scholarly criticism and gives to the candidate the opportunity to defend the thesis in public. The Examination is chaired by the Dean, the Associate Dean of Graduate Studies or a member of the Panel of PhD Defence Chairs. The examining committee consists of the chairperson of the department (or a designate), the research supervisor or supervisors, and at least three additional members, one of whom shall be the external examiner from outside the University.

The candidate is questioned on the thesis following a summary presentation no longer than 20 minutes. The Chairperson will give priority to questions from the external examiner and from the other members of the examining committee in some pre-arranged order. The audience will then be invited to ask questions. The Chairperson adjourns the examination when the examining committee decides that

further questioning is unnecessary. He/she then chairs the examining committee during its deliberations *in camera*. The decision of the examining committee is based both on the thesis and on the candidate's ability to defend it.

No thesis shall be approved without the agreement of an external examiner, except that a negative opinion of an external examiner who does not attend the examination should not prevail over the unanimous opinion of the other examiners present and voting.

The thesis is graded "approved" or "not approved". A thesis can be accepted by the Examining Committee as submitted; accepted on condition that specific corrections are made; rejected with permission to submit a revised thesis; or rejected. It should be stressed that theses can be rejected on grounds of form as well as content.

If specific corrections are required, the thesis will be returned to the candidate and a time limit during which the corrections must be completed will be decided upon by the examining committee. Specific corrections will normally be left to the satisfaction of the local committee and research supervisor.

If the thesis is rejected with permission to submit a revised thesis (within 12 months of the first defence), the revised thesis will be re-read by an examining committee, at least two of whose members were on the original committee. The thesis shall be submitted to an external examiner who may be the original external examiner if the Associate Dean of Graduate Studies considers this to be desirable. The candidate shall defend the thesis before an examining committee in the usual way. There are no third chances.

The recommendation for degree must be approved by the Faculty of Graduate Studies and by the Senate.

Variation of the procedures stipulated above may be permitted only with the written permission of the Dean of Graduate Studies.

9.7 Regulations for Submission of Theses

All thesis students must obtain a copy of the Faculty of Graduate Studies Regulations for Submission of Theses. These regulations are available from the Office of the Faculty of Graduate Studies. The regulations give details on:

1. Manuscript Originality
2. Preparation of Manuscript
3. Order of Contents
4. Submission Deadlines
5. Mailing Costs

All thesis students must refer to the Schedule of Academic Dates in this calendar for submission deadlines.

Students must be registered for the year in which they present their approved unbound theses to the Faculty of Graduate Studies.

It is the responsibility of the student to ensure that all regulations have been met. Failure to comply with the regulations can result in delay in graduation.

9.8 Binding

At the time of submitting unbound thesis (original and four copies) to the Graduate Studies Office, students will present a cheque for \$85.00* payable to the Faculty of Graduate Studies, Dalhousie University. This sum will cover the cost of binding. An additional charge will be made (where appropriate) to cover mailing costs.

The Faculty Office will arrange for the binding and subsequent distribution of theses as follows:

- (a) One (1) copy is sent to the author.
- (b) Two (2) copies are sent to the student's Department.
- (c) Two (2) copies are sent to the University Library which arranges for the production of microform copy to be retained in the National Library, Ottawa and listed in *Dissertation Abstracts International* or *Masters Abstracts International*. The National Library can then circulate such copy according to the International Inter-Library Loan Code, with full copyright protection; it also guarantees a permanent record of the thesis. The University Library retains one (1) bound copy in the University Archives.

* Subject to change without notice

10. Scholarships, Fellowships and Financial Assistance

Please note that the contents of this awards section are subject to change without notice.

The University reserves the right to publicize the recipients of merit awards.

10.1 Graduate Scholarships and Fellowships

10.1.1. General Disciplines

Dalhousie Graduate Scholarships: Each department has a limited number of scholarships for students pursuing a degree programme on a full-time basis. Scholarships are not offered to anyone on leave from a job with salary continuation. In order to be eligible for a Dalhousie Graduate Scholarship, a student is expected to hold at least the equivalent of a Dalhousie honours degree in an appropriate field of study. Those wishing to be considered for scholarship assistance are advised to submit their applications no later than March 1. Maximum eligibility for scholarships is two Master's years and the first four Doctoral years, but some departments may have shorter maxima.

In general, the Dalhousie Graduate Scholarship will be paid to the student in regular monthly payments on the 27th of each month, after University fees have been deducted. Cheques are available from the students' department upon presentation of a current valid Dalhousie Student identification card. Where warranted, with permission of the Dean of Graduate Studies, a student may receive scholarship funding for a maximum of 12 months while pursuing research off-campus.

Applicants for graduate scholarships should write to the graduate coordinator of the department concerned in addition to making their official application to the Registrar.

Very well qualified scholars who receive awards from federal agencies may also receive Dalhousie supplements within the limits set down by the agencies offering the awards.

The Izaak Walton Killam Memorial Scholarships: Shortly before her death, Mrs. Dorothy J. Killam set aside a substantial portion of her estate for the purpose of founding the Izaak Walton Killam Fund for Advanced Studies at Dalhousie University.

Her purpose in so doing was not only to establish a perpetual memorial in his native province to her late husband, Izaak Walton Killam, industrialist and financier, but also "to help in the building of Canada's future by encouraging advanced study." It was her hope that she might thereby in some measure "develop and expand the work of Canadian Universities, and promote sympathetic understanding between Canadians and the people of other countries." It is in accordance with Mrs. Killam's wishes that Dalhousie University offers the Izaak Walton Killam Memorial Scholarships.

Killam scholars are selected on the basis of nominations made by departments. It is expected that nominees will also have applied for funding from relevant national or international agencies. Canadian students are eligible for nomination for the Killam Scholarships only if they have applied for the relevant national scholarship (NSERC, SSHRC, MRC, etc.).

Only those students registered in a programme with a thesis requirement are eligible to hold the Izaak Walton Killam Memorial Scholarship.

Scholarships may be renewed annually upon evidence of satisfactory completion of work leading toward the Master's or Doctoral degree, subject to the following maxima; Masters students may hold a Killam Scholarship for 12 months and PhD students for up to 36 months. The scholarships are valued at \$15,000 (1995-96) for a Master's programme and \$18,500 (1995-96) for a Doctoral programme. No remission of fees accompanies the scholarships, but additional funds to assist with transportation to Halifax will be supplied. Killam scholars may perform instructing or demonstrating duties, but, if they do, will be given additional remuneration for these services.

Killam scholarships are open to both Canadians and non-Canadians. Please note that candidates do not apply for these Scholarships. On the basis of the information in a completed application for admission the graduate department concerned may nominate the student to the selection committee.

The Izaak Walton Killam Postdoctoral Fellowships: Killam funds also provide for postdoctoral fellowships in most fields of study. The annual stipend is \$33,000 (1995-96) plus travel grants. There are no restrictions regarding nationality of applicants, but non-Canadian candidates must meet all Canadian Immigration requirements. Qualifying applicants should have recently completed a PhD degree at a recognised university and should not hold a permanent

academic position to which they will return. Since these Fellowships are intended to attract new scholars to Dalhousie, scholars already at Dalhousie are not eligible to apply, including Dalhousie PhDs, Dalhousie or King's employees, and researchers using Dalhousie or King's facilities. These awards may be taken up between July 1st 1996 and January 15th 1997 but preferably in September or October 1996. Fellows may engage in limited teaching duties in the University. A graduate seeking a Killam Memorial Postdoctoral Fellowship must contact the appropriate Dalhousie department and indicate the scholar or researcher with whom she/he wishes to work or be associated by October 15, 1996, enclosing a c.v. and a brief description of the proposed research. Prospective applicants with suitable research proposals will be invited to apply on forms mailed to them, which should be returned to the Dean of Graduate Studies no later than December 15, 1996. Supporting documents should be returned to the Department, no later than December 15, 1996. The results of the competition are usually announced in mid-February, and all applicants are notified of the results.

Eliza Ritchie Doctoral Scholarship for Women: The Eliza Ritchie Doctoral Scholarship was established to commemorate Women's Centennial Year (1985) and to recognise the contribution to Dalhousie of one of its most important nineteenth-century graduates. After completing her undergraduate studies at Dalhousie in 1887, Eliza Ritchie (1856-1933) became one of the first Canadian women to receive a PhD degree (Cornell University, 1889). She cut short her professional career at Wellesley College to return to Halifax in 1899, where she devoted her energies to feminist and cultural causes, and to Dalhousie, for the rest of her life. She was the first warden of a Dalhousie women's residence (Forrest Hall, 1912-13), the first woman to serve as a member of the Dalhousie Board of Governors (1919-25), a founding member of the editorial board of the *Dalhousie Review*, and the first woman to receive an honorary degree from Dalhousie (LLD, 1927). Scholarships will be awarded to Canadians and permanent residents only and preference will be given to candidates from the Atlantic Provinces. Among such applicants preference will be given to those in disciplines in which women are underrepresented. The award will have a value of \$18,000 (1995-96) for a 12-month academic period at Dalhousie. One scholarship may be awarded each year. The deadline for receipt of the prescribed applications is 15th March. Additional information and application forms are available from the Faculty of Graduate Studies, Dalhousie University.

James Robinson Johnston Graduate Scholarship for African Canadians: James Robinson Johnston Graduate Scholarship for African Canadians: The James Robinson Johnston Graduate Scholarship is supported by the Endowment for the James Robinson Johnston Chair in Black Canadian Studies at Dalhousie as part of the commitment of the Johnston endowment and the university to support the development of Black Canadian scholars in graduate studies and the

professions. James R. Johnston was Dalhousie's first black graduate in the Law Faculty in 1898 and was a major figure in the legal profession and the Black community throughout his short life. Today young African Canadians can be found pursuing studies in the arts, sciences, health professions and management as well as the traditional professions of law, dentistry and medicine. This scholarship is intended to provide an opportunity for promising African Canadian students to pursue their work at the graduate level.

Scholarships will be awarded to African Canadian citizens or permanent residents in master's or doctoral programs at Dalhousie University. To be eligible, applicants intending to pursue studies in any discipline in which Dalhousie offers graduate degrees are welcome to apply once they have been accepted into a program. Applications are particularly encouraged from students who intend to follow a program of studies which includes a focus on some aspect of which Dalhousie offers graduate degrees and who have first class standing in their undergraduate program are welcome to apply once they have been accepted into a graduate program.

Successful candidates for an initial award and for renewals will be identified by the Faculty of Graduate Studies Scholarship Committee. The general rules for Dalhousie Graduate Scholarships will be applied except that, in the case of this scholarship, the award must be taken up initially in the first year of the degree program.

The master's-level scholarship is valued at \$10,200 for one twelve-month academic year of full-time study. The doctoral level scholarship is valued at \$18,000 for a twelve-month academic year of full-time study and may be renewed, subject to an annual progress review (first-class standing required) by the Faculty of Graduate Studies Scholarship Committee, for a total of 36 months of full-time study, including initial award. Fees are not waived and must be paid out of the award.

10.1.2. Specific Disciplines

Business Administration

Goldberg-Schulich Award for Entrepreneurship: The Nevada Capital Corporation in 1984 donated the sum of \$29,000 to establish an award in memory of Meyer Goldberg of Halifax, N.S. This award is available to a student entering the second year of Dalhousie University's MBA programme. Deadline for receipt of application is March 15th.

The Department of External Affairs Fellowships in International Business: Fellowships of \$4,000 per annum are awarded to full-time second-year students specializing in the field of International Business. Candidates must be Canadian citizens or permanent residents, and have a strong academic record. Fellowship recipients will be selected on the basis of a career interest in international business and academic performance to date. For further information contact the Centre for International Business Studies, School of Business Administration.

Economics

Professor George A.B. Kartsaklis Memorial Scholarship: Family, friends and colleagues of Professor Kartsaklis established this fund to provide financial assistance to one or more graduate students from Third World countries currently enrolled in the Department of Economics, Dalhousie University.

English

C.L. Bennet Memorial Scholarship: The Department of English has designated that one University scholarship in the amount of \$500 be awarded annually as a memorial to the late Professor of English, Dr. C.L. Bennet. This award will be made to an outstanding graduate of a Maritime or Newfoundland university (other than Dalhousie) who wishes to pursue an MA in English at Dalhousie. Eligible students should apply for graduate study in English in the usual way, by March 31st, indicating a desire to be considered for the Bennet award. Further details may be obtained from the Department of English, Dalhousie University, Halifax, NS, B3H 3J5.

The James W. Tupper Graduate Fellowship in English: This fellowship, of an annual value of approximately \$5,500 is awarded by the faculty of the Department of English to a student who proposes to do graduate work in English at a university approved by the faculty. The award need not be held at Dalhousie. Further information may be obtained from the Department of English.

Environmental Studies

The Gerald and Margaret Godsoe Scholarship: This scholarship has been established by the Godsoe family to support a highly qualified and motivated individual entering the Master of Environmental Studies (MES) program at Dalhousie. The recipient must hold an honours degree in natural or social sciences, engineering, architecture or its equivalent, and have first class standing in his/her course of study or have proof of exceptional merit. Further, the recipient must have made significant contributions through community service, leadership, and education on environmental issues. Eligibility is limited to Canadian citizens and permanent residents of Canada living in the country. The award is valued at \$10,000 per year and may be renewable. The recipient will be selected by the Admissions Committee at the School for Resource and Environmental Studies. Additional information about application procedures is available from the School for Resource and Environmental Studies.

Marine Affairs Programme

The HMCS King's Memorial Scholarship in Marine Affairs: This is an annual scholarship in the amount of \$5,000 established by the Marine Awards Society of Canada (MASC), through the generosity of L.Cdr. Bent G. Sivertz, OBE, R.CNR (Ret'd), for a Canadian citizen to pursue the Master of Marine Management (MMM) degree. The criteria for conferment of the scholarship include the following: applicants must be a Canadian citizen; applicants must demonstrate superior academic records; applicants may undergo a financial needs assessment. Qualified applicants to the MMM

are automatically considered for this scholarship upon completion of their application, so no separate application is necessary.

Library and Information Studies

H.W. Wilson Foundation Award: This award, valued at \$1250 US, is presented by the School to an outstanding incoming student, and is renewable for the second year of the programme. All incoming students are automatically considered for the scholarship, so no separate application is necessary.

Oceanography

The Professor F. Ronald Hayes International Scholarship: This scholarship fund was established in memory of Professor F. Ronald Hayes, founder and first director of the Institute of Oceanography of Dalhousie University, and in commemoration of the Joint Oceanographic Assembly which was held at Dalhousie during August, 1982. The purpose of the scholarship is to provide financial support for a new graduate student in the first year of an MSc or a PhD programme in the Department of Oceanography. The recipient must be from a developing country ("developing country" shall be defined as one belonging to the United Nations Group of 77), from a state of the former Soviet Union, or from an economically disadvantaged country such as: Albania, Bulgaria, Romania and the former Yugoslavia. The recipient will be nominated through the normal screening process by the Departmental Graduate Admission Committee. For further information contact the Department of Oceanography.

Oral and Maxillofacial Surgery

John P. Laba Memorial Research Award: The income, earned from a fund established in memory of John P. Laba by family, friends, patients and colleagues, will provide for this award which may be given annually. The recipient will be the dentist accepted in the Graduate Programme in Oral and Maxillofacial Surgery and will be given exclusively for the presentation, dissemination and/or publication of research related to Oral and Maxillofacial Surgery. For further information please contact the Department of Oral and Maxillofacial Surgery.

Pharmacy

The Parke, Davis Pharmacy Research Fellowship: Parke, Davis Canada Inc. annually sponsors a fellowship of \$2,000 to a graduate student in the College of Pharmacy. For further information contact the College of Pharmacy.

The Novopharm Pharmacy Research Fellowship: Novopharm Limited sponsors an annual fellowship of \$500 to a graduate student in the College of Pharmacy who demonstrates superior research achievements in biopharmaceutics or drug metabolism. For further information contact the College of Pharmacy.

Physics

The William Leiper Memorial Scholarship: An endowment has been established to provide an annual scholarship to a deserving graduate student in physics. Awarded at the discretion of

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the Physics Department, the scholarship is normally granted to a student already engaged in graduate study at Dalhousie.

The James Gordon MacGregor Memorial Teaching Fellowship in Physics: One fellowship valued at \$2,500 is offered. To be eligible, the candidate must have the necessary qualifications for admission to the Master's programme in Physics. The holder of this fellowship is expected to give instruction in the laboratory during the academic session. Nominees will be selected by the Department from those students being considered for a Dalhousie Graduate Fellowship; no application is necessary.

The Dr. A. Stanley MacKenzie Teaching Fellowship in Physics: One fellowship valued at \$600 is offered. To be eligible, the candidate must have the necessary qualifications for admission to the Master's programme in Physics. The holder of this fellowship is expected to give instruction in the laboratory during the academic session. Nominees will be selected by the Department from students being considered for Dalhousie Graduate Fellowships; no application is necessary.

Psychology

The Dr. Mabel E. Goudge Scholarship in Psychology: In her Will, the late Dr. Mabel Goudge bequeathed a sum of money with which to endow scholarships to qualifying graduate psychology students at Dalhousie. The scholarship in graduate studies is restricted to experimental or clinical psychology. For further information contact the Department of Psychology.

The D.O. Hebb Post-Graduate Prize: To honour the memory of Donald Olding Hebb (B.A. 1925), Professor Emeritus (1977-1985), valued at \$1,000, the Psychology Department established the D.O. Hebb Post-Graduate Prize, which is awarded by the Graduate Program Committee, to an entering Masters or PhD student who has demonstrated the best potential to make a significant scientific contribution to the field of psychology.

Social Work

The Kavanaugh Scholarship: The Kavanaugh Scholarship was established by the Social Action Commission of the United Baptist Convention of the Atlantic Provinces to provide financial assistance in an annual amount of \$500.00 to a Master of Social Work student. Terms of reference and application forms are available to registered MSW students in early fall from the main office of the School.

10.2. Bursaries

10.2.1. Dalhousie Bursaries

Students may apply to the Graduate Studies Office for university bursaries made available through the student assistance programme. FGS also administers the John and Lina Graham bursary for Commonwealth students and the Dr. P. Anthony Johnstone Memorial bursary for a graduate student with a record of involvement in social justice and human rights. Bursaries are for needy students who can prove their need. Students eligible for government loans must have applied for them

before a bursary application can be considered. Please note there are no appeals on bursary decisions.

The John and Lina Graham Commonwealth Bursary: The donors established this fund to mark the 75th anniversary in 1988 of the Association of Commonwealth Universities. The net annual income may be used to assist one or more graduate students who find themselves in need of financial aid while in Nova Scotia. Recipients will be residents of Commonwealth countries, other than Canada, who in the opinion of the selecting body demonstrate need.

The Dr. P. Anthony Johnstone Memorial Bursary: The donors established this fund in 1994 to honour the memory of P. Anthony (Tony) Johnstone (1931-1989), scholar, educator and director of the Nova Scotia Human Rights Commission, 1985-1989. The net income may be used to assist a humanities or social science graduate student who has a record of interest and involvement in social justice and human rights.

10.3 Teaching Assistantships

Most departments offer Teaching Assistantships. The number, amounts and conditions vary. Please enquire of your department or school.

The President's Graduate Teaching Assistant Awards: Dalhousie University recognizes and applauds the important contributions of Graduate Teaching Assistants to the educational mission of the University. The work of TAs, both in the classrooms or laboratories and behind the scenes, provides crucial support for faculty members and greatly enhances the learning process for undergraduate students. Each year, the President's Graduate Teaching Assistant Awards are presented to those TAs who have achieved outstanding success in the area of undergraduate instruction.

Nominations are accepted at the Office of Instructional Development and Technology. The winners are chosen in May of each year, and the presentation of awards is made by the President during the Fall Convocation in October.

10.4. Research and Travel Grants

10.4.1. Research Grants: Small research grants to assist thesis research can be applied for by graduate students in the Social Sciences and Humanities. (The expenses of most science students are covered out of operating grant or departmental funds). Forms available in the Graduate Studies Office, also contain the required format for application to the Human Ethics Committee. Awards granted to students will be set up under their supervisor's signing authority. Students in other disciplines may also apply to the Faculty of Graduate Studies for small grants if and only if their departments are unable to help them because of an unforeseen emergency. A letter from the Department Chair/Graduate Coordinator to this effect must accompany the application.

10.4.2. Travel Grants: Travel grants for presentation of a paper or poster at scholarly meetings can be applied for by graduate

students in thesis programmes using forms available in the Graduate Studies Office. Students are eligible to apply for one travel grant during the period of their graduate degree programme at Dalhousie, and should be presenting a paper or poster based on their thesis research. Departmental approval must be given to these applications. Applications will not be accepted retroactively or for conferences which occur after graduation.

11. Convocation

Convocation ceremonies are held in May and October. When a student has fulfilled all the requirements (including payment of all programme fee requirements and any continuing fees), for the degree in advance of the official graduation date, a letter to that effect can be obtained from the Faculty of Graduate Studies Office. An administrative fee of \$5 will be charged.

11.1 Conferring of Degrees

Successful candidates for degrees are ordinarily required to appear at Convocation in the proper academic costume to have the degree conferred upon them. By special permission of the Senate, degrees may be conferred *in absentia*. Any graduating student who is unable to appear at the convocation is expected to notify the Registrar in writing prior to May 5, or October 11 for Fall convocation, giving the address to which the diploma is to be mailed.

11.2 Academic Costume

Graduates of the University are entitled to wear gowns and hoods of black stuff. The distinctive part of the costume is the lining of the hood, which for the various degrees currently offered are as follows:

- MA: Crimson silk
- MBA: Turquoise silk
- MDE: Medium blue/scarlet border
- MBS: Brown silk
- MHSA: Sky blue silk/white border
- LLM: Purple silk
- MLIS: Mid-forest Green silk
- MMM: Navy silk/seagreen border
- MN: Apricot silk
- MFA: Sky Blue silk
- MSc: Scarlet silk
- MSc (Agriculture):
Scarlet silk/gold chevron
- MSW: Citron silk
- PhD: Black gown faced with yellow silk;
black hood with a lining of yellow silk;
birretum is the doctor's bonnet of black
velvet with yellow cord.
- JSD: Black gown faced with olympic blue
silk bordered with yellow silk; black
hood with a lining of olympic blue silk
bordered with yellow silk; birretum is
the doctor's bonnet of black velvet with
yellow and blue cord.

12. Awards on Graduate Transcripts

A select number of Dalhousie Scholarships/Awards are recorded on the students official Dalhousie transcript. They are:

Killam and Honorary Killam Scholarships,
Eliza Ritchie and honorary Eliza Ritchie
Scholarship,

J. R. Johnston and honorary J. R. Johnston
Scholarship,

Governor General's Gold Medal.

An official letter confirming other Dalhousie scholarships (e.g. Dalhousie Graduate Scholarships) can be obtained upon request from the Faculty of Graduate Studies Office. An administrative fee of \$5.00 will be charged.

13. Appeals

Faculty decisions are subject to the normal appeals procedures which begin with the Department, School or College, then, if necessary, the Dean. If still unresolved, the student may appeal to the Academic Appeals Committee of the Faculty of Graduate Studies. There are no appeals on admission decisions, or decisions on scholarships or bursaries.

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is expected to develop a PhD thesis proposal and initiate research. The following two years (if accepted with a Master's degree), 3 years (if accepted without a Master's degree) the student will be granted a leave of absence from Medicine and register full-time PhD paying full graduate studies fees, devoting all of his/her time to the PhD programme. During the time the student is registered full-time graduate studies it is expected that the thesis research will be completed and the thesis written and defended.

In the following years until completion of the MD, the student will register full-time MD and, if necessary, part-time PhD (paying only MD fees). In some instances it might be possible to combine the latter stages of the PhD (thesis writing and defence) with the final years of the MD. Should the student complete the MD requirements before completing the PhD he/she must register with the Faculty of Graduate Studies paying an appropriate fee.

It is anticipated that this concurrent programme could result in a significant saving of time for any students contemplating both degrees.

Departmental Listings

The following entries are designed to provide general information about particular graduate programmes. Although general Faculty of Graduate Studies requirements apply to all graduate programmes, the methods of fulfilling these requirements vary considerably among Departments. Detailed, up-to-date information is located in departmental publications.

Each Departmental entry includes the following information:

1. A list of faculty members engaged in the teaching of graduate classes and/or the direction of graduate research. Faculty members whose major appointments are in other Departments are so indicated. In addition, the names of other researchers in the Department and honorary appointees may be listed.
2. A description of facilities available may be included. Some general regulations may be described.
3. A list of admission requirements in addition to those of the Faculty of Graduate Studies. In some cases the minimum requirements outlined in Section 2 are not sufficient for entry into a particular programme. Other particular requirements may be listed.
4. A description of degree programme requirements includes:
 - (a) Minimum time required to complete the programme
 - (b) Coursework required
 - (c) Other academic requirements
 - (d) Thesis requirement
 - (e) Other requirements
5. A representative list of class offerings. Not all of the classes will necessarily be offered in a given year. In all cases where a letter appears after a class number in this calendar it should be understood as follows:

"A" after the class number denotes a single-term class offered in the fall term only

"B" after the class number denotes a single-term class offered in the winter term only

"A or B" denotes a single-term class which students may take in either fall or winter term

"R" denotes a class lasting both fall and winter terms.
6. An extensive list of areas of specialization.

Agriculture

Location: Nova Scotia Agricultural College, Truro, N.S. B2N 5E3
 Telephone: (902) 893-6360
 Fax: (902) 897-9399

Professors

D.M. Anderson, BSA, MSc (Man), PhD (Sask)
 E.B. Burnside, BSA, MSA (Tor), PhD (N Carolina)
 C.D. Caldwell, BSc (Mt.A), MSc (Dal), PhD (East Anglia)
 D.C. Crober, BSc (Agr), MSc (McG), PhD (UBC)
 L.J. Eaton, BSc (Acadia), MSc, PhD (Dal)
 A.B. Gray, BSc (Bishops), MSc, PhD (McG)
 J.-P. LeBlanc, BSc (Quebec), BA (Mont), PhD (McG)
 H.Y. Ju, BSc (Seoul), MSc, PhD (McG)
 J. Nowak, MSc, PhD, PhD Hab (Olsztyn)
 G.W. Stratton, BSc (Agr), MSc, PhD (Guelph)
 P.R. Warman, BSc (Rutgers), MSc, PhD (Guelph)

Associate Professors

J. Adsett, BSc (McG), MScE (UNB), PhD (Sask)
 S. Asiedu, BSc, MSc, PhD (McG)
 G. Brewster, BA (Hon), MSc, PhD (Western)
 A. Farid, BSc, MSc (Shiraz), PhD (Alta)
 A.H. Fredeen, BSA (Sask), MSc (Guelph), PhD (Davis)
 A. Lirette, BScS (Medicine), BScA, MSc (Laval), PhD (Alta)
 A. Madani, BSc (Pahlavi), MSc (UBC), PhD (Wash)
 T. Tennesen, BSc, MSc, PhD (Alta)

Assistant Professor

G. Atlin, BSc, MSc (Guelph), PhD (Iowa)
 N.L. Crowe, BSc (Agr), MSc (McG), PhD (Guelph)
 L.A. MacLaren, BSc, MSc (Alta), PhD (Calif)
 R.C. Martin, BA, MSc (Carelton), PhD (McG)
 V.O. Nams, BSc (Tor), MSc (Alta), PhD (Victoria)

The above NSAC faculty hold adjunct appointments at Dalhousie

Honorary Adjunct Professors

B.R. Christie, BSA, MSA (Tor), PhD (Iowa)
 D.J. Doohan, BSc (Agr) (Guelph), MSc, PhD (NC State)
 S.P. Lall, MSc, PhD (Guelph), Fisheries and Ocean
 Y.A. Papadopoulos, BSc, MSc, PhD (Guelph), Agriculture Canada
 R.P. Singh, BSc (Agr), MSc (Agr) (Agra Univ), PhD (N. Dakota)

Honorary Research Associates

R.K. Prange, MSc (UBC), PhD (Guelph), Ag. Canada

The above hold adjunct appointments at NSAC

Admission

The Nova Scotia Agricultural College has facilities for advanced study and research leading to an MSc in Agriculture.

The Master of Science degree is granted by Dalhousie University in cooperation with the Nova Scotia Agricultural College.

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies. All inquiries for admission should be addressed to: The Research & Graduate Studies Office, Nova Scotia Agricultural College, P.O. Box 550, Truro, Nova Scotia B2N 5E3

MSc Degree Programme

Formally approved in the Spring of 1993, the Master of Science in Agriculture represents a unique co-operation between Dalhousie University and the Nova Scotia Agricultural College.

The Master of Science degree is granted by Dalhousie University in association with the Nova Scotia Agricultural College, the only educational institution in the Atlantic Region with the faculty and facilities capable of providing such a programme of study.

Graduate students attend classes at the Nova Scotia Agricultural College and, on occasion, supplement their programme with courses at Dalhousie University. Students may choose to concentrate their studies in any of the following areas:

Agribiology:	Waste Management, Environmental Microbiology, Ecology, Pest Management, Sexual Reproduction of Angiosperms
Agricultural Chemistry:	Food Science, Agricultural Chemistry
Soil Science:	Soil Chemistry, Nutrient Management, Soil Physics, Geology, Soil Fertility
Animal Science:	Nutrition, Animal Behaviour, Genetics and Breeding, Animal Product Technology, Physiology, Animal Management
Plant Science:	Crop Physiology, Crop Breeding, Plant Biotechnology, Crop Management

The MSc in Agriculture programme is research centred. All students must complete a research thesis embodying original contribution in the thesis field of study. The thesis is defended at an oral examination.

Required classes include AGRI 5700.03R Communication Skills for Scientists and AGRI 5705.03R Graduate Module Class, the content of which is influenced by specific student needs.

In addition, each student demonstrates in the laboratory of at least one undergraduate course in order to gain knowledge and experience in classroom instruction.

Classes Offered

Classes marked with an asterisk (*) are offered in alternate years. Please check the current timetable to see whether a particular class is being offered.

AGRI 5250.03A: Soil Microbiology.
Instructor: G. Stratton

Format: Lecture 3 hours, lab 4 hours

AGRI 5270.03B: Economic Entomology.

Instructor: J.-P. LeBlanc

Format: Lecture 3 hours

AGRI 5350.03A: Animal Research Methods.

Instructor: A. Fredeen

Format: Lecture 3 hours

***AGRI 5360.03B: Protein Nutrition.**

Instructor: D. Anderson

Format: Lecture 3 hours

AGRI 5380.03B: Quantitative Genetics.

Instructor: D. Patterson

Format: Lecture 3 hours

AGRI 5390.03A: Molecular Genetic Analysis of Populations.

Instructor: A. Farid

Format: Lecture 3 hours, labs 4 hours

***AGRI 5440.03A: Organic Environmental Analysis.**

Instructor: J. Hoyle

Format: Lecture 3 hours, labs 4 hours

***AGRI 5450.03B: Environmental Soil Chemistry.**

Instructor: P. Warman

Format: Lecture 3 hours, labs 4 hours

AGRI 5520.03A: Plant Breeding Methods.

Instructors: G. Adin, Y. Papadopoulos

Format: Lecture 3 hours, labs 2 hours

AGRI 5530.03A: Nitrogen in Crop Production.

Instructor: R.C. Martin

Format: Lecture 3 hours

AGRI 5560.03B: Advanced Crop Physiology.

Instructor: C.D. Caldwell

Format: Lecture 3 hours

***AGRI 5580.03B: Plant Biotechnology.**

Instructor: J. Nowak

Format: Lecture 3 hours, labs 4 hours

***AGRI 5620.03A: Ruminant Digestive Physiology & Metabolism.**

Instructors: A.H. Fredeen, A. Lirette

Format: Lecture 3 hours, labs 4 hours

AGRI 5700.03R: Communication Skills for Scientists.

Instructor: L.E. Haley

Format: Lecture 2 hours

AGRI 5705.03R: Graduate Module Class II.

Instructor: Staff

Format: Lecture 2 hours

AGRI 5710.03R: Graduate Module Class I.

Instructor: Staff

Format: Lecture 2 hours

AGRI 5720.03B: Applied Statistics & Experimental Design for Agriculture.

Instructor: T. Astatkie

Format: Lecture 3 hours

Special Topics Classes

AGRI 5210.03A: Special Topics in Environmental Microbiology.

Instructor: G. Stratton

Format: Lecture 3 hours

AGRI 5220.03B: Special Topics in Weed Science.

Instructor: D. Doohan

Format: Lecture 3 hours

AGRI 5240.03B: Special Topics in Environmental Impact.

Instructor: G. Stratton
Format: Lecture 3 hours

AGRI 5260.03A or B: Special Topics in Plant Pathology.

Instructors: A.B. Gray, R.P. Singh
Format: Lecture 3 hours

AGRI 5310.03A: Special Topics in Applied Ethology.

Instructor: T. Tennessen
Format: Lecture 3 hours

AGRI 5320.03A or B: Special Topics in Animal Nutrition.

Instructors: D. Anderson, A. Fredeen
Format: Lecture 3 hours

AGRI 5340.03A: Special Topics in Animal Physiology.

Instructor: L. MacLaren
Format: Lecture 3 hours

AGRI 5370.03A or B: Special Topics in Animal Breeding and Genetics.

Instructor: D.C. Crober
Format: Lecture 3 hours

AGRI 5410.03B: Special Topics in Soil Fertility.

Instructor: P. Warman
Format: Lecture 3 hours

AGRI 5430.03A or B: Special Topics in Environmental Analysis.

Instructor: J. Hoyle
Format: Lecture 3 hours

AGRI 5460.03A or B: Special Topics in Soil and Water Management.

Instructors: A. Madani, P. Havard
Format: Lecture 3 hours

AGRI 5470.03A or B: Special Topics in Analytical Instrumentations for Researchers.

Instructors: N. Crowe, G. Stratton
Format: Lecture 3 hours

AGRI 5510.03A or B: Special Topics in Plant Breeding.

Instructors: G. Atin, Y. Papadopoulos
Format: Lecture 3 hours

AGRI 5540.03A or B: Special Topics in Crop Physiology.

Instructors: C.D. Caldwell, S.K. Asiedu, N. Goodyear, R.C. Martin
Format: Lecture 3 hours

AGRI 5570.03A or B: Special Topics in Agricultural Biotechnology.

Instructor: J. Nowak
Format: Lecture 3 hours

AGRI 5610.03A: Special Topics in Animal Product Technology.

Instructor: N.L. Firth
Format: Lecture 3 hours

AGRI 5705.03R: Graduate Module Class.**AGRI 9000.00R: MSc Thesis**

Anatomy and Neurobiology

Location: Sir Charles Tupper Medical Building, 13th floor, Halifax, N.S. B3H 4H7

Telephone: (902) 494-2052

Fax: (902) 494-1212

Head of Department

D.A. Hopkins

Professors

R.W. Currie, BSA, MSc, PhD (Man)
D.H. Dickson, BA, Msc, PhD (Western)
D.A. Hopkins, BSc (Alta), MA, PhD (McM)
J.G. Rutherford, BA (Cornell), MS (Syracuse), PhD (SUNY), Associate Dean, Faculty of Graduate Studies
K. Semba, B.Ed, MA (Tokyo), PhD (Rutgers)
J.M. Walker, BPT, MSc (Man), PhD (McM), major appointment in Physiotherapy
R.J. Wassersug, BSc (Tufts), PhD (Chicago)

Associate Professors

H.H. Ellenberger, BA, MSc, PhD (Miami)
M.M. Hansell, BSc (Tor), PhD (Calif)
I.G. Mobbs, BSc (Aberdeen), MSc (McM), PhD (Western)
P.E. Neumann, MD (Brown)

Assistant Professors

G.V. Allen, BSc, PhD (Dal)
S. Darvesh, MD (Dal), PhD (UNB)
T. Hagg, MD (Leiden), PhD (UCSD), Graduate Studies Co-ordinator
W.B. Mathieson, MSc (Carleton), PhD (Ottawa)
I. Mendez, MD, PhD (Western)
S.F. Morris, Bsc (Victoria), MD (Ottawa), Msc (Tor)
F.M. Smith, BSc, PhD (UBC)

Honorary Adjunct Professors

R.A.R. Taaker, BSc, MSc, PhD (Queen's)
D.P. Toews, BSc, MSc (Alta), PhD (UBC)

The Department of Anatomy and Neurobiology provides facilities for advanced study and research in Neuroscience, Histology, Embryology, Cell Biology, Neuroendocrinology and Evolutionary Biology.

Admission Requirements

All general requirements for admission to the Faculty of Graduate Studies must be fulfilled. In addition, applicants are expected to have received a sound training in biology and chemistry.

Honours degree holders in Biology: Apply for MSc programme, with option to transfer to PhD programme after one year, contingent upon the recommendation of student's advisory committee.

Four year BSc holders: Apply for two year MSc programme.

Three year BSc holders: Must complete qualifying year before applying for admission to graduate programme.

Master's degree holders in a biological science: May apply for direct admission to PhD programme.

Medical graduates: Individuals showing an aptitude for research may apply for admission to either the MSc or PhD programme.

Applicants holding a 3-year BSc degree will be required to complete a qualifying year before being admitted into a graduate programme. The content of this year of study will be recommended by the Department of Anatomy and Neurobiology Graduate Studies Committee.

MSc Degree Programme

The minimum residency requirements for the MSc degree are as indicated in Section 4 of the Faculty of Graduate Studies Calendar.

A minimum of five graduate-level credits is required. A written thesis reporting original research must be submitted and defended orally. The MSc thesis (ANAT 9000.00) may count for up to three of the five graduate level credits required for the degree. All MSc candidates must participate in the departmental seminar programme during each year of training. Classes are determined by consultation between the student, research supervisor and the Department of Anatomy and Neurobiology Graduate Studies Committee. For each candidate, classes will be selected from those listed below or, where appropriate, from those offered by other Departments. Consent of the instructor is required for admission into each class. Normally, 24 months (2 years) are necessary to complete all requirements for the MSc degree.

All MSc candidates must assist in laboratory teaching or an equivalent (approximately 30-40 hours) during each year of residency.

Financial assistance is available for qualified students for no more than two full years.

PhD Degree Programme

Residency requirements for the PhD degree are summarized in Section 4 of this calendar.

The course requirements for each PhD candidate are determined by consultation between the student, the research supervisor and the Department of Anatomy and Neurobiology Graduate Studies Committee. All PhD candidates must participate in the departmental seminar programme during each full year of training. The student is also required to assist in laboratory teaching (approximately 30-40 hours per year for at least two years) and to deliver 2-4 hours of lectures during the course of his/her training.

A written thesis (ANAT 9530.00) based on original research of a high calibre must be submitted and defended orally.

Financial assistance is available for qualified candidates for no more than four years.

Preliminary Examination: All PhD candidates must pass a preliminary examination no later than 1 full year prior to the submission of a thesis (see Section 6). The examination will include material related to the general and specific areas of research. The examining committee will be selected by the Department of Anatomy and Neurobiology Graduate Studies Committee after consultation with the candidate's research supervisor and will conduct the examination in accordance with the regulations established by the Department of Anatomy and Neurobiology.

Theses Examination: MSc and PhD theses will be defended in accordance with the regulations of the Faculty of Graduate Studies (see Sections 7.2, 7.3 and 7.4).

PhD Programme in Anatomy/Neuroscience

Anatomy and Neurobiology also offers a PhD in Anatomy/Neuroscience through the interdisciplinary Neuroscience programme.

Combined MD/PhD Programme

For information on the combined MD/PhD programme see "Interdisciplinary and Joint Programmes" (page 54).

Classes Offered

ANAT 5030.06R: Human Histology.
Coordinator: M.M. Hansell

ANAT 5041.03A: Light Microscope Techniques.
Coordinator: W.B. Mathieson

ANAT 5042.03B: Electron Microscope Techniques.
Coordinator: W.B. Mathieson

ANAT 5050.03R: Anatomy Research Seminar. (required)
Coordinator: Staff

ANAT 5060.03B: Neurobiology of Neurological Disorders.
Coordinator: T. Hagg
Cross-listing: NESC 5060.03

ANAT 5062.03A: Autonomic Regulation: Central Mechanisms
Coordinator: H.H. Ellenberger
Cross-listing: NESC 5062.03

ANAT 5063.03B: Neurobiology of the Peripheral Autonomic Nervous System.
Coordinator: F. Smith
Cross-listing: NESC 5063.03

ANAT 5070.03B: Chemical Neuroanatomy.
Coordinator: K. Semba
Cross-listing: NESC 5070.03

ANAT 5090.03B: Cellular Development in the Nervous system.
Coordinator: TBA

ANAT 5100.06B: Human Neuroanatomy.
Coordinator: K. Semba

ANAT 5120.06R: Human Embryology.

Prerequisite: ANAT 5150.03 and 5160.09, an equivalent or the consent of the instructor.

Coordinator: M.M. Hansell

ANAT 5160.09R: Human Gross Anatomy.

Coordinator: R.J. Wassersug

ANAT 5170.03R: Special Topics.

Coordinator: Arranged according to research topic

ANAT 5609.03A: Anatomical and Molecular Neuropharmacology of the Basal Ganglia: The Scientific basis for Grafting and Neural Transplantation.

Coordinator: I. Mendez

ANAT 9000.00: MSc Thesis

ANAT 9530.00: PhD Thesis

Atmospheric Science

Location: Departments of Physics and Oceanography

Professors

P. Chylek, Diploma (Physics) (Charles, Prague), PhD (Calif)

Assistant Professors

Q. Fu, BSc, MSc (Peking), PhD (Utah)

I. Folkens, BSc (Dal), MSc, PhD (Tor)

Honorary Adjunct Professors

O. Hertzman, MSc (UBC), PhD (Wash)

K. Higuchi, BSc (Carleton), MSc, PhD (Tor)

G. Isaacs, PhD (McGill)

M. King, PhD (Az)

Graduate Degrees

Graduate degrees in Atmospheric Science may be taken through either the Physics or the Oceanography departments.

MSc Degree Programme

Minimum course requirements are a total of five half-credit classes. Each student must take three core half-credit classes including PHYC 6570.03/OCEA 5570.03; PHYC 6580.03/OCEA 5580.03; and one of PHYC 5520.03/OCEA 5520.03, PHYC 5411.03/OCEA 5411.03, OCEA 5595.03. Classes may be taken through Physics or Oceanography.

Research and Thesis are required.

PhD Degree Programme

Prospective graduate students should refer to the class requirements for the Departments of Physics or Oceanography. The classes required in the chosen department must include three core half classes described under the MSc programme.

If the student is registered in Oceanography, he or she must write and defend a proposal for thesis research; if in Physics, a preliminary oral examination must be taken in the first year.

All candidates must prepare, research and orally defend a thesis.

Biochemistry

Location: Sir Charles Tupper Medical Building, 9th Floor, Halifax, NS, B3H 4H7
Telephone: (902) 494-2480
Fax: (902) 494-1355

Head of Department

W. Carl Breckenridge, PhD, Carnegie and Rockefeller Professor

Professors

W.C. Breckenridge, BSc (Queen's) MSc, PhD (Toronto)
 P.J. Dolphin, BSc, PhD, DSc (Southampton)
 W.F. Doolittle, AB (Harvard), PhD (Stanford)
 M.W. Gray, BSc, PhD (Alberta)
 C.B. Lazier, BA (Toronto), MSc (UBC), PhD (Dalhousie)
 F.B.St.C. Palmer, BSc, PhD (Western)
 R.A. Singer, AB (Princeton), PhD (Harvard), Graduate Coordinator (Tel: 494-2306)
 M.H. Tan, BSc, MD (Dalhousie), FRCP(C), FACP, major appointment in Medicine
 C.J.A. Wallace, MA, DPhil (Oxon)

Associate Professors

D.M. Byers, BSc, MSc (Dalhousie), PhD (Alberta), major appointment in Pediatrics
 H.W. Cook, BSc, MSc (McGill), PhD (Dalhousie), major appointment in Pediatrics

Assistant Professors

M.J. Dobson, BSc (Dalhousie), D.Phil (Oxon)
 P.X-Q. Liu, BSc (Wuhan), PhD (Cornell)
 N.D. Ridgway, BSc, MSc (Dalhousie), PhD (U.B.C.), joint appointment in Pediatrics
 H.-S. Ro, BSc, PhD (McGill)
 K.L.C. Too, BScHon, Msc (Malaysia), PhD (Hawaii)

Lecturers

D.C. Riddell, BSc, PhD (Queen's), major appointment in Pathology.

Admission Requirements

General requirements for admission to the Faculty of Graduate Studies are given in section 2 of "Faculty Regulations". In addition, foreign applicants must submit the results of the Graduate Record Examination. A TOEFL score of at least 600 is required of applicants whose native language is not English (section 2).

General Regulations

The Department accepts applicants with degrees in Biochemistry and also those with training in related fields such as biology, chemistry and medicine. Our programme is designed to ensure that all graduate students acquire a general background in biochemistry that will provide a solid foundation for career development. In addition, each student specializes in one of the following areas: molecular biology; lipids, lipoproteins and membranes; protein biochemistry. Advanced knowledge within a specialty is developed by formal classes and/or guided study arranged for each student through consultation with a

supervisory committee. Students also participate in the Biochemistry seminar series (BIOC 5910.06-5913.06) and in teaching/laboratory demonstrating.

Entering graduate students are assessed with regard to their general background in biochemistry, using an open-book written test, to ensure that they have a grasp of the important principles in solving biochemical problems and have the background necessary for advanced classes. A preliminary examination on the subject area of the thesis occurs at the end of the first year of study. Application may be made at that time for transfer from an MSc to a PhD programme. Scholarship support is available, and students are eligible for the Patrick Prize, awarded by the Department to recognize excellence in graduate research. Additional information can be obtained by contacting the Department for a copy of our booklet, *Research and Graduate Study in Biochemistry*.

MSc Programme

A thesis describing original research done by the candidate is prepared and defended orally. A Thesis Supervisory Committee consisting of the research director and two others is appointed to assist the candidate.

The minimum residence requirements for the two MSc programmes (see section 2.2) are 1 and 2 years, respectively. Experience has shown that most candidates require an additional 6-12 months to complete the thesis.

PhD Programme

The preparation and oral defence of a thesis describing an extensive original investigation carried out by the candidate is the major requirement. A Thesis Supervisory Committee consisting of the research director and three others is appointed to oversee the research. The minimum residence requirements of the PhD are 2 years from the MSc and 3 years from the BSc (see section 2.3). Most students require an additional 1-2 years to complete the thesis.

PhD Programme in Biochemistry/Neuroscience

Biochemistry also offers a PhD in Biochemistry through the interdisciplinary Neuroscience programme.

Combined MD/PhD Programme

For information on the combined MD/PhD programme see "Interdisciplinary and Joint Programmes" (page 54).

Areas of Specialization

Gene Expression and Cell Regulation

M.J. Dobson - Chromosome Structure and Function: yeast plasmid segregation, organization of human telomeric DNA, yeast artificial chromosome vectors, protein-DNA interactions.

C.B. Lazier - Estrogen Action: estrogen receptors and gene expression; mechanism of action of nonsteroidal antiestrogens.

D.C. Riddell - Human Molecular Genetics: tumor suppressor genes. Gene mapping.

H.-S. Ro - Molecular Control of Gene Expression: adipocyte differentiation, obesity (cardiovascular diseases and diabetes), cellular transformation and apoptosis (cancer).

R.A. Singer - Cell Growth Control: regulation of the eukaryotic (yeast) cell cycle and cell proliferation (with G.C. Johnston/Microbiology).

K.-L.C. Too - Prolactin Action: signal transduction, gene expression and regulation of lymphoid cell growth.

Lipids, Lipoproteins and Membranes

W.C. Breckenridge - Lipoproteins and Atherosclerosis: structure and function of lipids and apolipoproteins in lipoprotein metabolism.

D.M. Byers - Membrane Proteins and Lipids: protein kinase C substrates and neural cell signaling; enzymology and regulation of cholesterol and fatty acid metabolism; acyl carrier proteins in luminescent bacteria.

H.W. Cook - Membrane Lipid Metabolism and Signal Transduction: protein kinase C isoforms and lipid turnover in neural cells; plasmalogens and peroxisomal disorders.

P.J. Dolphin - Lipoprotein Metabolism: molecular enzymology of lipolytic enzymes; genetic defects in man and animal models; reverse cholesterol transport.

F.B.St.C. Palmer - Functions of Membrane Phospholipids: receptor-linked transmembrane signalling.

N.D. Ridgway - Sphingomyelin and Cholesterol: metabolic and coordinate regulation.

M.H. Tan - Dyslipidemias in Diabetes Mellitus: Fractional Esterification Rate of cholesterol in HDL particles in diabetic patients at risk for coronary heart disease.

Molecular Evolution

W.F. Doolittle - Genome Evolution: genomics, molecular phylogeny, archaeobacterial genetics.

M.W. Gray - Organelle genome structure and evolution; ribosomal RNA structure and function: plants and protists, transcription, RNA processing and RNA editing.

F. X.-Q. Liu - Genome Evolution and Gene Regulation: evolution of plastid operons; organelle-nucleus interactions; protein introns and protein splicing.

Proteins

C.J.A. Wallace - Protein Engineering: chemical and genetic remodelling of cytochrome *c* for studies of mitochondrial electron transport and protein structure-function relationships.

Classes Offered

Classes marked (*) are not offered every year; consult current timetable for changes.

BIOC 5000.06R/5001.03A or B: Special Topics in Biochemistry. students interested in topics not covered in formal classes may ask the department for special classes to meet their needs. The fields in which the department can offer instruction may be judged from the list of research topics.

BIOC 5300.03B: Biochemical Communication: Membranes and Cell Signalling.

Instructors: D.M. Byers, H.W. Cook, and C.B. Lazier.

Format: Lecture 3 hours

BIOC 5301.03A: Biochemistry of Lipids.

Instructors: H.W. Cook and N.D. Ridgway

Format: Lecture 3 hours

Cross-listing: BIOC 4301.03

*BIOC 5302.03B: Structure, Biosynthesis and Metabolism of Lipoproteins. (not offered '96-'97).

Instructors: P.J. Dolphin and W.C. Breckenridge

Format: Lecture 2 hours

Cross-listing: BIOC 4302.03

BIOC 5304.03B: Integration and Control of Metabolism. (not offered in '96 - '97).

Instructors P.J. Dolphin and W.C. Breckenridge

Format: Lecture 3 hours

Cross-listing: BIOC 4304.03

*BIOC 5401.03B : The World of RNA. (not offered in '96 - '97).

Instructor: M.W. Gray

Format: Lecture/seminar, guided reading and discussion 2 hours

*BIOC 5402.03B: Biochemical Evolution. (offered in '96-'97).

Instructors: W.F. Doolittle and C. J. A. Wallace

Format: Weekly discussions / seminars and guided reading 2 hours

BIOC 5403.03B: Genes and Genomes.

Instructors: P. Liu and W.F. Doolittle.

Format: Lecture 3 hours

Cross-listing: BIOC 4403.03, BIOL 4010.03, MICR 4403.03

BIOC 5404.03A: Gene Expression.

Instructor: R.A. Singer

Format: Lecture 3 hours

Cross-listing: BIOC 4404.03, BIOL 4011.03, MICR 4404.03

BIOC 5603.03A: Advanced Laboratory in Biochemical Techniques. Biochemistry, Biology and Microbiology faculty members; Coordinator: consult department. The class is a series of laboratory modules (each of 4 weeks' duration, 6 hours per week) organized collaboratively by the departments of Biochemistry, Biology, and Microbiology. A choice of modules is offered in 3 sections covering techniques used in the study of molecular biology, protein structure-function, and specific metabolic processes. Graduate students select three modules from any section or sections, subject to availability of space. Consult the coordinator regarding prerequisites and module selections.

Format: Laboratory approximately 72 hours total.

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Cross-listing: BIOC 4603.03, BIOL
4012.03/5012.03, MICR
4601.03/5601.03

BIOC 5701.03B: Enzymes. (not offered in
1996/97)

Format: Lecture/tutorial 3 hours,
Consult department

Cross-listing: BIOC 4701.03

**BIOC 5800.06R: Biochemistry or Clinical
Disorders.** This is an introductory class to the
pathophysiology of disease. It provides the
clinical and biochemical background of disease
groups and system disorders.

Instructor: Members of the Department of
Pathology.

Format: Lecture 3 hours including case
presentations and problem
sessions.

Cross-listing: BIOC 4800.03, PATH 5010.06

**BIOC 5910.06R-5913.06R: Biochemistry
Seminar.** Attendance at the weekly
Departmental seminar, and discussion with
seminar speaker; the presentation of seminars,
in "Journal Club" format, covering recent
research papers; participation in the
Departmental Symposium on a student-selected
topic.

Coordinator: J. Ro

Format: Tutorial 1 hour.

BIOC 9000.00R: MSc Thesis

BIOC 9530.00R: PhD Thesis

Biology

Location: Life Sciences Centre, 1355
Oxford Street, Halifax, N.S.
B3H 4J1

Telephone: (902) 494-3515
Fax: (902) 494-3736

Chair

J.H.M. Willison

Professors Emeriti

K.E. von Maltzhan, MS, PhD (Yale)

L.C. Vining, MSc (Auck), PhD (Cantab), FRSC

Professors

R.G. Brown, MSc (McG), PhD (Rutgers)

A.R.O. Chapman, PhD (Liv)

R. Croll, PhD (McG), major appointment in
Physiology/Biophysics

R.W. Doyle, MSc (Dal), PhD (Yale) Director,
Gene Probe Laboratory

J.C. Fentress, PhD (Cantab), major appointment
in 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 Science

P.A. Lane, MSc (SUNY Binghamton), PhD
(SUNY Albany)

R.W. Lee, MA (Mass), PhD (SUNY Stony Brook)

T.H. MacRae, MSc, PhD (Windsor)

I.A. McLaren, MSc (McG), PhD (Yale), George
S. Campbell Professor

I.A. Meinertzhagen, PhD (St. Andrews), major
appointment in Psychology

E.L. Mills, MS, PhD (Yale), major appointment
in Oceanography

R.K. O'Dox, PhD (UBC)

D.G. Patriquin, MSc, PhD (McG)

R.B. Scheibling, BSc, PhD (McG)

S.R. Shaw, BSc (London), PhD (St. Andrews),
major appointment in Psychology

D.B. Stoltz, PhD (McM), major appointment in
Microbiology

R.J. Wassersug, PhD (Chic), major appointment
in Anatomy and Neurobiology

J.H.M. Willison, PhD (Nottingham)

E. Zouros, MSc, PhD (Agr Col Athens), PhD
(Chic)

Associate Professors

E.W. Angelopoulos, MS, PhD (Minn)

G.S. Hicks, MSc (Carleton), PhD (Sask)

B. Pohajdak, MSc, PhD (Man)

S. Walde, PhD (Calgary), NSERC Research
Fellow

H. Whitehead, MA, PhD (Cambridge)

J.M. Wright, PhD (Memorial)

Associate Professor (Research)

G.F. Newkirk, PhD (Duke)

Assistant Professors

J. Hutchings, MSc, PhD (MUN)

S.J. Iverson, PhD (Maryland)

M. Leonard, MSc (Guelph), PhD (Ottawa), WFA

M.O. Johnston, PhD (Chic)

A. Pinder, PhD (Mass), NSERC Research Fellow

Honorary Adjunct Professors

- D. Aiken, MSc (New Hamp), PhD (Alta),
Fisheries and Oceans
D. Anderson, PhD (Sask), MSc, BSA (Man),
HRA
S. Asiedu, BSc, MSc, PhD, (McG), HRA
R.G. Boutilier, MSc (Acadia), PhD (East Anglia)
W.D. Bowen, PhD (UBC), BIO
P.F. Brodie, MSc (McGill), PhD (Dal)
C.D. Caldwell, PhD (East Anglia), NS Agric Col
S.E. Campana, PhD (UBC), BIO
J.D. Castell, MSc (Dal), PhD (Oregon)
D.K. Cone, MSc (Guelph), PhD (UNB), St.
Mary's University
R.J. Conover, PhD (Yale), BIO
J.S. Craigie, MSc, PhD (Queens), Inst. Marine
Bioscience, NRC
S.E. Douglas, MSc, PhD (Dal)
J. Doull, PhD (Dal)
S.R.V. Durvasula, MSc, PhD (Andhra), BIO
L. Eaton, NSRC
R.W. Elnor, PhD (North Wales)
A.H. Fredeen, PhD (McG), NS Agric Col
L. Fritz, PhD, BS (SUNY Stony Brook), MS, PhD
(Rutgers), NRC
A.B. Gray, MSc, PhD (McG), NS Agric Col
B.T. Hargrave, MSc (Dal), PhD (UBC)
F. Harrington, PhD (New York at Stony Brook)
W.G. Harrison, PhD (North Carolina, Raleigh),
BIO
E. Head, MPhil (London), PhD (Wales), BIO
H.Y. Ju, PhD (McG), NS Agric Col
E. Kenchington, MSc (Dal), PhD (Tas), Fisheries
and Oceans
P.E. Kepkay, BSc (Reading), MSc, PhD (Dal)
S.R. Kerr, MSc (Queen's), PhD (Cal), BIO
K.H. Mann, PhD (Reading), DSc (Lond), FRSC,
BIO
J.L. McLachlan, MA, PhD (Oregon State
College), Acadia
J. Nowak, PhD (Olsztyn), PhD (Dal), NS Agric
Col
T.C. Platt, MA (Tor), PhD (Dal), BIO
J.D. Pringle, MSc (Victoria), PhD (Dal), Fisheries
and Oceans
M. Ragan, PhD (Dal), NRC
M. Silver, PhD (Syracuse)
M. Sinclair, MSc (Southampton), PhD (USCD),
BIO
T. Tennessen, PhD (Alta), NS Agric Col
J.P. van der Meer, PhD (Cornell), Inst. Marine
Bioscience, NRC
J. Vandermeulen, MSc (Alta), PhD (U of Calif,
LA), BIO
M.J. White, BSc (McM), PhD (UBC)
J.L.C. Wright, PhD (Glasgow), Inst. Marine
Bioscience, NRC

Research Associates

- D. Cook, MSc (Michigan)
C.M. Herbinger, MSc (DEA Paris), PhD (Dal),
Gene Probe Laboratory
S.P. Lall, MSc, PhD (Guelph), Fisheries and
Oceans
R.C. Martin, MSc (Carleton), PhD (McG), NS
Agric Coll

- G. Pogson, PhD (UBC)
E. Retallack, MSc (Dal), PhD (Manchester)
Y. Tang, MSc, PhD (Dal)
P.R. Warman, MSc, PhD (Guelph), NS Agric
Coll
D. Webber, MSc (Dal)

Honorary Research Associate

- A. Horn, PhD (Toronto)
D. Ruzzante, MSc, PhD (Dal)
C. Staicer, MSc (NAU), PhD (Mass)
L. Wielgart, MSc (Memorial), PhD (Dal)

Admission

The Biology Department has facilities for advanced study and research leading to the MSc and PhD degrees.

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies and normally a student will not be permitted to earn all three degrees (BSc, MSc, and PhD) at Dalhousie. All inquiries for admission to the graduate programme should be addressed to Dr. Finn Sander, Biology Department.

MSc Degree Programme

For minimum times required to complete this programme, see section 4.

Students are required to obtain five full credits at the graduate level; of these at least two must be graduate classes and include Biology 5700.03 and Biology 5705.03; they may include graduate classes from other departments, and in the case of students supervised at Nova Scotia Agricultural College, may include classes given at the College (see Stream E, below). The thesis may count as 1, 2, or 3 credits. Additional classes may be specified by supervisory committees.

Students are required to demonstrate in an undergraduate biology class for at least one year and must be admitted to candidacy before they are permitted to submit and defend a thesis.

A thesis reporting original research must be submitted and defended orally.

Students are expected to participate in weekly departmental seminars.

PhD Degree Programme

For minimum times required to complete this programme, see section 4.

BIOL 5700.03 (or 5701.03) and BIOL 5705.03 (or 5706.03/5707.03) are required classes and additional classes may be specified by supervisory committees.

A preliminary examination on subjects in the general area of the thesis research is required for all PhD students. Students must pass the preliminary examination at least one year before submitting a PhD thesis.

Students are required to demonstrate in an undergraduate biology class for one year, and must be admitted to candidacy before submitting a thesis.

A thesis reporting original research must be defended orally. Students are expected to participate in weekly departmental seminars.

Streams

Incoming students are assigned to one of five streams; however, they may take classes outside their stream areas. Consult department for details. The streams are:

A: Population Biology

B: Cellular and Molecular Biology

C: Organismal Biology

Classes Offered

Classes marked with an asterisk (*) are offered in alternate years. Please check the current timetable to see whether a particular class is being offered.

BIOL 5012.03A or B: Advanced Laboratory in Biochemical Techniques.

Instructors: C.J.A. Wallace, J.M. Wright
Format: Lab 72 hours total (approx.)

BIOL 5020.03A: Advanced Cell Biology.

Instructor: T.H. MacRae
Format: Lecture 3 hours

BIOL 5024.03A: Microscopy.

Instructors: G. Faulkner, D.B. Stoltz, K.B. Easterbrook, J.H.M. Willison
Format: Lecture 2 hours, lab 3 hours

BIOL 5030.03A: Topics in Genetics.

Instructor: R.W. Lee
Format: Seminar 2 hours

BIOL 5060.03A: Environmental Ecology.

Instructor: B. Freedman
Format: Lecture 3 hours

BIOL 5061.03A: Experimental Design and Data Analysis in Biology.

Instructors: R. Scheibling, H. Whitehead
Format: Lecture 3 hours

***BIOL 5070.03R: Advanced Topics in Animal Physiology.**

Instructors: R.K.O'Dor, A. Pinder
Format: Lecture 2 hours, open lab 3 hours

***BIOL 5072.06R: Animal Nutrition.**

Instructor: J. Castell
Format: Lecture/seminar 2 hours

BIOL 5101.03B: Industrial Microbiology and Biochemistry.

Instructor: M. Silver
Format: Lecture/seminar 2 hours

BIOL 5103.03B: Infectious Diseases of Aquatic Organisms.

Instructor: R. Brown
Format: Lecture 3 hours

***BIOL 5214.03B: Physiology and Biochemistry of Marine Algae.**

Instructor: J.S. Craigie
Format: Lecture 2 hours

***BIOL 5439.03B: Topics in Human and Medical Genetics.**

Instructors: O.P. Kamra (Coordinator), M. Ludman, J.P. Welch, B. Zouros
Format: Lecture/seminar 2 hours

***BIOL 5600.03B: Invertebrate Fisheries and Aquaculture.**

Instructors: J. Grant, R. Mohn, G.F. Newkirk
Format: Lecture/seminar 3 hours

***BIOL 5616.03B: Ecosystem Analysis.**

Instructor: P. Lane
Format: Lecture/discussion 3 hours

***BIOL 5651.03A: Marine Mammalogy.**

Instructors: I. McLaren, H. Whitehead
Format: Lecture/projects/etc. 3 hours

BIOL 5700.03R: Communications Skills for Scientists.

Instructors: H. Whitehead, and others
Format: Lecture 2 hours

BIOL 5701.03R: Communication Assignment.

Instructor: Staff
Format: Lecture 1 hour

BIOL 5705.03R: Graduate Module Class I. Taken by MSc students only (graded)

Instructor: Staff
Format: 2 hours

BIOL 5706.03R: Graduate Module Class II. Taken by PhD students (or for MSc students who wish to take additional modules) (graded)

Instructor: Staff
Format: 2 hours

BIOL 5707.03R: Graduate Module Class III. Taken by PhD students only (pass/fail)

Instructor: Staff
Format: 2 hours

BIOL 5800.03-5899.03: Special Topics in Biology. The format of Special Topics classes will depend upon individual student needs. The availability of these classes is dependent upon demand. The names of the professors associated with the following classes are not exclusionary and are provided as a guide only. Students are advised to discuss Special Topics classes with their supervisor.

BIOL 5801.03 A or B or R/5901.06R: Special Topic in Agricultural Biology.

BIOL 5802.03 A or B or R/5902.06R: Special Topic in Animal Behaviour. H. Whitehead

BIOL 5803.03 A or B or R/5903.06R: Special Topic in Animal Physiology. R.K. O'Dor

BIOL 5804.03 A or B or R/5904.06R: Special Topic in Animal Science.

BIOL 5805.03 A or B or R/5905.06R: Special Topic in Aquaculture. G. Newkirk

BIOL 5806.03 A or B or R/5906.06R: Special Topic in Biochemistry. B. Pohajdak

BIOL 5807.03 A or B or R/5907.06R: Special Topic in Biological Education.

BIOL 5808.03 A or B or R/5908.06R: Special Topic in Biomathematics.

BIOL 5809.03 A or B or R/5909.06R: Special Topic in Biostatistics.

BIOL 5810.03 A or B or R/5910.06R: Special Topic in Cell Biology. T. MacRae

BIOL 5811.03 A or B or R/5911.06R: Special Topic in Developmental Biology. B.K. Hall

BIOL 5812.03 A or B or R/5912.06R: Special Topic in Ecology. I. McLaren

BIOL 5813.03 A or B or R/5913.06R: Special Topic in Environmental Biology. J.H.M. Willison

BIOL 5814.03 A or B or R/5914.06R: Special Topic in Evolutionary Biology. E. Zouros

BIOL 5815.03 A or B or R/5915.06R: Special Topic in Fish Biology. S.R. Kerr

BIOL 5816.03 A or B or R/5916.06R: Special Topic in Functional Morphology. A. Pinder

BIOL 5817.03 A or B or R/5917.06R: Special Topic in Genetics. O.P. Kamra

BIOL 5818.03 A or B or R/5918.06R: Special Topic in History of Biology. J. Farley

BIOL 5819.03 A or B or R/5919.06R: Special Topic in Industrial Microbiology. R.G. Brown

BIOL 5820.03 A or B or R/5920.06R: Special Topic in Limnology. P. Lane

BIOL 5821.03 A or B or R/5921.06R: Special Topic in Marine Biology. R. Doyle

BIOL 5822.03 A or B or R/5922.06R: Special Topic in Marine Ecology. R. Scheibling

BIOL 5823.03 A or B or R/5923.06R: Special Topic in Marine Microbiology.

BIOL 5824.03 A or B or R/5924.06R: Special Topic in Microbiology. L.C. Vining

BIOL 5825.03 A or B or R/5925.06R: Special Topic in Molecular Biology. J. Wright

BIOL 5826.03 A or B or R/5926.06R: Special Topic in Philosophy of Biology. K. von Maltzhan

BIOL 5827.03 A or B or R/5927.06R: Special Topic in Phycology. A.R.O. Chapman

BIOL 5828.03 A or B or R/5928.06R: Special Topic in Plant Biology. G. Hicks

BIOL 5829.03 A or B or R/5929.06R: Special Topic in Plant Ecology. B. Freedman

BIOL 5830.03 A or B or R/5930.06R: Special Topic in Plant Physiology. D.G. Patriquin

BIOL 5831.03 A or B or R/5931.06R: Special Topic in Plant Science.

BIOL 5832.03 A or B or R/5932.06R: Special Topic in Population Biology. S. Walde

BIOL 5833.03 A or B or R/5933.06R: Special Topic in Zoology. E. Angelopoulos

BIOL 9000.00 MSc Thesis

BIOL 9530.00 PhD Thesis

Areas of Specialization

Stream A - Population Biology
Biology and culture of lobster and scallops (D.E. Alken)

Ecophysiology and post-harvest biology of crops; plant-microbe interaction (S.K. Asiedu)

Population dynamics and management of seals (W.D. Bowen)

Investigation of tacer movement in plant translocation systems (C.D. Caldwell)

Incremental growth of fish otoliths (S.E. Campana)

Population and community ecology of seaweeds (A.R.O. Chapman)

Ecology; Zooplankton physiology and population studies (R.J. Conover)

Physiology and biochemistry of marine algae (J.S. Craigie)

Ecological genetics of aquatic organisms; aquaculture genetics (R.W. Doyle)

Phytoplankton ecology and primary production (S.R.V. Durvasula)

Management of mineral nutrition of lowbush blueberry (L.J. Eaton)

Ethology; development and adaptation in behaviour (J.C. Fentress)

Forest ecology, pollution and resource management, ecology (B. Freedman)

Plant pathology in Nova Scotia (A.B. Gray)

Marine benthic ecology (B.T. Hargrave)

Mammalian behavioural ecology; social communication (F. Harrington)

Marine phytoplankton (W.G. Harrison)

Secondary production and copepod ecology (B. Head)

Experimental analysis of development of seed plants and ferns (G.S. Hicks)

Evolutionary and ecological genetics of plants; evolution of mating systems; development and evolution of flowers (M.O. Johnston)

Evolutionary ecology; population biology; life history strategies of fishes (J.A. Hutchings)

Effect of boron nutrition on glucosinolate content in crucifers (H.-Y. Ju)

Marine population studies; ecology (S.R. Kerr)

Seal biology (W.C. Kimmmins)

Community ecology, structure and stability of plankton communities, competition-predation phenomena, eutrophication (P.A. Lane)

Avian behavioural ecology (M.L. Leonard)

Analysis of ecosystems. Comparison of system function in coastal inlets and in lakes. Ecological energetics. (K.H. Mann)

Field crop management and multiple cropping systems (R.C. Martin)

Marine botany (J.L. McLachlan)

Population, production, and evolutionary ecology of zooplankton, (I.A. McLaren)

Biological oceanography, benthic invertebrates (B.L. Mills)

Aquaculture genetics and bivalve culture (G.F. Newkirk)

Plant tissue culture (J. Nowak)

Plant anatomy, taxonomy (A.R. Olson)

Biological Agriculture (D.G. Patriquin)

Dynamics and spatial properties of phytoplankton. (T.C. Platt)

Ecology of crustacea and marine plants. (J.D. Pringle)

Fisheries management studies (M. Sinclair)

Population and community ecology of marine benthos (R.E. Scheibling)

Fisheries biology (M. Sinclair)

Ethology in Canadian Animal Science and its applications to research on cattle (T. Tennesen)

Genetics of marine algae (J.P. van de Meer)

Marine pollution studies: fate and effects of petroleum and coal hydrocarbons (J.H. Vandermeulen)

Regeneration and reproduction in lower plants. (K.E. von Maltzahn)

Predator-prey relationships in terrestrial arthropods (S. Walde)

Evolutionary biology; anatomical adaptation (R.J. Wassersug)

Social organization and population biology of whales (H. Whitehead)

Plant stress physiology; environmental policy (J.H.M. Willison)

Population and ecological genetics; the genetic basis of adaptation and evolution (B. Zouros)

Stream B - Cellular and Molecular Biology

Birth control for seals (R.G. Brown)

Molecular biology of marine algae of importance to aquaculture (S.E. Douglas)

Radiation genetics and chemical mutagenesis; cytogenetic effects of food additives and insecticides (O.P. Kamra)

Marine bivalves; molecular evolution of fisheries biology (E. Kenchington)

Genetics, characterization and regulation of chloroplast DNA in *Chlamydomonas* (R.W. Lee)

Synthesis and assembly of tubulin; microtubule organization; metals in marine environments (T.H. MacRae)

Isolating, cloning and identifying genes expressed in killer cells (B. Pohajdak)

Molecular biology of marine plants (M. Ragan)

Physiology and evolution of invertebrate sensory systems (S.R. Shaw)

Bacterial leaching and environmental microbiology (M. Silver)

Viruses and parasitism in insects (D.B. Stoltz)

Regulation of chlorophyll a & b protein gene expression by ultraviolet light (M.J. White)

Chemistry of marine natural products (J.L.C. Wright)

Molecular genetics of fishes (J.M. Wright)

Stream C - Organismal Biology

Monogastric nutrition and feedstuff evaluation (D.M. Anderson)

Nutrient requirements of aquatic species (J. Castell)

Fish Physiology (R.G. Boulter)

Fish parasites and diseases (D.K. Cone)

Molluscan reproduction and development (R.P. Croll)

Relationship of feeding and management to milk yield (A.H. Fredeen)

Fish nutritional research (S.P. Lall)

Invertebrate nervous systems: Their structural organization and development (I.A. Meinertzhagen)

Exercise physiology and bioenergetics of marine invertebrates, especially cephalopods; The life cycles of squid (R.K. O'Dor)

Development, nutrition, pathology of marine invertebrates (R. Scheibling)

Optics of arthropod compound eyes (S.R. Shaw)

Alternative amendments for soil chemistry and fertility and plant production (P.R. Warman)

Functional morphology of amphibian larvae (R. Wassersug)

Ultrastructure of trypanosomes and *Trichomonas* (E. Angelopoulos)

Developmental biology, cell differentiation, development and evolution (B.K. Hall)

Lipid metabolism and energetics of mammals, especially marine mammals (S.J. Iverson)

Comparative animal physiology (A. Pinder)

Business Administration

Location: 6152 Coburg Road, Halifax, N.S.
B3H 1Z5

Telephone: (902) 494-7080

Fax: (902) 494-1107

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.

Graduates in good standing in any discipline can apply to enter the graduate programme leading to the degree of Master of Business Administration. Details of the undergraduate programme leading to the Bachelor of Commerce degree may be found in the calendar for the Faculty of Management.

Director of the School

R.E. Klapstein

Director, International Business Centre

M.R. Brooks

Professors Emeriti

C.R. Brookbank, BA, MA, PhD (Tor)

R.E. George, BSc (London), MS (Bristol), PhD (London)

J.R.E. Parker, B Comm (Dal), MBA (Wash), CPhil (Mich), FCA

Professors

M.R. Brooks, BOT (McG.), MBA (Dal), PhD (Wales), William A. Black Chair of Commerce
Sir G. Day, LLB (Dal), Fellow of the University College (Cardiff) of the University of Wales, Chancellor, Herbert S. Lamb Chair in Business Education

I. Fooladi, BSc (Iran), MA (Tehran), MS, PhD (Oregon)

L.C. MacLean, BA, Bed (StFX), MA, PhD (Dal)

M.J.C. Martin, BSc (Nottingham), PhD (Sheffield)

J.D. McNiven, BA, MA, PhD (Mich)

P.J. Rosson, Dip. MS (Salford), MA (Lancaster), PhD (Bath), Dean, Faculty of Management

Y. Sankar, BA (McG), MA (Tor), PhD (Johns Hopkins)

D.A. Schellinck, BSc, MBA (Dal), PhD (Illinois)

Associate Professors

B.C. Archibald, BA (Queen's), MSc (Stanford), PhD (Wat)

R.G. Blunden, BComm (Dal), MIM (Northwestern), PhD (Western)

R. Carroll, BBA, BEd (StFX), MBA (Dal), CGA

D.C. Cherry, B Comm (Dal), MBA (McM), CMA

J.E.D. Conrod, BComm (Dal), MBA (Tor), CA

C.J. Dirksen, BS (Santa Clara), MBA, PhD (Oregon)

J.F. Duffy, BS, MS, PhD (Iowa)

R.A. Ellison, BSc (UNB), MBA (McM), PhD (Tenn)

H.I. Gassmann, Vordiplom (Stuttgart), MS (Oregon State), PhD (UBC)

R.E. Klapstein, BSc (Calg), BA (Alta), MBA, LLB (Dal), LLM (Osgoode), CMA, Director, School of Business Administration

A.M. Ireland, BA (Chatham), MSc (Carnegie-mellon), MBA, PhD (Dal), CA

S.O. Larsson, BSc (SGW), MSc (Alta), PhD (UBC)

R.N. Maddox, BA, MBA, PhD (Ohio)

L.W. Mealiea, AB, MBA (Rutgers), PhD (Mass)

A. Oppong, BSc (Ghana), MBA (Chic), 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)

E.W. Scott, BComm (Dal), MBA (Col), CA, CMA

Y. Shafai, BSc, MPA (Tehran), MBA, PhD (Mich)

D.P.J. Sheridan, CD, BA, BEd, MEd (Admin) (Sask), PhD (Alta)

F.S. Skinner, BComm (MUN), MBA, PhD (Tor)

R.A. Street, BComm, LLB, LLM (Dal), MBA (Western)

Assistant Professors

R.G. Baltazar, BSc (Ateneo de Manila), MIM, AGSIM

B.W. MacLean, BComm, MBA (Dal), CA

Z.S. Liu, BS (Nanjing), GDPA, MA (Carelton), PhD (UBC)

J. Sagebien, BA (Hamshire), MA (Naropa), MBA (Simmons), PhD (London School of Economics)

Lecturer

M.L. Grise, BComm (Queen's)

MBA Programme

The aim of the MBA programme is to prepare students to become effective managers in small or large organizations. The programme concentrates on developing the ability to make sound decisions and judgements, and trains students in the analysis and evaluation of data for decision making. These skills have wide application in business, government and other organizations. Core courses develop basic skills, while elective subjects strengthen functional skills and deepen understanding of the complex and changing environment facing modern organizations. Required modules in communication develop skills through application. Integration of current computer technology into the curriculum ensures that the learning environment closely approximates that in which graduates will be working. While students may choose to concentrate elective studies in one or two areas, there is no requirement that a major be formally declared.

Additional information on the MBA programme, including course descriptions, is found in a brochure published by the School of Business, and available from the School. Students seeking further information should contact:

Coordinator, MBA Programme
School of Business Administration
6152 Coburg Road
Halifax, N.S. B3H 1Z5
Telephone: (902) 494-7080

E-mail: MBA.Admissions@Dal.Ca

Website: <http://quasar.sba.dal.ca:2000/>

NOTE: In October of 1995 the core curriculum was altered from the previous structure. Students admitted to the MBA programme before this date should consult the calendar of the year admitted.

Admission Requirements

Regulations of the Faculty of Graduate Studies govern admissions. Admission is approved by the Dean of the Faculty of Graduate Studies, on the recommendation of the School of Business Administration. Applicants must hold a degree recognized by Dalhousie University as the equivalent of a Bachelor's Degree in one of its own faculties. Applicants are welcomed from those who have concentrated in the humanities, the social sciences, the physical sciences and engineering.

The School of Business actively seeks applicants also having relevant full-time work experience, but some candidates will be admitted directly from undergraduate studies. A résumé should accompany every application.

All applicants are required to submit results of a Graduate Management Admission Test (GMAT). Information on test dates, locations and registration can be obtained from the Dalhousie Registrar, or by writing directly to GMAT, Educational Testing Service, Box 966, Princeton, NJ, U.S.A. 08541.

Candidates whose native language is not English are required to submit results of the Test of English as a Foreign Language (TOEFL). Information on test dates, locations and registration can be obtained by writing to TOEFL, Educational Testing Service, P.O. Box 899, Princeton, NJ, U.S.A. 08540.

Admission criteria and procedures are identical for the part-time and full-time programmes.

Admissions are made on a rolling basis, commencing in January for the following September. Admission is made only for the academic year beginning in September. Interim (official) transcripts will be considered for candidates currently attending university, if all other documentation is complete. Since space in the programme is limited, it is strongly recommended that all documents be submitted before May 31 (March 31 for foreign students). Applications received after these dates will be considered on a space available basis.

Applications received after June 1 will be considered only in exceptional circumstances, and as space is available. A complete application includes:

- Faculty of Graduate Studies application form
- 2 reference letters, (academic)
- GMAT results
- TOEFL results, where applicable
- Proof of financial ability, where applicable (see Faculty Regulation, item 3)
- 2 transcripts from each institution attended
- 2 copies of a brief statement explaining how You expect the Dalhousie MBA to benefit you, and what you will contribute to the programme.

- 2 copies of your résumé

The application form, together with the application fee, should be sent to the Registrar's Office. All supporting documentation should be sent directly to the School of Business Administration. Reference letters must be originals, sent directly by the referees. Only official transcripts received directly from the issuing institution will be accepted. GMAT and TOEFL score reports must be forwarded by the Educational Testing Service.

All admitted applicants must confirm in writing their acceptance of the offer of a place, and provide a non-refundable deposit of \$200. This fee will be applied toward tuition but will be forfeited if the student does not register in the academic year for which he or she was admitted. Please note that this deposit is separate from any application or pre-registration fees, and is the means by which candidates to whom orientation materials are to be sent are identified.

Tuition deposits are normally due:

- by April 30 for offers made before April 1
- within 30 days for offers made between April 1 and June 15
- within 10-15 days for offers made after June 15

The Faculty of Law may require a deposit in addition to that required by the School of Business.

Grading System and Good Standing

Under the regulations of the Faculty of Graduate Studies and the requirements of the School of Business, MBA students are required to achieve a grade of B- or better in all classes taken. Full-time students are permitted to continue in the programme with one FM grade if an overall B average is maintained for the year. This special exception is available only to full-time students. No credit towards a degree is granted for any class in which a grade of less than B- is obtained.

Students who do not meet these requirements may not continue in the programme unless readmission is recommended by the School and approved by the Faculty of Graduate Studies.

Failed Core classes must be repeated and passed at the earliest opportunity; failed elective classes may be repeated and passed or replaced. A second failure in the same course, regardless of when such failure occurs, will normally result in immediate dismissal from the MBA programme. In order to graduate, students must achieve an overall B average for the programme.

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. In any course for which 25 percent or more of the evaluation is based on group work, there must be an exam(s), which must be passed on average.

Special examinations may be granted to students only in the case of illness supported by a medical certificate, or in other exceptional circumstances. Medical certificates must be

submitted at the time of the illness and will not normally be accepted after a lapse of one week from the date of the examination.

Part-time MBA Programme

The MBA degree may be earned through part-time study. A student must complete the requirements for the MBA degree within six years of initial enrolment in the programme. Extensions may be granted in special cases upon petition to the Faculty of Graduate Studies.

Several core classes and a selection of electives are offered at night each year on a rotating basis, and any summer classes offered are scheduled at night.

There is no prescribed order of completion of courses in the part-time programme, except as dictated by course prerequisites. However, MBA 6004.03A (Strategy Formulation) and 6005.03B (Strategy Implementation) are among the last classes taken, since they provide an integration of the whole programme and require a major field project.

No more than five (5) half-credit classes may be taken in each twelve month year, including summer sessions. Only Graduate level classes approved for Summer Session offering will be eligible for credit.

Part-time MBA students will be enrolled in classes together with full-time MBA students.

Advanced Standing and Exemptions

Students with relevant academic background may receive some advanced standing or exemption for core classes in the MBA programme. For further information, contact the MBA Coordinator. Full-time students will not normally be permitted to carry less than a full work load in the first year of the programme, regardless of the number of waivers granted.

International Business

There are no formal concentration requirements in the MBA programme but students hoping to be considered for International Business Fellowships are expected to complete: 5801.03 International Business, 6802.03 Strategic Management of International Operations, 6315.03 Intercultural and Comparative Management, and at least one of the other International Business courses offered by the School. These include:

- BUSI 6803.03: International Transportation
- BUSI 6804.03: Ocean Shipping Seminar
- BUSI 6805.03: Seminar on Marine Resources and Ocean Industry
- BUSI 6806.03: International Marketing
- BUSI 6807.03: International Financial Management
- BUSI 6808.03: International Banking
- BUSI 6812.03: Foreign Study Mission
- BUSI 6813.03: Management and the Natural Environment
- BUSI 6815.03: Doing Business Effectively in Asia

In addition, BUSI 6553.03 Managing Technological Innovation is designed with significant international content.

Combined LLB and MBA Programme

This is a four-year programme which enables students to select classes leading to the degrees of Bachelor of Laws and Master of Business Administration. The usual order of the programme is:

Year 1: First-year classes of MBA programme, with a minimum of ten half-credit classes. See "Programme Structure" for details.

Year 2: First-year classes of the LLB programme

Year 3: Three half-credit classes from the MBA programme plus 25 hours of classes from the LLB programme, including 7/9 hours from the Business Law area

Year 4: Four half-credit classes, including BUSI 6004.03A and 6005.03B from the MBA programme, and between 23 and 25 hours of classes in law.

Years 1 and 2 may be reversed, but students wishing to do so should advise both Schools and the Faculty of Graduate Studies as early as possible.

Candidates for the LLB/MBA programme must also satisfy the entrance requirements of the Faculty of Law (see calendar of that Faculty) and may obtain further information about the combined programme by writing either to the Faculty of Law or to the Coordinator of the MBA programme. For admission, students must apply to both the Law School and the Business School.

Programme Structure - Ten Month MBA

Students with a recognized undergraduate degree in business (i.e., BComm, BBA, HBA) will be granted a maximum of five half credits of Advanced Standing, reducing their total MBA programme to 15 classes. Students may also receive exemptions for core classes for which a demonstrated overlap is shown, replacing exempted classes with electives of their choice. The minimum number of classes required is fifteen half credit, which will normally be six core and nine elective classes.

Programme Structure

Fall Term

- Career Planning - Module 1 (non-credit)
- BUSI 5201.03A: Financial Management
- BUSI 5511.03A: Management Information Systems. Cross-listing: LIBS 6090.03
- BUSI 5801.03A: International Business
- 3 Electives

Winter Term

- Career Planning - Module 2 (non-credit)
- BUSI 5551.03B: Production and Service Management
- BUSI 6004.03B: Strategy Formulation
- 4 Electives

Spring Term

- Career Planning - Module 3 (non-credit)
- BUSI 6005.03B: Strategy Implementation
- 2 Electives

Note: The core classes shown above will vary for individual students depending on their undergraduate classes. Please consult the MBA Programme Office for a personalized core class requirements listing.

Programme Structure - Two Year MBA

All MBA classes are half-credit classes. The MBA programme includes eleven required core classes, one required non-credit class (except LLB/MBA), and nine free electives, (six for LLB/MBA).

Full-time students are normally required to carry a full course load in the first year, consisting of ten half-credit classes and one non-credit class.

First Term

- BUSI 5103.03A: Accounting
- BUSI 5305.03A: Managing Development (formerly 5311.03/5315.03)
- BUSI 5703.04A: Business Economics
- BUSI 5503.03A: Quantitative Decision Making
- BUSI 5801.03A: International Business (formerly 6901.03)
- BUSI 5003.00A: Communications and Career Planning - Module 1 (non-credit)

Second Term

- BUSI 5003.00B: Communications and Career Planning - Module 2 (non-credit)
- BUSI 5201.03B: Financial Management. Prerequisite: BUSI 5101.03, 5703.04, or permission of the instructor
- BUSI 5401.03B: Marketing Management
- BUSI 5551.03B: Production Management
- BUSI 5511.03B: Management Information Systems (formerly 6903.03). Cross-listing: LIBS 6090.03
- 1 elective

Combined LLB/MBA students are not required to take BUSI 5003.00.

The second year normally consists of two required core classes and nine electives, to total eleven classes.

Third Term

- BUSI 6004.03A: Business Policy I: Strategy Formulation. Prerequisite: All first year required classes, or permission of the instructor.
- 4 electives

Fourth Term

- BUSI 6005.03B: Business Policy II: Strategy Implementation. Prerequisite: BUSI 6004.03
- 4 electives

The variety of electives allows a student to develop a programme in keeping with his/her career plan. Not all classes will necessarily be offered every year. In addition, new classes may be added from time to time. Therefore, students should check with the School for up-to-date information.

Students may also elect to take, with the approval of the School, graduate classes in other faculties and departments, such as Mathematics, Statistics and Computing Science, Resource and Environmental Studies, Economics, Public Administration, Law, etc. A concentration in Environmental Studies became available to MBA students in 1992/93. Throughout the programme, candidates will be expected to attend lectures given by visiting professors and business executives and to take part in projects involving the analysis of the problems of local business firms.

Elective Classes

Note: It may not be possible to offer every elective class each year, classes marked with an * are not offered every year. Please consult the university timetable for a list of current offerings.

Accounting

- BUSI 5101.03A or B: Financial Accounting.**
Format: Lecture
Prerequisite: BUSI 5103.03 or permission of the instructor
- BUSI 5102.03A or B: Managerial Accounting.**
Format: Lecture
Prerequisite: BUSI 5103.03 or permission of the instructor
- BUSI 6101.03A or B: Public Auditing.**
Format: Seminar
Prerequisite: BUSI 5103.03
- BUSI 6102.03A or B: Taxation.**
Format: Seminar
Prerequisite: BUSI 5103.03, 5703.04
- *BUSI 6103.03A or B: Advanced Taxation.**
Format: Seminar
Prerequisite: 6102.03
- BUSI 6106.03A: Advanced Managerial Accounting 1: Cost Accounting.**
Format: Lecture
Prerequisite: BUSI 5703.03 or permission of the instructor
- BUSI 6107.03B: Advanced Managerial Accounting 2: Organizational Control.**
Format: Lecture
Prerequisite: BUSI 6106.03 or permission of the instructor
- BUSI 6108.03A or B: Advanced Financial Accounting 1.**
Format: Lecture
Prerequisite: BUSI 5103.03 or permission of the instructor
- BUSI 6109.03A or B: Advanced Financial Accounting 2.**
Format: Lecture
Prerequisite: BUSI 6108.03 or permission of the instructor
- *BUSI 6112.03A or B: Financial Statement Analysis.**
Format: Lecture
Prerequisites: BUSI 5103.03, 5201.03, and 5503.03
- BUSI 6114.03A or B: Information System Controls.**
Format: Lecture
Prerequisite: BUSI 5103.03, 5511.03

Finance

- BUSI 6201.03A or B: Investments.**
Format: Lecture
Prerequisite: BUSI 5201.03.03.
Recommended: BUSI 5103.03
 - *BUSI 6202.03A or B: Investments II.**
Format: Lecture
Prerequisites: BUSI 5201.03, BUSI 6201.03 or BUSI 6205.03 recommended
 - BUSI 6203.03A or B: Canadian Capital Markets.**
Format: Lecture
Prerequisite: BUSI 5201.03.
Recommended: BUSI 5103.03
 - BUSI 6204.03A or B: Short-Term Financial Management.**
Format: Lecture
Prerequisite: BUSI 5201.03,
Recommended: BUSI 5103.03
 - BUSI 6205.03A or B: Capital Budgeting.**
Format: Lecture
Prerequisite: BUSI 5103.03 and 5201.03
 - BUSI 6206.03A or B: Portfolio Theory.**
Format: Lecture
Prerequisite: BUSI 5103.03 and 5201.03
 - BUSI 6250.03A or B: Theory of Finance.**
Format: Seminar
Prerequisite: Concentration in Finance and permission of the instructor.
 - BUSI 6807.03A or B: International Financial Management.** (see International Business)
- Management**
- BUSI 5312.03A or B: Organizational Design.**
Format: Lecture
Prerequisite: BUSI 5305.03 or permission of the instructor
 - BUSI 5331.03A or B: Introduction to Labour Management Relations.**
Format: Seminar
 - BUSI 6313.03A or B: Organizational Change.**
Format: Lecture/seminar
Prerequisite: BUSI 5305.03 & BUSI 5312.03 or permission of the instructor
 - BUSI 6315.03A or B: Intercultural and Comparative Management.**
Format: Lecture
Prerequisite: BUSI 5801.03
 - BUSI 6322.03A or B: Selection: Testing & Interviewing.**
Format: Seminar/lecture
Prerequisite: BUSI 5315.03 or permission of the instructor
 - BUSI 6323.03A or B: Training & Development.**
Format: Seminar
Prerequisite: BUSI 5305.03 or permission of the instructor
 - BUSI 6324.03A or B: Performance Appraisal & Compensation.**
Format: Seminar/lecture
Prerequisite: BUSI 5305.03 or permission of the instructor
 - BUSI 6326.03A or B: Management Skills Development.**
Format: Seminar

Prerequisite: BUSI 5305.03 or permission of the instructor
BUSI 6332.03A or B: Collective Bargaining.
Format: Seminar
BUSI 6333.03A or B: Comparative Labour Relations.
Format: Seminar
Prerequisite: BUSI 5331.03 or permission of the instructor

Marketing and Transportation

BUSI 5402.03A or B: Buyer Behaviour.
Format: Lecture
BUSI 6401.03A or B: Marketing Research and Information Systems.
Format: Seminar
Prerequisites: BUSI 5402.03, BUSI 5401.03
Recommended: BUSI 6504.03, strongly recommended
BUSI 6402.03A or B: Marketing Channels.
Format: Lecture
Prerequisite: BUSI 5401.03
Recommended: BUSI 5402.03
BUSI 6403.03A or B: Advertising Management.
Lecture/seminar
Prerequisite: BUSI 5401.03
Recommended: BUSI 5402.03
BUSI 6404.03A or B: Consumer Behaviour.
Format: Seminar
Prerequisite: BUSI 5401.03 and 5402.03
BUSI 6405.03A or B: Sales Management.
Format: Lecture/case studies
Prerequisite: BUSI 5401.03
BUSI 6406.03A or B: Domestic Transportation.
Format: Lecture/seminar
BUSI 6407.03A or B: Logistics Management.
Format: Lecture/seminar
Prerequisite: BUSI 5551.03 or permission of the instructor
BUSI 6408.03A or B: Transportation Management.
Format: Lecture
Prerequisite: BUSI 5201.03 and BUSI 5315.03

BUSI 6450.03B: Marketing Strategy Seminar.
Format: Seminar
Prerequisites: BUSI 5401.03, and at least two 6000-level marketing classes, (which may be taken concurrently) or permission of the instructor

BUSI 6803.03A or B: International Transportation. (see International Business)

BUSI 6804.03A or B: Ocean Shipping Seminar. (see International Business)

BUSI 6806.03A or B: International Marketing. (see International Business)

Management Science

BUSI 6501.03A or B: Operations Research.
Format: Lecture
Prerequisite: BUSI 5503.03

BUSI 6502.03A or B: Forecasting Models.
Format: Seminar
Prerequisite: BUSI 5503.03 or equivalent

BUSI 6503.03A or B: Simulation Models.

Prerequisite: BUSI 5503.03
***BUSI 6504.03A: Applied Statistics.**
Format: Seminar
Prerequisite: BUSI 5503.03
***BUSI 6505.03A or B: Managerial Decision Making.**
Format: Lecture/seminar
Prerequisite: BUSI 5503.03
BUSI 6507.03R: Advanced Operations Research Project. Choice of instructor
Format: Tutorial
Prerequisite: See the Management and Information Science area coordinator for requirements

Information and Systems Technology

BUSI 6512.03A or B: Telecommunication and Business Strategy.
Format: Seminar
Prerequisite: BUSI 5511.03
Exclusion: BUSI 6905.03 in 1992/93 and 1993/94

BUSI 6514.03A or B: Systems Analysis and Design.
Format: Seminar
Prerequisite: BUSI 5511.03
Exclusion: BUSI 6904.03 (former number)
Cross-listing: LIBS 5580.03

BUSI 6515.03A or B: Special Topics in Management Information Systems.
Format: Seminar
Prerequisite: BUSI 5511.03
Exclusion: BUSI 6905.03 (former number)

BUSI 6516.03A or B: Database Management Systems.
Format: Lecture/seminar
Prerequisite: BUSI 5511.03
Exclusion: BUSI 6906.03 (former number)
Cross-listing: LIBS 5540.03

BUSI 6517.03A or B: Management of the Information Resource.
Format: Seminar
Prerequisite: BUSI 5511.03
Exclusion: BUSI 6907.03 (former number)

BUSI 6518.03A or B: Expert Systems.
Format: Lecture/seminar
Prerequisite: BUSI 5511.03
Exclusion: BUSI 6908.03 (former number)

BUSI 6553.03A or B: Managing Technological Innovation.
Format: Seminar

International Business

BUSI 6802.03B: Strategic Management of International Operations.
Format: Seminar
Prerequisite: BUSI 5801.03

BUSI 6803.03A or B: International Transportation.
Format: Seminar
Recommended: BUSI 5801.03

***BUSI 6804.03A or B: Ocean Shipping Seminar.**
Format: Seminar
Prerequisite: BUSI 6803.03

***BUSI 6805.03A or B: Seminar on Marine Resources and Ocean Industry.**

Format: Seminar
BUSI 6806.03A or B: International Marketing.
Format: Seminar
Prerequisite: BUSI 5401.03
Recommended: BUSI 5801.03, strongly recommended

BUSI 6807.03A or B: International Financial Management.
Format: Seminar
Prerequisites: BUSI 5703.04, 5201.03 and 5103.03
Recommended: BUSI 5801.03, strongly recommended

BUSI 6808.03A or B: International Banking.
Format: Seminar
Prerequisite: BUSI 5703.04
Recommended: BUSI 5801.03, strongly recommended

***BUSI 6809.03A or B: Special Topics in International Business.**
Format: Lecture/Seminar

BUSI 6812.03: Foreign Study Mission.
Prerequisite: BUSI 5801.03

BUSI 6813.03: Management and the Natural Environment - An International Perspective.

BUSI 6815.03: Doing Business Effectively in Asia.
Format: Lecture/seminar
Prerequisite: BUSI 5801.03
Co-requisite: BUSI 6802.03 or permission of the instructor.

General

BUSI 6002.03A or B: New Venture Creation.
Prerequisites: BUSI 5101.03, 5102.03, 5201.03, 5401.03

BUSI 6003.03A or B: Management of Diversification.
Prerequisites: BUSI 5101.03, 5102.03, 5201.03, 5315.03, 5401.03, 5503.03, 5551.03, or permission of the instructor

BUSI 6006.03: Managing the Family Enterprise.
Prerequisites: BUSI 5103.03, 5102.03, 5201.03, 5315.03, 5401.03, 5503.03, 5551.03, or permission of the instructor

BUSI 6901.03A or B: Business Law.
Format: Seminar

BUSI 6902.03A or B: Business and Government.
Format: Lecture

BUSI 6951.03A/6952.03B: Research Reading and Conference. Choice of instructor

MBA (Financial Services) Programme

This MBA degree is designed to further prepare managers in the financial services industry to exercise leadership, sound general business knowledge, analytical skills and judgement in their managerial and client service roles. The MBA (Financial Services) consists of sixteen graduate level classes, including seven classes offered by the Institute of Canadian Bankers through the Professional Banking Program (PBP), and nine classes provided by the School of Business Administration. To be eligible for admission to the programme, applicants will be required to have successfully completed a minimum of four PBP classes and either meet the normal undergraduate requirements for admission to the MBA programme at Dalhousie, or possess at least five years experience in relevant management positions. Once accepted to the programme, a student must complete the requirements for the MBA (Financial Services) degree within seven years.

Eight of the nine Business Administration classes are offered via a distance education format, using university texts supplemented with teaching notes prepared by Dalhousie University professors. Each of the initial eight core classes in the programme will consist of 17 weeks of distance study and assignments, followed by a three day intensive learning session. The capstone class, Organizational Change and Policy Project, will be a one week intensive learning session conducted at Dalhousie University.

The programme will offer two academic terms per year, commencing in mid September and mid February; admissions are made for either term. There will be four classes available in each term. Classes will only be offered if there are an acceptable minimum number of students enrolled in a class section. The capstone class will be offered during the summer break between the two regular terms, commencing in the first summer after a sufficient number of students have completed the preceding 15 classes.

There is no prescribed order of completion of classes in the programme, except as dictated by class prerequisites. However, a student may only enrol in the capstone class after having successfully completed the preceding 15 classes in the programme.

Application Procedure

For the 1996-97 academic year applications (including all supporting documents) must be post-marked no later than June 1, for the term commencing September 16, 1996, and no later than November 15 for the term commencing February 10, 1997. A complete application includes:

- Faculty of Graduate Studies Application for Admission
- 2 letters of reference (one academic, one employment)
- 2 transcripts from each educational institution attended
- 2 ICB transcripts

- 2 Confirmations of Employment Record

Classes

The classes available to students in the MBA (Financial Services) programme are:

September Term

- BUSI 5103.03: Accounting
- BUSI 5503.03: Quantitative Decision Making
- BUSI 6315.03: Intercultural and Comparative Management
- BUSI 6410.03: Advanced Marketing

February Term

- BUSI 5551.03: Production and Service Management
- BUSI 5703.03: Business Economics
- BUSI 5801.03: International Business
- BUSI 6207.03: Advanced Corporate Finance

Summer Term

- BUSI 6990.03: Strategic Leadership and Change (Project)

MBA (Financial Services) students are permitted to take these classes in the distance format only.

Contact

Students seeking further information should contact:

Administrative Assistant
School of Business Administration
6152 Coburg Road
Halifax, NS B3H 1Z5
Telephone: (902) 494-7080
Fax: ((02) 494-1107
EMail: MBAFinancial@sbacoop.sba.dal.ca

Chemistry

Location: Chemistry Building, Dalhousie University, Halifax, N.S. B3H 4J3
Telephone: (902) 494-3305
Fax: (902) 494-1310
e-mail: DALCHEM@AC.DAL.CA
Website: <http://mol.chem.dal.ca>

Chairperson of Department

R.J. Boyd

Graduate Coordinator

N. Burford

Professors Emeriti

□ Knop, DSc (Laval), FCIC, Harry Shirreff Professor of Chemical Research
 D.E. Ryan, BSc (UNB), MA (Tor), PhD, DSc (Lond), DIC, FCIC

Professors

D.R. Arnold, BS (Bethany College), PhD (Roch), FCIC, Alexander McLeod Professor of Chemistry
 W.A. Aue, PhD (Vienna)
 R.J. Boyd, BSc (UBC), PhD (McG), FCIC
 N. Burford, BSc (Wales, Cardiff), PhD (Calgary)
 T.S. Cameron, BA, MA, DPhil (Oxon)
 A. Chatt, BSc (Calcutta), MSc (Roorkee), MSc (Wat), PhD (Tor), FCIC
 J.A. Coxon, MA (Cantab.), MSc, PhD (East Anglia)
 T.P. Forrest, BSc (MtA), MSc (Dal), PhD (UNB)
 T.B. Grindley, BSc, MSc, PhD (Queen's), FCIC
 J.S. Grossert, BSc, MSc, PhD (Natal), FCIC
 J.C.T. Kwak, BSc, MSc, PhD (Amsterdam), FCIC
 P.D. Pacey, BSc (McG), PhD (Toronto), FCIC
 J.A. Pincock, BSc, MSc (Man), PhD (Tor)
 L. Ramaley, BA (Columbia), MA, PhD (Princeton), FCIC
 R. Stephens, MA (Cantab.), MSc (Bristol), PhD (Lond), DIC
 R.E. Wasylshen, BSc (Wat), MSc, PhD (Man), FCIC, Faculty of Science Killam Professor in Chemistry
 M.A. White, BSc (Western), PhD (McM), FCIC

Associate Professors

K.R. Grundy, BSc, MSc, PhD (Auckland)
 R.D. Guy, BSc (SFU), PhD (Carleton)
 D.L. Hooper, BSc, MSc, PhD (UNB), FCIC
 C.H. Warren, BSc (Western), PhD (McM)
 P.D. Wentzell, BSc (Dal), PhD (Mich State)
 R.L. White, BSc (Dal), PhD (McM), FCIC

Assistant Professors

F.L. Cozens, BSc (Hons) (York), PhD (Tor), NSERC Women's Faculty Award
 P.G. Kusalik, BSc (Lethbridge), MSc, PhD (UBC), NSERC University Research Fellow

Honorary Adjunct Professors

R.K. Boyd, BSc, PhD (St. Andrews, Scotland), National Research Council, Institute For Marine Biosciences

J.M. Curtis, BSc (Southampton), MSc (Guelph), PhD (Swansea), National Research Council, Institute for Marine Biosciences
 D.G. Marangoni, BSc (Acadia), PhD (Dal), St. Francis Xavier University
 P. Thibault, BSc, PhD (Montreal), National Research Council, Institute for Marine Biosciences
 K. Vaughan, BSc (UMIST), PhD (Scotland), Saint Mary's University
 M.J. Zaworotko, BSc (Imperial College), PhD (Alabama), Saint Mary's University

Visiting Scientists (1995)

K.G. Amoh, Ghana Atomic Energy Commission, Ghana
 N.A. Aras, Middle East Technical University, Turkey
 K. Crouse, Universiti Pertanian, Malaysia
 S.B. Elegba, Ahmadu Bello University, Nigeria
 I.D.B. Ewa, Ahmadu Bello University, Nigeria
 I. Khamis, Atomic Energy Commission, Syria
 J. Kiceniuk, Fisheries and Oceans Canada, St. John's, NF
 L. Komorowski, Technical University of Wroctaw, Poland
 A. Korkin, Moscow State University, Russia
 A. Laaksonen, University of Stockholm, Sweden
 W.A. Whitla, Mount Allison University, Sackville, NB

Postdoctoral Fellows (1995)

K. Eichele, BSc, PhD (University of Tübingen, Germany)
 J.A.C. Clyburne, BSc (Acadia), PhD (Dal)
 M.E. Lam, BSc (UBC), PhD (Dal)
 M. Li, PhD (Dal)
 C.B. Lucasius, PhD (Nijmegen), Killam Postdoctoral Fellow
 J.M. Martell, BSc (SMU), PhD (Dal)
 K.A. McManus, BSc, PhD (Dal)
 P.H. Poole, BSc (St.F.X.), MA, PhD (Boston), Killam Postdoctoral Fellow
 S.V. Sereda, BSc (Kiev State Univ), PhD (Moscow)
 I. Svishchev, MSc, PhD (Moscow)
 J. Wang, BSc, MSc (East China), PhD (Dal)
 J. Wang, BSc (Henon), MSc (Academia Sinica), PhD (Queen's)

Research Assistants/Associates

R. Cordes, BSc (Dal), MSc (UBC)
 S.T. Dimitrijevic, PhD (Belgrade)
 H. Furue, PhD (Queen's)
 N.P. Schepp, BSc, PhD (Tor)

Programmes leading to MSc and to PhD degrees are offered. Research for these degrees can be undertaken in analytical, inorganic, organic, physical/theoretical chemistry or combinations thereof.

Admission Requirements

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies. In some cases an MSc Degree may be required as a prerequisite for entry into a PhD programme. It is recommended that all students from outside Canada submit the results of the advanced Graduate Record

Examination in Chemistry. In some cases this will be made a precondition to consideration of the student's application for admission. For those whose first language is not English a minimum TOEFL score is required (see section 2.4).

General Regulations

All graduate students are required, as part of their training, to instruct in the undergraduate laboratories and to attend departmental seminars which are given by invited speakers. The Department will hold an annual meeting at which time it will review the work of all graduate students. Permission to continue will be contingent upon a satisfactory decision by the Department.

All graduate students must be in the Department and available for teaching assistant duties by September 1st of each year.

Further details of degree regulations are presented in a Handbook for Graduate Students in Chemistry, which may be obtained from the Departmental Office.

MSc Degree

Full-time Programme

Two full credit classes, or the equivalent, together with the presentation and oral defence of a thesis based on original research are required. Faculty regulations permit a 1-year MSc candidate to graduate after 12 months of resident study. Experience has shown that most MSc candidates in the Department require at least 16 months to complete their work. Financial support is not available for more than two years.

Part-time Programme

The full-time MSc class requirements and thesis regulation apply. The thesis must be supervised by a member of the Department. No stipends are available from the Faculty of Graduate Studies.

PhD Degree Programme

Three full-credit classes, or the equivalent, are required. A preliminary oral examination must be completed successfully. Original research, together with preparation and oral defence of a thesis, is required.

For the minimum time required to complete the programme, see Section 4. Financial support is not available for more than four years.

Classes Offered

Core classes, specialized classes and modular classes are offered by the department. The core classes constitute the main framework of a student's formal course work, and are designed to be broad-based but at an advanced level. They are intended to help the student gain a wide understanding in several major branches of chemistry and thus students are required to take such classes outside their area of specialization. The following half-credit core classes are offered at least every other year. Please consult the Department to ascertain which classes are being given.

Core Classes:

Analytical

CHEM 5201.03: Advanced Topics in Separations

CHEM 5202.03: Topics in Advanced Analytical Spectroscopy

CHEM 5204.03: Chromatography

Inorganic and Structural

CHEM 5101.03: Topics in Advanced Main Group Chemistry

CHEM 5102.03: Advanced Transition Metal Chemistry

CHEM 5103.03: Topics in Solid State Chemistry

Organic

CHEM 5401.03: Synthesis in Organic Chemistry

CHEM 5402.03: Organic Structure Determination

CHEM 5403.03: Organic Reaction Mechanisms

Physical and Theoretical

CHEM 5301.03: Theory of Chemical Bonding

CHEM 5304.03: Kinetics and Catalysis

CHEM 5305.03: Introductory Statistical Thermodynamics

CHEM 5306.03: Magnetic Resonance

CHEM 5308.03: Molecular Spectroscopy

Interdisciplinary

CHEM 5504.03: Diffraction Techniques in Solid State Chemistry

Additional specialized classes at the 6000 level provide the opportunity for in-depth study of selected topics which are more closely related to the student's research area. These classes vary from year to year depending on students' needs and interests.

Specialized Classes:

Inorganic

CHEM 6106.03: Advanced X-Ray Crystallography and Group Theory

CHEM 6107.03: Inorganic Crystallography and Application of Group Theory

CHEM 6108.03: Structure and Bonding in Non-Metal Chemistry

CHEM 6199.03: Special Topics in Inorganic Chemistry

Analytical

CHEM 6203.03: Environmental Chemistry

CHEM 6204.03: Analytical Radiochemistry

CHEM 6205.03: Chemometrics

CHEM 6299.03: Special Topics in Analytical Chemistry

Physical/Theoretical

CHEM 6301.03: Advanced Electronic Structure Theory

CHEM 6312.03: Colloid and Surface Science

CHEM 6313.03: Special Topics in Solid State Chemistry

CHEM 6314.03: Advanced Topics in NMR

CHEM 6315.03: Topics in Statistical Mechanics

CHEM 6316.03: Theory of Modern NMR Experiments

CHEM 6399.03: Special Topics in Physical Theoretical Chemistry

Organic

CHEM 6404.03: Organic Photochemistry

CHEM 6405.03: Stereochemistry

CHEM 6407.03: Organic Electrochemistry

CHEM 6408.03: Free Radical Chemistry

CHEM 6409.03: Carbohydrate Chemistry

CHEM 6499.03: Special Topics in Organic Chemistry

Interdisciplinary

CHEM 6501.03: Electronic Instrumentation for Scientists

Modular

CHEM 6600.03: Special Topics in Chemistry

Approved classes from departments other than Chemistry may be taken for credit.

Chemistry Research Interests**Analytical Chemistry**

W.A. Aue: Basic and applied chromatography

R.K. Boyd: Separations science; mass spectrometry

A. Chatt: Nuclear and bioanalytical methods; studies on trace elements in the environment

R.D. Guy: Method development for the speciation of toxic metals and organics

L. Ramaley: Electroanalytical chemistry, mass spectrometry and chemical instrumentation

R. Stephens: Analytical atomic spectroscopy

P.D. Wentzell: Chemometrics; sensors; continuous flow analysis

Inorganic and Structural Chemistry

N. Burford: Synthesis, structure and bonding of compounds of the main group elements

T.S. Cameron: X-ray structural studies on inorganic and organic compounds

J.M. Curtis: Applications of mass spectrometry in structural studies and trace analysis

K.R. Grundy: Synthesis and reactivity of organometallic complexes

O. Knop: Structural and solid-state inorganic chemistry

M.J. Zaworotko: Supra molecular chemistry; non-covalent bonding; design, synthesis and characterization of new materials

Organic Chemistry

D.R. Arnold: Development of photochemical and photochemical synthetic methods

T.P. Forrest: Expert systems and neural networks for spectroscopic interpretation

T.B. Grindley: Carbohydrate chemistry; molecular modelling; synthesis

J.S. Grossert: Mass spectrometry and organosulphur chemistry

D.L. Hooper: Spectroscopic methods; high field multinuclear nmr

K.T. Leffek: Physical organic chemistry

J.A. Pincock: Studies on reaction mechanisms involving both ground and excited states

K. Vaughan: Triazene chemistry

R.L. White: Biosynthesis of natural products and enzymes of secondary metabolism

Physical and Theoretical Chemistry

R.J. Boyd: Quantum chemistry reaction mechanisms; density functional theory and surface chemistry

J.A. Coxon: Electronic spectra; laser spectroscopy; weak chemiluminescence

P.G. Kusalik: Computer simulations of polar liquids and solutions; liquid state theory

J.C.T. Kwak: Colloid and polymer chemistry

P.D. Pacey: Temperature dependence of reaction rates

C.H. Warren: Molecular graphics and computer-aided instruction

R.E. Wasylshen: Multinuclear nmr studies of solids and fluids

M.A. White: Materials science; thermal properties of solids

Classics

Location: 1244 LeMarchant Street,
Halifax, N.S. B3H 3P7
Telephone: (902) 494-3468
Fax: (902) 494-2467

Chairperson of Department

J.P. Atherton

Professors Emeriti

J.A. Doull, BA (Dal), MA (Tor)
A.H. Armstrong, MA (Cantab), FBA

Professors

J.P. Atherton, MA (Oxon), PhD (Liverpool)
R.D. Crouse, BA (Vind), STB (Harvard), MTh
(Trinity), PhD (Harvard)
R. Friedrich, Dr phil (Goettingen), Graduate
Studies Coordinator
C.J. Starnes, BA (Bishop's), STB (Harvard), MA
(McG), PhD (Dal)

Associate Professors

W.J. Hankey, BA (Vind), MA (Tor), PhD (Oxon)
D.K. House, MA (Dal), PhD (Liverpool)
P.F. Kussmaul, Dr phil (Basle), Dr phil habil
(Heidelberg)

Assistant Professor

P. Calkin, BA (UBC), MA, PhD (Dal)

The Department invites applications especially from students of wide humanistic interests who wish to study the ancient origins of contemporary culture.

The graduate teaching and research of the Department is chiefly in the following areas:

- (a) Greek and Latin Literature
- (b) Ancient History (including: history of early Christian Church)
- (c) Greek Philosophy (including: history of Aristotelian philosophy from the Greek commentators to Hegel); Greek and Latin Patristics

MA students may concentrate their work in any of these areas. PhD candidates must work in the area of Hellenic and Hellenistic Studies.

Admission Requirements

Candidates must satisfy the admission requirements of the Faculty of Graduate Studies. The requirement of both Classical languages at Honours level may sometimes be relaxed, e.g., where a student has taken a Combined Honours course involving only one Classical language. In such cases at least two classes in the second language will be taken in addition to the MA course proper. In certain programmes, a knowledge of other ancient languages may be required.

MA Degree Programme

Three graduate seminars, two in the general area of interest and a reading and research class related to the thesis subject are required.

Candidates are expected to attend graduate seminars related to their theses throughout their period of full-time study. A thesis is required.

MA students should obtain a copy of the Departmental regulations for the degree.

PhD Degree Programme

The normal admission requirement is the Dalhousie MA in Classics, or equivalent preparation. The minimum residence requirement for such candidates is two years, during which time they must satisfy the general requirements of the Faculty, and, in addition, must demonstrate competence in the languages (ancient and modern) necessary for research in their particular fields of study.

All candidates are expected to have a broad understanding of all aspects of Classical culture, and within the general area of Hellenic-Hellenistic Studies, each candidate is expected to concentrate, with the guidance of a Supervising Committee, in one of three fields: History, Literature and Philosophy. Before submitting a thesis, the candidate must pass a comprehensive examination (written and oral) in his/her special field: this will normally be taken towards the end of the second or beginning of the third year of study.

Classes Offered

Greek and Latin Literature

CLAS 5010.06: Seminar on Greek Literature
(1). R. Friedrich

CLAS 5020.06: Seminar on Greek Literature
(2). R. Friedrich

CLAS 5030.06: Seminar on Latin Literature (1).
R. Friedrich/J.P. Atherton

CLAS 5040.06: Seminar on Latin Literature (2).
R. Friedrich/J.P. Atherton

Ancient History

CLAS 5530.06: Reading and research in
Ancient History. (1). P.F. Kussmaul

CLAS 5531: Reading and research in Ancient
History. (2). P.F. Kussmaul

CLAS 5550.06: Reading and research in
Ancient History. (2). P.F. Kussmaul

CLAS 5551.03A: Reading and research in
Ancient History. P.F. Kussmaul

CLAS 5552.03B: Reading and research in
Ancient History. P.F. Kussmaul

Classical Philosophy

CLAS 5600.06: Seminar on the Philosophy of
Aristotle. J.P. Atherton

CLAS 5601.06: Seminar on Plato and
Neoplatonism. J.P. Atherton

CLAS 5602.06: Seminar on Hellenistic
Philosophy. D.K. House

CLAS 5603.06: Seminar on the Philosophy of
Plato. D.K. House

Patristics

CLAS 5700.06: Seminar on the Philosophy of
the Church Fathers. R.D. Crouse

CLAS 5701.06: Seminar on the Medieval
Interpreters of Aristotle. R.D. Crouse

CLAS 5705.06: Seminar on St. Augustine (1).
C.J. Starnes

CLAS 5706.06: Seminar on St. Augustine (2).
C.J. Starnes

CLAS 5800.06: Seminar on Christian
Beginnings. W.J. Hankey

CLAS 5801.06: Seminar on Christianity and
Neoplatonism. W.J. Hankey

Classes Occasionally Offered

Greek and Latin Literature

CLAS 5011.06: Seminar on Greek Tragedy. R.
Friedrich

CLAS 5012.06: Seminar on Greek Comedy. R.
Friedrich

CLAS 5013.06: Seminar on Greek Lyric. R.
Friedrich

CLAS 5031.06: Seminar on Roman Satire. Staff

CLAS 5032.06: Seminar on Roman Historians.
Staff

CLAS 5033.06: Advanced Seminar on Latin
Literature. Staff

CLAS 5034.06: Seminar on Greek Literature.

Ancient History

CLAS 5531: Seminar on the Roman Empire
and the Rise of Christianity. P.F. Kussmaul

CLAS 5551.03: Ancient Law and
Jurisprudence. P.F. Kussmaul

Classical Philosophy

CLAS 5604.06: History of the Interpretation of
Aristotle. Staff

CLAS 5605.06: Advanced Seminar on
Neoplatonism. Staff

CLAS 5606.06: Greek Philosophical Texts. Staff

CLAS 5607.06: Latin Philosophical Texts. Staff

CLAS 5608.06: Reading and Research. Staff

CLAS 5609.03B: Greek Philosophical Texts.
J.P. Atherton

Patristics

CLAS 5707.06: Readings in Patristic Texts.
Staff

CLAS 5708.03: Reading and Research. Staff

CLAS 5900.06: Departmental Seminar. Staff

CLAS 5901.06: Reading and Research. Staff

CLAS 9000.00: Thesis (MA)

CLAS 9530.00: Thesis (PhD)

Community Health and Epidemiology

Location: Clinical Research Centre, 5849
University Avenue, Halifax,
N.S. B3H 4H7
Telephone: (902) 494-3860
Fax: (902) 494-1597

Head of Department

David R. MacLean

Graduate Coordinator

Susan A. Kirkland

Professors Emeriti

C.B. Stewart, OC, BSc (Med), MD, CM (Dal),
MPH, Dr PH (Johns Hopkins), FAPHA,
FRCPC, MCFP, LLD (Dal, UPEI, MtA), DSc (St
FX)

A.C. Irwin, BA (Sask), MD, DPH (Tor), DSM
(Edin), FRSH

Professors

M.G. Brown, BA(hons) (Western), MA
(Queen's), AM, PhD (Chicago)

F. Cohen, AB (Harvard-Radcliffe), MEd
(Harvard), PhD (Minnesota), major
appointment in Resource and Environmental
Studies

D.R. MacLean, MD (Dal), MHSc (Tor), CCFP

T.J. Murray, MD, FRCP(c), FACP, major

appointment in Neurology
M.J. Stewart, BScN (McM), PhD (Dal), major
appointment in Nursing

Associate Professors

M. Cohen, BA (Mich), DMD (Tufts), MSD, PhD
(Minnesota), major appointment in Oral
Biology, Dentistry

G. Flowerdew, BSc (Lond), MSc (London School
of Hygiene and Tropical Medicine), DSc
(Harvard)

A. Imaill, BDS (Baghdad), MPH, DrPH (Mich),
major appointment in Paediatrics and
Community Dentistry

M. Joffres, MD (Toulouse), MSPH, PhD (Hawaii)

L.C. MacLean, BA, BEd (StFX), MA, PhD (Dal),
major appointment in Business Administration

K. Rockwood, BA, BMed, MD (MUN), MPA
(Queen's), major appointment in Geriatric
Medicine

I. Sketris, BSc (Toronto), MPA (Dal), PharmD
(Minnesota), major appointment in Pharmacy

S.J.O. Veldhuyzen van Zanten, major
appointment in Gastroenterology

Assistant Professors

J. Cox, BA, MD (Tor), FRCP, major appointment
in Medicine

L. Dodds, MS (Washington), PhD (Tor)

K. Gordon, MD (Queen's), MSc (Mich), major
appointment in Paediatrics

M. Gross, MSc (McM), MB, BS
(Newcastle-upon-Tyne), FRCS (Eng), FRCPS,
major appointment in Surgery

J. Read Guernsey, BSc(Hons) (Carleton), MSc,
PhD (Iowa)

- G. Kephart, BS(Hons) (California), MS, PhD (Wisconsin)
- G.M. Johnston, BSc (Hon) (McG), MHSA (Alta), PhD (Western), major appointment in Health Services Administration
- D. Langille, BSc (Acadia), MD (Dal), MHSc (UBC)
- J.M. Langley, MD (Dal), major appointment in Paediatrics
- L. McIntyre, MD, MHSc (Tor), FRCPC, major appointments in Health Services Administration and Recreation, Physical and Health Education
- C. Poulin, BSc (Dal), MD (Laval), MSc (McG), FRCPC
- P. Roy, BSc, MD (Dal), MSc (McM), major appointment in Surgery
- W. Schlech III, MD (Cornell), FACP, major appointment in Medicine
- S. Weerasinghe, BSc (Jaffna), MSc (Sri Lanka), PhD (Dal)

Lecturers

- D. Anderson, BA, MD (Dal), MSc (McM)
- S. Kirkland, BSc, MSc (Waterloo), PhD (Tor)
- J. LeBlanc, MD, MSc (McM), major appointment in Paediatrics

Honorary Adjunct Appointments

- A.H. Leighton, MD (Johns Hopkins), MA (Cantab), MA (Hon) (Harvard), DS (Hon) (Acadia), FRC Psych (Hon), DS (Hon) (Laval), jointly appointed in Psychiatry
- K. MacPherson, BSc, MD (Dal), MPH (Mich), Geriatric Program Development and Research, Camp Hill Medical Centre
- J. Murphy, PhD (Cornell), Department of Psychiatry, Harvard Medical School; Chief of Psychiatric Epidemiology, Massachusetts General Hospital; Lecturer, Department of Epidemiology, Harvard School of Public Health
- K.E. Scott, BSc, MD, CM (McG), MSc (Lond), FRCPC, FSS

MSc Degree Programme

The MSc Community Health and Epidemiology (CH&E) programme focuses on knowledge, analytical skills and formal evaluative methods used in assessing community health needs and in designing, implementing and evaluating disease prevention and health promotion initiatives. The programme includes one year of course work plus thesis.

Institutional Environment

The Department of Community Health and Epidemiology is part of Dalhousie University's Faculty of Medicine which serves Canada's Maritime Provinces. CH&E full-time and part-time faculty have backgrounds in a number of disciplines including community medicine, epidemiology, biostatistics, economics, occupational and environmental health, psychiatry, demography, sociology and anthropology. CH&E faculty have provided leadership in areas of population health research, prevention, health promotion, assessment of community health service needs,

health manpower planning, health services utilization research and in various types of evaluative studies, including international health projects.

Admission Requirements

The typical MSc CH&E student has had undergraduate training in a health profession or related discipline and has worked in the health sector. Admission standards are those of Dalhousie University's Faculty of Graduate Studies. An honours baccalaureate degree or an M.D. degree from a recognized university is ordinarily required. Enrolment is limited. Some part-time students are accepted. Applicants must meet English Language Competency and Quantitative Skills requirements. Applicants will be interviewed as part of the selection process.

Curriculum

The programme requires a minimum of five Core Classes, three Elective Classes and a Thesis. All course work may be completed in one academic year. The five required classes are: Community Health Principles; Epidemiology Principles; Research Methods for Community Health; Biostatistics II; and Community Health Services Systems.

The Master's Thesis is a major part of the MSc CH&E programme. A thesis may include the design and execution of an applied research project in the field of community health and epidemiology. Full-time students will ordinarily complete their thesis during their second year in the MSc programme.

Classes Offered

CH&E Core Classes

- CH&E 5000.03A: Community Health Principles. C. Poulin
- CH&E 5010.03A: Epidemiology Principles. S. Kirkland

- CH&E 5020.03B: Biostatistics II. S. Weerasinghe

- CH&E 5030.03A: Research Methods for Community Health. G. Kephart

- CH&E 5040.03B: Community Health Services Systems. M. Brown

CH&E Elective Classes

- CH&E 5019.03A: Biostatistics I. S. Weerasinghe
- CH&E 6000.03B: Community Health Programmes for Communicable and Non-communicable Diseases. C. Poulin
- CH&E 6001.03A: Environmental and Occupational Health. J. Guernsey
- CH&E 6010.03S: Community Health Practicum. C. Poulin
- CH&E 6020.03A: Advanced Epidemiology. S. Kirkland
- CH&E 6021.03R: Advanced Biostatistics. S. Weerasinghe
- CH&E 6022.03A: Evaluation of Health Services and Programmes. M. Brown

CH&E 6024.03B: Methods in Clinical Trials. J. LeBlanc

CH&E 6040.03B: Health, Economics and Development. M. Brown

CH&E 6042.03B: Determinants of Health in Human Populations. G. Kephart

CH&E 6043.03B: Principles of International Health. L. McIntyre and M. Cohen

CH&E 6060.03: Directed Readings/Studies

CH&E 9000.00: Thesis Research

Computing Science

Location: Chase Building
Telephone: (902) 494-2572
Fax: (902) 494-5130
e-mail: paula@cs.dal.ca

Chair of Department
R.P. Gupta

Director of Division
C.S. Hartzman

Professors

P. Keast, PhD (St. Andrews)
K.J.M. Moriarty, MSc (Dal), PhD (London)
M.A. Shepherd, MSc, PhD (Western) - Graduate Coordinator

Associate Professors

A. Farrag, PhD (Alberta)
C.S. Hartzman, MS (Purdue), PhD (Colorado)

Assistant Professors

Q. Gao, MAsC, PhD (Waterloo)
A.E. Sedgwick, MS (Wisconsin), PhD (Tor)
S. Srinivas, PhD (Ind. Inst. of Sc.)

Computer Systems Manager

D. Trueman, MSc (Toronto)

Adjunct Professors

P. Muir, MSc, PhD (Toronto)
L. Oliver, MSc (Acadia), PhD (McG)
C. R. Watters, MSc (Western), PhD (TUNS)
T. Trappenberg, PhD (RWTH Aachen Germany)

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.

The department offers programmes leading to the degree of MSc in the following areas: software development, database systems and design, parallel computing, supercomputers, numerical analysis and optimization, artificial intelligence, computer vision, information retrieval, hypermedia, networking and fault-tolerant computing.

Admission Requirements

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies.

Candidates will normally be expected to hold a degree recognized by Dalhousie University as the equivalent of a Bachelor's degree with Honours in one of its own faculties.

GRE Aptitude scores are recommended for all applicants for graduate studies whose undergraduate work has been completed outside of Canada, and TOEFL scores are required for applicants whose native language is not English. Valid score reports must be received directly from the Educational Testing Service. To ensure consideration for scholarship funds, application should be made early.

Masters Degree Programme

Requirements

1. At least three full-credit classes, not including seminar classes, at the graduate level to be chosen in consultation with a department adviser. In addition, students whose preparation is deficient will be required to complete appropriate classes which will be designated by the adviser.
2. Attendance and participation in seminars.
3. A satisfactory thesis.
4. Students are required to give an oral presentation of their thesis and at that time to answer questions about the thesis. This presentation will be made after the thesis is in the hands of the student's committee and will be taken into account when the committee makes its decision.

Classes Offered

A selection of the following graduate classes will be offered subject to demand.

Computing Science

- COMP 5100.03/4100.03: Operating Systems II
- COMP 5130.03/4130.03: Analysis of Algorithms
- COMP 5140.03/4140.03: Software Design and Development
- COMP 5150.03/4150.03: Theory of Programming Languages
- COMP 5200.03/4200.03: Topics in Artificial Intelligence
- COMP 5210.03: Expert Systems
- COMP 5250.03/4250.03: Information Retrieval
- COMP 5270.03/4270.03: Numerical Software
- COMP 5330.03: Topics in Graph Theory
- COMP 5350.03/4350.03: Object-Oriented Programming
- COMP 5360.03: Topics in Vector and Parallel Computing
- COMP 5400.03/4400.03: Programming Methodology
- COMP 5450.03/4450.03: Data Communications
- COMP 5550.03/4550.03: Topics in Computer Systems
- COMP 5650.03/4650.03: Selected Topics in Information Retrieval
- COMP 5660.03/4660.03: Automata and Computability
- COMP 5670.03/4670.03: Computer Graphics
- COMP 5700.03/4700.03: Advanced Topics in Data Base Design
- COMP 5800.03/4800.03: Computer Systems Modelling
- COMP 6000.03 - 6990.03: Reading Classes for Advanced Graduate Students

Earth Sciences

Location: Life Sciences Centre, 1355
Oxford Street, Halifax, N.S.
B3H 4J1

Telephone: (902) 494-2358

Fax: (902) 494-6889

Chairperson of Department

Patrick J.C. Ryall

Graduate Co-ordinator

P.H. Reynolds

Professors Emeriti

H.B.S. Cooke, MSc, DSc (Witwatersrand)
G.C. Milligan, MSc (Dal), PhD (Harv)

Professors

D.B. Clarke, BSc, MA (Tor), PhD (Edin)
J.M. Hall, BSc (Wales), PhD, DIC (Lond)
R.A. Jamieson, BSc (Dal), PhD (MUN)
P.H. Reynolds, BSc (Tor), PhD (UBC) (jointly with Physics)
P.T. Robinson, BSc (Mich), PhD (Calif)
P.E. Schenk, BSc (Western), MSc, PhD (Wisc)
D.B. Scott, BSc (Wash), MSc (Wash State), PhD (Dal)
M. Zentilli, BSc (Chile), PhD (Queen's)

Associate Professors

N. Culshaw, BA (Keele), PhD (Ottawa)
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)

Assistant Professors

D. Godfrey-Smith, BA (Calgary), PhD (SFU)

Senior Instructor

P. Wallace, BSc, MSc (McM)

Research Associate

C. Beaumont, major appointment in Oceanography Department

Honorary Research Associates

H. Dick, BA (Pennsylvania), PhD (Yale), Woods Hole

M. Graves, BSc (Idaho), MSc (Dal), Cuesta Research, Ltd.

J. Malpas, BA, MA (Oxon), MSc, PhD (MUN), University of Hong Kong

P.K. Mukhopadhyay, PhD (Jadaupur), Global Geoenergy Research

J.B. Murphy, BSc (Dublin), MSc (Acadia), PhD (McG), St. Francis Xavier University

G. Pe-Piper, BSc (Athens), PhD (Cambridge), Saint Mary's University

R. Raeside, BSc (Aberdeen), MSc (Queen's), PhD (Calgary), Acadia University

A. Ruffman, MSc (Dal), Geomarine Associates Ltd.

N. van Wagoner, BA, BSc (Cal State), PhD (Dal), Acadia University

J. Verhoef, PhD (Utrecht), GSC Atlantic, BIO

- J. Waldron, BA (Cambridge), PhD (Edinburgh),
Saint Mary's University
G. Williams, BSc (London), PhD (Sheffield),
GSC Atlantic, BIO

Honorary Adjunct Professors

- S. Barr, BSc (UNB), PhD (UBC), Acadia
University
R. Boyd, BSc, PhD (Sydney), University of
Newcastle
J. Calder, BSc (Saint Mary's), PhD (Dal), NS
Natural Resources
J. Dostal, BSc (Charles), PhD (McM), Saint
Mary's University
P. Gayes, BSc (SUNY), MSc (Pennsylvania),
PhD (SUNY)
F.M. Gradstein, BA, MSc, PhD (Utrecht), Saga
Petroleum, Norway
F.A. Hacquebard, BSc, MSc (Leiden), PhD
(Groningen), LLD (Dal)
L.F. Jansa, BSc, MSc (Masaryk), PhD (Charles),
GSC Atlantic, BIO
W. Kalkreuth, Dip (Berlin), Institute of
Sedimentary and Petroleum Geology, Calgary
F.S. Mediolini, PhD (Parma)
M. Melchin, MSc (Waterloo), PhD (Western), St.
Francis Xavier University
P.J. Mudie, BSc (Cape Town), BSc (Leicester),
PhD (Dal), GSC Atlantic, BIO
D.J.W. Piper, BA (Hons) (St Catharine's Col,
Cantab), MA (Cantab), PhD (Darwin Col,
Cantab), GSC Atlantic, BIO
M.H. Salisbury, BSc (MIT), MSc, PhD (Wash),
GSC Atlantic, BIO
M. Williamson, BSc, MSc (Wales), PhD (Dal),
GSC Atlantic, BIO

Students with good degrees in any of the sciences or mathematics who wish to study some aspect of the earth are welcome. Graduate work leading to the degrees of MSc and PhD is possible in a number of different fields. These include for example: marine geology and geophysics, Appalachian geology, isotope geology, economic geology, petrology, geochemistry and mineralogy, geophysics, sedimentology, micropaleontology and coastal sedimentation, structural geology, metamorphism, and tectonics:

Interdisciplinary studies are encouraged, and there is active cooperation among the science departments (including Oceanography) at Dalhousie University. Students are urged to take full advantage of the opportunities this affords. Research, on scientific problems of mutual interest to Dalhousie and government laboratories such as the Nova Scotia Department of Natural Resources, Nova Scotia Research Foundation and the Atlantic Geosciences Centre at the Bedford Institute of Oceanography, is often done. Members of these laboratories frequently serve on supervisory committees.

The complex of departments and laboratories in Halifax and Dartmouth concerned with various aspects of the earth make graduate study in earth sciences very attractive.

Admission Requirements

Candidates must satisfy general requirements for admission to the Faculty of Graduate Studies. Candidates seeking financial support should ensure that their applications are complete by February 15.

MSc Degree Programme

The minimum time for completion of the MSc degree is 12 months of full-time study (see Faculty Regulation 4). Experience has shown that most students take at least 24 months to complete their work. Financial support is available for no more than 24 months.

Part-time study is also possible. Students must complete course requirements within 4 years, and all degree requirements within 6 years of registration for the first time. Conditions for admission to this programme are the same as those for full-time students. Financial support is not normally available for part-time study.

Research leading to the preparation and oral defence of a thesis is required.

The equivalent of five graduate classes is required, of which the thesis normally counts as three.

Graduate students are required to participate in the Earth Sciences seminar. EARTH 6200.06 must be taken.

PhD Degree Programme

The minimum time required to complete this programme is two years from an MSc; normally three years are required (see Section 4).

The preliminary examination (see Section 6) is an integral part of the compulsory classes, EARTH 6200.06.

Students must demonstrate ability in one language other than English. Participation in the Earth Sciences seminar is required.

Research leading to the preparation and oral defence of a thesis is required.

Classes Offered*

The following classes are designed primarily for undergraduates in their final year; they may be taken by graduate students for general interest, because the material is needed to help in their research, or because the student's background may be inadequate.

ERTH 5151.03A or B: Mineral Deposits. M. Zentilli

ERTH 5152.03A or B: Fossil Fuels. M. Gibling

ERTH 5270.03A: Applied Geophysics. P.J.C. Ryll

ERTH 5280.03B: Marine Geophysics. K. Loudon (Ocean.)

ERTH 5290.03B: Geodynamics. C. Beaumont (Ocean.)

ERTH 5350.03A: Tectonics. J.M. Hall

ERTH 5351.03B: Canadian Regional Tectonics. N. Culshaw

ERTH 5380.03A: Advanced Geochemistry.
C.K. Muecke

ERTH 5390.03B: Advanced Igneous Petrology.
D.B. Clarke

ERTH 5400.03B: Advanced Metamorphic Petrology. R.A. Jamieson

ERTH 5502.03A: Micropaleontology and Global Change. D.B. Scott

The following classes are designed specifically for graduate students.

ERTH 6100.03R: Seminar in Sedimentology and Stratigraphy.

ERTH 6110.03R: Research Topics in Micropaleontology.

ERTH 6120.03A/6220.03B: Seminar in Mineralogy, Petrology and Geochemistry.

ERTH 6150.06R: Metallogeny in Mineral Exploration.

ERTH 6160.06R: Research Topics in Sedimentary Geology I.

ERTH 6170.06R: Research Topics in Sedimentary Geology II.

ERTH 6200.06R: Research Skills in Earth Sciences.

ERTH 6230.03R: Directed Studies.

*Some classes not offered every year.

All graduate students must be registered in one of:

ERTH 9000.00: MSc Thesis.

ERTH 9530.00: PhD Thesis.

Economics

Location: 6214 University Avenue,
Halifax, N.S. B3H 3J5
Telephone: (902) 494-2026
Fax: (902) 494-6917

Chairperson of Department

B. Lesser

Faculty Advisors

S. Dasgupta, Graduate Coordinator (494-6868)
I. McAllister, MDE Coordinator (494-6993)

Professors Emeriti

J.L. Cornwall, BA (Iowa), MSc (Lond), PhD (Harvard), FRSC
Z.A. Konczacki, BSc (Lond), BEcon(Hons) (Natal), PhD (Lond)

Professors

F.M. Bradfield, BComm (McM), PhD (Brown)
S. DasGupta, BA (Calcutta), MA (Delhi), PhD (Rochester)
E. Klein, LL.M. (Buenos Aires), MSc (Dal), Dr Rer Pol (Hamburg)
B. Lesser, BComm (Dal), MA, PhD (Cornell)
C. Marfels, Dr Rer Pol (Berlin)
R.L. McAllister, MA (Oxon), MA (Cantab)
L. Osberg, BA(Hons) (Queen's), MPhil, PhD (Yale)
U.L.G. Rao, MA, MSc (Andhra), PhD (Western)

Associate Professors

P. Burton, BSc (Sask), MA, PhD (UBC)
M.L. Cross, AA (Dawson College), BA (Hons) (Montana), MA (SFU), PhD (Texas A&M)
P.B. Huber, BA, MA, PhD (Yale)
L. Mazany, BSFS (Georgetown), PhD (UBC)
S. Phipps, BA(Hon) (Victoria), MA, PhD (UBC)

Assistant Professors

T.B. Iscan, MA, PhD (Cornell)
K. Xu, MBA, PhD (Concordia)

Special Lecturer

T.A. Pinfold, BA, MA (Western), PhD (Minn)

Honorary Adjunct Professors

A. Akbari, BSc (Hons), MBA (Karachi), MA, PhD (Simon Fraser)
S. Amirkhalkhali, BAHons (Shiraz), MA, PhD (Dal), Saint Mary's University
J. Badawi, BComm (Ain Shams, Cairo), MBA, PhD (Indiana), Saint Mary's University
P. Bowles, BSc (Southampton), MA (Sussex), PhD (London), UNBC
R.L. Comeau, BA, MA (St.F.X.), PhD (Brown) (retired)
J.L. Cornwall, BA (Iowa), MSc (London), PhD (Harvard), Dalhousie (retired) (Professor Emeritus)
W. Cornwall, BA (MSVU), PhD (Dal), Mount St. Vincent University
R. George, BSc (London), MSc (Bristol), PhD (London) (retired)

- A. Mansoorian, BSc (LSE), MA (McM), PhD (Queen's), York University
 T. Ogwang, BStat (Makerere), MA (Leeds), PhD (Dal), UNBC
 T. Pinfold, BA, MA (Western), PhD (Minn)
 W. Rankaduwa, BA, MSc (Sri Lanka), MA, PhD (Dal), Mount Saint Vincent University
 A.M. Sinclair, BA (Dal), MA, BPhil (Oxon), PhD (Harvard), Dalhousie (retired)

MA Degree Programme

Admission Requirements

MA programmes in Economics may be of one or two years duration. Entrance to a two-year MA programme requires a pass or General BA degree with a major in Economics and an average of at least 75% (B+) at Dalhousie standards in the classes of Economics and related fields. A minimum of four classes in Economics beyond the introductory level, with content and level of work satisfactory to the Department, is required. These prerequisite classes should include one full class in intermediate theory (equivalent to Dalhousie Economics 2200.03/2201.03) and a basic class in Statistics (equivalent to Dalhousie Mathematics 2060.03 and 2080.03). A first-level Mathematics class (equivalent to Dalhousie Mathematics 1000.03 or to both 1110.03 and 1120.03) is also required.

Entrance to a one-year MA Programme requires an Honours BA in Economics (or equivalent) with an average of at least 75% (B+) at Dalhousie standards in classes in Economics and related fields. Normally this means completion of at least eight classes in Economics beyond the introductory level including classes in Economic Theory beyond the intermediate level, Statistics, Econometrics and classes in areas related to some of the fields of specialization, other than Economic Theory or Econometrics, that are listed below under Programme Choices. Mathematics classes which are equivalent to Dalhousie MATH 1000.03 and 2030.03 are also required.

Promising students who do not meet the entrance requirements for the programmes may be admitted to a Qualifying Year to permit them to bring their work up to full admission standards. Students who excel during the qualifying year may then be admitted to a one year programme.

Applicants should also consult regulations 2., "Admissions Requirements," which includes regulation 2.4, "English Language Proficiency".

Programme Choices

The department offers the MA in the following areas of specialization:

- Economic Theory
- Econometrics
- Labour Economics
- Public Finance
- Resource Economics
- Monetary Theory
- Industrial Organization
- Regional and Development Economics

Department approval is required for the programme of each student.

Interdisciplinary Programmes

The Department of Economics participates with other Departments and Institutions in several such programmes. These include:

- African Studies
- Environmental Studies
- Health Evaluation Studies
- Urban, Rural, and Regional Studies

Graduate students wishing to orient their studies in the direction of these interdisciplinary fields take some classes in the relevant area from offerings outside the Department and do their graduate thesis on related topics. The Department's approval of such a programme is required. Other special interdisciplinary programmes may be devised, with the Department's consent, to meet particular interests.

Completion of MA Programme

Students must successfully complete the required and optional classes of their programme. Normally a course of study worth at least five (5) credits is required, including a thesis which must be submitted and approved by the Department.

MDE Degree Programme (Master of Development Economics)

Admission Requirements

The normal duration of the programme is two years; applicants with the equivalent of some graduate level training or a professional degree (such as MPA, MBA, LLB or MBS) may be eligible for a one-year programme.

Entrance to the two-year programme normally requires a Pass or General BA, BSc or BComm degree, with a minimum of two classes in economics beyond the introductory level, including one full class in intermediate theory and a basic class in statistics. A first-level Mathematics class (equivalent to Dalhousie Mathematics 1000.03A or to 1110.03B plus 1120.03A) is required. An academic average of at least 75% (B+) at Dalhousie standards is also required for admission to either a one-year or two-year programme.

Promising students who do not meet these requirements might be admitted to a qualifying year or permitted to take missing classes within the time frame of the two-year programme. Students who excel in the qualifying year may then be admitted to a one-year programme.

Programme Choices

The MDE Programme permits students to follow one of two paths:

The Canadian Studies Programme concentrates on Canadian economic development, with comparative insights from other countries. Primary emphasis in the programme is placed on exploring problems of development in Canada's less developed regions, with special attention to the Atlantic Provinces. Regional development policy initiatives and strategies are stressed.

The International Development Studies Programme concentrates both on sectoral themes and on geographic regions. These include urban and rural development, human resource planning, the role of state corporations, international trade and payments, import substitution policies, international and bilateral aid, disaster relief, health and environmental issues, women in development, and the problem of helping those in greatest need in Third World countries. Specific country experiences will be extensively drawn upon through links the University faculty has with West Africa, East Africa, Indonesia, Latin America, the Baltic states, the Caribbean, China, Nepal and India.

For both programme options, students should select classes to achieve a blend of economics and at least one of the disciplines of business/public administration, law, education, environmental studies, history, music, political science, sociology and social anthropology. Class selection should also facilitate skill development in: the ability to think numerically, to interpret data, and to apply economic logic to real issues; computer literacy; and a sensitivity to human behaviour and different cultures. For both programme options, some field exposure is encouraged both through class frameworks and thesis research.

Completion of MDE Programme

Students in a full two-year programme must normally complete seven full-credit classes plus thesis. In some cases, this number of classes may be reduced on the basis of advanced standing granted for previous work.

PhD Degree Programme

Admission Requirements

Applicants for admission to the PhD programme must have academic qualifications superior to those required for entrance into the MA programme. The minimum required for entry is an Honours Degree in Economics with an average of at least 80% (A-) by Dalhousie standards in the classes in economics and related fields. Students entering after completing the required course work for an MA degree in Economics would normally prepare for their PhD Comprehensive Exams in two years; those with only an Honours BA would normally require three years. In addition to the entrance requirements above, students are expected to have completed classes, at a satisfactory level, in Intermediate Calculus, Matrix and Linear Algebra, and Statistics (equivalent to Dalhousie MATH 2000.06, 2030.03, 2040.03, 2060.03 and 2080.03).

Applicants may be required to submit the results of the Graduate Record Examination in Economics with their application. They should also consult regulation 2, "Admissions Requirements," which includes regulation 2.4, "English Language Proficiency."

Programme Choices

The department offers the PhD in the following areas of specialization:

- Economic Theory

(Microeconomics)

(Macroeconomics)

- Econometrics
- Industrial Organization
- Labour Economics
- Resource Economics

Students admitted to a two-year PhD programme may choose any area of specialization. Students admitted to a three-year PhD programme may do so after having satisfactorily completed a prescribed course of study during their first year. Departmental approval is required for the programme of each student.

The structure of the PhD programme is described below.

The PhD Programme is designed to provide students with a strong foundation in economic theory and quantitative methods and intensive work in two applied fields of economics. At the completion of their class work, candidates for the PhD Programme will be examined in:

1. Macroeconomic and Microeconomic theory (at the level of Dalhousie Economics classes 5500.03, 5509.03, 6600.03 and 6609.03, including applications of the economic theory described)
2. Two fields of specialization
3. History of Economic Thought

They are also required to show proficiency in Quantitative Analysis and Economic History in the course of their work. A course of study recommended for the two-year PhD Programme would include:

Year 1:

1. Economics 5500.03 (Macroeconomic theory)
2. Economics 5509.03 (Microeconomic theory)
3. Economics 5506.06 (Economic History as available)
4. Two elective classes

Year 2:

1. Economics 6600.03 (Macroeconomic theory)
2. Economics 6609.03 (Microeconomic theory)
3. Economics 5533.06 (Econometrics)
4. Two elective classes

Examination and Thesis

Comprehensive examinations consisting of written papers in economic theory and two fields, and oral examinations in the same three subjects, are required at the end of the required period of course work.

A suitable thesis must be submitted and defended. Students are required to make a public presentation of a thesis proposal no later than six months after completion of the comprehensives and preferably at some point prior to the comprehensives.

Classes Offered

Classes other than those listed may be offered. Not all classes listed are necessarily offered in any given year.

ECON 5000.03A or B: Economic Theory for MDE Microeconomics.

ECON 5001.03A or B: Economic Theory for MDE Macroeconomics.

ECON 5231.03B: Health, Economics and Development. M. Brown

ECON 5238.03A: The Industrial Revolution in Europe. P.B. Huber

ECON 5239.03B: The European Economy in Historical Perspective: After the Industrial Revolution. P.B. Huber

ECON 5250.06: Applied Development Economics.

ECON 5251.03R: Seminar in Development Studies.

ECON 5252.03A or B: From Disaster Relief to Development. I. McAllister

ECON 5333.03A: Theories of Economic Development. B. Lesser

ECON 5334.03B: Economic Development. Recent Debates, Controversies and Conflicts

ECON 5336.03B: Regional Development: Post-1945 Canadian and Industrial Countries' Economic Policy Experience. R.I. McAllister

ECON 5350.03B: Social Cost-Benefit Analysis. T. Pinfold

ECON 5431.03B: International Payments. L. Mazany

ECON 5500.03A: Macroeconomics. T. Iscan or K. Xu

ECON 5502.03A: Monetary Theory: Microeconomic Aspects. K. Xu

ECON 5503.03A or B: Public Finance I. S. Phipps

ECON 5504.03A or B: Public Finance II. S. Phipps

ECON 5506.06: North American Economic History. B. Lesser

ECON 5509.03A: Microeconomics. S. DasGupta or E. Klein

ECON 5511.03A: Regional Economics: Theories. F.M. Bradfield

ECON 5512.03B: Regional Economics: Empirical Studies and Policies. F.M. Bradfield

ECON 5513.03B: Regional Economics: Analysis and Policies. F.M. Bradfield

ECON 5514.03B: Monetary Theory - Macroeconomic Aspects. K. Xu

ECON 5516.03A: Natural Resource Economics I. M.L. Cross

ECON 5517.03B: Natural Resource Economics II. P. Burton

ECON 5518.03A or B: Antitrust Economics. C. Marfels

ECON 5520.03B: Economic Applications of Game Theory. P. Burton, S. Dasgupta or E. Klein

ECON 5521.03A: Mathematics for Economists. S. DasGupta or E. Klein

ECON 5522.03A or B: Labour I. L. Osberg

ECON 5523.03A or B: Labour II. L. Osberg

ECON 5533.06: Econometrics. U.L.G. Rao

ECON 5551.03A: Special Topics in Monetary Policy.

ECON 5552.03B: Special Topics in Monetary Theory.

ECON 5557.03R: Selected Topics: Industrial Organization and Antitrust Economics. C. Marfels

ECON 5558.06: Special Topics in Industrial Organization. C. Marfels

ECON 5559.06: Special Topics in Labour Economics. L. Osberg

ECON 5563.06: Special Topics in Regional Economics. F.M. Bradfield

ECON 5570.03: Special Topics in Econometrics. U.L.G. Rao

ECON 5572.03: Special Topics in International Trade. P.B. Huber

ECON 5575.03A: Applied Statistics and Econometrics I. L. Mazany

ECON 5576.03A: Applied Statistics and Econometrics II. L. Mazany

ECON 5600.06R: Special Topics in Macroeconomics. T. Iscan or K. Xu

ECON 5601.03A or B: Special Topics in Macroeconomics. T. Iscan or K. Xu

ECON 5620.03A: Special Topics in Resource Economics. P. Burton or M. Cross

ECON 5621.03B: Special Topics in Resource Economics. P. Burton or M. Cross

ECON 5639.03A or B: Special Topics in Labour Economics. L. Osberg

ECON 5670.03B: Special Topics in Econometrics. G. Rao

ECON 6600.03A or B: Economic Theory (Macroeconomics). T. Iscan or K. Xu

ECON 6609.03A or B: Economic Theory (Microeconomics). S. DasGupta or E. Klein

ECON 6610.03: Mathematical Economics. S. DasGupta and E. Klein

ECON 6619.03A: Seminar in Mathematical Economics and Advanced Economic Theory I.

ECON 6620.03B: Seminar in Mathematical Economics and Advanced Economic Theory II.

ECON 6680.06: Directed Reading.

ECON 9000.00: MA Thesis.

ECON 9530.00: PhD Thesis.

Special Topics classes, not separately listed, will be arranged to provide for advanced work in the areas of specialization chosen by PhD students. MA students with the appropriate backgrounds will also be admissible to such classes. Other classes than those listed may also be offered and certain of the classes listed are not necessarily offered on an annual basis.

Education

Location: 6090 University Avenue,
Halifax, N.S. B3H 3J5
Telephone: (902) 494-3724
Fax: (902) 494-2847

There will be no new admission to the MEd, MAT, or MA and PhD in Education. All graduate students currently enrolled in Masters and Doctoral programmes should refer to the 1995/96 Graduate Studies calendar for programme regulations and class descriptions.

Acting Director, School of Education

W. Kimmins, Provost, College of Arts and Science

Professor Emeritus

E.Z. Friedenberg, BA (Centenary), MA (Stanford), PhD (Chicago)

Associate Professors

A. Barton, BA, MA (Trinity)

K.C. Sullivan, BSc, BEd (Dal), MEd, PhD (Alta)

Honorary Research Associates

J. Eaton, BSc (Acadia), PhD (Dal)

N. Vogan, BA (MtA), MMus, PhD (Rochester);
Mount Allison University

Honorary Adjunct Professor

A.H. Akbari, BSc, MBA (Karachi), MA, PhD (Simon Fraser); Saint Mary's University

R.N. Bérard, BA (Antioch), MA (McM), BEd (Dal), PhD (McM), Mount Saint Vincent University

M. Crowley, BA (Miami), MAT (Johns Hopkins), PhD (Maryland), Mount Saint Vincent University

F.J. Dockrill, BA, BEd, MA (SMU), PhD (Dal);
Saint Mary's University

F. French, BA, MEd (Memorial), PhD (Alberta);
Mount Saint Vincent University

K. Kienapple, BA (Waterloo), MSc, PhD (Purdue); Mount Saint Vincent University

A. MacCleave, BSc (Acadia), MA (MSVU), PhD (Penn State); Mount Saint Vincent University

P.A. MacCuspie, BA (Dal), MEd (Boston), PhD (Dal)

M.L. MacDonald, BA (Dal), MA, PhD (Boston)

D.A. Manicom, BEd (McG), MEd (AIE), PhD (Tor), Mount Saint Vincent University

A. Manning, BA, MS (Ed) (Niagara), PhD (Ottawa); Mount Saint Vincent University

J. Manos, BA, BEd (StFX), MEd (Calgary), PhD (Alberta), Mount Saint Vincent University

J. McConnell, BA (Carleton), BEd (Tor), MEd (Boston), PHD (UBC)

H. McGee, BA, MA (Florida State), PhD (Southern Illinois); Saint Mary's University

F. Miner, BA, MBA (Utah), PhD (Minnesota);
Saint Mary's University

L. Neilsen, BEd (Sask), MA (Mun), PhD (New Hampshire)

D. Plumb, BA (Alta), MCEd (Sask), PhD (Alta),
Mount Saint Vincent University

J. Portelli, BA (Malta), MA, PhD (McGill);
Mount Saint Vincent University

E. Ricker, BA, MEd (UBC), PhD (Tor), Mount
Saint Vincent University

M. Schoenberger, BA (St. Catherine), MA (Minnesota), PhD (Albert); Mount Saint
Vincent University

M. Welton, BA, MA, PhD (UBC), Mount Saint
Vincent University

English

Location: 1434 Henry Street, Halifax, N.S.
B3H 3J5
Telephone: (902) 494-6924
Fax: (902) 494-2176
e-mail: GRADENGL@AC.DAL.CA

Chairperson of Department

J. Baxter

Professors Emeriti

J. Fraser, MA (Oxon), PhD (Minn), FRSC
J. Gray, MA (Aberd), MA (Oxon), PhD (Mont),
GRSA, FRSC, McCulloch Professor of English
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), DLitt
(Acadia), FRSC
S.E. Sprott, MA, BD (Melbourne), PhD
(Columbia)

Professors

A. Andrews, BA, DipEd, MA (Leeds), PhD (Ill),
FRSA, major appointment in Theatre
J.R. Baxter, BA, BEd, MA, PhD (Alta)
R.M. Huebert, BA (Sask), MA, PhD (Pitt)
P. Monk, BA (Reading), MA (Carleton), PhD
(Queen's)
R.R. Tetreault, BA (UBC), MA, PhD (Cornell)
J.A. Wainwright, BA (Tor), MA, PhD (Dal)

Associate Professors

L. Diepeveen, BA (Calvin), MA, PhD (Ill)
M.M. Furrow, BA (Dal), MA, MPhil, PhD (Yale)
B.R. Greenfield, BA (York), MA (McG), MPhil,
PhD (Columbia)
A. Higgins, BA (Connecticut), MA (McG), MA
(Mass), MA, PhD (Yale)
Y. Li, BA, MA (UBC), PhD (Cantab)
C. Luchyj, BA, MA, PhD (Tor)
D. McNeil, BA (Concordia), MA (UNB), PhD
(McM)
M. Stone, BA (Guelph), MA, MPhil (Waterloo),
PhD (Tor)

Assistant Professors

R. Maitzen, BA (UBC), MA, PhD (Cornell)
H.E. Morgan, BA (UBC), MA (Wash), BLitt
(Oxon), PhD (Wash)
T. Ross, BA, MA (Carleton), PhD (Tor)
J. Thompson, BA (Western), MA, PhD (Tor)

Honorary Adjunct Professors

S. Bruhm, MA (Dal), PhD (McG); Mount Saint
Vincent University
G. Davies, BA (Dal), MA (Tor), PhD (York);
Acadia University
R. Davies, PhD (Wales), Acadia University
J.R. Perkin, BA (Oxford), PhD (Tor); Saint
Mary's University
P. Schwenger, PhD (Yale); Mount Saint Vincent
University
A. Smol, BA (Concordia), MA, PhD (Queen's);
Mount Saint Vincent University
T. Whalen, MA (Melbourne), PhD (SMU); Saint
Mary's University

Applicants should designate the proposed thesis area at the time of application for admission. The Department will entertain research proposals at the MA level in most areas of British, Canadian, or American literature, and at the PhD level in many of these areas. Nonetheless, applicants for the PhD should take care to consult the Graduate Coordinator of the department concerning its strength, in both resources and personnel, in the field of study in which they propose to specialize.

Admission Requirements

Candidates must at a minimum satisfy the general requirements for admission to the Faculty of Graduate Studies as spelled out in section 2.2 of this calendar. Since this department accepts full-time graduate students only if we can fund them, standards are very high, currently an A- or better average at least in the last two years. Both our MA and PhD programmes presuppose an acquaintance with English literature of different periods and nationalities. Applicants with other strengths but with limited historical coverage might still be accepted, but required to remedy deficiencies with one or even two of their graduate classes.

Only in exceptional circumstances will persons holding a BA and an MA from Dalhousie be allowed to proceed to a PhD programme without study at another institution. If you have a Dalhousie BA and MA and wish to apply to the PhD, please consult the Graduate Coordinator first.

The Department suggests a pragmatic deadline much earlier than the official one. We urge applicants to complete their application by early February to allow the Department to put forward the best candidates for Killam awards.

MA Degree Programme

For minimum time required to complete this programme, see Section 4.

Course work must include a graduate seminar (half or full-year) in the thesis area; at least one graduate seminar in a field unrelated to the thesis; and additional seminars in English to make up the equivalent of three full-year classes. With the approval of the Department, a graduate class in another department relevant to the candidate's course may take the place of one of the additional seminars, and under certain conditions a reading class may take the place of the seminar in the thesis area.

All students are required to have studied at least one European language other than English and to demonstrate some proficiency in it.

A thesis, equivalent to two classes, is required.

PhD Degree Programme

For a minimum time required to complete this programme, see Section 4.

In the first year, doctoral candidates must take graduate seminars in the pattern described above for the MA.

Candidates must take a qualifying examination, with written and oral portions, in the field (period and national literature) most germane to their intended thesis. The examination is to be taken no later than May of the second year in the programme.

All graduate students in the Department are required to have studied at least one European language other than English, and to demonstrate some proficiency in it.

Preparation and defence of a thesis are required.

Malcolm Ross Award in Canadian Literature

To be awarded at the discretion of the Department of English for an outstanding MA or PhD thesis in the field of Canadian Literature. McClelland and Stewart, publishers of the New Canadian Library series, have funded the award to honour Malcolm Ross, founding editor of the series and Professor Emeritus in the Department of English.

Classes Offered

Graduate Seminars

Approximately seven full-year seminars or the equivalent are offered each year. Students should consult the Department about which of the following seminars will be offered in 1996-97.

ENGL 5110.06R: Middle English Literature. M. Furrow, H. Morgan

ENGL 5120.06R: Early English Drama. A. Higgins

ENGL 5220.06R: Shakespeare. J. Baxter

ENGL 5226.06R: Re-imagining Shakespeare. J. Baxter

ENGL 5230.06R: Renaissance Poetry and Rhetoric. J. Baxter

ENGL 5231.03A: Spenser, Shakespeare, Donne: Eros and Chastity. J. Baxter

ENGL 5232.03B: Brave New Worlds in the English Renaissance. J. Baxter

ENGL 5235.03A: Milton's Paradise Lost. : R. Huebert

ENGL 5237.06R: Gender in English Renaissance Drama. C. Luckyj

ENGL 5250.06R: Renaissance Dissident Writers. R. Huebert

ENGL 5255.03B: The Body in Renaissance Literature and Culture. R. Huebert

ENGL 5260.03B: 17th Century Life-Writing. R. Huebert

ENGL 5265.03B: Renaissance Women's Writing, 1580-1640. C. Luckyj

ENGL 5306.03B: The Restoration Theatre. D. McNeil

ENGL 5310.06R: Restoration and Augustan Satire. D. McNeil

ENGL 5315.06R: The Eighteenth-Century English Novel. D. McNeil

ENGL 5316.03A: Studies in the Eighteenth-Century English Novel. D. McNeil

ENGL 5317.03B: Studies in the 18th Century Novel. D. McNeil

ENGL 5335.03B: Reading Pope and Swift: Satire, Entrapment, Theory. T. Ross

ENGL 5340.06: Values in Literature: The Example of the Eighteenth Century. T. Ross

ENGL 5405.06R: The Wordsworths and Coleridge in Conversation. J. Thompson

ENGL 5410.06R: Innovation and Tradition in Romantic Poetry. R. Tetreault

ENGL 5411.03A or B: Women and Men in the Romantic Era. R. Tetreault

ENGL 5412.06: Women and Men in the Romantic Era. R. Tetreault

ENGL 5415.06R: Wordsworth and Coleridge. R. Tetreault

ENGL 5417.03B: The 1790s: The Revolutionary Decade. J. Thompson

ENGL 5420.03R: Keats and Shelley. R. Tetreault

ENGL 5421.03A or B: Keats. R. Tetreault

ENGL 5422.03A or B: Shelley. R. Tetreault

ENGL 5435.06R: Victorian Narrative Modes. M. Stone

ENGL 5436.03A: Engendering the Muse: Victorian Poetry, Literary History and Feminist Poetics. M. Stone

ENGL 5517.06R: The Ideology of Modernism: Pound and Eliot. V. Li

ENGL 5522.03A: The Modernist/Post-Modernist Novel. V. Li

ENGL 5615.06R: Modern Canadian Poetry. P. Monk

ENGL 5620.06R: Modern Canadian Fiction. J.A. Wainwright

ENGL 5625.03A or B: Studies in Modern Canadian Poetry. P. Monk

ENGL 5628.06R: Modern Canadian Literature: Re/writing History. J.A. Wainwright

ENGL 5630.03A or B: Studies in Modern Canadian Fiction. J.A. Wainwright

ENGL 5810.06R: The American Scene: Major Figures of the Nineteenth Century. B. Greenfield

ENGL 5811.03B: American Lives. B. Greenfield

ENGL 5815.06R: American Travel/American Literature. B. Greenfield

ENGL 5820.06R: American Poetry 1910-1945. L. Diepeveen

ENGL 5830.03A: Reading American Modernism. L. Diepeveen

ENGL 5835.03B: Finding a Centre: Making Literary History in Contemporary American Poetry. L. Diepeveen

ENGL 5840.06R: Literary Talk: How Modernism was invented. L. Diepeveen

ENGL 5906.03A: Problems in Literary History. T. Ross

ENGL 5918.03A: The Politics of Representation. V. Li

ENGL 5928.06R: Literary Couples. J. Thompson, M. Stone

ENGL 5930.03B: The New Historicism. R. Huebert

ENGL 5935.03A: Canonicity. T. Ross

ENGL 5940.06R: Queer Theory. S. Bruhm

ENGL 9000.00: MA Thesis

ENGL 9530.00: PhD Thesis

Environmental Studies

Location: 1312 Roble Street, Halifax, N.S.
B3H 3E2
Telephone: (902) 494-3632
Fax: (902) 494-3728

Resource and Environmental Studies

Director of School
R.P. Côté

Academic Programme Co-ordinator
A. Dwire

Professors

- R. Apostle, BA (SFU), MA, PhD (Calif, Berkeley), major appointment in Sociology and Social Anthropology
M.E. Binkley, BA, MA, PhD (Tor) major appointment in Sociology and Social Anthropology
R. Boardman, BSc, PhD (Lond), major appointment in Political Science
F. Cohen, BA, MEd (Harvard), PhD (Minn)
R.W. Doyle, MSc (Dal), PhD (Yale), major appointment in Biology
B. Freedman, BSc, MSc, PhD (Tor), joint appointment with Biology
P.A. Lane, MSc (SUNY Binghamton), PhD (SUNY Albany) major appointment in Biology
I. McAllister, MA (Oxon), MA (Cantab), major appointment in Economics
K.W. Renton, BSc (Sir Geo. Wms.), PhD (McG), major appointment in Pharmacology
P.J. Ricketts, BA (Nottingham), PhD (Southampton), Dean of Graduate Studies
B.H. Wildsmith, BSc (Guelph), LLB (Dal), LLM (Harvard), major appointment in Law
J.H.M. Willison, PhD (Nottingham), major appointment in Biology
K.S. Wood, BA, MA (Oregon)

Associate Professors

- G.E.E. Beanlands, BSc, MSc (UNB), PhD (Dal)
M.P. Brown, BA (Mt A), MA (Dal), PhD (Tor) major appointment in Public Administration
R.P. Côté, BSc (Loyola), MSc (Memorial)
M.L. Cross, AA (Dawson College), BA (Montana), MA (SFU), PhD (Texas A&M), major appointment in Economics
T. Li, BA, PhD (Cantab), major appointment in Sociology and Social Anthropology
L. Mazany, BSFS (Georgetown), PhD (UBC), major appointment in Economics
R.F. McCurdy, MPH, MSc (Minn), PhD (TUNNS), major appointment in Pathology
G.K. Muecke, BSc, MSc (Alta), DPhil (Oxon), major appointment in Earth Sciences
G.E. Newkirk, PhD (Duke), major appointment in Biology
D.J. Patton, BA (UNB), MA (Tor), DBA (Indiana), major appointment in Business Administration

D. VanderZwaag, BA (Calvin), MDiv (Princeton), JD (Arkansas), LLM (Dal), joint appointment with Law

Assistant Professors

- P. Burton, BSc (Sask), MA, PhD (UBC), major appointment in Economics
- A. Dwire, BA, MA (Dal)
- J.R. Guernsey, BSc (Carleton), MSc, PhD (Iowa), cross appointment in Community Health and Epidemiology
- P. Saunders, BA, MA, LLB (Dal), major appointment in Law

Research Associates

J. Reade, BA (SMU), MLS (Dal)

Honorary Research Associates

- W. Barchard, BSc, MSc (Guelph), Environment Canada
- D.B. Buckley, BSc (Acadia), MSc (Western), PhD (Alaska), BIO
- J.M. Campbell, BA (Dal), MA, PhD (UC Irvine)
- J. Chute, BA (Dal), MA (MUN), MA (Tor), PhD (McM)
- R. Crawford, MSc, PhD (Tor), N.S. Dept. of Fisheries
- M. Gardner, BA, MA, PhD (Dal), Gardner, Pinfold & Assoc.
- G. Howell, BSc, MSc (Dal), Environment Canada
- J. Leith, BPhysEd (McM), MA (Guelph)
- K.A. Monk, BSc (Durham), PhD (Lond)
- T. Tomascik, BSc (Tor), PhD (McG)

Honorary Adjunct Professors

- T.G. Babcock, BA (McG), MA, PhD (Cornell)
- K.B. Beesley, BES, PhD (Waterloo), Nova Scotia Agricultural College
- S. Bondrup-Nielsen, BSc (Guelph), MSc (Tor), PhD (Alta), Acadia University
- A.T. Charles, BSc (Carleton), PhD (UBC), Saint Mary's University
- K. Cossey, MES (York), Heritage Canada
- G. Daborn, BA (Keele), MSc, PhD (Alta), Acadia University
- E. Gold, BA, LLB (Dal), PhD (Wales)
- J. Grant, MA, PhD (Waterloo), Nova Scotia College of Art & Design
- S. Guppy, BSc (Nottingham), MSc, PhD (Wales), MArch (Columbia), Technical University of Nova Scotia
- T. Herzman, MSc, PhD (Alta), Acadia University
- L. Kasdan, MA, PhD (Chicago), Dalhousie
- C. Lamson, BA (Skidmore), MSc (Simmons), MA (Memorial), MES (Dal), Department of Fisheries
- F. Manuel, BA (Carleton), MSc (McG), PhD (Dal)
- N. Munro, BSc (UNB), MA (Carleton), Heritage Canada
- J. Pinter, MSc (Eotvos), PhD (Moscow State)
- N. Rifai, MSc, PhD (Nitra), Nova Scotia Agricultural College
- D.J. Scarratt, BSc, PhD (Wales), Bedford Institute of Oceanography
- R.W. Shaw, DEng (RMC), BSc (Queen's), MA (Tor), PhD (McG)
- J.H. Vandermeulen, BSc, MSc (Alta), PhD (UCLA), Department of Fisheries and Oceans
- T. Vigerstad, MSc, PhD (Rhode Island), Bio-Response Systems Limited

D.H. Waller, PhD (Dal), DIC (Public Health) (Lond), BEng (TUNS), Technical University of Nova Scotia

P.G. Wells, BSc (McG), MSc (Tor), PhD (Guelph), Environment Canada

International Programme Staff

- T.G. Babcock, BA (McG), MA, PhD (Cornell)
- J. Campbell, BA (Dal), MA, PhD (UC Irvine)

The School (formerly the Institute) offers a graduate programme leading to the Master of Environmental Studies (MES) degree.

The core faculty of the School is complemented by cross-appointed faculty whose major appointments are in other units within Dalhousie, at other universities, or in government agencies.

Classes in Environmental Studies are offered through the school. In addition, a wide selection of classes relevant to the programme are given by other units within Dalhousie, and by Saint Mary's University and the Technical University of Nova Scotia. Students take core classes from which they will acquire a broad, interdisciplinary background in environmental studies. Each student will also take classes and write a thesis in a particular field of interest. An important element in the MES programme is group research projects which give the students experience in multidisciplinary team work. There are opportunities for study and research from the points of view of policy, technique and science. More than 20 faculty members from various academic units in the university contribute in class work and as thesis supervisors.

Admission Requirements

In order to be enrolled in an MES programme students must have achieved sufficient depth of knowledge in an appropriate branch of an approved academic discipline.

The minimum entry requirement is

- (i) an Honours bachelor degree in a life science, an earth science, chemistry, physics, mathematics, economics, political science or sociology, or
- (ii) a professional degree in law, architecture, medicine or engineering, or
- (iii) equivalent academic qualification

Deadline for applications is 15 February.

Programme Duration and Minimum Requirements

For most students the minimum programme will occupy two years. Students are required to complete, not later than the end of their first year, three half-credit classes selected from the disciplines of life sciences, earth sciences, chemical and physical sciences, engineering (group A), and social sciences, law, architecture (group B). An approved class in statistics as related to the environment may be accepted in either group A or B.

Students whose undergraduate specialization was in group A should take at least two subjects in group B, and vice versa. Each credit must be in a different discipline and must be in subjects other than the major subject

of the student's first degree. In total, 11 half-credit courses and a thesis are required. During the first year, students will generally complete the following requirements:

1. Three half-classes specified above
2. ENVI 5000.06 and 5001.03
3. An approved graduate half-class in an area designed to relate the undergraduate major to an environmental theme
4. ENVI 5110.03 (or appropriate alternative)
5. ENVI 5200.03 (or appropriate alternative)
6. A class with an international perspective

The requirements for the second year are:

1. ENVI 5002.03
2. An approved graduate level half-class
3. ENVI 9000.00 (Thesis)

In exceptional cases, a student may be admitted to a one-year programme. The requirements for a one-year programme are:

1. ENVI 5000.06 and 5001.03
2. One graduate level class related to an environmental theme in the student's area of specialization.
3. ENVI 9000.00 (Thesis)

Classes Offered

All classes except ENVI5002.03 and ENVI9000.00 are open to students in other programmes by permission of the instructor. Please note that not all classes are offered each year, class content may also vary from year to year.

ENVI 5000.06R: Introduction to Environmental Studies. A. Dwire

ENVI 5001.03B: Environmental Assessment. G. Bearlands

ENVI 5002.03A: Environmental Studies Joint Project. Staff

ENVI 5004.03B: Management of Chemicals and Waste. R.P.Côté

ENVI 5006.03A: Environmental Toxicology. P. Wells and B. Freedman

ENVI 5020.03A: Resource Systems and Economic Development. S. Wood

ENVI 5021.03B: Fisheries Management and Development. T. Charles

ENVI 5030.03A: Seminar on Management of Sustainable Development. Staff
Cross-listing: PUAD 6775.03

ENVI 5031.03A: Environmental/Ecological Economics. S. Wood

ENVI 5032.03B: Aquatic Toxicology and Water Quality Assessment. P. Wells

ENVI 5034.03A or B: Independent Reading. Staff

ENVI 5035.03A: Research Methods. A. Dwire

ENVI 5036.03A: Rural Environments. K. Beasley

ENVI 5038.03B: Public Involvement in Resource Management. G. Bearlands

ENVI 5039.03B: Indigenous People and Natural Resources Issues. F. Cohen

ENVI 5043.03A: Industrial Ecology Seminar. R.P.Côté

ENVI 5047.03A or B: Special Topics. Staff

ENVI 5110.03B: Resource Economics. P. Burton
Cross-listing: ECON 5516.03

ENVI 5120.03B: Environmental Ecology. B. Freedman
Cross-listing: BIOL 5060.03

ENVI 5180.03A: Coastal Communities in the North Atlantic. V. Thiessen
Cross-listing: SOSA 3220.03/5220.03

ENVI 5200.03A or B: Environmental Law. A: P. Saunders, B: D. Vander Zwagg
Cross-listing: LAWS 2104.03

ENVI 5601.03B: Management of the Marine Environment. A. Dwire

ENVI 5818.03A: Management and the Natural Environment. R.P.Côté and D. Patton

ENVI 9000.00: Thesis

French

Location: 1315 LeMarchant Street,
Halifax, N.S. B3H 3J5
Telephone: (902) 494-2430

Chairperson of Department

P. De Méo

Professors Emeriti

R. Kocubrek, State Examination, PhD, CSC
(Charles, Prague), McCulloch Professor,
Chevalier dans l'ordre des Palmes
Académiques

Professors

H.E. Bednarski, BA (Lond), MA (Dal), PhD
(Laval)
M. Bishop, BA, BEd (Manchester), MA (Man),
PhD (Kent, Canterbury), Graduate
Co-ordinator, McCulloch Professor
J.W. Brown, AB (Miami), MA (Middlebury),
PhD (Penn)
P. De Méo, BA, MA, PhD (UCLA)
B.E. Geaner, BA, BEd, MA (Dal), Dr. de 3e cycle
(Toulouse II)
W.T. Gordon, BA, MA, PhD (Tor)
I.Z. Oore, BA (Tel-Aviv), MA (Waterloo), PhD
(Western)
H.R. Runte, MA, MPh, PhD (Kansas)
M. Sandhu, Licence ès Lettres (Montpellier),
PhD (Yale)
K. Waterson, BA (Long Island), MA (NYU),
PhD (CUNY)

Associate Professors

R. Bonnel, Licence (Paris), MA (Essex), Dr. de 3e
cycle (Paris)
T.P. Carter, BA (Princeton), MA, PhD (Brown)
N. Trèves, BSc (American U, Cairo), PhD (Rice)

Honorary Adjunct Professors

J. Best, BA (UWO), MA, PhD (Strasbourg),
Acadia University
N. Bishop, BA, BEd, MA (Sask), Dr. de 3e cycle
(d'Aix-Marseille), Memorial University of
Newfoundland
J. Cauville, BA (Sorbonne), MA, PhD (UBC),
Saint Mary's University
F.X. Eygun, BA (St. Boniface), MA (Calgary),
PhD (Maritoba), Mount Saint Vincent
University
K. Flukeld, MA (France), PhD (Sherbrooke),
Saint Mary's University
D.R. Gamble, BA, MA (Tor), PhD (St. John's,
Oxford), Memorial University of
Newfoundland
A.G. Gann, PhD (Tor), Mount Allison University
D. Graham, BA (Hons) (Sask), MA, PhD
(Western), Memorial University of
Newfoundland
L. Lavoie, BA (Laurentian), MA (Laval), PhD
(d'Aix-Marseille), University College of Cape
Breton
J.-M. Lemelin, BA, MA, PhD (Sherbrooke),
Memorial University of Newfoundland

A. Macdonald, MA, MLitt (Aberdeen), PhD
(Harvard), Memorial University of
Newfoundland

A.R. Pugh, BA, MA, PhD (Cambridge),
University of New Brunswick

C. Rubinger, BA (Sorbonne), MA (McGill),
Mount Saint Vincent University

G. Thomas, BA (Wales), MA, PhD (MUN),
Memorial University of Newfoundland

Honorary Research Associates

Y. Cormier, BEd (Moncton), MA (Laval), PhD
(Sherbrooke), Université Sainte-Anne

P.J. Demers, BA, BPed, MEd, PhD (Montreal),
University of New Brunswick

M. Jacquot, Licence d'anglais (Paris-Sorbonne),
MA (Acadia), PhD (Dal), Université
Sainte-Anne

V. Kocay, BA, MA (Man), PhD (Tor), Saint
Francis-Xavier University

M. O'Reilly, BA (Carleton), MA, PhD (Ott),
Memorial University of Newfoundland

MA Degree Programme

For general rules see the Faculty
Regulations section 2.2 of this calendar.

- Classes and research leading to the MA degree in French are offered in the areas of French literature, linguistics, second language studies and culture. Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies and must show evidence of proficiency in spoken and written French.
- Students may be accepted on a full-time or a part-time basis. A full-time student must spend a minimum of one year in full-time graduate study. The time normally required to complete the full-time programme is one year for holders of a French Honours degree or equivalent, and two years for holders of a general degree.
- In a one-year full-time programme, the equivalent of at least five university credits is required. This will consist of theses (usually equivalent to two credits) plus three 5000-level credits. In a two-year full-time programme, students have to attain the equivalent of Honours status (see Undergraduate Calendar) and to obtain the additional five credits as required in a one-year full-time programme.
- In addition to the five credits, all MA students are normally expected to take a half-year class in Research Methods. When appropriate, up to one additional undergraduate or graduate credit may be required in order to improve the student's proficiency in French. Part-time students carry no more than two and one-half full-credit classes during one year. A one-year full-time programme corresponds to three years part-time. A two-year full-time programme corresponds to six years part-time.
- The thesis, written in French, is to be submitted and approved within the time limits set out in Section 5 of this calendar.

Students who wish, eventually, to go on to the PhD are advised to do the MA thesis degree.

PhD Programme

For general rules see the Faculty Regulations Section 5.3 of this calendar.

The admission requirements are as follows: an MA thesis degree in French, an excellent French oral and written proficiency, a scholarly interest in one of the areas of French Studies to which PhD thesis research is limited. These areas cover all periods of French, Québec and Acadian Literature, with certain emphases, and the field of Linguistics, equally with particular emphases. Please consult the Department's PhD document for full details.

The requirements after admission are the following: two years of Dalhousie residency, four full graduate credits (from the departmental offerings in the years of residency), a second language examination (within two years after admission), preliminary and comprehensive written and oral examinations (not less than one year prior to submission of thesis), and the PhD thesis (normally written in French) and its oral defence.

Selection of Classes and Registration

It is the responsibility of students admitted to one of the graduate programmes to report to the graduate coordinator in the week preceding the beginning of classes, or earlier. The purpose is a pre-registration briefing and interview, the final selection of classes, completion of class selection forms and the drawing up of the programme of graduate studies. All graduate students should be duly registered before classes begin.

Classes Offered

What follows is a list of PhD and MA classes. Classes required in particular cases will be specified in each student's Programme of Graduate Studies. Only a limited number of classes is offered in any given year. Descriptions of the graduate classes offered in a particular year will be made available to students.

FREN 5002.03A, B, or R: Méthodes de recherche/ Research Methods. H. Runte and staff

FREN 5005.03A or B: Philologie française: Séminaire d'ancien français/French Philology: Old French Seminar. H. Runte

FREN 5006.03A or B: Philologie française: Séminaire de l'histoire du français moderne/French Philology: Seminar on the History of Modern French. H. Runte

FREN 5016.03A or B: Aspects de la traduction/Topics in the Science of Translating. W.T. Gordon

FREN 5040.06R: Stylistique avancée/Advanced Stylistics. M. Sandhu

FREN 5120.06R: Linguistique/Linguistics. Staff

FREN 5121.03A or B: Fonctionnalisme et structuralisme en linguistique/ Functionalism and Structuralism in Linguistics. Staff

FREN 5122.03A or B: Créativité Lexicale/Lexical Creativity. Staff

FREN 5123.03A or B: Langue et terminologie savantes/Learned Language and Terminology. Staff

FREN 5124.03A or B: Vocabulaire et Culture/Vocabulary and Culture. Staff

FREN 5125.03A or B: Sémantique/Semantics. W.T. Gordon

FREN 5130.03A or B: Linguistique saussurienne/Saussurean Linguistics. W.T. Gordon

FREN 5140.03A or B: Dialectologie acadienne et sociolinguistique/Acadian Dialectology and Sociolinguistics. B.E. Gesner

FREN 5180.03A or B: Linguistique de textes/Linguistics of Texts. Staff

FREN 5185.03A or B: Les Métaphores dans les textes/Metaphors in Texts. Staff

FREN 5190.03A or B: La Linguistique du français enseigné/Linguistics in Teaching French. Staff

FREN 5250.03A or B: Fondements de l'enseignement des langues secondes/Foundations of Second Language Teaching. P. De Méo

FREN 5260.03A or B: Approches communicatives de l'enseignement du français langue seconde/ Communicative Approaches to French Second-Language Teaching. P. De Méo

FREN 5266.03A or B: Enseignement de la phonologie en française langue seconde/Teaching of Phonology in French as a Second Language. K. Waterson

FREN 5268.03A or B: Enseignement de la littérature francophone/Teaching French Literature. K. Waterson

FREN 5270.03A or B: Enseignement de la lecture en français langue seconde/ Teaching of Reading in French as a Second Language. P. De Méo

FREN 5275.03A or B: Informatique et enseignement de la langue française/Computers in Teaching French. T.P. Carter

FREN 5280.03A or B: Enseignement de la culture francophone/Teaching of Francophone Culture. Staff

FREN 5281.03A or B: Culture française/French Culture. J. Brown

FREN 5285.03A or B: Sémiotique appliquée/Applied Semiotics. J. Brown

FREN 5290.03A or B: Analyse, exploitation et développement de matériaux pédagogiques/ Analysis, Exploitation and Development of Curricular materials. P. De Méo

FREN 5295.03A/5296.03B: Séminaire: Didactique des langues secondes/Seminar: Second-Language Teaching. Staff, Topic varies, Consult Department for current year's topic.

FREN 5300.03A: Séminaire: Littérature médiévale/Seminar in Mediaeval French Literature. H. Runte

FREN 5301.03B: Lectures: littérature médiévale/Supervised Readings in Mediaeval French Literature. H. Runte

FREN 5400.03A or B: Rabelais et son temps/Rabelais and his Time. N. Trèves

FREN 5401.03A or B: Montaigne et son temps/Montaigne and his Time. N. Trèves

FREN 5402.03A or B: La Poésie de la Renaissance/Renaissance Poetry. N. Trèves

FREN 5500.03A or B: L'Aventure intellectuelle du Grand Siècle/The Intellectual Adventure of French Classicism. K. Waterson

FREN 5600.03A or B: Le roman épistolaire du 18e siècle/18th Century Epistolary Novel. R. Bonnel

FREN 5610.03A or B: Ethique et esthétique de la nature dans l'art et la littérature du 18e siècle/Ethics and Aesthetics of Nature in 18th Century Art and Literature. R. Bonnel

FREN 5700.03A or B: La Révolution romantique/The Romantic Revolution. M. Sandhu

FREN 5701.03A or B: Le Roman du dix-neuvième siècle/Nineteenth-Century Novel. M. Sandhu

FREN 5705.03A or B: Le Poème en prose au 19e siècle/The Prose Poem in the 19th Century. J. Brown

FREN 5706.03A or B: Impressionnisme et symbolisme/Impressionism and Symbolism. M. Bishop

FREN 5801.03A or B: Anti-romans du vingtième siècle/Anti-Novels of the 20th Century. D. Lawrence

FREN 5802.03A or B: La Poésie moderne de Char à Bonnefoy/Modern Poetry from Char to Bonnefoy. M. Bishop

FREN 5803.03A or B: La Littérature Contemporaine I/Contemporary Literature I. M. Bishop

FREN 5804.03A or B: Art et Littérature/Art and Literature. M. Bishop

FREN 5805.03A or B: La Stylistique structurale/Structural Stylistics. J. Brown

FREN 5806.03A or B: Poétique et théorie de la littérature/Poetics and Theory of Literature. J. Brown

FREN 5807.03A or B: Culture contemporaine/Contemporary Culture. M. Bishop

FREN 5808.03A or B: La Littérature Contemporaine II/Contemporary Literature II. M. Bishop

FREN 5876.03A or B: Aspects de la littérature du Canada français/Studies in French Canadian Literature. B. Bednarski

FREN 5877.03A or B: Analyse de textes littéraires québécois/Analysis of Quebec Literary Texts. I. Oore

FREN 5910.03A or B: Lecture de textes acadiens contemporains/Supervised Readings in Acadian Literature since 1968. H. Runte

FREN 5920.03A or B: Femmes écrivains et images de femmes dans la littérature française à travers les siècles/French Women Writers and Images of Women through the Centuries. N. Trèves

FREN 5990.06R: Projet indépendant/Independent Project (MAT). Subject to independent completion of study.

FREN 5998.03A/5999.03B: Recherches indépendantes/Independent Research. Subject to approval by graduate coordinator and department chairperson.

FREN 9000.00 MA Thèse/Thesis

FREN 9530.00 PhD Thèse/Thesis

German

Location: 1355 LeMarchant Street,
Halifax, N.S. B3H 3J5
Telephone: (902) 494-2161
Fax: (902) 494-2719

Chairperson of Department

J. Curran (Acting)

Graduate Studies Coordinator

F.W. Gaede

Professors

F.W. Gaede, PhD (Freib), FRSC, McCulloch
Professor

H.-G. Schwarz, MA (Munich), PhD (McG)

Associate Professor

D.H. Steffen, PhD (Gottingen)

Assistant Professor

J.V. Curran, MA, MA (Dal), PhD
(Newcastle-upon-Tyne)

Graduate classes leading to the degree of MA are offered in the history of German literature and thought. Research in the Department is concerned principally with the Baroque Age, the literary and philosophical tradition of German Idealism, and the culture of the twentieth century.

Graduate students may concentrate their work in any of the periods or in any particular aspect of the history of German literature and thought.

Admission Requirements

Applicants who do not meet the standards of an Honours degree may be required to take additional classes.

MA Degree Programme

Depending on their level of preparation, students spend either one or two years towards completion of their classes and thesis.

Candidates are expected to have a reading knowledge of a third modern or ancient language. A thesis is required.

Classes Offered

GERM 5500.06R: Literature and Thought from Reformation to Enlightenment

GERM 5520.06R: Goethe and the Enlightenment

GERM 5530.06R: Hegel's Aesthetics and the Ancients

GERM 5540.06R: Kant and the History of German Idealism

GERM 5550.06R: Hegel: Phenomenology of Spirit

GERM 5570.06R: Goethe and Romanticism

GERM 5580.06R: Goethe's Faust

GERM 5590.06R: Studies in German Idealism

GERM 5600.06R: Heidegger and German Idealism

GERM 5610.06R: Literature of the 19th Century

GERM 5620.06R: Modern German Literature

GERM 5630.06R: Aesthetic Theory

GERM 5640.06R: Ancient and Modern Dialectics

GERM 5660.06R: History and Theory of the German Novel

GERM 5670.06R: Hegel's Philosophy of Nature

GERM 5700.03A: Special Topics I

GERM 5701.03B: Special Topics II

GERM 5800.06R: Research Seminar

GERM 9000.00R: Thesis

Health Services Administration

Location: 5599 Fenwick Street, Halifax,
N.S. B3H 1R2
Telephone: (902) 494-7097
Fax: (902) 494-6849

Director of School

T. Rathwell, BA (York), MA, PhD (Durham)

Professor Emeritus

A. Peter Rudeman, BS, MA, PhD (Harvard),
MBA (Chicago)

Professors

L. Nestman, BComm (Sask), CA, MHSA (Alta)

Associate Professor

L. Curry, PhD (Stanford) (Honorary)

L.L. McIntyre, MD, MHSc (Tor), FRCPC,
joint-appointment in Recreation, Physical and
Health Education

T. Rathwell, BA (York), MA, PhD (Durham)

D. Tamlyn, BN (McG), MEd (Ottawa), PhD
(Dal), major appointment in School of Nursing

Assistant Professors

G. Johnston, BSc(Hons) (McG), MHSA (Alta),
PhD (Western)

K. Rondeau, BSc Hons, BLT (Regina), DIA, MA,
MBA (Concordia), PhD (Tor)

Lecturers

W.D. Cochrane, BA(Hons), LLB (Dal)

M. Davies, BSc (MSVU), BEd (UPEI), MHSA
(Dal), CHE

B. Langille, BA, MA (Dal)

K. MacIntyre, RN, BBA (MSVU), MHSA (Dal)

W. Marsh, BComm (Dal), MBA (SMU)

M. McKeough, BSc (Hons) (Tor), MEd (Dal)

D. McKillop, BA (York), MIR (Toronto)

B. Montgomery, BScN (MSVU), MHSA (Dal)

C. Moore, BScN (MSVU), MScN (Tor), Honorary

R. Nurse, BA (MUN), MHSc (Tor), Honorary

D.W. Rice, BEng, MEng, PEng (TUNS)

Students seeking further information or help in planning courses of study in the School of Health Services Administration should contact the:

Graduate Co-ordinator
School of Health Services Administration
5599 Fenwick Street
Halifax, N.S. B3H 1R2
(902) 494-7097

The MHSA programme is accredited by the Accrediting Commission on Education for Health Administration, and the School is a full member of the Association of University Programmes in Health Administration.

Objectives

The School of Health Services Administration offers a Masters degree which meets the needs of those pursuing administrative careers in the Canadian health

care delivery system. The programme is designed to prepare individuals for careers in hospital administration, nursing administration, long term care administration, public and community health administration and administration in municipal, provincial and federal governments in health and health-related areas. There are employment opportunities for individuals with an MHSA in policy, planning, evaluation, administration and research.

The programme seeks to provide a conceptual background for the increasingly complex managerial tasks that need to be performed in health institutions and health related governmental departments. Every effort is made to balance political, social, economic, cultural, medical and ethical approaches to understanding the health care delivery system with those of the management sciences.

The emphasis in the programme is on an academic, multidisciplinary and professional education. It is academic in that it emphasizes knowledge of current research findings and treats the practice of health services administration as phenomena subject to social scientific analysis. It is multidisciplinary in that faculty are drawn from traditional social and administrative sciences. It is a professional programme in the sense that it will attempt to broaden the social perspectives of the student emphasizing the feature that a professional has a social responsibility to society and must have an appreciation of the ethical standards appropriate to a career in health services administration.

Application Procedure

Application forms are available from the Admissions Office of Dalhousie University. Application should be submitted as early as possible to the Registrar's Office.

The following supporting documents are to be sent directly to the School:

- transcripts of all previous work
- at least two letters of reference
- Résumé/Curriculum Vitae
- a statement of career interests and reasons for seeking admission to the School
- GMAT (see below)
- TOEFL for Foreign Students (see below)

The application (including all supporting documentation) must be received by May 1.

Candidates are required to sit for the Graduate Management Admission Test (GMAT). This requirement may not be waived without explicit permission of the Admissions Committee. GMAT results will be considered with other information submitted by applicants in deciding on eligibility for admission.

The Test may be taken at conveniently-located centres throughout North America and in many other parts of the world. In the case of North American candidates, applications for the test are accepted by the ETS in Princeton until approximately six weeks before test dates. For candidates in other countries, closing dates are eight weeks before test dates.

School of Health Services Administration
GMAT Number is 0690.

Applicants for the test should use an order form obtainable from the Registrar's Office of the nearest University, Dalhousie University, or may write to the address below to obtain an information bulletin and registration form for the GMAT. If the order form is lost or omitted from the materials received write directly to:

Graduate Management Admission Test
Educational Testing Service
Box 966
Princeton, N.J., 08540, U.S.A.

All students are required to demonstrate at an early stage in their studies that they are proficient in writing reports and essays in English. Candidates from countries outside Canada whose mother tongue is not English will be required to take the Test of English as a Foreign Language (TOEFL) as a requirement for admission and a minimum score of 580 must be achieved. Further information may be obtained by writing:

Test of English as a Foreign Language
Box 899
Princeton, N.J., 08540, U.S.A.

CANDIDATES ARE ADVISED TO TAKE THE TEST(S) AT THE EARLIEST POSSIBLE DATE.

The deadline for applying to the School is May 1. For foreign students, it is strongly recommended that all documents (transcripts and references) be submitted prior to March 31.

Part time Study

The Programme offered through the School is available to students on a part time basis. A part-time student may enrol in up to two and one-half credits in any one academic year. In order to ensure that graduate students benefit from a reasonable concentration of their studies, part-time studies must normally be completed within seven years.

LLB/MHSA Programme

The combined LLB/MHSA programme is a four-year programme which enables students to select classes leading to degrees of Master of Health Services Administration and Bachelor of Laws. The suggested order of the programme is:

Year 1:

First year of MHSA programme
Summer HEAS 6390.06

Year 2: First year of LLB programme
Year 3: HEAS 6365.03, HEAS 6330.03
one ½ credit HEAS elective plus 25 hours of classes from the LLB programme, including Civil Procedure, Constitutional Law, and a major research paper.

Year 4: HEAS 6380.03, HEAS 6360.03 or Health Law from the Law School, 1½ credits HEAS electives and a minimum of 21 hours of classes from the LLB programme, including Professional Responsibility, and a major research paper.

Candidates for the LLB/MHSA programme must satisfy the entrance requirements of both programmes, and may obtain further

information about the combined programme by contacting either the School of Health Services Administration or the Faculty of Law. For admission, students must apply to both the School of Health Services Administration and the Law School individually. Students applying for the MHSA programme may submit LSAT results in lieu of GMAT results.

MN/MHSA Programme

The combined MN/MHSA scheme is a three-year programme which enables students to select classes leading to degrees of Master of Nursing and Master of Health Services Administration. The MN/MHSA programme is designed to enable students to:

- advance knowledge in the area of nursing management;
- analyze, implement, and evaluate theories and models relevant to nursing;
- conduct independent, and/or collaborative research;
- work collaboratively with other health professions in planning, implementing, and evaluating health care; and
- demonstrate leadership in nursing and society.

The method of delivery includes traditional classroom seminar/classes, professional clinical experiences, a residency in administration in a nursing area and a thesis with an administrative focus. The thesis committee will include faculty committee members from the Schools of Nursing and/or Health Services Administration. The integrity of both programmes is maintained by the design of the three year MN/MHSA programme. However, the number of credits required is reduced by electing to take this joint programme.

Candidates for the MN/MHSA programme must satisfy the entrance requirements of both programmes, and may obtain further information about the combined programme by contacting either the School of Health Services Administration or the School of Nursing. For admission, students must apply to both the School of Health Services Administration and the School of Nursing individually. Students applying for the MHSA programme may submit GRE results in lieu of the GMAT results.

General Admission Requirements

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies. Enrolment in the School is limited. In general successful applicants should have attained at least a "B+" standing in their previous university work.

- Admission is based on an assessment of:
- professional experience and/or promise;
 - all previous academic work;
 - letters of reference;
 - GMAT;
 - TOEFL (when required)

Advanced Standing & Exemption

Applicants wishing to receive advanced standing should include class outlines for those classes previously taken which they consider to

be equivalent to Dalhousie HEAS classes. Where it is determined at time of admission that a student has the equivalent of a required class but is not granted advanced standing, an exemption may be permitted, so that another class is substituted for the required class.

NOTE: Not all classes are offered each year; consult the school for current year offerings.

Classes Offered

The two-year programme leading to a Master of Health Service Administration degree features both an academic and results-oriented curriculum. It requires the successful completion of 9-11 credits which must include:

Required Classes

- HEAS 5300.03A: Introduction to the Canadian Health System
- HEAS 5320.03B: Managerial Epidemiology
- HEAS 5330.03A: Management and Design of Health Care Organizations I
- HEAS 5335.03B: Information Systems in Health Administration
- HEAS 5339.03A: Health Care Economics I
- HEAS 5340.03B: Health Care Economics II
- HEAS 5345.03A: Health Services Accounting and Management Control
- HEAS 5350.03B: Health Services Management Accounting and Control
- HEAS 5315.03A: Management and Design of Health Care Organizations II
- HEAS 6330.03B: Health Services Planning and Evaluation
- HEAS 6365.03B: Quality Management
- HEAS 6380.03B: Senior Seminar in Health Services
- HEAS 6390.06R: Health Services Residency
- HEAS 6500.03A: Intermediate Statistics for Health Services

Five half-credit classes must be chosen from the following classes:

- HEAS 5200.03B: Principles of International Health
- HEAS 6000.03B: Nursing Administration and Leadership
- HEAS 6310.03A: Health Care Policy
- HEAS 6312.03B: Health Care Funding Systems
- HEAS 6320.03A: Managed Care
- HEAS 6325.03A: Long Term Care Administration
- HEAS 6340.03A: Human Resources in the Health Care Setting
- HEAS 6341.03B: Management Union Relations
- HEAS 6364.03A: Risk Management
- HEAS 6360.03A: Health Care Law
- HEAS 6370.03B: International Comparative Health Care Systems
- HEAS 6375.03B: Health Care Marketing
- HEAS 6394.03A or B or R: Directed Project (full or half credit)
- HEAS 6395.03A or B or R: Directed Reading (full or half credit)

1 full credit - graduate electives:

The remaining one-credit requirement may be made up from any of the elective classes offered by the School of Health Services Administration or any other graduate studies programme, subject to approval of a faculty advisor.

History

Location: 1411 Seymour Street, Halifax,
N.S. B3H 3M6
Telephone: (902) 494-2011
Fax: (902) 494-3349
e-mail: History@ac.dal.ca

Chair of Department

J.T. O'Brien

Graduate Co-ordinator

D.R. Woolf

Professor Emeritus

P. Waite

Professors

M.S. Cross, BA, MA, PhD (Tor)
J.E. Crowley, AB (Princeton), MA (Mich), PhD
(Johns Hopkins)
J. Fingard, BA (Dal), MPhil, PhD (London),
FRSC
J.L. Parpart, BA (Brown), MA, PhD (Boston)
N.G.O. Pereira, BA (Williams), MA, PhD (Calif,
Berkeley)
L.D. Stokes, BA (Tor), MA, PhD (Johns Hopkins)
G.D. Taylor, BA, PhD (Penn), Dean of Faculty of
Arts and Social Sciences
T. Traves, BA (Man), MA, PhD (York),
President and Vice-Chancellor, Dalhousie
University
D.R. Woolf, BA (Queen's), DPhil (Oxford), FR
Hist S

Associate Professors

S.J. Brooke, BA (Dal), MA (McG), DPhil (Oxford)
G. Hanlon, BA, MA (Tor), PhD (Bordeaux)
C.J. Neville, BA, MA (Carleton), PhD
(Aberdeen)
J.T. O'Brien Jr., BA (Wisconsin), MA, PhD
(Rochester)
D.A. Sutherland, BA (MtA), MA (Dal), PhD
(Tor)

Assistant Professors

C. Danyak, BA (Concordia), MA, PhD (McG)
S. Tilloison, BSc (Waterloo), MA, PhD (Queen's)
P. Zachernuk, BA, MA (Dal), PhD (Tor)

Honorary Adjunct Professors

M. Conrad, BA (Acadia), MA, PhD (Tor),
Acadia University
F.H. Early, BA (Florida State), MA, PhD
(Concordia), Mount Saint Vincent University
E. Haigh, BSc, MSc (Alberta), PhD (Wisconsin),
Saint Mary's University
C. Howell, BA, MA (Dal), PhD (Cincinnati),
Saint Mary's University
J.E. Lee, BA, MA, PhD (Tor)
B.M. Moody, BA (Acadia), MA, PhD (Queen's),
Acadia University
J.H. Morrison, BA, BEd (Acadia), PhD (Ibadan,
Nigeria), Saint Mary's University
J.G. Reid, BA (Oxon), MA (Memorial), PhD
(UNB), Saint Mary's University

R.C. Stuart, BA, MA (UBC), PhD (Florida,
Gainesville), Saint Mary's University

R.J. Twomey, BA (Connecticut St), MA, PhD (N.
Ill)

Admission Requirements

Candidates for the one year MA degree must hold a BA Honours degree in history. Those with general history BA degrees or degrees in fields other than history may be placed in a two year MA programme or in a qualifying year programme. Candidates for doctoral study must hold an MA degree in history or in a cognate field.

MA Degree Programme

Students admitted into either a qualifying year or a two year MA programme must in the first year take five upper level undergraduate history classes and secure at least a B grade in each. Students in the one year MA programme are required to attend the Graduate Seminar which meets weekly during the academic year.

The MA is a research degree and can be done full-time or part-time. Applicants for the one-year MA will normally have an honours (four-year) BA or equivalent. Students in the programme spend the first term satisfying course requirements and begin their thesis research early in the winter term, under the supervision of a faculty member, or members, in the student's area of interest. The course requirement is normally satisfied by taking two designated advanced classes, or one advanced class and a Directed Reading field with a faculty member. In cases where suitable advanced classes are not offered, a student may, at the discretion of the Graduate committee and on the recommendation of the student's principal supervisor, elect to fulfill his or her course requirements through two Directed Reading fields. Classes and fields may be selected from both departmental and extra-departmental offerings, subject to approval of the Graduate committee (at least one class or field must be taught by a member of the History Department). Directed Reading fields are generally examined in early January following the Christmas vacation. Theses may be orally examined at any time, and topics should be chosen with a view to completion twelve months after commencement of the programme. To complete their degree students must submit and orally defend a thesis of not more than 50,000 words.

Candidates writing theses in Canadian history must demonstrate a competent reading knowledge of French: those writing theses in other fields must demonstrate an adequate reading knowledge of the language required for the successful completion of their research.

PhD Degree Programme

For minimum time required to complete the programme, see Section 4 of the Faculty of Graduate Studies Regulations in this calendar.

In order to be considered a candidate for the PhD degree, students must prepare three fields, at least one of which must be outside the student's primary research area, and pass

written and oral examinations in all three fields. Students must demonstrate an adequate reading knowledge of the language required for the successful completion of their research. All students engaged in Canadian history research must demonstrate a reading competence in French. A "pass" of the PhD field exams is deemed to be a mark of A- or better in each exam. Passes are recorded only as "P" on transcripts. Students who fail to attain the pass standard in one of three exams will be permitted to rewrite within three (3) months of the exam. Students who fail to attain the pass standard on two or three of the fields (or who fail in a rewrite attempt) will be required to withdraw from the PhD programme.

A thesis is required which shall not exceed 100,000 words in length, excluding footnote references and bibliography. Doctoral theses are usually to be undertaken in the areas of Canadian, British, British Imperial, Russian (mid-19th century to mid-20th century), and African History. Students wishing to do a PhD thesis in areas other than those named above may be recommended for admission providing that resources are available.

To qualify for the award of the PhD degree, the thesis must make a significant and original contribution to historical study by the discovery of new information, or by the original interpretation of known information, or both.

Fields of Study by Directed Reading (MA and PhD)

Canadian History

The following fields are offered:

History of the Maritimes, with emphasis on the late 18th to mid-20th century; Canadian social history, in particular such areas as poverty and philanthropy, urban and rural social disorder, labour history, and the rise of the city; Canadian political history, particularly the 19th and 20th centuries; Canadian-American relations, particularly since 1867.

African History

This field may be studied with special attention to precolonial history during the period of oral tradition, the colonial period since 1800, processes of decolonization in Anglophone Africa, and African social history in the 19th and 20th centuries.

British History

The following fields are offered: Aspects of British history 1250-1730; aspects of political, social and cultural history, 1914-1979; labour history in the 20th century.

United States History

Fields are offered in:

Colonial and revolutionary America, 19th century American social, labour, and ethnic history, and 20th century American political and business history.

European History

Students may take a field in French or Italian history (1550 to 1789) emphasizing the sources and methods used in social history, but must have a reading knowledge of either of those two languages.

German History

Only one field is available in German history: Germany 1870-1945. Within this, students may concentrate upon particular topics or periods especially relevant to their thesis work. A prior reading knowledge of German is required.

Medieval History

Fields are available in English and medieval European history.

Russian History

Two fields are available one in nineteenth-century Russian history and one in twentieth-century Russian and Soviet history.

History of Political and Social Theory

Fields may be offered in the broad history of political and social theory (including historiography) or in more specific areas: Renaissance and Reformation political theory, the Enlightenment, and Marxism (including special reference to the Third World).

Caribbean and Latin American History

Fields may be offered in aspects of labour (including slave labour history), the impact of imperialism in the 19th and 20th centuries, and transitions to socialism.

Women's History

Fields are offered, both as single units and in combination, on women in developed industrial societies (North America), in developing societies (Africa), and in socialist societies (including Cuba and China).

Senior Undergraduate Classes which are Open to Graduate Students and for which Graduate Credit is Assigned

HIST 5000.03A or B: Directed Readings*

HIST 5001.03A or B: Directed Readings II*

HIST 5002.06R: Selected Readings in History*

HIST 5090.03A: Russian Society in Historical Perspective

HIST 5103.03A or B: The English Civil War: Society, Religion and Politics 1603-1660

HIST 5116.03A or B: Culture, Class and Society in Twentieth-Century Britain

HIST 5222.03A: Topics in Canadian Social History, 19th and 20th Centuries

HIST 5223.03A or B: The Caring Society: Welfare in Canada Since 1900

HIST 5261.03A: The Rural Experience in Canada

HIST 5292.03A: Wealth and Power in North America

HIST 5368.03A or B: The United States since 1929

HIST 5380.06R: Latin American History

- HIST 5430.03A or B: Making of Colonial Africa (1850-1930)
- HIST 5435.03A or B: Rise and Fall of African Slavery
- HIST 5452.03A or B: South Africa Since the Mineral Revolution
- HIST 5461.03A or B: Gender and Development in Africa
- HIST 5462.03A or B: African Economic History
- HIST 5470.03A or B: Wars and Revolutions in Nineteenth Century Africa
- HIST 5475.03A or B: African Intellectuals and the Modern Experience
- HIST 5500.03A or B: Topics in Modern History
- HIST 5600.03A or B: Topics in Late 19th and Twentieth-Century American and British History
- HIST 5610.03A or B: Women in North America
- HIST 5612.03A or B: Women in Socialist Development
- HIST 5701.03A: Medieval Civilization
- HIST 5704.03A: Crime and Society in Post-Conquest England
- HIST 5705.03A or B: The Early Modern Mind
- HIST 5985.03A: Modern Historiography

*Non-History MA or PhD students only; history students must take regular classes or one of the Directed Reading fields listed above.

Candidates for the full-time MA in History must take graduate classes in the A (fall) term. Students from other disciplines may apply for admission to such classes in either A or B term (as offered) by seeking the permission of the instructor, and obtaining the approval of their own department.

Graduate classes are offered on a rotating basis and students should check with the History Department as to its offerings in a given academic year.

Human Communication Disorders

Location: 5599 Fenwick Street, Halifax, N.S. B3H 1R2
Telephone: (902) 494-7052
Fax: (902) 494-5151

Director of the School
E. Yang

Professors
W.B. Green, BS, MA, PhD (Syracuse)
G.T. Mencher, BA, MA, PhD (Mich), FASHA (Honorary)

Associate Professors
J. Armson, BSc, MS, PhD (Temple)
R. Caisie, BPs, MSc, PhD (McG)
E. Yang, MD, MCD, PhD (Texas)

Assistant Professors
S.A. Belanger, BSc (Boston), MA (Minn), PhD (Conn)
P. Cleave, BA, MSW (McM), MSc (Western), PhD (Kansas)
J.E. Fee, BA, MA, PhD (UBC)
E. Kay-Raining Bird, BA, MA, PhD (Wisconsin)

Lecturers
T. Jiang, MSc
M.N. Wall, MD
G. Whitehead, MA

Clinical Coordinators
L. Carey, MA
S. Flaher, MSc
C. Tompkins, MSc

Clinical Instructors

Audiology
Nova Scotia Hearing and Speech Clinic
Atlantic Provinces Special Education Authority
St. John Regional Hospital, St. John, NB

Speech-Language Pathology
Nova Scotia Hearing and Speech Clinic
Stan Cassidy Rehab Centre, Fredericton, NB

Practicum Supervisors

Audiology
Dr. Everett Chalmers Hospital, Fredericton, NB
Nova Scotia Hearing and Speech Clinic
Saint John Regional Hospital, Saint John, NB
Western Memorial Hospital, Cornerbrook, NF

Speech-Language Pathology
Bathurst Hospital, Bathurst, NB
Carleton Memorial Hospital, Woodstock, NB
Chaleur Regional, NB

Children's Rehab, St. John's, NF
Colchester County School Board, NS
Department of Health and Social Services, PEI
Dr. Everett Chalmers Hospital, Fredericton, NB

Edmunston Hospital, NB
 Gander Hospital, Gander, NF
 Halifax City School Board
 Health and Community Services, Saint John, NB
 Hopital Georges Dumont, Moncton, NB
 Hotel Dieu Hospital, Chatham, NB
 Janeway Child Health Centre, St. John's, NF
 McPhail, Charlottetown, PEI
 Miller Centre, St. John's, NF
 Moncton Hospital, Moncton, NB
 Montague, PEI
 Nova Scotia Hearing and Speech Clinic
 Oromocto Hospital, Oromocto, NB
 Queen Elizabeth Hospital, Charlottetown, PEI
 Saint John Regional Hospital, NB
 Sarnia, ON
 Springstead, Barrie, ON
 St. John's General Hospital, NF
 Sussex Health Centre, Sussex, NB
 Western Memorial Hospital, Cornerbrook, NF

The School of Human Communication Disorders provides a three year programme of studies and clinical experiences leading to a MSc degree in either Speech Language Pathology or Audiology. The School invites applications from students possessing a baccalaureate degree in Psychology, Educational Psychology, Linguistics, Special Education, Natural Science, Nursing, Health Sciences and other behavioural or health related disciplines. Applications must indicate the student's preference for either Audiology or Speech Language Pathology.

Admission Requirements

All applicants must possess a minimum of a baccalaureate degree from a recognized institution of higher education. This programme is designed for students with either minimal or no previous academic experience in the area of speech language pathology or audiology. Students whose undergraduate degree is in either speech language pathology or audiology may be considered for entrance into the programme at a more advanced level under exceptional circumstances only.

Preference will be shown to students whose academic background includes at least one class in each of the following five categories:

1. Research Methods, eg. Statistics, Research Design
2. Physical and Biological Sciences, eg. Anatomy, Physiology, Physiological Psychology, Human Biology, Neurophysiology, Physics, Acoustics
3. Linguistics, eg. Language Development, Phonetics, Psycholinguistics, Neurolinguistics, Sociolinguistics
4. Psychology, eg. Developmental Psychology, Abnormal Psychology, Learning Theory, Motivation
5. Perception and Psychophysics, eg. Sensation, Perception, Speech Perception, Psychoacoustics

Undergraduate grade requirements should exceed the equivalent of a "B" in the student's major and be at least the "B" level overall. Two letters of recommendation, from Professors in the student's undergraduate major, will be required as well as a statement from the

applicant indicating personal reasons for pursuing graduate work in Speech-Language Pathology or Audiology.

MSc Degree Programme

This degree programme is a full time three year course with summer practicum experiences at the end of the first and second years of study. Currently the School does not offer any part time studies in the MSc degree programme.

Students will be required to attain a minimum of 13 credits (10 academic, 1 final project and 2 clinical practicums) over a three year period. It should be noted that the individual special needs of students, especially with regard to practicum experiences, final project requirements, and possible inadequate baccalaureate course work, might dictate credit requirements in excess of thirteen.

Extensive supervised clinical practice is required throughout the three year programme. Much of this requirement is met by attending a practicum held during the summer months.

A final project is required of all students in order to graduate from the programme. In concert with a Faculty advisor, the student designs, executes, and reports a research project. Depending upon the nature and extent of the project, students may be required to also take additional course work. Successful completion of this requirement results in the equivalent of 1 academic credit.

A maximum of three students per year may undertake a thesis in place of a final project. The objective is to provide the student with an opportunity to develop independence in conceptualising and conducting research in the field of human communication disorders. A supervisory committee consisting of three members will oversee the thesis research.

Core Curriculum

While students may pursue a course of study that leads to specialization in either Speech-Language Pathology or Audiology, during the programme they will be required to take classes that contain information that is basic to both professions. These classes will be described under "core curriculum" in the class listings that follow.

Classes Offered

Core Curriculum

HUCD 5020.03B: Phonetics

HUCD 5060.06R: Practicum

HUCD 5110.03A: Anatomy and Physiology of the Speech Mechanism

HUCD 5120.03B: Hearing Measurement

HUCD 5130.03A: Introduction to Speech-Language Pathology

HUCD 5140.03A: Aural (Re)habilitation with Children

HUCD 5150.03B: Speech and Language Acquisition

HUCD 5230.03A: Human Communication Processes

HUCD 5260.03B: Hearing Disorders

HUCD 6060.03A: Topics in Clinical Procedures

HUCD 6310.03A: Audition I

HUCD 6600.03A: Seminars in Communication Disorders

HUCD 6980.03B: Research Design

HUCD 7000.06R: Research Project

HUCD 7060.06R: Practicum

Speech Language Pathology Curriculum (above and beyond core)

HUCD 5210.03A: Speech-Language Analysis

HUCD 5250.03A: Speech Disorders - Children

HUCD 5270.03A: Language Disorders - Children

HUCD 6350.03B: Language Disorders - Adults

HUCD 6370.03B: Fluency Disorders

HUCD 6390.03B: Voice/Resonance Disorders

HUCD 6450.03B: Speech Disorders - Adults

HUCD 6470.03A: Augmentative and Alternative Communication

Audiology Curriculum (above and beyond core)

HUCD 5220.03A: Diagnostic Audiology

HUCD 5240.03A: Aural (Re)habilitation - Adults

HUCD 5280.03B: Audition II

HUCD 6320.03B: Pediatric Audiology

HUCD 6360.03B: Amplification

HUCD 6380.03B: Electrophysiological Audiometric Measures

HUCD 6420.03A: Advanced Diagnostic Audiology

HUCD 6440.03A: Noise in Industry and the Community

Additional Classes Available

HUCD 6500.03: Tutorial Readings

HUCD 6700.03: Research

Interdisciplinary Studies

See Interdisciplinary and Joint Programme listings (page 54).

Law

Location: Weldon Law Building, 6061
University Avenue, Halifax,
N.S. B3H 4H9
Telephone: (902) 494-3495
FAX: (902) 494-1316

Acting Dean of Faculty

D.A. Russell, BA (St. Thomas), MA, LLB (Dal),
LLM (Cambridge)

Associate Dean

John A. Yogis, QC, BA (SMU), LLB, LLM (Dal),
LLM (Mich)

Professors Emeriti

C. Hutchins, QC, BA, LLB (Dal)
R. St.J. MacDonald, QC, BA (StFX), LLB (Dal),
LLM (London), LLM (Harvard), LLD (McG)
A.J. Meagher, QC, BA, LLB (Dal)
R.G. Murray, QC, BA, LLB (Dal), LLM
(Harvard)
J. Willis, QC, BA (Oxon), LLD (Ottawa,
Queen's, Dal, York)

Professors

B.P. Archibald, BA (King's), MA, LLB (Dal),
LLM (Col), Graduate Coordinator
V. Black, BA, MA (Carleton), LLB (Tor), LLM
(Calif, Berkeley)
I.M. Christie, BA, LLB (Dal), LLB (Cantab), LLM
(Yale), (Sabb.Lv.)
T.A. Cromwell, B. Mus., LLB (Queen's), BCL
(Oxon)
F.E. Darby, BA (MtA), LLB (Dal)
R.G. Elgie, BA (Western), LLB (Osgoode), MD
(Ottawa), FRCS(c), Director, Health Law
Institute
P.V. Girard, BA (Brock), LLB (McG), LLM (Cal,
Berkeley)
F.A. Kaiser, BA, LLB (Dal), LLM (LSE)
H.M. Kindred, LLB (Bristol), LLM (London),
LLM (Illinois)
A.W. MacKay, BA (MtA), MA (Florida), BEd
(MtA), LLB (Dal)
H.L. O'Brien, QC, BCom, LLB (Dal), LLM
(Chicago)
P. Thomas, LLB (Wales), LLM (Yale)
D. A. Thompson, BA (McG), LLB (Dal)
L.E. Trakman, BCom, LLB (Cape Town), LLM,
SJD (Harvard)
C.L. Wiktor, LLM (U of Wroclaw), MS in LS
(Col) Law Librarian
B.H. Wildsmith, BSc (Guelph), LLB (Dal), LLM
(Harvard)
F.L. Woodman, BA (Dal), LLB (Queen's)
J.A. Yogis, QC, BA (SMU), LLB, LLM (Dal),
LLM (Mich)

Associate Professors

J.K. Bankier, BA (Tor), LLB (Osgoode)
R.F. Devlin, LLB (Queen's, Ireland), LLM
(Queen's, Ont)
D.L. Pothier, BA (Dal), MA (Carlton), LLB (Dal)
D.A. Russell, BA (St. Thomas), MA, LLB (Dal),
LLM (Cambridge)

D.L. VanderZwaag, BA (Calvin), MDiv
(Princeton), JD (Arkansas), LLM (Dal)

Assistant Professors

C. Aylward, BA, LLB, LLM (Dal)
A.E. Chircop, BA, LLD, LLM (Malta), JSD (Dal)
S.G. Coughlan, BA (Ottawa), MA (Tor), LLB
(Dal), PhD (Tor)
E.C. Gibson, BA, LLB (Sask), LLM (Tor)
D. Ginn, BA (Mt.A), LLB (Queen's), LLM
(Osgoode)
A.W. LaForest, LLB (UNB), LLM (Camb)
A.M. Macklin, BSc (Alta), LLB (Tor), LLM (Yale)
M.L. McConnell, BA (Victoria, B.C.), LLB (Dal),
PhD (Sydney)
P.M. Saunders, BA, MA, LLB (Dal)
T. Scassa, BA (Con), BCL, LLB (McGill), LLM,
JSD (Mich)
M.E.E. Turpel, BA (Carlton), LLB (Osgoode),
Dip. Int'l Law (Camb)

Part-time Faculty

W.H. Charles, QC, BA (Sir Geo. Wms), LLB
(Dal), LLM (Harvard), LLM (Mich)
G. C. Johnson, BCom, LLB (Dal), MBA (St.
Mary's)
F. Van Penick, AB (Princeton), LLB (Dal)
G.R. Winham, BA (Bowdoin), Dip. Int'l Law
(Manchester), PhD (North Carolina), major
appointment in Political Science

Honorary Adjunct Professors

E. Gold, BA, LLB (Dal), PhD (Wales), MCIT,
FNI, MRIN, Master Mariner (FG)
E.C. Harris, QC, BComm, LLB (Dal), LLM
(Harvard), RIA, CA
D.M. Johnston, LLB (St. Andrews, Scotland),
LLM, JSD (Yale)
G. Sharpe, BA (Tor), LLB, LLM (Osgoode)
W. Spicer, LLB (Dal)

Master of Laws (LLM)

A graduate programme in law leading to the Master of Laws degree is offered to well-qualified candidates by the Faculty of Law of the University. The programme is primarily intended for prospective law teachers and professional specialists. The programme may consist of either a combination of course work, seminars and a thesis, or a combination of course work and seminars involving substantial written papers. In either case taken on a full-time basis over one full academic year, or on a part-time basis over two full academic years. Applicants who plan to take the degree on the basis of course work, seminars and a thesis are required to submit outlines of their proposed thesis topic at the time of the application. Thesis topics may concentrate on any area of law in which faculty supervisors and library resources will support substantial and useful work. In recent years, thesis supervision has been provided in the following fields, among others: international law, administrative law, labour law, constitutional law, commercial law, tax law, tort law, criminal law and criminology, family law, health law, law of the sea, maritime law, and environmental law. The Law faculty's academic plan recognizes the Law School's particular

research capacity in the areas of public law and feminist legal scholarship. A particular interest has been developed in marine and environmental law which has been designated as a field of special emphasis in the Faculty of Law. The Sir James Dunn Law Library collection for the Marine and Environmental Law Programme is now one of the best in North America. In addition graduate work is being done under the aegis of the Health Law Institute which is a joint initiative of the Faculties of Law, Medicine, Health Professions and Dentistry.

Admission Requirements

Applicants for admission to the LLM programme should hold a first degree in law equivalent to the Dalhousie LLB, passed with at least a "B" average (or Upper Second Class Honours). The ability to conduct independent research and to work easily in the English language is a prerequisite for admission. Candidates from outside Canada whose native language is other than English will be required to pass the TOEFL (Test of English as a Foreign Language). See Section 2 of this calendar.

Residency Requirements

The degree may be taken on the basis of either one academic year (September 1 to August 31) of full-time residence at Dalhousie, or two academic years of part-time residence at Dalhousie, after registration for the LLM degree. (It should be noted that the two year residence requirement for part-time candidates differs from that required elsewhere in the calendar of the Faculty of Graduate Studies.)

Course Requirements

The degree may be taken on the basis of either course work, seminars and a thesis, or course work and seminars only. Applicants are required to indicate at the time of formal application on which basis they would prefer to take the degree, but the Graduate Studies Committee of the Faculty of Law, at the time an offer of a place is made, will decide on which of the two alternative bases a place is offered. The availability of places for the thesis alternative is governed by the availability of adequate faculty supervision and library resources. All class work for the degree, whichever of the two alternative bases is decided upon, must be completed at an average of not less than B, with no grade below B-

All candidates for the degree are required to take a graduate seminar especially designed for our graduate students in law. This seminar, which is led by a senior teacher in the Faculty of Law, is given in the fall term (and early part of the spring term) and requires from the student a comprehensive class presentation based on a substantial written paper. Some students who have not had previous exposure to jurisprudence may be advised to take a graduate jurisprudence course.

If the degree is taken by course work, seminars and thesis, a candidate is required to (a) in addition to the graduate seminar, complete at least two additional one-term classes from the course and seminar offerings of the Faculty of Law (the choice of classes to be

determined by the Law School's Graduate Studies Committee), and (b) present a well-researched substantial thesis of scholarly quality produced under the continuous supervision of a member or members of the law faculty.

Such a thesis would normally be 150-300 typescript pages in length (double-spaced). Five copies of the thesis, temporarily bound, must be submitted to the supervisor on or before the dates given in the almanac. The thesis requirements and regulations of the Faculty of Graduate Studies must be met. A thesis may be graded as either "Approved," or "Not Approved." In order to be "Approved," a thesis must normally be approved by the thesis supervisor and two co-readers.

If the degree is taken by class work and seminars without thesis, in addition to the graduate seminar, candidates are required to take at least an additional five one-term classes from the advanced class work and seminar offerings of the Law Faculty considered to be suitable as graduate classes and seminars by the Law Graduate Studies Committee. Of those five classes, at least three must be designated as "major paper courses" by the Faculty of Law, or be approved by the Graduate Studies Committee as having a substantial written component. A "major paper" or "substantial written component" would normally be independently supervised by a faculty member, and would usually consist of a well-researched work of 15,000 - 20,000 words in length, based on a seminar/class presentation.

At the discretion of the Graduate Studies Committee of the Faculty of Law, a candidate may be required to submit to an oral examination by the Committee or its nominees in the field of the thesis or that of any written paper presented by the candidate. The Graduate Studies Committee of the Faculty of Law may recommend the substitution of not more than two seminars or graduate level classes in a discipline other than law, which may be highly relevant to the candidate's thesis topic or area of specialization, provided that any such substituted course or seminar has, in the opinion of the Committee and the Dean of Graduate Studies, equivalence to the law classes being substituted.

Before deciding on the course work and seminars, or course work, seminars and thesis option, candidates who are contemplating future doctoral studies should note that some doctoral programmes may require the completion of a Master of Laws degree which includes a thesis.

General

The Graduate Studies Committee of the Faculty of Law may at any time require any candidate for the degree to show cause, in such manner as it may determine, why such candidate should be permitted to continue his or her candidacy.

It should be noted that candidates taking the degree on a part-time basis are not eligible for graduate scholarships.

A student is required to comply with the directions of the supervisor and the decisions of the Graduate Studies Committee of the Faculty of Law, as well as the rules and regulations of the Faculty of Graduate Studies.

A full description of programmes available in the Law School which may be of relevance to graduate students can be found in the general Law School Calendar and in its course selection materials.

Combined LLB and MBA Programme

See "Business Administration" entry in this calendar.

Combined LLB and MLIS Programme

See "Library and Information Studies" entry in this calendar.

Combined LLB/MPA Programme

See "Public Administration" entry in this calendar.

Doctor in the Science of Law Degree (JSD)

An advanced graduate programme in law leading to the JSD (Juris Scientiae Doctor) degree is offered to a very limited number of highly qualified candidates by the Faculty of Law of the University. Applicants who meet the admission requirements are invited to submit a detailed outline of their proposed thesis and a detailed description of their research plans with their application forms. Such topics will have to be limited to those areas of law for which faculty and library resources will support original and useful work. It is expected that such resources will normally be available in four subject areas:

- (i) Marine Law
- (ii) Environmental Law

These areas of the curriculum have been designated as a priority development by the Faculty of Law since 1974. As a result, considerable faculty expertise, library holdings, research projects and course offerings in these areas has been created. Consequently, the Faculty's Marine and Environmental Law Programme has achieved international prominence.

- (iii) International Law
- (iv) Comparative Law

These areas of specialization have grown with seminars in comparative criminal law, comparative constitutional law, international human rights law and European Community law.

Admission Requirements

Applicants for admission to the JSD programme must have demonstrated superior academic ability during their previous legal

education. Normally it will be necessary to have (i) attained at least the equivalent of a Dalhousie A- average grade at the LLB level and (ii) completed successfully a Master's degree in law. Preference will be given to applicants with established credentials in published scholarship of a professional calibre. The ability to conduct independent research and work easily in the English language is a prerequisite for admission. Foreign candidates are required to pass the TOEFL (Test of English as a Foreign Language) to the satisfaction of the Graduate Studies Committee of the Faculty of Law prior to admission. Applicants seeking JSD funding from Dalhousie University should ensure that their completed applications are received by the University no later than January 1 of the year in which they intend to commence their studies.

Residency Requirements

Applicants must be prepared to spend at least one full academic year (12 months) in continuous residence at Dalhousie after registration for the JSD programme. The Graduate Studies Committee of the Law School reserves the right in certain cases to require the completion of a second year of residency. It is to be noted, however, that consistent with other doctoral programmes at Dalhousie University, JSD candidates must pay fees at the full-time rate for two years regardless of whether they have been required to spend a second year in residence at Dalhousie.

Course Requirements

Candidates for the JSD degree may be required by the Graduate Studies Committee of the Faculty of Law, on the recommendation of their thesis committee, to carry out advanced course work in the area of their thesis, or in a cognate area of a more general field of law, or in a discipline other than law, which is deemed to be highly relevant to their thesis topic. When undertaking such course work, JSD candidates must obtain an average standing of at least B⁺ in all classes designated as "required by the thesis committee", with no grade falling below B. A student who fails to meet these requirements is automatically dropped from the programme, but may apply for readmission immediately.

Preliminary Examination Requirements

Each candidate will also be required to pass a preliminary examination normally at the end of their first year of residence, and not less than 1 year before submitting the thesis. The preliminary examination may be oral, written, or both, at the discretion of the thesis committee, and will cover the subjects relevant to the general area of the candidate's research. Failure to pass this examination may result in dismissal. However, the student may be permitted to repeat the examination within the subsequent 12 (twelve) months. (For greater detail see the Dalhousie Law School "Guidelines for Preliminary Examinations - JSD Candidates).

Special Skill Examination Requirements

A candidate may, at the discretion of the thesis committee, be required to pass a special examination designed to demonstrate the examinee's proficiency in a foreign language, statistical method, computer analysis, or other skill deemed to be important for successful completion of the candidate's thesis in the chosen area.

Thesis Requirements

The primary requirement for the JSD degree is the completion of a substantial thesis which should not only display original scholarship of high standard, but also represent a significant and professional contribution to the literature of the chosen subject. In applying for admission, an applicant is required to satisfy the Graduate Studies Committee of the Faculty of Law that the suggested topic is suitable for development as a doctoral thesis. Normally, a JSD thesis should be between 350 and 500 typescript pages in length (double-spaced). After an applicant has been accepted, a thesis committee consisting of a supervisor and two advisors will be appointed by the Graduate Studies Committee of the Faculty of Law. All candidates are required to comply with the decisions of their thesis committees. In normal circumstances, the completed JSD thesis must be submitted to the Graduate Studies Committee of the Faculty of Law within five years of the date of original registration in the programme. Submission of the thesis must follow the rules and regulations laid down by the Faculty of Graduate Studies.

Thesis Defence Requirements

Each JSD candidate is required to defend the completed thesis in an oral examination. This defence shall be conducted in accordance with the Faculty of Graduate Studies Regulations for Oral Examination of a Doctoral Candidate.

Teaching Activities

The Graduate Studies Committee of the Faculty of Law may give permission to a JSD candidate to engage in teaching activities during the period of residency, if such activities are deemed to fall within the field of the candidate's thesis topic. Under no circumstances shall any JSD candidate be permitted to spend more than six hours per week in teaching activities and related preparations.

Library & Information Studies

Location: Killam Library, 6225 University Avenue, Halifax, N.S. B3H 4H8
Telephone: (902) 494-3656
Fax: (902) 494-2451

Director of School

B.H. MacDonald

Graduate Coordinator

J. Dunn

Professor Emeritus

J.R.T. Bittinger, MA (Oxon), BLS (McG)

Professors

L.J. Amey, BSc, BEd (Acadia), MEd (UNB), MS (Columbia), PhD (Tor)

M. Dykstra, BA (Calvin), MLS (Dal); PhD (Sheffield)

Associate Professors

A. Ireland, BA (Chatham), MSc (Car-Mel), MBA, PhD (Dal), CA, major appointment in School of Business Administration

R.E. Klapstein, BSc (Calgary), BA (Alberta), MBA, LLB (Dal), LLM (Osgoode), CGA, major appointment in School of Business Administration

B.H. MacDonald, BSc (Acadia), MA, MLS, PhD (Western)

Assistant Professor

A. Dwire, BA, MA (Dal), major appointment in School of Resource and Environmental Studies

E. Toms, BA, BEd (Mem), MLS (Dal)

Adjunct Professors

J. Beaumont, BSc (Carleton), Associate of the Library Association (UK)

C. Carroll, BA (StFX), MA (UNB)

N. Horrocks, BA (Western Australia), MLS, PhD (Pittsburgh), Fellow of the Library Association (UK), Associate of the Library Association of Australia

M. Leggott, BSc (SMU), MSc (Calgary), MLS (Dal)

L.G. Vagianos, BA (Hiram College), MA (Suffolk), MSLS (Western Reserve), LLD (UPEI)

M. Weaver, BA (Exeter), DIS (CityU, London)

Associated Instructional Staff

J. Dunn, B Math (Waterloo), MLS (Dal)

Students seeking further information or help in planning courses of study in the School of Library and Information Studies should address themselves to:

Graduate Coordinator
School of Library and Information Studies
Room 3621, Killam Library
Dalhousie University
Halifax, N.S. B3H 4H8

The goal of the School of Library and Information Studies is to provide graduate education within the Atlantic Provinces to qualified candidates which equips them for their first and subsequent positions as information professionals. This will be accomplished by exposing students to the theories, technologies and practices which comprise library and information studies. Within the programme, the local professional community is provided with opportunities to acquire new skills and career directions.

The student, therefore, is introduced to the development and significance of librarianship and related information fields, to the underlying principles of the profession, and to the techniques of information organization, analysis, retrieval, and use. Each student is challenged to explore and question through a curriculum which attempts to balance professional studies with supervised practical experience and advanced academic study or individual research.

Admission Requirements

Candidates must hold a Bachelor's Degree with at least a second class standing from a university recognized by the Senate of Dalhousie University.

All applicants are urged to submit completed documentation early in the year as this is a limited enrolment programme; many more applications are received than there are places to be allotted.

Students are admitted only in September. Students whose native language is English should have had the equivalent of two years of university study in a major language other than English or be prepared to demonstrate a reading knowledge of such a language before graduating from the School's programme.

Candidates whose native language is other than English must submit a TOEFL score according to the regulations set out in Section 2.4 of this calendar. The School's booklet, *Information for Prospective Students*, which describes the programme in detail, is distributed to all applicants by the Registrar's Office. Write for a copy if one is not received with the application form.

MLIS Degree Programme

The degree of Master of Library and Information Studies is awarded upon satisfactory completion of:

1. Sixteen credit half-classes
2. One non-credit class offered during the Fall term for first year students: LIBS 0500.00: Introductory Module. The correct grade is a P.
3. Work experience of 100 hours in a selected library or other information agency under the supervision of a qualified information professional. This experience is designed to provide the student with exposure to everyday routines and problems as well as the opportunity to test and evaluate class theory, to contribute by actual participation, and to discover and explore areas of particular interest for course specialization

and future employment. Students may also elect to meet this requirement by such employment prior to graduation. Further details are available in *Information for Prospective Students*.

In addition to the 8 required classes and 8 electives, students are required to:

1. attend the scheduled lectures series given by visiting experts in library, information and publishing fields;
2. participate in the scheduled trips to relevant institutions within or near the metropolitan area of Halifax/Dartmouth.

Term Timetables

Certain classes are scheduled in the evening to enable working information professionals to attend.

The School operates on a 4-term system, which may be varied as follows:

Two-Year Programme

Full-time attendance during the Fall and Winter terms of two years.

Part-Time Programme

The degree is to be completed within seven years. The School requires full-time attendance during the Fall term at the beginning of the programme, accounting for 4 half classes for credit.

Combined LLB/MLIS Programme

This is a four-year programme leading to the degrees of Bachelor of Laws and Master of Library and Information Studies. The usual order of the programme is:

- Year 1 first year classes of the MLIS programme (6 required, 2 elective)
- Year 2 First year classes of the LLB programme
- Year 3 2 required MLIS classes; 25 hours of LLB classes
- Year 4 1 MLIS class each term; 23 hours of LLB classes

Candidates for the combined MLIS/LLB programme must also satisfy the entrance requirements of the Faculty of Law. For further information, contact the Director, School of Library and Information Studies.

Special Programme Extending Over One Academic Year or One Calendar Year Where Indicated: Applicants will be considered for a special programme, if they meet the requirement of the Faculty of Graduate Studies by possessing "an honours undergraduate degree in the same field as their graduate programme," i.e. BLS (Honours) or, in the opinion of Faculty, an equivalent qualification.

Field Trip

During some academic years the School of Library and Information Studies schedules a field trip to a city of major importance with regard to library activity. Students are urged to take this field trip. Consult *Information for Prospective Students*.

Classes Offered

In the following list the required classes are numbered 5500.03-5580.03. These and classes numbered in the 0500 series are required of all students; 6000 and 0600 classes are electives. All classes with the 'O' prefix are non-credit; 7000 classes are experimental or occasional classes. The curriculum has been organized with sufficient flexibility to allow students to pursue an individual research project, or to develop a subject specialty through reading classes for further academic work. There is also a thesis option.

If a student chooses as an elective a class offered by a department other than the School of Library and Information Studies, approval must be obtained from the head of the relevant department and the School.

- LIBS 0500.00: Introductory Module
- LIBS 5500.03: The Information Environment
- LIBS 5510.03: Information Organization & Access
- LIBS 5520.03: Research Methods
- LIBS 5530.03: Information Sources & Retrieval
- LIBS 5540.03: Database Management Systems (Cross-listed with BUSI 6516.03)
- LIBS 5560.03: Collections Management
- LIBS 5570.03: Organizational Management & Strategy
- LIBS 5580.03: Systems Analysis (Cross-listed with BUSI 6514.03)
- LIBS 6050.03: International Perspectives
- LIBS 6060.03: Management Information Systems (Cross-listed with BUSI 5511.03)
- LIBS 6150.03: History of the Book
- LIBS 6250.03: Young Adult Literature and Media Interests
- LIBS 6300.03: Government Information Resources
- LIBS 6350.03: Classification and Indexing Systems
- LIBS 6370.03: Records Management
- LIBS 6450.03: Children's Literature and Media Interests
- LIBS 6500.03: Users and Services
- LIBS 6550.03: Bibliography
- LIBS 6590.03: Information Sources in Science and Technology
- LIBS 6600.03: Information Sources in Humanities/Social Sciences
- LIBS 6690.03-6680.03: Academic Courses
- LIBS 6700.03-6710.03: Reading Courses
- LIBS 6750.03: Health Sciences Literature & Information Sources
- LIBS 6800.03: Archives
- LIBS 6810.03: Information Literacy
- LIBS 6820.03: Marketing and Public Relations
- LIBS 6830.03: Information Retrieval
- LIBS 6840.03: Automation and Networking

LIBS 7070.03: Library Management and Current Problems in Librarianship

LIBS 7320.03: Legal Literature and Librarianship

LIBS 7340.03: Sources for Business Intelligence

LIBS 7390.03: Quantitative Methods

LIBS 7400.03: Hypermedia and the Net

LIBS 9000.00: Thesis: (4 half credits)

LIBS 0600.00: Practical Printing

LIBS 0640.00: Hand-Binding

EDUC 5552.03: Planning and Development of School Library Programmes and Services

School Publications

- *Information for Prospective Students* (annual)
- *Newsletter* (annual)
- Occasional Papers Series (Write to the Director for a list)
- *Y-A Hotline* (Irregular)
- Checklist of Canadian Copyright Deposits in the British Museum. Vols. I-III now available
- Monographic series with Scarecrow Press, Metuchen, NJ

Marine Affairs Programme

Location: Weldon Law Building, 6061 University Avenue, Halifax, NS B3H 4H9
Telephone: 902-494-3555
Fax: 902-494-1001
Telex: 019-21863
E-mail: Patricia.Roberts@dal.ca
Website: <http://ac.dal.ca/~mnm/sections.html>

Coordinator:

A. Chircop, LLD (Malta), LLM, JSD (Dal)

Teaching Faculty

- E. Mann Borgese, OC, DipMus (Zurich), LHD (MSVU), Professor Emeritus, Department of Political Science
 C.M. Boyd, MA (Ind), PhD (Scripps), Professor, Department of Oceanography
 M. Brooks, BOT (McG), MBA (Dal), PhD (Wales), Associate Professor, School of Business Administration
 E. Côté, BSc (Loyola), MSc (Memorial), Adjunct Professor, Associate Director, School for Resource and Environmental Studies
 F.W. Crickard, BA, MA (Dal), (R-Adm., Ret'd), Research Associate, Department of Political Science
 J. Grant, BSc (Duke), PhD (South Carolina), Associate Professor, Department of Oceanography
 D.P. MacLellan, BA (Dal), APR, Adjunct Professor
 L. Mazany, BSFS (Georgetown), PhD (UBC), Assistant Professor, Department of Economics
 G.F. Newkirk, PhD (Duke), Associate Professor (Research), Department of Biology
 E.R. Ruddick, BSc (Victoria), PhD (MIT), Professor, Department of Oceanography
 D.B. Scott, BSc, PhD (Dal), Associate Professor, Earth Sciences
 C.T. Taggart, BSc, MSc, PhD (McG), Associate Professor, Department of Oceanography
 A. Thomas, BSc (McG), MSc, PhD (UBC), Honorary Research Associate, Department of Oceanography
 D. VanderZwaag, BA (Calvin), MDiv (Princeton), JD (Arkansas, LLM (Dal), Associate Professor of Law
 F.G. Wells, BSc (McG), MSc (Tor), PhD (Guelph), Honorary Adjunct Professor, Resource and Environmental Studies

Honorary Adjunct Professors

- D. Day, BA, Dip Ed, PhD, Professor of Geography, Saint Mary's University
 O. Hertzman, BA, BSc, MSc (UBC), PhD (Washington), Honorary Adjunct Professor, Department of Oceanography
 L.P. Hildebrand, BScH, MBS (Dal), Adjunct Professor

Marine Affairs is an interdisciplinary programme examining all aspects of the uses of the seas. The Master of Marine Management provides a theoretical and practical

interdisciplinary basis for understanding ocean development, planning and regulatory issues affecting the optimal use of the seas and marine industries.

Master of Marine Management

The Master of Marine Management (MMM) is a one-year, professional, non-thesis, interdisciplinary degree. Students are expected to take required classes covering the marine and social sciences, as well as a number of electives from approved marine-related classes. Students are also required to prepare a graduate project.

Admission Requirements

Enrolment is limited to 20 students. Applicants must satisfy general requirements for admission to the Faculty of Graduate Studies. These include a Bachelor's Degree from a university of recognized standing with honours or its equivalent with a minimum average of B. Selection criteria include relevant work experience and career objectives. Applicants from outside Canada whose native language is not English must also submit a Test of English as a Foreign Language (TOEFL) score, its equivalent, or have completed a university degree in English. Dalhousie sets a minimum acceptable TOEFL score of 580. Deadlines for applications are January 31st for applicants requesting financial assistance, and March 31st for all other applicants.

Classes Offered

Required

MARA 5001.06R: Contemporary Issues in Ocean Management and Development. This class offers an introduction to ocean management. Subject areas addressed include coastal zone management, sea use planning, fisheries management, marine law and policy, maritime transport, development of non-living resources, protection and preservation of the coastal and marine environment, coastal tourism, maritime enforcement and conflict management. Instructors for the various subjects come from Halifax universities, federal and provincial government agencies and the private sector.

MARA 5002.06R: Graduate Project. Students are required to apply the knowledge gained through course work to a specific planning and management problem or issue. As part of the project, students participate in internship programs with a local public or private sector agency of relevance to the project topic.

MARA 5003.03A: Marine Science and Technology. This class provides a general introduction to the marine sciences and technology. Subject areas addressed include physical, chemical, geological, meteorological and biological oceanography, coastal ecology, aquaculture, engineering and port development. Instructors are drawn from Halifax universities, federal and provincial agencies and the private sector.

MARA 5004.00B: Communications Management (non-credit). This class develops skills of marine managers for handling

information and communications, including crisis management, with decision-makers and various stakeholders in ocean development and management processes such as special interest groups, the media, business interests (shareholders), and the public at large.

MARA 5005.03A or B: Independent Readings.

This class is an option for MMM students who wish to pursue independent research into specific topics not covered in another class. The topic and area of research must be approved by the Marine Affairs Programme Coordinator and the research supervisor.

MARA 5008.03A or B: Integrated Maritime Enforcement.

Electives

Students select the remaining complement of classes from the broad range offered in the marine field at Dalhousie, St. Mary's University and the Technical University of Nova Scotia.

Mathematics, Statistics, & Computing Science

Location: Chase Building, Halifax, N.S.
B3H 3J5
Telephone: (902) 494-2572
Fax: (902) 494-5130
e-mail: mscs@cs.dal.ca

Chairperson of the Department
R.P. Gupta

Professors Emeriti

M. Edelstein, MSc (Jerusalem), DSc (Technion-Haifa)
S. Swaminathan, MA, MSc, PhD (Madras)
A. J. Tingley, MA, PhD (Minnesota)

Professors

J.C. Clements, MA (UBC), PhD (Toronto)
A.A. Coley, PhD (Lond)
K.A. Dunn, MSc, PhD (Toronto)
C.A. Field, MSc, PhD (Northwestern)
P.A. Fillmore, MSc, PhD (Minn), FRSC
G. Gabor, MSc, PhD (Eotvos)
L. Grunfelder, PhD (ETH Zurich)
R.P. Gupta, MSc (Agra), PhD (Delhi)
P. Keast, PhD (St. Andrews)
K. Moriarty, MSc (Dal), PhD (Imp Col)
R. Nowakowski, MSc, PhD (Calgary)
R. Paré, MSc, PhD (McGill)
H. Radjavi, MA, PhD (Minn)
M.A. Shepherd, MSc, PhD (Western)
P.N. Stewart, MA (Berk), PhD (UBC)
W.R.S. Sutherland, MSc, PhD (Brown)
K.K. Tan, PhD (UBC)
A.C. Thompson, PhD (Newcastle upon Tyne)
R.J. Wood, MSc (McM), PhD (Dal)

Associate Professors

K. Dilcher, MSc, PhD (Queen's)
A.A. Farrag, MSc (SFU), PhD (Alta)
D. Hamilton, MA, PhD (Queen's)
C.S. Hartzman, MS (Purdue), PhD (Colo)
K.P. Johnson, MSc (Tor), PhD (Brandeis)
C.C.A. Sastri, MSc (Andhra), PhD (NY)
K.R. Thompson, MSc (Manchester), PhD (Liverpool)

Assistant Professors

K. Bowen, PhD (California)
J. Brown, MSc, PhD (Tor)
Q. Gao, MAsC, PhD (Waterloo)
L. Manchester, MSc, PhD (Tor)
S. Ruan, PhD (Alta)
A. Sedgwick, PhD (Tor)
B. Smith, MA (Calgary), PhD (Berk)
S. Srinivas, PhD (Inst. of Sci., Bangalore)

Postdoctoral Fellows

A. Almudevar, PhD (Tor)
P. Dunsby, PhD (Queen Mary & Westfield)
D. Pronk, PhD (Utrecht)

N. Thandi, PhD (Wisconsin)

Honorary Adjunct Professors

M.A. Beattie, PhD (Queen's), Mount Allison University

F. Bennett, PhD (Man), Mount Saint Vincent University

B. Hartnell, PhD (Wat), Saint Mary's University

P. Muir, PhD (Tor), Saint Mary's University

L. Oliver, PhD (McG), Acadia University

M. Rahman, PhD (Windsor), Technical University of Nova Scotia

R. Rosebrugh, PhD (Dal), Mount Allison University

T. Trappenberg, PhD (Aachen)

C. Waters, PhD (TUNS), Acadia University

D. Zhuang, PhD (Dal), Mount Saint Vincent University

Honorary Research Associates

P. Cabilio, PhD (Columbia), Acadia University

Information concerning programmes and classes in Mathematics follows immediately below. For information on programmes and classes in Computing Science and Statistics please refer to those sections of this calendar.

Mathematics

Location: Chase Building
Telephone: (902) 494-2572
Fax: (902) 494-5130

Director of Division

R.J. Wood

Graduate Coordinator

W.R.S. Sutherland

The department offers programmes leading to the degrees of MSc and PhD in the following areas: algebra, approximation theory, category theory, convex geometry, differential equations, functional analysis, graph theory, number theory, numerical analysis, operator theory, optimization, general relativity theory, stochastic modelling, topology.

Admission Requirements

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies.

Candidates will normally be expected to hold a degree recognized by Dalhousie University as the equivalent of a Bachelor's degree with Honours in one of its own faculties.

GRE Aptitude and Advanced Mathematics scores are recommended for all applicants for graduate studies whose undergraduate work has been completed outside of Canada, and TOEFL scores are required for applicants whose native language is not English. Valid score reports must be received directly from the Educational Testing Service. To ensure consideration for scholarship funds, application should be made early.

Masters Degree Programme

Requirements

1. At least three full-credit classes, not including seminar classes, at the graduate level to be chosen in consultation with a department adviser. In addition, students whose preparation is deficient will be required to complete appropriate classes which will be designated by the adviser.
2. Attendance and participation in seminars.
3. A satisfactory thesis.
4. Students are required to give an oral presentation of their thesis and at that time to answer questions about the thesis. This presentation will be made after the thesis is in the hands of the student's committee and will be taken into account when the committee makes its decision.

Note: For the degrees of MSc in Computing Science, the classes must be chosen from the list of classes in Computing Science.

PhD Degree Programme

Requirements

Note: The minimum and maximum time required to complete this programme are set out in section 5 of the Faculty Regulations.

1. At least one full-credit class during each of the first two years of the programme.
2. Comprehensive examinations which must be taken for the first time within 12 months and successfully completed within 16 months of registration in the programme.
3. Attendance and participation in an appropriate seminar.
4. A demonstration of reading competence in one of the following languages: French, German, Russian.
5. Preparation and defence of a satisfactory research thesis.

Classes Offered

A selection of the following graduate classes will be offered subject to demand.

NOTE: Students interested in pursuing a Master's degree programme in Applied and Computational Mathematics designed to prepare them for the work environment should consider the following classes: Math 5220.03; Math 5230.03; Math 5450.03; one of Math 5310.03; Math 5320.03; one of Math 5270.03; Math 5360.03; Comp 5350.03; one of Stats 5080.03; Stats 5370.03; Stats 5620.03.

MATH 5010.03/4010.03: Introduction to Measure Theory and Integration

MATH 5015.03/4015.03: Advanced Linear Algebra

MATH 5020.03/4020.03: Analytic Function Theory

MATH 5025.03/4025.03: Commutative Algebra I

MATH 5035.03/4035.03: Commutative Algebra II

MATH 5040.03: Homological Algebra

MATH 5045.03/4045.03: Advanced Algebra I

MATH 5055.03/4055.03: Advanced Algebra II

MATH 5065.03/4065.03: Algebraic Geometry

MATH 5070.03/4070.03: Topics in Number Theory

MATH 5090.03/4090.03: Probability

MATH 5120.03: Topics in Ordinary Differential Equations

MATH 5130.03/4130.03: Analysis of Algorithms

MATH 5135.03/4135.03: Introduction to Category Theory

MATH 5140.03/4140.03: Introduction to Functional Analysis

MATH 5150.03/4150.03: Functional Analysis

MATH 5160.03/4160.03: Operator Theory

MATH 5170.03/4170.03: General Topology

MATH 5180.03/4180.03: Introduction to Algebraic Topology

MATH 5185.03: Topics in Algebraic Topology

MATH 5190.03/4190.03: Ordinary Differential Equations

MATH 5195.03: Topics in Topology and Functional Analysis

MATH 5200.03/4200.03: Differential Equations - Qualitative Theory

MATH 5210.03: Topics in C^* - Algebras

MATH 5220.03/4220.03: Introduction to Partial Differential Equations

MATH 5225.03: Topics in Partial Differential Equations

MATH 5230.03/4230.03: Partial Differential Equations

MATH 5235.03: Topics in Operator Theory

MATH 5240.03: Topics in Banach Spaces

MATH 5270.03/4270.03: Numerical Software

MATH 5290.03: Advanced Topics in Operator Theory

MATH 5300.03/4300.03: Optimal Control Theory

MATH 5310.03/4310.03: Nonlinear Programming

MATH 5315.03: Convexity and Convex Programming

MATH 5320.03: Topics in Optimization

MATH 5330.03/4330.03: Topics in Graph Theory

MATH 5350.03: Advanced Numerical Analysis

MATH 5380.03: Approximation of Functions

MATH 5400.03/4400.03: Applied Mathematics in Science and Industry

MATH 5410.03/4410.03: Topics in Cosmology

MATH 5450.03: Mathematical Modelling III

MATH 5650.03/4650.03: Relativity and Cosmology

MATH 5660.03/4660.03: Automata and Computability

MATH 6000.03-6990.03: Reading Classes for Advanced Graduate Students

MATH 7030.03: Algebra Seminar

MATH 7190.03: Analysis Seminar

MATH 7230.03: Operator Theory Seminar

MATH 7400.03: Applied Mathematics Seminar

MATH 7670.03: Optimization Seminar

Microbiology and Immunology

Location: Sir Charles Tupper Medical Building, 7th and 10th Floor, Halifax, N.S. B3H 4H7
Telephone: (902) 494-3587
Fax: (902) 494 5125

Head of Department

G.C. Johnston.

Professors

R. Anderson, PhD (Cologne) (Viral Pathogenesis) - Graduate Studies Coordinator
 P.S. Hoffman, PhD (Virginia Polytech) (Microbial Pathogenesis)
 G.C. Johnston, PhD (York) (Molecular Genetics: Regulation of Proliferation)
 S.H.S. Lee, PhD (Dal) (Virology; Interferon)
 D.E. Mahony, PhD (McG) (Bacteriology; Bacteriocins and Plasmids of Clostridia)
 K.R. Rozee, PhD (Dal), Dip Bact (Tor) (Microbial Pathogenesis; Epidemiology)
 D.B. Stoltz, PhD (McM) (Insect Virology)
 C. Stuttard, PhD (Dublin) (Microbial Genetics; Streptomyces)

Associate Professors

E.A. Bortolussi, MD (Tor), FRCP(C), Pediatrics (Neonatal Infection)
 E.I. Carr, MD (Tor), PhD (Rockefeller), Medicine (Rheumatology)
 D.W. Hoskin, PhD (McG) (Tumour Immunology; MHC-unrestricted Killer Cells)
 A.C. Issekutz, MD (Dal), FRCP(C), Pediatrics (Inflammation)
 S.F. Lee, BSc (Hons), PhD (Guelph)
 T. Lee, PhD (Glasgow) (Immunoparasitology)
 T. Marrie, MD (Dal), FRCP(C), Medicine (Infection; Pneumonia Disease)
 R. Rajaraman, PhD (Dal), Medicine (Integrins; Neutrophil Activation Programmed Cell Death in Neoplasia)

Assistant Professors

C. Barnes, PhD (Dal) (Molecular Genetics)
 G. Bezanson, PhD (Carleton), Medicine (Molecular Pathogenesis)
 M.A. Drebot, PhD (Dal), (Viral Diagnostics and Pathogenesis)
 R. Duncan, PhD (Guelph) (Molecular Virology)
 G. Faulkner, PhD (Dal) (Ultrastructure)
 W.A. Kennedy, MDCM (McG), FRCP(C), Pediatrics (Parainfluenza and Coronavirus Respiratory Tract Infection Pathogenesis)
 W.F. Schlech, MD (Cornell), FRCP(C), Medicine (Listeria; HIV Infection)
 A.W. Stadnyk, PhD (McM) (Intestinal Inflammation; Cytokines)
 G.J. Tyrrell, PhD (Tor) (Antimicrobial Resistance; Verotoxins)

Disciplines Within Microbiology

Graduate degrees can be pursued in the areas of Virology, Bacteriology, Molecular Pathogenesis, Microbial Genetics, Molecular

Genetics and Immunology. Graduate students are expected to acquire a conceptual understanding of the disciplines in microbiology and an in depth knowledge of their particular area of specialization. Notwithstanding this, the existence of specified streams in Immunology, Virology, Microbial Pathogenesis and Molecular Genetics in the Department may allow well-qualified students, with at least minimal training in Microbiology, but a strong background in the appropriate subject area, to concentrate their studies.

Admission Requirements

In conjunction with the general requirements for admission, candidates must have received sound basic instruction in Chemistry and Cell Biology and four credits in a relevant discipline or disciplines with a B average or better.

New students may be required to write a placement test to assist in the appropriate design of an individual programme of study.

MSc Degree Programme

For minimum time required to complete this programme, see Section 4 of the Faculty of Graduate Studies Regulations in this calendar. Normally, study equivalent to five credits at the graduate level is required. Attendance and participation in seminars is required. A research project must be completed, the result of which will be embodied in a thesis. The thesis can count for up to 3 of the required credits.

Part-time study is also allowed and conditions for admission to this programme are the same as for full-time students.

PhD Degree Programme

For minimum time required to complete this programme, see Section 4 of the Faculty of Graduate Studies Regulations in this calendar. Class and seminar requirements are the same as for the MSc programme.

Comprehensive knowledge of the area of specialty and an understanding of general microbiology and immunology must be demonstrated and will be assessed by oral examination.

Research of a high calibre is required, the results of which must be embodied in a thesis which makes a significant contribution to knowledge in the chosen field. An oral defense of the thesis before an external examiner is required.

MD/PhD Combined Programme

For information on the combined MD/PhD programme see "Interdisciplinary and Joint Programmes" (page 54).

Classes Offered

MICR 5001.06R: Molecular Biology Seminars.
Format: Seminar
Instructor: R. Anderson

118 Microbiology and Immunology

MICR 5004.06R: Pathobiology of Cancer.

Format: Lecture 2 hours

Instructor: P. Hoffman

MICR 9530.00 PhD Thesis

MICR 5006.06R: Advanced Topics in Immunology.

Format: Seminar

Instructor: T. Lee

MICR 5007.06R: Advanced Topics in Molecular Pathogenesis.

Format: Seminar

Instructor: P. Hoffman

MICR 5008.06R: Advanced Topics in Immunology.

Format: Seminar

Instructor: R. Anderson

MICR 5024.03A: Microscopy.

Instructor: G. Faulkner, D.B. Stoltz

MICR 5026.03B: The Mammalian Cell as a Microorganism.

Format: Lecture 3 hours, lab 3 hours

Instructor: R. Rajaraman

MICR 5027.03B: Molecular Mechanisms of Cancer.

Format: Lecture 3 hours

Instructor: R. Rajaraman

MICR 5037.03A: Genetics of Industrial Bacteria.

Format: Lecture/seminar, 3 hours

Instructor: C. Stuttard

MICR 5038.03B: Molecular Biology of Yeast.

Format: Lecture/seminar, 4 hours.

Instructor: C. Barnes, G.C. Johnston

MICR 5103.03B: Infectious Deases of Aquatic Organisms. See listing in Biology section of this calendar.

Cross-listing: BIOL 5103.03

MICR 5114.03B: Advanced Topics in Molecular and Medical Virology.

Format: Lecture/presentation/discussion 3 hours

Instructor: R. Duncan

MICR 5115.03B: Immunology of Host Resistance.

Format: Lecture/discussion 3 hours

Instructor: D.W. Hoskin

MICR 5118.03A: Molecular Pathogenesis.

Format: Lecture 2 hours

Instructor: P. Hoffman, G. Bezanson

MICR 5301.03A: Immunobiology.

Format: Lecture 1 hour, presentation 2 hours

Instructor: R.I. Carr

MICR 5302.03B: Molecular Immunology.

Format: Lecture 1 hour, presentation 2 hours

Instructor: T. Lee

MICR 5303.03B: Granulocytes and the Immune Response.

Format: Lecture 1 hour, discussion 2 hours

Instructor: T. Lee (not offered in 1996/97)

MICR 5602.06R: Laboratory Techniques in Molecular Biology.

Format: Lab 6 hours

Instructor: L. Murray

MICR 9000.00 MSc Thesis

Neuroscience

See Interdisciplinary and Joint Programme, page 54.

Nursing

Location: Forrest Building, 1st Floor, 5869 University Avenue, Halifax, N.S. B3H 3J5
Telephone: (902) 494-2535
Fax: (902) 494-3487

Director

E.J. Black

Professors

B.A. Keddy, BScN (MCSV), MA, PhD (Dal), RN
 J.A. Ritchie, BN (UNB), MN, PhD (Pitts), RN
 M. Stewart, BScN (McM), MN, PhD (Dal), RN

Associate Professors

M. Arklie, BN (Dal), MS (Boston), PhD (Texas), RN
 E.J. Black, EdD (UBC), MEd (Boston), BN (Dal)
 B. Downe-Wamboldt, BN, MEd (Dal), PhD (Texas), RN
 H. Fraser-Davey, BScN (MSVU), MSc(A) (McG), PhD (Dal), RN
 F. Gregor, BN, MN, PhD (Dal), RN, Associate Director/Co-ordinator, Graduate Programme
 G.A. Hart, BN (McG), MSN (UBC), RN
 M.J. Horrocks, BSN (UBC), MS (Psych N), MS (PHN), D.CMHN (UCSF), AED (Tor)
 J.M. Hughes, BN (Dal), MS (Boston) RN
 C. Smillie, BScN (UBC), BEEd (MSVU), MSc (Dal), RN
 D. Sommerfeld, BScN (MSVU), MSN (UBC), RN
 D.L. Tamlyn, BN (McG), MEd (Ottawa), PhD (Dal), RN
 S. Wong, BScN (MSVU), MScN (Western), RN

Assistant Professor

D. Meagher-Stewart, BScN (MSVU), MS (McM), RN

Honorary Adjunct Professor

L. Butler, BScN (MSVU), MN (Dal), PhD (Tor)

Admission Requirements

All applicants must be licensed to practice as registered nurses (active practitioner) in a province in Canada or in a foreign country. Applicants must have a Bachelor's degree with a minimum "B" standing. The Graduate Record Examination (Aptitude Test) must be taken and the results forwarded to the Graduate Programme Coordinator before a decision on admissibility can be made. Basic preparation including work experience for the clinical specialization study is required, as are introductory classes in research and statistics. Three letters of reference are also required.

MN Programme

Dalhousie University School of Nursing offers a two-year research-oriented programme preparing graduates to demonstrate leadership in nursing. The programme consists of 8 credits. Following completion of core classes which include advanced preparation in clinical nursing, students choose among three streams:

- a) a thesis is intended for those students seeking to conduct independent and/or collaborative research,
- b) a practicum is intended for those students seeking to increase knowledge and skills in health care policy development, implementation or evaluation, or
- c) an advanced practitioner option for those students seeking preparation as an advanced nursing practitioner.

Prospective applicants are encouraged to consult the School of Nursing to identify specific clinical offerings in any academic year. Elective class(es) may be chosen, in consultation with the academic advisor, from a variety of fields.

The MN programme is accepted by MPFHC as the regional programme for the Maritime Provinces. Non-nursing electives may be taken at other universities (prior approval must be obtained from the School of Nursing). Graduate nursing classes within the programme are also offered by distance education modes to other Maritime regional centers.

MN/MHSA Programme

The combined MN/MHSA programme is a three-year programme which enables students to select classes leading to degrees of Master of Nursing and Master of Health Services Administration. The MN/MHSA programme is designed to enable students to:

- advance knowledge in the area of nursing management;
- analyze, implement, and evaluate theories and models relevant to nursing;
- conduct independent, and/or collaborative research;
- work collaboratively with other health professions in planning, implementing, and evaluating health care; and
- demonstrate leadership in nursing and society.

The method of delivery includes traditional classroom seminar/classes, professional clinical experiences, a residency in administration in a nursing area and a thesis with an administrative focus. The thesis committee will include faculty committee members from the Schools of Nursing and/or Health Services Administration. The integrity of both programmes is maintained by the design of the three year MN/MHSA programme. However, the number of credits required is reduced by electing to take this joint programme.

Candidates for the MN/MHSA programme must satisfy the entrance requirements of both programmes, and may obtain further information about the combined programme by contacting either the School of Health Services Administration or the School of Nursing. For admission, students must apply to both the School of Health Services Administration and the School of Nursing individually. Students applying for the MN/MHSA programme may submit GRE results in lieu of the GMAT results.

Classes Offered

NURS 5000.03A: Intermediate Statistics. Math Dept.

NURS 5100.03A/NURS5120.03B: Research Methods. B. Keddy, S. Wong

NURS 5200.03: Health Care Reform and Its Impact on Nursing.

NURS 5310.03: Social Organization of Nursing Knowledge.

NURS 5330.03: Theoretical Concepts & Competencies Related to the Helping Relationship in Advanced Nursing Practice.

NURS 5410.03: Advanced Study of Biopsychosocial Phenomena.

NURS 5420.03: Advanced Study of Nursing Approaches to Biopsychosocial Phenomena.

NURS 5510.03: Advanced Clinical Practicum I.

NURS 5530.03: Advanced Clinical Practicum II.

NURS 5610.03: Advanced Practitioner Role Development.

NURS 5620.06: Advanced Practice Role Practicum.

Prerequisite: NURS 5540.03

NURS 5730.03: Pathophysiology & Pharmacology for Advanced Nursing Practice.

NURS 5740.03: Advanced Health Assessment.
Prerequisite: NURS 5730.03

NURS 5800.06R: Reading Class.

NURS 5810.03A/N5820.03B: Reading Class.

NURS 5900.06R: Reading Class.

NURS 5910.03A/N5920.03B: Reading Class.

NURS 7000.06: Nursing Practicum.

NURS 9000.00 Thesis

Nursing Electives

***NURS 5160.03: Analysis of Research.** M. Arkle

NURS 5850.03A: Women and Aging.

***NURS 5860.03: Grounded Theory.**

NURS 5770.03: Mind and Body in Nursing Practice.

NURS 5830.03: Death and Dying/Palliative Care.

NURS 5898.03B: Health Promotion/Primary Health Care and Professional Practice.

***NURS 5960.03: Social Support.** M. Stewart

NURS 5950.03 A or B: Self-directed Learning in Nursing.

NURS 5990.03B: Interdisciplinary Human Nutrition.

***NURS 6000.03A/MHSA 6000.03A: Nursing Administration and Leadership.** D. Tamlyn

***Not offered every year**

A minimum registration of three students is normally required for any class to be offered.

Oceanography

Location: Life Sciences Centre, 1355
Oxford Street, Halifax, N.S.
B3H 4J1
Telephone: (902) 494-3557
Fax: (902) 494-3877
e-mail: Oceanography@Dal.Ca

Chair of Department

A.J. Bowen

Graduate Studies Co-ordinator

J. Grant

Professors

C. Beaumont, BSc (Sussex), PhD (Dal), INCO
Fellow of the CIAR
A.J. Bowen, MA (Cantab), PhD (Scripps)
C.M. Boyd, MA (Ind), PhD (Scripps)
P. Chylek, Diploma (Physics) (Charles, Prague),
PhD (Calif), joint appointment in Physics
R.W. Doyle, MSc (Dal), PhD (Yale), cross
appointment with Biology
R.O. Fournier, MSc (Wm. & Mary), PhD (URI)
M.R. Lewis, BS, MS (Maryland), PhD (Dal)
E.L. Mills, BSc (Carl.), MS, PhD (Yale), FLS
R.M. Moore, BA (Oxon.), PhD (Southampton)
B.R. Ruddick, BSc (Victoria), PhD (MIT)

Associate Professors

B.P. Boudreau, BSc (UNB), MS (Texas A&M),
PhD (Yale)
J. Grant, BSc (Duke), PhD (South Carolina)
K.E. Loudon, BA (Oberlin), M.Ed. (Temple),
PhD (MIT)
C.T. Taggart, BSc (Carleton), MSc (York), PhD
(McG)
K.R. Thompson, BSc, MSc (Manchester), PhD
(Liv), major appointment in Math, Stats, and
Comp. Sc.

Associate Professor (Research)

B.D. Johnson, BEng (NC State), MEng (TUNS),
PhD (Dal)

Assistant Professors

I. Folkins, BSc (Dal), MSc, PhD (Tor), joint
appointment with Physics
Q. Fu, MSc (Peking), PhD (Utah)
P.S. Hill, AB (Dartmouth), MSc, PhD (Wash)
D. Kelley, BSc (MtA), PhD (Dal)
W. Miller, BA (Wake Forest), MSc (S. Florida),
PhD (URI)

Honorary Adjunct Professors

A. Cembella, BSc (Simon Fraser), PhD (UBC),
NRC
J. Cullen, AB (Calif, Santa Cruz), PhD (Scripps)
K.T. Frank, BSc, PhD (Toledo), Dept. of
Fisheries & Ocean, BIO
B.T. Hargrave, BSc, MSc (Dal), PhD (UBC), BIO,
Fisheries & Oceans
O. Hertzman, BA, BSc, MSc (UBC), PhD
(Washington)
K. Higuchi, BSc (Carleton), MSc, PhD (Tor),
Atmospheric Environment Service

G. Isaac, BSc, MSc, PhD (McG), Atmospheric
Environment Service
M. King, BA (Colorado College), MS, PhD
(Arizona), NASA, Goddard Space Flight
Center

L. Mayer, BS (Rhode Island), PhD (Scripps),
Ocean Mapping Group, UNB
N.S. Oakey, BSc (McG), MSc (Sask), PhD
(McM), BIO
S. Pearre, BSc (Virginia), MSc, PhD (Dal)
D.J.W. Piper, BA, MA, PhD (Cantab)
S. Sathyendranath, BSc (St. Teresa's College),
PhD (Univ. P & M Curie)
J.N. Smith, BSc (McG), MSc (Chicago), PhD
(Tor), BIO
P.C. Smith, BSc MS (Brown), PhD (MIT/Woods
Hole Oceanography Inst), Atlantic
Oceanographic Laboratory, BIO
P. Wangersky, BSc (Brown), PhD (Yale)
D.G. Wright, BSc (Laurentian), PhD (UBC),
Atlantic Oceanographic Laboratory, BIO

Admission Requirements

A good Honours degree, or its equivalent,
is required for admission to the Oceanography
Department.

Undergraduate preparation may be in any
of the basic sciences - Biology, Chemistry,
Physics or Geology. Degrees in Atmospheric
Science, Meteorology, Mathematics or
Engineering are also acceptable if the
undergraduate work includes a reasonably
good background in relevant basic science.

MSc Degree Programme

For minimum time required to complete
this programme, see Section 4, of the Faculty of
Graduate Studies Regulations in this calendar.

Minimum course requirements are a total of
5 half-credit classes at the 5000 level or higher,
at least three of which must be chosen from the
introductory classes (5110.03-5140.03, 5520.03).

Additional classes may be required to
strengthen a student's background in basic
science.

Research and a thesis are required.

PhD Degree Programme

For minimum time required to complete
this programme, see Section 5. In addition to
completion of four of the five introductory
half-classes (5110.03-5140.03, 5520.03), at least
four half-credit classes in advanced classes,
ordinarily in the area of the candidate's special
interest are normally required. More classes
will frequently be desirable.

Candidates must write and defend a
proposal for thesis research.

Research and a thesis are required.

Classes Offered

Classes marked * are not offered every year.
Please consult timetable upon registration.

*OCEA 5080.03: Time Series Analysis II. K.
Thompson; Cross-listed with STAT 5400.03.

OCEA 5110.03B: Introduction to Geological Oceanography. P. Hill

OCEA 5120.03A: Introduction to Physical Oceanography. B. Ruddick

OCEA 5130.03A: Introduction to Chemical Oceanography. R.M. Moore

OCEA 5148.03B: Introduction to Biological Oceanography. M. Lewis

*OCEA 5160.03B: Fisheries Oceanography. C. Taggart

*OCEA 5210.03B: Time Series Analysis. K. Thompson

OCEA 5221.03B: Ocean Dynamics. B. Ruddick

*OCEA 5222.03B: Estuary, Coast and Shelf Dynamics. A.J. Bowen

*OCEA 5230.03B: Biology of Phytoplankton. M. Lewis

*OCEA 5270.03R: Special Topics in Biological Oceanography. staff

*OCEA 5280.03A: Chemical Sedimentology & Early Diagenesis. B. Boudreau

OCEA 5285.03B: Marine Geochemical Processes. W. Miller

OCEA 5290.03B: Advanced Chemical Oceanography. R. Moore

OCEA 5292.03B: Chemical Methods in Oceanography. R. Moore

*OCEA 5293.03A: Advanced Marine Particles. P. Hill

*OCEA 5295.03A: Solution Chemistry for Oceanographers. B. Boudreau

OCEA 5311.03A: Fluid Dynamics I. D. Kelley

*OCEA 5312.03B: Fluid Dynamics II. A.J. Bowen

*OCEA 5330.03B: Benthic Ecology. J. Grant

*OCEA 5331.03B: History of Marine Science. E.L. Mills

*OCEA 5350.03B: Marine Geophysics. K.E. Loudon

*OCEA 5380.03B: Marine Modelling. M. Lewis

*OCEA 5411.03A: Dynamic Meteorology I. Q. Fu
Cross-listing: PHYC 5441.03

*OCEA 5412.03B: Dynamic Meteorology II. Q. Fu
Cross-listing: PHYC 5412.03

*OCEA 5500.03A: Atmospheric Physics I. Staff.
Cross-listing: PHYC 5500.03

*OCEA 5510.03B: Atmospheric Physics II. Staff
Cross-listing: PHYC 5510.03

OCEA 5520.03A: Introduction to Meteorology. TBA
Cross-listing: PHYC 5520.03

*OCEA 5530.03B: Introduction to Radiation and Climate. P. Chylek
Cross-listing: PHYC 5530.03

*OCEA 5541.03A or B: Synoptic Meteorology. Staff

*OCEA 5555.03A or B: Radar and Satellite Meteorology. Staff

*OCEA 5560.03A: Mesoscale Dynamics. Staff
Cross-listing: PHYC 5560.03

OCEA 5570.03A: Light Scattering and Radiative Transfer. P. Chylek

*OCEA 5573.03B: Topics in Atmospheric Radiation. Q. Fu

OCEA 5580.03A: Cloud Physics. P. Chylek

*OCEA 5590.03: Paleoclimatology. TBA

OCEA 5595.03A or B: Atmospheric Chemistry. I. Fokins

OCEA 5600.03B: Invertebrate Fisheries and Aquaculture. J. Grant, G. Newkirk

OCEA 9000.00 MSc Thesis

OCEA 9530.00 PhD Thesis

In addition to the weekly oceanographic departmental seminar, each of the oceanographic subdisciplines has a regular seminar in its speciality. At the seminar, topics of specific interest are discussed and examined. Students are required to attend both the general departmental seminar and the speciality seminar in their field of interest.

Oral and Maxillofacial Surgery

Location: 5981 University Avenue,
Halifax, N.S. B3H 3J5
Telephone: (902) 494-1679

Chair

D.S. Precious

Professors

M.M. Cohen Jr., AB (Mich), DMD (Tufts), MSD,
PhD (Minn), FCCMG

F.W. Lovely, DDS (Dal), MS (Mich), FRCD(C)
FICD

D.S. Precious, DDS, MSc (Dal), FRCD(C), FICD,
FADI, Programme Director

Associate Professors

B.B. Harsanyi, DDS, MS, FRCD(C)

R.E. Howell, DDS (Loma Linda), Cert Oral Path
(USC Med Ctr)

J.G.L. Lovas, BSc, DDS (Tor), MSc (Western),
FRCD(C)

Assistant Professors

A.K. Bhardwaj, BDS, DDS, FRCD(C)

A.A. Drysdale, MDCM, FRCP(C)

K.H.B. Goodday, DDS, MSc (Dal), FRCD(C)

E.A. Wright, BDS (Lond), LDS, RCS (Eng), DDS
(Dal), MS (Indiana), MD (Dal), FRCP(C)

R.H. Yabsley, MD, BSc, (Med), FRCS(C), FACS

The four-year programme in Oral and Maxillofacial Surgery which starts on June 1st each year is designed to provide graduate students with a comprehensive background for the practice and teaching of Oral and Maxillofacial Surgery, and to qualify them for examination by the Royal College of Dentists of Canada.

Particular emphasis is placed upon the basic sciences and clinical hospital surgery practice.

Admission Requirements

Candidates to be considered must possess both a DDS or DMD and the National Dental Examination Board Certificate to be eligible for Licensure in the Province of Nova Scotia.

Candidates must register for the entire four years of the programme and pay full tuition for the first three years and thesis only registration for the fourth year.

Application must be completed prior to June 30 of the year preceding commencement of the programme.

MSc Degree Programme Requirements

1. Satisfactory completion or credit for the prescribed classes
2. Satisfactory knowledge and skills in all the phases of clinical oral and maxillofacial surgery

3. Satisfactory completion of a research study and submission of the results in the form of a thesis acceptable to the Director of the programme

Curriculum

Year 1

- ORAL 5000.06: Anatomy 1 credit
- ORAL 5010.06: Surg Anatomy 1 credit
- ORAL 5020.06: Physical Diagn Audit
- ORAL 5030.06: Clinical Lab Medicine Audit
- ORAL 5040.06: Pharmacology Audit
- ORAL 5060.06: Oral Pathology 1 credit
- ORAL 5070.06: Seminar Audit
- ORAL 5080.06: Clinical Oral Surgery 1 credit
- ORAL 5090.06: Microbiology 1 credit
- ORAL 5110.06: Pathobiology Audit

Year 2

- ORAL 6000.06: Anaesthesia 1 credit
- ORAL 6010.06: Medicine Audit
- ORAL 6020.06: Clinical Physiology Audit
- ORAL 6030.06: Oral Pathology 1 credit
- ORAL 6040.06: Seminar Audit
- ORAL 6050.06: Clinical Oral Surgery 1 credit
- ORAL 6060.06: Orthopedics Audit
- ORAL 6070.06: Infectious Diseases Audit
- ORAL 6080.06: Emergency Medicine Audit
- ORAL 6090.06: Neurosurgery Audit

Year 3

- ORAL 7000.06: Oral Pathology 1 credit
- ORAL 7010.06: Seminar 1 credit
- ORAL 7020.06: Clinical Oral Surgery 1 credit
- ORAL 7030.06: Research 1 1 credit

Year 4

- ORAL 8000.06: Clinical Oral Surgery 1 credit
- ORAL 8010.06: Seminar 1 credit
- ORAL 9000.00: MSc Thesis

A combined MD/MSc programme is also available.

Pathology

Location: Sir Charles Tupper Bldg., 11th Floor, 5859 University Avenue, Halifax, N.S. B3H 4H7
Telephone: (902) 494-2091
Fax: (902) 494-2519

Head of Department
 M.A. Moss

Professors

M.L. Givner, BSc, MSc, PhD (McG)
 M.A. Moss, MB, BS (London), MSc (Dal),
 FRCP(C)
 G. Rowden, BSc (Exeter), MSc, PhD (Lond),
 DSc(Lond), FRCP (UK), MRC Path

Associate Professors

A.D. Fraser, BA (Houghton), PhD (Boston),
 FACB, DABCC
 W.L. Greer, BSc, PhD (Western), FCCMG -
 Graduate Studies Coordinator
 D.L. Guernsey, BA (Lehigh), MS (Bridgeport),
 PhD (Hawaii)
 R. Gupta, MB, BS (India), FRCP(C)
 S.J. Luner, BS (Cal Inst of Tech), PhD (UCLA)
 R.F. McCurdy, MPH, MSc (Minn), PhD, (TUNS)
 B.A. Nassar, BSc (Beirut), PhD (Newcastle), MB,
 BCh (Cairo), FRCP(C)
 P.E. Neumann, MD, BA (Brown), (major
 appointment in Anatomy and Neurobiology)
 A.A. Trillo, MD (Nat'l Univ Mexico), PhD
 (Western)
 J.R. Wright, Jr., BS, MA, MD (Ohio)

Assistant Professors

K.C. Dooley, PhD (UBC)
 L.C. Dymond, BSc (Memorial), MSc, MD (Dal),
 FRCP(C)
 R.B. Fraser, MSc, MD (Dal), FRCP(C), FCAP
 A.K. Guha, BSc, MD, MSc, PhD (Dal), FRCP(C)
 V. McAllister, BCH, DCh, MB (Dublin),
 FRSC(I), FRCS(C), (major appointment in
 Department of Surgery)
 L. Resch, MD (Dal), FRCP
 D.C. Riddell, BSc, PhD (Queen's)
 B.A. Wright, BDS (Lond), LDS, RCS (Eng), DDS
 (Dal), MS (Indiana), MD (Dal)
 E.Z.M.A. Zayed, MB, BCh (Egypt) FRCP(C)

Research for the MSc degree may be conducted in experimental pathology and/or allied fields of medical sciences (e.g. clinical chemistry, hematology or histopathology) for those planning a career as a laboratory scientist.

Admission Requirements

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies. In addition, candidates with the MD degree may be admitted.

MSc Degree Programme

This programme is intended to give the student a strong background in the experimental approach in pathology. Although the programme may be completed in 12 months, most students require 24 months.

The research work and thesis defence are valued at 2½ credits. All students are required to attend and participate in the research seminar programme (PATH 5091.03). In addition, two other credits are required, in a subject related to the thesis or in the laboratory field chosen. Other classes may be required depending upon the background preparation of the student, the nature of their thesis, or the student's career goals.

Candidates must participate as appropriate in the weekly series of conference seminars in Pathobiology, Laboratory Medicine, Surgical and Autopsy conferences or molecular pathology/genetics.

Research and a thesis are required. The thesis must be defended by oral examination which covers the candidate's area of study and research. Yearly presentations to the Department are required of every candidate.

Classes Offered

PATH 5000.03A: General Pathology. A reading/discussion class covering basic systems and processes in pathology.
 Instructor: J. Wright

PATH 5001.03B: Advanced Mechanisms of Pathology. This class will provide an in-depth study of such topics as cell injury, adaption and repair, inflammation, fluid and hemodynamic derangements, free radical damage, environmental pathology and aging.
 Instructor: S. Luner

PATH 5010.06R: Biochemistry of Clinical Disorders. This is an introductory class to the pathophysiology of disease. It provides the clinical and biochemical background of disease groups and system disorders.
 Instructor: B. Nassar

PATH 5040.03A: Pathobiology of Cancer. This class will outline the pathobiology of neoplasia. It will discuss both normal and abnormal mechanisms of cell growth and differentiation since cancer is ultimately a disease of these processes. The basic biology of carcinogenesis and behaviour of tumours will be highlighted. The clinical aspects of cancer management will also be presented.
 Instructor: A. Guha

PATH 5041.03B: Molecular Pathology of Cancer. An in-depth study of the molecular and genetic basis of cancer. The multi-step nature of carcinogenesis will be the broad basis for studying oncogenes, tumour suppressor genes, genes regulating differentiation and apoptosis, and cancer susceptibility genes. Certain molecular biology techniques will be discussed in order to fully understand the molecular events of cancer.
 Instructor: D. Guernsey

PATH 5050.03A: Immunopathology. This class will explore the intricacies, functions and abnormalities of the immune system. Both the humoral and cellular arms of the immune system will be detailed. Immunological deficiencies and autoimmune diseases will be discussed. Clinical aspects of topics such as transplantation and tumour immunology will also be presented. (not offered in 1996/97)

Instructor: A. Guha

PATH 5051.03B: Special Topics: Molecular Pathology and Molecular Genetics. (not offered in 1996/97)

Instructor: C. Riddell

PATH 5060.06R: Special Topics: Morphometrics and Stereology.

PATH 5070.06R: Special Topics: Electron Microscopy. Introduction to diagnostic electron microscopy. Coverage of virology, renal pathology and tumour diagnosis.

Instructor: G. Rowden

PATH 5080.06R: Special Topics: Immunocytochemistry and Histochemistry. Basics of immunostaining technique including fluorescent and peroxidase methods, FACS analysis. Applications in various fields of diagnostic surgical pathology. In situ DNA/RNA hybridization methods for infectious agents.

Instructor: G. Rowden

PATH 5091.03R: Pathology Research Seminar Series. The objectives of this class are: 1) to provide a forum for graduate students to develop skills at presenting seminars; 2) to provide constructive evaluation of their research; and 3) to promote interaction between students and faculty.

Instructor: W.L. Greer

PATH 9000.00 MSc Thesis

Seminars - Conferences

A series of weekly seminars, journal clubs, and conferences is conducted throughout the year in various areas of pathology, and laboratory medicine.

Areas of Specialization for MSc Thesis

- Computerization and instrumental methods; diagnostic enzymology; screening for metabolic disease: K.C. Dooley
- Interference in digoxin assays; hypouricemic states: L.C. Dymond
- Clinical toxicology; therapeutic drug monitoring: A.D. Fraser
- Animal models of diabetes: R.B. Fraser
- Hormone replacement therapy: M.L. Givner
- Human molecular genetics; molecular diagnosis of cancer: W.L. Greer
- Molecular oncology; genetic basis of human disease; molecular neurobiology: D.L. Guernsey
- Autoimmune disease testing and use of monoclonal antibodies for cancer detection and therapy: A.K. Guha
- Kidney transplantation-chronic rejection; neuropathology: R. Gupta
- Malignant cell surface: S.J. Luner

- Clinical transplantation; recipient's immune conditioning and chronic rejection: V. McAlister
- Environmental pathology: R.F. McCurdy
- Environmental pathology: M.A. Moss
- Essential fatty acids and prostaglandins; molecular diagnosis of hyperlipidemias; familial cancers; porphyrias: B. Nassar
- Developmental neurogenetics: P.E. Neumann
- Computerized image analysis: L. Resch
- Tumour suppressors; human molecular genetics: D.C. Riddell
- Dermatopathology with emphasis on the immune system of the skin: G. Rowden
- Cardiopathology; atherosclerosis; nephropathology; ultrastructural pathology: A.A. Trillo
- Head and neck pathology; oral disease and diseases of salivary glands: B.A. Wright
- Experimental diabetes; islet transplantation; perinatal pathology: J. Wright
- Coagulation and platelet disorders: E.Z.M.A. Zayed

Pharmacology

Location: Sir Charles Tupper Building,
6th Floor, 5859 University
Avenue, Halifax, N.S. B3H 4H7
Telephone: (902) 494-3435
Fax: (902) 494-1388

Head of Department

H.A. Robertson

Professors

J.W. Downie, BSc, PhD (Man)
G.R. Ferrier, BSc, PhD (Man) Graduate Studies
Coordinator
J.D. Gray, BSc, MD, (Alta), FRCP(C), Medicine
K.W. Renton, BSc (Sir Geo Wms), PhD (McG)
H.A. Robertson, BA, MSc, (Western), PhD
(Cantab)
J. Sawynok, BSc, MSc (Melb), PhD (Queen's)
M.M. Vohra, BPhM, MPhM, PhD (Ban)
T.D. White, BSc, MSc (Western), PhD (Bristol)

Associate Professors

R.I. Hall, BScPharm (Dal), MD (Dal), Anesthesia
S.E. Howlett, BSc (Concordia), MSc, PhD (MUN)
G.M. McKenzie, BSc (Windsor), MSc, PhD (Dal)

Assistant Professors

J. Blay, BSc (Hons), PhD (Cantab)
M. Hong, BSc (Hons), MSc, PhD (Queen's)
O.R. Hung, BSc, MD (Dal), FRCP(C)
M.E.M. Kelly, BSc(Hons), PhD (Southampton)
T.C. Peterson, MSc, PhD (Dal)
N. Tatton, PhD (Tor)

Post-Doctoral Fellows and Research Associates/Assistants 1995

J. Armstrong, BSc (Laurentian), MSc, PhD
(Carleton)
J. Babity, BSc, PhD (UBC)
E. Denovan-Wright BSc, PhD (Dal)
R. Droblich, BSc (Windsor), BSc, PhD (Wayne
State)
H. Du, PhD (Beijing)
M. Guido, BSc, PhD (Cordoba, Argentina)
G. Li, MSc, MD (Tongl)
R. Newton, BSc (Surrey) D.Phil (Oxford)
J. Zhu, PhD (Tongli)

Admission Requirements

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies. Students registered in the Faculty of Medicine may, upon completion of the second year of studies, be admitted to a PhD programme.

Normally, a previous class in Biochemistry and in Physiology will be expected; however, applicants are advised to consult the department as to the appropriateness of their specific academic background. With departmental permission, specific classes in these subjects may be taken as part of a graduate programme in Pharmacology.

MSc Degree Programme

For minimum time required to complete this programme, see Section 6. Candidates must complete satisfactorily the following classes or their equivalents: 5403.06, 5405.03, and a minimum of two half credit courses in the 5600 series. A course in statistics is required if an appropriate course has not been successfully completed before entrance to the program. An ancillary class chosen from classes offered by another department in the Faculty of Graduate Studies may be required. Candidates must also satisfactorily complete short research projects in two departmental laboratories (5511.00, 5512.00). Students are expected to attend research seminars within the department. Laboratory teaching experience is included in the programme (5506.03). Thesis research, and preparation and oral defense of a thesis are required.

PhD Degree Programme

For minimum time required to complete this programme, see Section 4. A qualifying examination for entrance into the PhD programme may be required. Candidates must complete satisfactorily the course requirements listed for the MSc degree plus two additional half credit courses in the 5600 series. An additional short research project (5513.00) is optional. An ancillary class chosen from classes offered by another department in the Faculty of Graduate Studies is required. Students are expected to attend research seminars within the department. Lecture and laboratory teaching experience is included in the programme (5507.03). A comprehensive examination is required. Thesis research, and preparation and oral defense of a thesis are required.

PhD Programme in Pharmacology/Neuroscience

Pharmacology also offers MSc and PhD programmes in Pharmacology/Neuroscience through the interdisciplinary Neuroscience Programme.

MD/PhD Combined Programme

For information on the combined MD/PhD programme see Interdisciplinary and Joint Programmes (page 54)

Areas of Research Specialization

Faculty research interests include: cardiac electrophysiology and pharmacology, polypeptide growth factors and signal transduction, general anaesthetics, neurotransmitter receptor mechanisms, autonomic physiology and pharmacology, behavioral pharmacology, general anaesthetics, nerve regeneration, molecular biology, mechanisms of analgesia, drug metabolism, and experimental therapeutics.

Classes Offered

The 5511.00-5513.00 classes are normally for graduate students in Pharmacology, but available to others by special arrangement.

Three or four classes in the 5600 series are offered each term on a two-year rotating cycle as indicated below.

PHAC 5402.06R: Systematic Pharmacology.

PHAC 5403.06R: Systematic Pharmacology. (includes laboratory)

PHAC 5404.03A or B: Experimental Design and Interpretation.

PHAC 5405.03B: Advanced Pharmacology

PHAC 5406.03A: Introduction to Pharmacology I

PHAC 5407.03B: Introduction to Pharmacology II

PHAC 5408.03B: Experimental Pharmacology.
Prerequisite: PHAC 5511.00

PHAC 5511.00R: Introduction to Research in Pharmacology I.

PHAC 5512.00R: Introduction to Research in Pharmacology II. Same as 5511.00R

PHAC 5513.00R: Introduction to Research in Pharmacology III. Same as 5511.00 and 5512.00. Available only to students in the PhD programme.

PHAC 5506.03R: MSc Practice Teaching.

PHAC 5507.03R: PhD Practice Teaching.

Offered in 1996-97*

PHAC 5605.03A: Extracellular Actions of ATP and Adenosine. T.D. White

PHAC 5607.03A: Pharmacology of Congestive Heart Failure. S.E. Howlett

PHAC 5611.03A: Drug Metabolism. K.W. Renton

PHAC 5619.03A: The Autonomic Nervous System and its Pharmacology. J. Downie

PHAC 5623.03R: Clinical Pharmacology. J. Gray

PHAC 5603.03B: Neuropharmacology of Pain. J. Sawynok

PHAC 5616.03B: Molecular neuropharmacology. H. Robertson

PHAC 5617.03B: Pharmacology of Cell Growth. J. Blay

PHAC 5618.03B: Pharmacology of Selected Cytokines in Disease. T.C. Peterson

Offered in 1997-98*

PHAC 5602.03A: Cardiac Excitation and Contraction; Physiology and Pharmacology. G.R. Ferrier

PHAC 5609.03A: Anatomical and Molecular Neuropharmacology of the Basal Ganglia: the Scientific Basis for Grafting and Neural Transplantation. H.A. Robertson, I. Mendez

PHAC 5610.03A: Anesthesia. R. Hall

PHAC 5612.03A: Clinical Trial Design. J. Gray

PHAC 5613.03A: Pharmacology of Autocoids. M.M. Vohra

PHAC 5623.03R: Clinical Pharmacology. J. Gray

PHAC 5615.03B: Pharmacological and Biophysical Approaches to Understanding Cellular Ion Transport. M.E. Kelly

PHAC 5621.03B: Pharmacology of Drug Abuse. G. McKenzie

*Classes offered are subject to change. Please contact the department.

PHAC 9000.00R MSc Thesis

PHAC 9530.00R PhD Thesis

Pharmacy

Location: Burbidge Building, 5968 College Street, Halifax, N.S. B3H 3J5
 Telephone: (902) 494-2378
 Fax: (902) 494-1396

Director of College

R.F. Chandler

Professor Emeritus

J.G. Duff, BSP, MSc (Sask), PhD (Fla)

Professors

E. Butler, BSc (Chem), MSc (Chem), PhD (Colloid Chem, Bp)

R.F. Chandler, BSc Pharm, MSc (Alta), PhD (Syd)

D. Jones, BSc, PhD (Birm), F.I.Ceram, FIM, C.CHEM, FRSC(UK), FADM, D.O.hc., major appointment in Faculty of Dentistry

I.S. Sketris, BSc (Pharm) (Tor.), PharmD (Minn), MPA (HSA) (Dal)

D.K. Yung, BA, BSP, MSc (Sask), PhD (Alta)

Associate Professors

I. Abraham, BPharm, MPharm (UST Ksl), PhD (Neb)

P.S. Farmer, BSP, MSc (Sask), PhD (Portsmouth), Graduate Studies Co-ordinator

P.T. Pollak, BSc, MD, PhD (UWO), FRCP

A.M. Whelan, BSc(Pharm) (Dal), PharmD (MUSC)

P.K.F. Yeung, BSc (Pharm), MSc (Man), PhD (Sask)

Assistant Professors

T.B. Birkeness, BSc (Chem) (UWO), PharmD (FSU)

K.K. Janke, BA (Psych) (St. Olaf), PhD (Pharm.Ad.) (Minn)

Honorary Adjunct Professor

A.K. Kirumira, BSc (Mosul), MSc (Reading), PhD (Murdoch)

M. Quilliam, BSc, PhD (Manitoba)

The College of Pharmacy offers MSc and PhD programmes in the areas of pharmacokinetics, biopharmaceutics, drug disposition and metabolism, medicinal chemistry, physical pharmacy and drug analysis. For more detailed information on the administration of these programmes applicants and students are referred to the Handbook for Graduate Studies in the College of Pharmacy which is available from the Graduate Studies Coordinator, College of Pharmacy.

Admission Requirements

Please note: Admissions to the graduate programmes of the College of Pharmacy have been suspended until further notice.

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies (see Section 2.). Applicants from outside of Canada must submit the results of the Graduate Record Examination (GRE, Aptitude). Canadian applicants also are advised

to submit GRE scores, and the College reserves the right to make this a precondition to consideration of the student's application for admission. A score of at least 580 on the TOEFL is required of applicants whose native language is not English (Section 2.).

Students entering with a BSc (Pharm) Degree or its equivalent will be registered in the 1-year MSc programme. Students entering with an Honours BSc Degree in a field other than pharmacy (e.g., biology or chemistry) may be required to register in the 2-year MSc programme, although candidates with suitable academic backgrounds will be registered in the 1-year programme. Applicants holding a Pass BSc Degree may exceptionally be eligible for admission to the 2-year MSc programme. In certain circumstances, a student may be admitted to a Qualifying Year programme of preliminary work in order to meet admission standards for the MSc programme.

An MSc in pharmacy is normally required for entry directly into the PhD programme, although students in the MSc programme may apply to transfer to the PhD programme subject to the conditions described in the Handbook for Graduate Students in the College of Pharmacy.

Ultimate approval of a student's transfer to the PhD programme must be made by the Dean of Faculty of Graduate Studies.

MSc Degree Programme

For minimum times required to complete this programme see Section 4.

Experience has shown that most candidates require an additional 6-12 months to complete the thesis requirement. A Graduate Advisory Committee chaired by the research supervisor and comprised of two other members will be appointed for each student.

Candidates must complete satisfactorily a minimum of two full-credit advanced classes, the actual programme of classes required to be determined by each student's Graduate Advisory Committee. Additionally candidates must participate in graduate seminars (Pharmacy 5000.03) during each year in the programme. A major part of the requirements for the MSc Degree is the preparation and oral defence of a thesis (Pharmacy 9000.00) describing research done by the student. The primary purpose of the MSc Degree programme is to develop in the student research skills in an area of the pharmaceutical sciences at a level which will enable the student to carry out research relatively independently. The dissertation is expected to be of such scope and skilful presentation as to indicate that the candidate has acquired a command of the subject, has the demonstrated ability to contribute fresh knowledge or a fresh outlook to the subject, and has mastered the research methodology of the discipline.

Candidates are normally required to demonstrate in an undergraduate Pharmacy class for at least one year.

Financial assistance is generally available for no more than two years.

PhD Degree Programme

For minimum times required to complete this programme see Section 4.

It is expected that most candidates will require an additional 12 months to complete the thesis requirement. A Graduate Advisory Committee chaired by the research supervisor and comprised of two other members will be appointed for each student. Candidates must complete satisfactorily a minimum of two full-credit graduate classes in addition to those required for the MSc programme, the actual programme of classes required to be determined by each student's Graduate Advisory Committee. To determine courses in which a student should enrol, an oral and/or written examination may be required by the Graduate Advisory Committee prior to registration of a new student coming from outside of the College. Additionally candidates must participate in graduate seminars (Pharmacy 6000.03) during each year in the programme. Reading comprehension of a foreign language and/or proficiency in an ancillary research skill such as computer programming may be required. Students are required to pass a preliminary oral examination not less than one year before defending the thesis.

The PhD Degree programme prepares the student to conceptualise, design and execute sound independent research. Thus the completion of an extensive, original investigation and the preparation and oral defence of a thesis (Pharmacy 9530.00) describing this research constitutes the major part of the requirements for the PhD Degree. The PhD research project is of more substantial dimensions than that for the MSc Degree, and the demonstration of a definite advance of knowledge is expected.

Candidates are required to obtain some teaching experience by demonstrating in an undergraduate Pharmacy laboratory class for at least one year and by presenting lectures in an undergraduate Pharmacy class.

Financial assistance is generally available for no more than four years post-baccalaureate or three years for a student entering with an MSc Degree.

Classes Offered

PHAR 4130.03A/5130.03A:

Physicochemical/Industrial Aspects of Controlled Release Drug Delivery - An Introduction.

Instructor: E.V. Butler
Format: Lecture/workshop 2 hours; library and lab practices 2 and 6 hours; 2 term papers.

Prerequisites: PHAR 2120.03, 2130.06, 3250.02, CHEM 2400.06, STAT 1060.03 or consent of the instructor. Offered every other year.

PHAR 4330.03B: Herbal Remedies.

Instructor: R.F. Chandler
Format: Lecture 3 hours

PHAR 4340.03R/5340.03R: Drug Design.

Instructor: P.S. Farmer

Format: Lecture 2 hours first term, term paper second term.

Prerequisite: Consent of the instructor

PHAR 4351.03A: Medical Biotechnology I.

Instructor: A.K. Kirumira,
Format: Lecture 3 hours, some demonstrations.

Prerequisite: BIOC 3101.03 and 3102.03, PHAC 3470.06 and consent of instructor.

PHAR 4352.03B: Medical Biotechnology II.

Instructor: A.K. Kirumira
Format: Lecture 3 hours, some demonstrations

Prerequisite: BIOC 3101.03 and 3102.03, PHAC 3470.06, PHAR 4351.03 and consent of instructor.

PHAR 4530.02B/5530.03B: Introductory Drug Metabolism and Toxicology.

Instructor: P.K.F. Yeung,
Format: Lecture 2 hours plus a special project for graduate students.

Prerequisites: PHAC 3470.06 or 3480.06, BIOC 3101.03 and 3102.03, PHAR 3500.09

PHAR 4910.03/5910.03A or B: Advances in Drug Metabolism and Disposition.

Instructor: P.K.F. Yeung, G.A. Klassen, P.T. Pollak, and M.A. Quilliam
Format: Lecture 2 hours

Prerequisite: PHAR 4930.02/5930.03 or instructor's consent. Offered every other year

PHAR 5000.03R/6000.03R: Pharmacy Seminar.

PHAR 5250.03B/4250.03B: Advanced Pharmacokinetics. Every other year; consult Department.

Instructor: I. Abraham
Prerequisites: PHAR 4100.03, PHAR 3250.02.

PHAR 5320.03A or B: Topics in Medicinal Chemistry. P.S. Farmer, lecture 2 hours.

Prerequisite: instructor's consent

PHAR 5980.03A: Intermediate Statistics.

Instructor: C.A. Field (Math Dept.)
Cross-listing: HEAS 6500.03, HHEB 5503.03, KINE 5503.03, LEIS 5503.03, NURS 5000.03, PHSE 5503.03, STAT 5990.03

PHAR 9000.00 MSc Thesis

PHAR 9530.00 PhD Thesis

Areas of Specialization

- Studies on dose-dependent disposition kinetics of drugs; kinetics of enterohepatic circulation of drugs; drug-drug kinetic interactions. (I. Abraham)
- Physico-chemical, colloidal and surface characterization of particulate matter. Drug powders, liposomes, microspheres and microcapsules. Stability of disperse systems. Interfacial phenomena and application to pharmaceutical systems. Design and evaluation of controlled release drug delivery systems. Encapsulation efficiency, drug release rate. Study of bioadhesion and bioadhesive materials. (E. Butler)

- Design and synthesis of drugs, prodrugs, drug metabolites and rotationally restricted analogs. (P.S. Farmer)
- Analytical methods development (RIA, HPLC, GC, etc.) with application to pharmacokinetic, pharmacodynamic, and metabolism studies. Emphasis is on the kinetic aspects (*in-vivo* and *in-vitro*) of drug metabolism and its relationship to pharmacodynamic effects in animal species and in humans. (P.K.F. Yeung)

Philosophy

Location: 1400 Henry Street, Halifax, N.S.
B3H 3J5
Telephone: (902) 494-3810
Fax: (902) 494-3518

Chairperson of Department

R.M. Campbell

Professor Emeritus

D. Braybrooke, BA (Harvard), MA, PhD
(Cornell) FRSC

Professors

S.A.M. Burns, BA (Acad), MA (Alta), PhD
(Lond), Graduate Co-ordinator
R.M. Campbell, BA (Harvard), PhD (Cornell)
R.M. Martin, BA (Columbia), MA, PhD (Mich)
P.K. Schotch, PhD (Wat)
S.B. Sherwin, BA (York), PhD (Stanford)

Associate Professors

N.C. Brett, BA (New Hampshire), MA, PhD
(Wat)
D. MacIntosh, BA (Queens), PhD (Tor)
T. Tomkow, BA (SFU), PhD (Cantab)
T. Vinci, BA (Tor), PhD (Pitts)

Assistant Professors

J. Arcott, BA (Queen's), MLitt (Oxon), PhD
(Queen's)
R. Campbell, BA (Northwestern), MA, PhD
(Cornell)
S. Campbell, BA, MA (Alta), PhD (Tor)
M. Hogan, AB (UC Berkeley), MA, PhD
(Wisconsin)
S.A. Maitzen, BA (Northwestern), MA, PhD
(Cornwall)

Honorary Adjunct Professor

C.J. Byrne, PhD (Tor) St. Francis Xavier

Candidates are expected to have some acquaintance with several areas of philosophy, including modern logic and the history of philosophy. Each student's programme is arranged individually in consultation with the department in relation to the student's interests and preparation. Enquiries should be addressed to the Graduate Studies Co-ordinator, in the Department.

Admission Requirements

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies.

MA Degree Programme

One Year: For students with an Honours BA or equivalent in philosophy. Requirements include three classes* and a thesis.

Two Year: For those with a BA in philosophy or an honours degree in a related field. Requirements include four classes* in the first year, three in the second, and a thesis.

* Note: A "class" means one full-year or two half-year classes.

PhD Degree Programme

For minimum time required to complete this programme, see Degree Requirements under general Faculty regulations. Normally, the doctoral student will be required to attend three graduate seminars beyond the requirements for the MA. Reading knowledge will usually be required in one language other than English in which a significant body of philosophical literature exists. There are three comprehensive examinations to be completed in (1) ethics and political philosophy; (2) metaphysics, epistemology, philosophy of language and science; (3) logic and philosophy of logic. Completion of the programme requires original research on a project of substantial dimensions, culminating in the submission and oral defence of a thesis. This research should be in an area already well-established as a specialty by members of the department, such as, political and social philosophy, ethics, philosophy of mind, epistemology, philosophy of language, or logic.

Classes Offered

The Philosophy Department offers four kinds of graduate classes: adjunct, general, seminar, and directed reading. Adjunct classes presuppose no prior preparation in the area covered by the class. Thus, a graduate student with no previous training in modern symbolic logic could take the combination 2130.03 and 2140.03 which provides a comprehensive introduction to this subject. These classes, since they are not intended for advanced study in the area designated, are open to graduate students in philosophy only in special cases and by permission of the Department. General classes cover a wide range of topics and presuppose some previous study in the area covered by the class. They are suitable for graduate students who want to deepen their understanding of a general area of study but have not specialized in it as an undergraduate. Seminar classes are relatively narrow in focus and presuppose extensive previous study in the area. Directed Reading classes are developed jointly by a student and an instructor in special cases to suit individual interests and needs. These are subject to departmental approval.

Note that the classes listed are half-year, unless otherwise indicated, and not all are given in any one year. Instructors in seminar classes are likely to vary from year to year. Consult the department for further information.

Adjunct Classes

- PHIL 2130.03: Logic: Deduction. R.M. Martin, P.K. Schotch
- PHIL 2140.03: Logic: Logical Theory I. P.K. Schotch
- PHIL 2160.03: Philosophical Issues of Feminism. S. Sherwin, S. Campbell
- PHIL 2260.03: Philosophy of Art. S.A.M. Burns
- PHIL 2350.03: History of Philosophy: Ancient Philosophy I. T. Vinci and S.A.M. Burns

- PHIL 2370.03: History of Philosophy: Ancient Philosophy II. S.A.M. Burns
- PHIL 2410.03: Philosophy of Psychology. T. Tomkow
- PHIL 2550.03: Marxist Theory. Staff
- PHIL 2610.03: History of Philosophy: The Rationalists. S. Campbell, S.A.M. Burns
- PHIL 2620.03: History of Philosophy: The Empiricists. S.A.M. Burns, T. Vinci, D. MacIntosh
- PHIL 2700.06: Philosophy in Literature. R. Martin
- PHIL 2705.03: Philosophy in Literature. R. Martin

General Classes

- PHIL 5051.03: Theory of Knowledge. T. Vinci, D. MacIntosh
- PHIL 5060.03: Logic: Logical Theory II. P.K. Schotch
- PHIL 5100.06: Ethics. R. Campbell
- PHIL 5105.03: Ethics. N. Brett
- PHIL 5170.03: Theories of Feminism. S. Sherwin
- PHIL 5211.03: Philosophy of Law. N. Brett
- PHIL 5265.03A or B: Aesthetics. S.A.M. Burns
- PHIL 5300.03: Philosophy of Language. T. Tomkow, R. Martin, D. MacIntosh
- PHIL 5420.03B: Philosophy of Biology. R. Campbell
- PHIL 5440.03: Philosophy of Mind. T. Tomkow
- PHIL 5460.03: Mind and Brain. T. Tomkow
- PHIL 5530.03: Freedom, Action and Responsibility. P.K. Schotch
- PHIL 5630.03: History of Philosophy: Kant. T. Vinci
- PHIL 5640.03: History of Philosophy: 20th Century Philosophy. D. MacIntosh
- PHIL 5650.03: Modern Philosophy. T. Vinci
- PHIL 5670.03: Philosophy of Science. D. MacIntosh, T. Vinci
- PHIL 5801.03A or B: Ethics and Health Care. S. Sherwin
- PHIL 5851.03: Metaphysics. T. Tomkow
- PHIL 5900.03: Logic: Logic and Philosophical Analysis. T. Tomkow

Seminar Classes

- PHIL 5055.03: Topics in Epistemology
- PHIL 5070.03: Topics in Philosophical Psychology
- PHIL 5080.03: Topics in Logical Theory
- PHIL 5115.03: Topics in Ethics I
- PHIL 5120.03: Theory of Rational Decision
- PHIL 5125.03: Topics in Ethics II
- PHIL 5190.03: Topics in the History of Philosophy I
- PHIL 5191.03: Topics in the History of Philosophy II

PHIL 5192.03: Topics in the History of Philosophy III

PHIL 5200.03: Topics in Normative Theory

PHIL 5215.03: Topics in Philosophy of Law

PHIL 5220.03: Contemporary Philosophical Issues

PHIL 5430.03: Game Theory as a Foundation for Ethics & Politics

PHIL 5470.03: Utilitarianism, Liberalism, & Democracy

PHIL 5480.03: Social Choice Theory

PHIL 5500.03A or B: Topics in Feminist Philosophy: S. Sherwin

PHIL 5510.03: Topics in Philosophy of Language

PHIL 5600.03: Philosophy of Religion Seminar

PHIL 5680.03: Topics in Philosophy of Science

PHIL 5855.03: Topics in Metaphysics

Directed Reading Classes

PHIL 5960.03/5980.03 ; 5970.06/5990.06

PHIL 9000.00 MA Thesis

PHIL 9530.00 PhD Thesis

Physics

Location: Sir James Dunn Science Building, Halifax, N.S. B3H 3J5
Telephone: (902) 494-2337
Fax: (902) 494-5191

Chairperson of Department

D.B.I. Kiang

Graduate Advisor

J.G. Cordes

Professors Emeriti

W.J. Archibald, MA (Dal), PhD (Virg), DSc (UNB), DSc (Dal), FRSC

D.D. Betts, BSc, MSc (Dal), PhD (McG), FRSC

Professors

B.L. Blackford, BSc (Acadia), MSc (MIT), PhD (Dal)

M.G. Calkin, BSc, MSc (Dal), PhD (UBC)

P. Chylek, Physics Diploma (Charles, Prague), PhD (Calif, Riverside), joint appointment with Oceanography

R. A. Dunlap, BS (Worcester), AM (Dartmouth), PhD (Clark)

D.J.W. Geldart, BSc (Acadia), PhD (McM), FRSC - Research

M.H. Jericho, BSc, MSc (Dal), PhD (Cantab), George Munro Professor of Physics

D.B.I. Kiang, BSc (MtA), MSc, PhD (McM)

H.J. Kreuzer, MSc, DSc (Bonn), FRSC - Faculty of Science Killam Professor

G.F.O. Langstroth, BSc (Alta), MSc (Dal), PhD (Lond), Assistant Dean, Faculty of Science

B.E. Paton, BSc, MSc (Waterloo), PhD (McG)

P.H. Reynolds, BSc (Tor), PhD (UBC), joint appointment with Earth Sciences

A.M. Simpson, BA (Cantab), MSc, PhD (Dal)

G. Stroink, BSc, MSc (Delft), PhD (McG), PEng, minor appointment in Physiology and Biophysics

M.A. White, BSc (UWO), PhD (McMaster), major appointment in Chemistry

Associate Professors

J.G. Cordes, BSc, MSc (Dal), PhD (Cantab)

D.F. Goble, BSc, MSc (Alta), PhD (Tor), BBEd (Dal)

D.A. Tindall, BA, PhD (Cantab)

Assistant Professors

I. Folkins, BSc (Dal), MSc, PhD (Tor), joint appointment with Oceanography

W.T. Hyde, BSc (Tor), MSc (Waterloo), PhD (Tor), joint appointment with Oceanography

D. Labrie, BSc (Montreal), MSc, PhD (McM)

Honorary Adjunct Professors

N. Jan, PhD (Cambridge), Physics, St.F.X.

D.A.H. Pink, PhD (UBC), Physics, St.F.X.

M. Steinitz, PhD (Northwestern), Physics, St.F.X.

Research Associates

A.K. Das, DPhil (Oxon)

V. Gelfandbein, PhD (Tech. Inst., Israel)

S.H. Payne, PhD (Cantab)
R.L. Wang, PhD (Dal)

Postdoctoral Fellows

Z. Koziol, PhD (Amsterdam), Killam Postdoctoral Fellow
M. Lam, PhD (Dal)
T. Stimer, PhD (Hull), Killam Postdoctoral Fellow
W. Tso, PhD (Stevens Inst. of Tech.)
M. Wang, PhD (Utah)
W. Xu, PhD (Dal)
M. Yewondwossen, PhD (Dal)

MacGregor Teaching Fellows

A. Adams
A. Bilyard
S. Bonev
T. L'Ecuyer
M. Miller
M. Small
M. Walsh
J. Wong

Admission Requirements

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies. An MSc is the normal admission requirement for the PhD programme. It is recommended that all foreign students provide the Department with an official copy of the Advanced Graduate Record Examination in Physics. In some cases this will be made a precondition to consideration of the student's application for admission.

MSc Degree Programme

For minimum time required to complete this programme, see Section 5 of the Faculty of Graduate Studies regulations in this calendar.

At least two full credit classes are required, of which at least one must be at the 6000 level. Research, preparation, and oral defense of a thesis are required.

PhD Degree Programme

For minimum time required to complete this programme, see Section 5 of the Faculty of Graduate Studies regulations in this calendar.

At least two full credit classes are normally required and additional classes may be specified by supervisory committees.

A preliminary oral examination must be completed successfully.

Research and the preparation and oral defense of a thesis are required.

The PhD degree will be granted primarily on the basis of the candidate's ability to carry through original investigation. Part of the evidence of this will be acceptance of scientific material for publication in refereed journals and the preparation of a satisfactory thesis.

Classes Offered

5000-level classes are fourth-year undergraduate classes which may be taken for graduate credit in certain circumstances. They are normally taken by new graduate students having background deficiencies in specific areas. 6000-level classes are full graduate classes.

All graduate students are required to attend and participate in regular departmental seminars.

A selection of the following graduate classes will be offered subject to demand.

PHYC 5100.03A or B: Electrodynamics.
Format: Lecture 3 hours
Prerequisite: PHYC 2010.03/4160.03 and MATH 3110.03/3120.03, or the permission of the instructor

PHYC 5151.03A: Quantum Mechanics II.
Format: Lecture 3 hours
Prerequisite: PHYC 3140.03 or permission of instructor

PHYC 5152.03B: Quantum Mechanics III.
Format: Lecture 3 hours
Prerequisite: PHYC 5151.03

PHYC 5160.03A: Mathematical Methods of Physics.
Format: Lecture 3 hours
Prerequisite: MATH 3110.03/3120.03 or permission of instructor

PHYC 5170.03B: Topics in Mathematical Physics.
Format: Lecture 3 hours
Prerequisite: PHYC 5160.03, or permission of instructor

PHYC 5180.03A or B: Nuclear and Particle Physics.
Format: Lecture 3 hours
Prerequisite: PHYC 3140.03 or permission of instructor

PHYC 5220.03A: Microcomputer Based Instrumentation.
Format: Lecture 2 hours, lab 3 hours
Prerequisite: PHYC 3810.03 or permission of instructor, this class is not given every year

PHYC 5230.03A or B: Introduction to Solid State Physics.
Format: Lecture 3 hours
Prerequisite: PHYC 3140.03 or permission of instructor

PHYC 5311.03A/5312.03B: Fluid Dynamics I/II.
Format: Lecture 3 hours
Cross-listing: OCEA 5311.03/5312.03

PHYC 5411.03A/5412.03B: Dynamic Meteorology I/II.
Format: Lecture 3 hours
Prerequisite: Permission of instructor
Cross-listing: OCEA 5411.03/5412.03

PHYC 5460.03A or B: Optics.
Format: Lecture 3 hours
Prerequisite: PHYC 3440.03 or permission of instructor

PHYC 5480.03A or B: Applied Group Theory.
Format: Lecture 3 hours Offered when there is sufficient demand

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PHYC 5500.03A/5510.03B: Atmospheric Physics I/II

Format: Lecture 3 hours
Prerequisite: permission of instructor
Cross-listing: OCEA 5500.03/5510.03

PHYC 5520.03A: Introduction to Meteorology.

Format: Lecture 3 hours
Prerequisite: Permission of instructor
Cross-listing: OCEA 5520.03.

PHYC 5530.03B: Introduction to Radiation and Climate.

Format: Lecture 3 hours
Prerequisite: permission of instructor, Cross listed with OCEA 5530.03

PHYC 5540.03A/5550.03B: Synoptic Meteorology I/II.

Format: Lecture 3 hours, tutorial-laboratory 3 hours
Prerequisite: At least 1 third year level physics

PHYC 5560.03A or B: Mesoscale Dynamics.

Cross-listing: with OCEA 5560.03

PHYC 5650.03A or B: Relativity and Cosmology.

Format: Lecture 3 hours
Prerequisite: PHYC 2000.03/2010.03, MATH 3050.06, or permission of instructor

PHYC 5660.03A or B: Topics in Cosmology.

Format: Lecture 3 hours
Prerequisite: PHYC 2000.03/2010.03, MATH 3050.06, or permission of instructor
Cross-listing: MATH 5410.03

PHYC 6120.06R: Quantum Theory.

Format: Lecture 3 hours
Prerequisite: PHYC 4151.03, 4152.03 or equivalent

PHYC 6141.03A/6142.03B: Advanced Quantum Theory I/II.

Format: Lecture 3 hours
Prerequisite: PHYC 6120.06, which may be taken concurrently

PHYC 6201.03A/6202.03B: Solid State Physics I/II.

Format: Lecture 3 hours
Prerequisite: PHYC 5230.03, 4151.03

PHYC 6241.03A/6242.03B: Advanced Solid State Physics I/II.

PHYC 6261.03A/6262.03B: Statistical Mechanics I/II.

Format: Lecture 3 hours
Prerequisite: PHYC 3210.03, 4151.03 or their equivalent

PHYC 6300.06R: Electromagnetism.

Format: Lecture 3 hours

PHYC 6320.03R: Advanced Problems (MSc students)

PHYC 6330.03R: Advanced Problems (PhD students)

The following 6000 level classes are more specialized than the above and consequently are not offered as frequently.

PHYC 6270.03A: Order-Disorder Phenomena and Phase Transitions.

Prerequisite: A basic knowledge of quantum statistical mechanics is assumed

PHYC 6271.03B: Field Theoretical Methods in Critical Phenomena

PHYC 6280.03A or B: Superconductivity.

Format: Lecture 2 hours

PHYC 6291.03A: Surface Science I

PHYC 6292.03B: Surface Science II

PHYC 6350.03B: Selected Topics in Physical Metallurgy.

Format: Lecture 2 hours

PHYC 6421.03A: Radiological Physics

PHYC 6422.03B: Radiation Therapy Physics

PHYC 6500.03R: Magnetism:

Format: Lecture 1½ hours

PHYC 6545.03A or B: Boundary Layer Meteorology.

Cross-listing: OCEA 5545.03

PHYC 6550.03A or B: Radar and Satellite Meteorology.

Cross-listing: with OCEA 5555.03

PHYC 6570.03A: Light Scattering and Radiative Transfer.

Cross-listing: OCEA 5570.03

PHYC 6575.03A or B: Topics in Atmospheric Radiation.

Cross-listing: OCEA 5575.03

PHYC 6580.03A or B: Cloud Physics.

Cross-listing: OCEA 5580.03

PHYC 6600.03A or B: Topics in Physics

PHYC 6710.03A or B: Introduction to Disordered Materials

PHYC 6970.06R: Selected Topics in Particle Physics.

Format: Lecture 2 hours

PHYC 9000.00 MSc Thesis

PHYC 9530.00 PhD Thesis

Physiology and Biophysics

Location: Sir Charles Tupper Building,
3rd Floor, Halifax, N.S. B3H
4H7

Telephone: (902) 494-3517

Fax: (902) 494-1685

Head of Department

A.S. French

Professors Emeriti

E. Issekutz, Jr., MD (Szeged), DSc (Budapest)

E. MacLeod, MD (Dal)

Professors

J.A. Armour, BSc (McG), MD (Western), PhD (Loyola)

R.P. Croll, BSc (Tufts), PhD (McG)

A.S. French, MSc, PhD (Essex)

D. Guernsey, PhD (Hawaii), Major appointment in Pathology

B.M. Horacek, MSc(Eng) (Prague), PhD (Dal), Graduate Studies Co-ordinator

M. Horackova, MSc, PhD (Prague)

G.A. Klassen, MD (UBC), FRCP(C), major appointment Dept. of Medicine

T.F. McDonald, BSc (Alta), PhD (Dal), DIC (Imperial College)

W.H. Moger, BS (Cornell), PhD (Calif)

M.R. Oulton, BA (Acadia), PhD (Dal), major appointment, Obstetrics/Gynecology

D. Rasmussen, BA (Colo C), MA, PhD (Dal)

W.G. Tatton, BSc, MD (Alta), PhD (Toronto)

M. Wilkinson, BSc (Southampton), PhD (Lond), major appointment in Obstetrics/Gynecology

H. Wolf, Dipl Ing (Munich), PhD (Dal)

A.Y.K. Wong, MSc, PhD (Dal)

Associate Professors

R.E. Brown, BSc (Victoria), MA, PhD (Dal), major appointment in Psychology

J.D. Dudar, MSc (Alta), PhD (Dal)

A. Fine, AB (Harvard), VMD, PhD (Penn)

C.L. Kozey, BPE (UNB), MSc (Waterloo), PhD (Dal)

N. Morgunov, BSc, MSc, PhD (Tor)

M.G. Murphy, MSc, PhD (Dal)

P.R. Murphy, MSc, PhD (Dal)

D. Pelzer, Dr Med (Heidelberg), Priv-Doz in Physiology (Hamburg)

G. Stroink, PhD (McG), Major appointment, Dept. of Physics

Assistant Professors

B. Chauhan, PhD (Wales), Major appointment, Department of Medicine

D. Hirsch, MD (Dal), Major appointment, Department of Medicine

D.E. Johnstone, B.Sc, MDCM (McG), FRCP(C), major appointment Department of Medicine

A. Kholopov, MSc (Moscow State) PhD (USSR Acad of Sci)

K. Landymore, BSc, MD, PhD (Dal), major appointment Obstetrics/Gynecology

S.M. Martin, BA (MSVU), MSc (Alta), PhD (Calgary), major appointment in Biology, Mount Saint Vincent University (Professor and Chair)

S. Pelzer, BSc, MSc, PhD (Freiburg)

R. Rittmaster, MD (Tufts Med Sch), major appointment Dept of Medicine

Information on research interests in the Department and openings for graduate and post-PhD or post-MD study should be requested from the Graduate Coordinator of the Department.

Admission Requirements

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies.

The following constitutes the minimum entrance requirements for the graduate programme in Physiology and Biophysics:

- a) An average mark of B+, with no mark below B- in the following basic undergraduate courses or their equivalent:
 - MATH 1000.03/1010.03 (differential and integral calculus)
 - PHYC 1100.06 (using differential calculus)
 - CHEM 1010.06 (general chemistry)
 - STAT 1060.03/1070.03 (basic statistics for scientists)
 - BIOL 1000.06 (general biology)
 - Expository English (essay writing class)
- b) A minimum average mark of A- over the last two years of the student's undergraduate programme.

Unless exempted, applicants must also provide the Department with an official copy of the results of the Graduate Record Examination General (Aptitude) Test and one Subject (Advanced) Test.

MSc Degree Programme

For the minimum time required to complete this programme, see Section 4. Students should, however, expect to spend two years working toward the MSc.

Students who have not completed upper level classes in human physiology with at least a grade of B- will be required to complete PHYL 4403.06: Human Physiology. Students are also required to take Cellular and Molecular Physiology 5502.06, Graduate Seminar 5517.03 and two half courses, one of which must be from the classes listed below.

A research thesis which constitutes two credits is required.

PhD Degree Programme

For minimum time required to complete this programme, see Section 4.

Selected classes of this or other departments may be required.

A preliminary examination in the field of thesis research is required.

Research and the preparation and defense of a thesis are required.

A candidate must demonstrate the ability to carry out research of high quality leading to an advance in knowledge of physiology and biophysics.

PhD Programme in Physiology and Biophysics/Neuroscience

Physiology and Biophysics also offers a PhD in Physiology and Biophysics/Neuroscience through the Interdisciplinary Neuroscience Programme.

MD/PhD Combined Programme

For information on the combined MD/PhD programme Interdisciplinary and Joint Programmes (page 54)

Classes Offered

Physiology

PHYL 4403.06R: Human Physiology. N. Morgunov (Cross-listed with Biomedical Engineering at TUNS, BME6250)

PHYL 5459.03B: Activity of Excitable Cells and Tissues. A. Wong (offered every second year, next offered in 1994/95. Cross-listed with Biomedical Engineering at TUNS)

PHYL 5494.03B: Synaptic Transmitters. M. Wilkinson (offered every second year, next offered in 1995/96)

PHYL 5502.06R: Cellular and Molecular Physiology. M. Wilkinson (offered every year)

PHYL 5505.03A: Lab Animal Medicine: Comparative Physiology: S. Craig (offered every second year, next offered in 1994/95)

PHYL 5508.03R/5509.03R/5510.03R: Directed Reading in Physiology and Biophysics. Staff

PHYL 5511.03B: Neurophysiology. A. Fine (offered every second year, next offered in 1994/95)

PHYL 5512.03B: Physiology and Biophysics of the Heart and Circulation. D. Armour (offered every second year, or on demand)

PHYL 5513.03A: Endocrine Physiology. W. Moger (offered every second year, next offered in 1994/95)

PHYL 5514.03A: Reproductive Physiology. M. Wilkinson (offered every second year, next offered in 1995/96)

PHYL 5517.03R: Physiology and Biophysics Graduate Seminar. Graduate Co-ordinator

PHYL 5608.06R/5609.06R/5610.06R: Directed Reading Graduate Seminar. Staff

PHYL 9000.00 MSc Thesis

PHYL 9530.00 PhD Thesis

Biophysics

The following classes are given by the Biomedical Engineering Institute at the Technical University of Nova Scotia.

BIOP 5900.03A: Biomedical Engineering I

BIOP 5910.03B: Biomedical Engineering II

BIOP 5930.03A: Digital Signal Processing I.

BIOP 5940.03B: Digital Signal Processing II

BIOP 5950.03A: Biomechanics I

BIOP 5960.03B: Biomechanics II

BIOP 5970.03A or B: Directed Studies in Electrical Engineering

Neuroscience

The following classes are offered through the interdisciplinary neuroscience programme.

NESC 6000.03R: Selected Topics in Neuroscience. R. Croll (offered yearly)

Physiotherapy

Location: Forrest Building, Dalhousie University, Halifax, NS B3H 3J5
Telephone: (902) 494-2524
Fax: (902) 494-1941

Director

L. Makrides, BPT (Sask), MSc (Ottawa), PhD (McM), MCSP

Graduate Coordinator

C. Kozey, BPE (UNB), MSc (Waterloo), PhD (Dal)

Professors

D. Egan, DPT (England), MSc (UWO), PhD (Curtin)

L. Makrides, BPT (Sask), MSc (Ottawa), PhD (McM), MCSP

G.I. Turnbull, MSCP, DipTP, BPT (Man), MA (Dal), PhD (Rhodes)

J.M. Walker, Certs Phys. Ther. (NZ), DipTP, BPT, MA (Man), PhD (McM)

Associate Professor

C.L. Kozey, BPE (UNB), MSc (Waterloo), PhD (Dal)

Assistant Professors

M. Earl, BScPT (UWO), BSc, MSc, PhD (Waterloo)

A. Fenety, BSc (UNB), DPT (Manitoba), MSc (Alberta), PhD (Dal)

Introduction

A programme of study leading to a Master of Science in Physiotherapy is offered through the School of Physiotherapy. In addition to the requirements for the Faculty of Graduate Studies, applicants must be licensed physiotherapists with a university degree and a B average or higher in four Physiotherapy undergraduate courses taken at the university level. Applicants must include a statement of goals and graduate research area with their application to the programme. Successful applicants will be chosen by the School's Graduate Committee. Foreign applicants must meet the English language competency requirements as outlined by Graduate Studies.

Application

Applicants must

- a) complete the application form for admission to the Faculty of Graduate Studies
- b) include a one page statement of experience, goals and objectives with the application
- c) meet the English language competency requirements as outlined by Graduate Studies.
- d) include two academic references. A work reference from someone who may comment objectively on your goals may be included in addition to the two required academic references.

In addition applicants are strongly advised to

- a) include a copy of a recent paper authored in the area in which the applicant is planning to pursue studies (if available)
- b) submit a recent GRE score

Program Requirements

Students registered in the programme will be expected to obtain a minimum of five (5) credits as follows:

Thesis: 2 credits
 Coursework: 3 credits

Course Work

Three half credit classes are required. The other three half credit classes will be selected based on the individual programme of study approved by the Supervisory Committee.

Residency

It is expected that upon completion of the coursework an additional year will be required to complete the thesis. Students are expected to spend at least one year full-time in the program.

Scholarship Deadlines

Applicants who wish to be considered for scholarships are strongly urged to have their applications completed by:

January 1	for University Scholarships
March 1	for School of Physiotherapy Scholarships

A limited amount of money is available from the School of Physiotherapy and this will be distributed on a competitive basis. Applicants are encouraged to seek external funding. Further information for sources of funding may be obtained from the Graduate Studies office.

In order to qualify for scholarship consideration a student is expected to hold a first-class honours degree in an appropriate field and to enter a full-time graduate programme.

Application Inquiries

For more information regarding admission and program requirements, please write to the Graduate Coordinator, School of Physiotherapy, Dalhousie University, Halifax, NS, B3H 3J5.

Classes

An approved half credit class in Statistical Methods and/or Research Design (required).

PHYT 5002.03: Instrumentation and Measurement. This class is aimed at providing the student with the theoretical basis and practical experience associated with measurement techniques used in Physiotherapy Research. The content of the class will focus on the fundamentals of instrumentation and measurement of biomechanical and physiological measures. The objective of this class is to gain the necessary knowledge and skills for data acquisition, processing and interpretation of electrophysiological, kinematic and kinetic data through a lecture/lab and discussion format. Dr. C. Kozey (required)

PHYT 5010.03: Special Topics in Musculoskeletal II

PHYT 5030.03: Special Topics in Neurology I

PHYT 5070.03: Directed Studies.

PHYT 5080.03: Directed Studies.

Special Topics in Physiotherapy I, II, III .03

PHYT 5090.03: Foundations Seminar. This class will provide students with the opportunity to study the development of the profession of physiotherapy from ancient times to the present. Models of physiotherapy delivery will be evaluated and novel approaches formulated which will be relevant to emerging health care needs both in developed and Third World countries utilizing a framework of clinical care, education and research. Methods of using new technologies to enhance the time and cost efficiency of total physiotherapy care will be considered as will the influencing of health care policy formulation. Emphasized will be the delivery of physiotherapy to a variety of client populations in non-institutional contexts. Dr. G. Turnbull (required)

PHYT 9000.00: Thesis (required)

Political Science

Location: Arts & Administration Bldg, 3rd Floor, 6299 South Street, Halifax, N.S. B3H 4H6
 Telephone: (902) 494-2396
 Fax: (902) 494-3825

Chairperson of Department
 D.M. Cameron

Graduate Co-ordinator
 R. Boardman

Professors Emeriti

J.M. Beck, BA (Acadia), MA, PhD (Tor), LLD (Dal), FRSC
 E. Mann Borgese, DipMus (Zurich), LHD (MSVU)
 D. Braybrooke, BA (Harvard), MA, PhD (Cornell), FRSC
 J. G. Bayrs, BA (Tor), AM, PhD (Col), FRSC

Professors

P.C. Aucoin, BA (SMU), MA (Dal), PhD (Queen's), jointly with Public Administration
 H. Bakvis, BA (Queen's), MA, PhD (UBC), jointly with Public Administration
 R. Boardman, BSc, PhD (Lond)
 D.M. Cameron, BA (Queen's), MA, PhilM, PhD (Tor)
 D.W. Middlemiss, BA, MA, PhD (Tor)
 T.M. Shaw, BA (Sussex), MA (East Africa, Prin.), PhD (Princeton), Director, Centre for Foreign Policy Studies
 D.W. Stairs, BA (Dal), MA (Oxon), PhD (Tor), FRSC
 G.R. Winham, BA (Bowdoin), Dip Int Law (Manchester), PhD (N Car), FRSC, Eric Dennis Memorial Professor of Government and Political Science

Associate Professor

R.G. Finbow, BA (Dal), MA (York), MSc, PhD (Lond)
 J. Smith, BA (McM), MA, PhD (Dal)

Assistant Professors

D. Black, BA (Trent), MA, PhD (Dal)
 K. Fierlbeck, BA (Alta), MA (York), PhD (Cantab)
 F. Harvey, BA, MA, PhD (McG)

Admission Requirements

Applicants must satisfy the minimum requirements set by the Faculty of Graduate Studies.

Successful applicants for the MA programme will have an Honours BA in Political Science, or its equivalent, with first-class or high second-class standing (GPA of 3.30 or higher).

Admission decisions are based on academic transcripts, letters of reference, a sample of written work submitted by the applicant, and

the capacity of the Department to supervise a thesis in the applicant's proposed field of research.

Successful applicants for the PhD programme will have an MA in Political Science with first-class standing (GPA of 3.70 or higher). Admission decisions are based on the same considerations as apply to the MA programme, but PhD students are admitted only when a faculty member is prepared to supervise the applicant's programme, including the proposed thesis topic.

Applicants who do not meet all of the above requirements, but who have superior academic qualifications, may be considered for admission to the MA or PhD programmes, but may be required to satisfy additional requirements within the programme. All such requirements will be specified at the time of admission. This includes applicants without the Honours BA, who may apply for admission to a two-year MA programme, and applicants for the PhD who hold a Master's degree other than the MA in Political Science.

Applicants whose native language is not English must demonstrate a minimum TOEFL score of 600, or the equivalent score on a comparable test.

MA Degree Programme

The MA is a one-year (12 month) programme consisting of three full-credit classes (or the equivalent in half-credit classes) and a thesis. Classes include at least two of the core graduate seminars, other graduate classes (including directed reading classes and graduate classes in other departments), and not more than one credit of classes cross-listed as undergraduate/graduate (3000/5000).

The MA may be completed on a full-time or part-time basis.

PhD Degree Programme

The PhD programme requires two years of full-time residency, and can be completed in three to four years. The two principal requirements consist of comprehensive examinations in two fields (a major and minor field) and an original thesis. Course work will be required as appropriate to prepare the student for her or his comprehensive examinations. These examinations will include both written and oral components. Before proceeding to the thesis, a student must present and defend a thesis proposal. Also, reading competence in a second language, usually French, must be demonstrated before the student begins work on the thesis. The thesis is written under the direction of a committee comprising the supervisor and two other members, and may include qualified faculty members from other departments and other universities. The completed thesis is subject to a public, oral defence.

Classes Offered

Classes offered by the Department are organized into four fields, as follows:

- Canadian Politics
- Comparative Politics

- Political Theory
- International Relations and Foreign Policy

Each field contains classes offered as core graduate seminars, and classes cross-listed at the undergraduate/graduate level. The latter usually contain a majority of undergraduate students, and graduate students will be required to satisfy appropriately higher standards. In addition, directed reading classes may be arranged on an individual or small group basis with appropriate faculty members. This will often be particularly appropriate in areas closely related to a student's thesis research, in conjunction with the thesis supervisor.

Not all classes are offered each year. A more accurate timetable will be available in the spring of each year.

Canadian Government and Politics

Core Graduate Seminar:

POLI 5204.06R: Advanced Seminar in Canadian Politics. P. Aucoin and D. Cameron

Cross-listed Classes:

POLI 5205.03A or B: Canadian Political Thought. J. Smith

POLI 5206.03A or B: Constitutional Issues in Canadian Politics. J. Smith

POLI 5216.03A or B: Local and Regional Government. D. Cameron

POLI 5220.03A or B: Intergovernmental Relations in Canada. H. Bakvis

POLI 5224.03A or B: Canadian Political Parties. H. Bakvis

POLI 5228.03A or B: Interest Groups: Representation, Management and Function. H. Bakvis

POLI 5233.03A or B: Canadian Political Economy. R. Finbow

POLI 5235.03A or B: Regional Political Economy in Canada. R. Finbow

POLI 5240.03A: Policy Formation in Canada. P. Brown

POLI 5241.03B: Introduction to Policy Analysis. TBA

Comparative Politics

Core Graduate Seminars:

POLI 5301.03A or B: Comparative Theory. R. Finbow

POLI 5340.03A or B: Approaches to Development. T. Shaw

Cross-listed Classes:

POLI 5302.03A or B: Comparative Development Administration. D. Black

POLI 5304.03A or B: Comparative Federalism. H. Bakvis

POLI 5311.03A or B: Sport and Politics. D. Black

POLI 5315.03A or B: African Politics. D. Black

POLI 5379.06R: U.S. Constitution, Government, and Politics. J. Smith

Political Theory and Methodology

Core Graduate Seminar:

POLI 5400.03A or B: Advanced Seminar in Philosophy. K. Fierbeck

Cross-listed Classes:

POLI 5431.03A or B: The Political Imagination in Literature. TBA

POLI 5445.03A or B: Entitlement and Property. K. Fierbeck

POLI 5475.03A or B: Democratic Theory. K. Fierbeck

POLI 5479.03A or B: Classical Liberalism and Democracy. TBA

POLI 5496.03A or B: Philosophy of the Social Science. TBA

International Relations & Foreign Policy

Core Graduate Seminar:

POLI 5520.06R: Theories of International Relations. G. Winham

Cross-listed Classes:

POLI 5525.03A or B: Comparative Foreign Policy Simulation. F. Harvey

POLI 5531.03A or B: The United Nations in World Politics. TBA

POLI 5535.03A or B: The New International Division of Labour. T. Shaw

POLI 5537.06R: Management and Conservation of Marine Resources. E.M. Borgese. (summer class only)

POLI 5540.03A or B: Foreign Policies in the Third World. T. Shaw

POLI 5544.03A or B: Political Economy of Southern Africa. T. Shaw

POLI 5550.03A or B: Japanese Foreign Policy. R. Boardman

POLI 5570.06R: Canadian Foreign Policy. D. Stairs

POLI 5571.06R: Strategy and Canadian Defence Policy. D. Middlemiss

POLI 5574.03A or B: American Foreign Policy. G. Winham

POLI 5575.03A or B: Nuclear Weapons and Arms Control in World Politics. D. Middlemiss

POLI 5581.03A or B: Diplomacy and Negotiation. G. Winham

POLI 5585.03A or B: Politics of the Environment. R. Boardman

POLI 5589.03A or B: The Politics of the Sea. E.M. Borgese

POLI 5591.03A or B: Comparative Maritime Strategy. P. Hayden, F. Crickard

POLI 5596.06R: Theories of War and Peace. F. Harvey

POLI 5636.03A or B: Nationalism and Statecraft. D. Stairs

Directed Reading Classes

Graduate students taking directed reading classes register under one of the following designations, depending on whether the class extends for the first term, the second term, or the full academic year:

POLI 5601.06R: Readings in Political Science

POLI 5602.03A: Readings in Political Science

POLI 5603.03B: Readings in Political Science

Thesis

Students register for the thesis under the appropriate designation, as follows:

POLI 9000.00 MA Thesis

POLI 9530.00 PhD Thesis

Psychology

Location: Life Sciences Centre, 1355
Oxford Street, Halifax, N.S.
B3H 4J1
Telephone: (902) 494-3417
Fax: (902) 494-6585

Chairperson of Department

R.E. Brown

Professor Emeritus

W.K. Honig, BA (Swarthmore), PhD (Duke)

Professors

R.E. Brown, BSc (Victoria), MA, PhD (Dal)
P.J. Dunham, BA (DePauw), MA, PhD
(Missouri)
J.C. Fentress, BA (Amherst), PhD (Cantab)
E. Klein, BA (SUNY), MA, PhD (Oregon),
Graduate Programme Coordinator
V.M. LoLordo, AB (Brown), PhD (Penn)
P. McGrath, BA, MA (Sask), PhD (Queen's),
Clinical Programme Coordinator
I.A. Meinertzhagen, BSc (Aberdeen), PhD (St.
Andrews)
D.E. Mitchell, BSc, MAppSc (Melb), PhD
(Berkeley)
S. Nakajima, BA (Chiba), MA (Wash), PhD
(McG)
D.P. Phillips, BSc, PhD (Monash)
H. Robertson, MSc (Western), PhD (Cantab),
major appointment in Pharmacology
B. Rusak, BA (Tor), PhD (Berkeley)
S. Shaw, BSc (Lond), PhD (St. Andrews)
W.G. Tatton, BSc, MD (Alta), PhD (Tor), Killam
Chair in Neuroscience
M.G. Yoon, BS (Seoul), PhD (Berkeley)

Associate Professors

J. Barresi, BS (Brown), MA (S. Calif), PhD (Wisc)
J.W. Clark, BA, MA (McG), PhD (Queen's)
J.E. Connolly, AB (Holy Cross), MA (Sask), PhD
(Lond)
R. Croll, BSc (Tufts), PhD (McG), major
appointment in Physiology/Biophysics
B. Farhard, BA, MA, PhD (Tor)
G.A. Finley, BSc, MD (Dal), major appointment
in Anaesthesiology
R. Lyons, BA (Dal), MEd (St.FX), PhD (Oregon),
major appointment in the School of
Recreation, Physical and Health Education
J. McGlone, BA, MA, PhD (Western)
B.R. Moore, AB (Emory), PhD (Stanford)
C. Moore, BA, PhD (Cantab), Undergraduate
Programme Coordinator
M. Ozier, BA, MA, PhD (Tor)
K. Semba, BEd, MA (Tokyo), PhD (Rutgers),
major appointment in Anatomy and
Neurobiology
M. Sullivan, MA, PhD (Concordia)

Assistant Professors

S. Adamo, BA (Tor), PhD (McG)
K. Davidson, BA (Queen's), MAsc, PhD
(Waterloo)
P. McMullen, MSc (Tor), PhD (Waterloo)

D. Santor, BA (Western), PhD (McG)
S. Stewart, BSc (Dal), PhD (McG)

Senior Instructor

R.S. Hoffman, BSc (Col Coll), MA (Dal)

Instructor

J. Leary, BSc (Dal), MSc (MUN), PhD (Adelaide)

Honourary Adjunct Professors

J. Backman, MA, PhD (Carleton), Psych/IWK
C. Bilsbury, BSc, PhD (Liverpool), Psych/Camp
Hill
S.E. Bryson, BA (Guelph), PhD (McG),
Psych/York
J.M. Byrne, MA, PhD (Kansas), Psych/IWK
V.M. Catano, BSc (Drexel), MSc, PhD (Lehigh),
Psych/Saint Mary's
H. Chipuer, BA (Sask), MA (Tor), PhD (Penn),
Psych/Saint Mary's
A.J. Cohen, BA (McG), MA, PhD (Queen's),
Psych/UPHI
C. Ellsworth, MA, PhD (Queen's), Psych/IWK
G. Eakes, BA, PhD (Berkeley), Psych/VG
J. Flak, BSc, MA, PhD (Western), Psych/Camp
Hill
C. Harvey-Clark, BSc (Victoria), DVM (Western
College of Vet. Medicine), Dalhousie Director
Animal Care
J. Howes, BA (Dal), MA, PhD (Western),
Psych/Camp Hill
M. Leiter, BA (Duke), MA (Vanderbilt), PhD
(Oregon), Psych/Acadia
G.W. MacDonald, BA (StFX), MA, PhD
(Windsor), Psych/IWK
C.C. Mate-Kole, BSc (Hons) (Brunel), PhD
(Leicester)
P.A. McCormick, BSc (Hons) (Victoria), MA,
PhD (Waterloo), Psych/St.FX
P. McLeod, BSc (Mt.A), MSc (MUN), PhD (Dal),
Psych/Acadia
J.A. McNulty, BA, MA, PhD (Tor)
P. O'Neill, MSc, PhD (Yale), Psych/Acadia
G. Pretty, BSc, MSc (Acadia), PhD (Western),
Psych/Saint Mary's
K.E. Renner, BS (Penn), MA, PhD (Northwest),
Psych/Carleton
P. Ritvo, MA (Calif State), PhD (Calif Sch Prof
Psych), Psychology/Psychiatry/Toronto
Hospital
R.S. Rodger, MA (Edin), PhD (Queen's, Belfast)
M Schwartz, BSc (McG), MA, PhD (Waterloo),
Psych/VG
D. Symons, BSc (McM), MA, PhD (Western),
Psych/Acadia
S. Symons, BSc (Dal), MA, PhD (Western),
Psych/Acadia
T.M. Vallis, BSc (Dal), MA, PhD (Western),
Psych/Camp Hill

Honorary Research Associate

B. Doane, BA (Princeton), MD, MA (Dal), PhD
(McG), Psych/VG

Postdoctoral Fellows

R. Barnet, PhD (State Univ. of NY at
Binghamton), Killam Postdoctoral Fellow
C. Beaver, PhD (Dal)
D. Cantoni, PhD (Univ. Lausanne)
B. Chen, PhD (Okayama)

G. Scott, PhD (Nottingham)
A. Stuart, PhD (Dal)
X.-J. Sun, PhD (Univ. de Paris, Sud)

Research Associates

K.G. Bina, PhD (Dal)
K. Briand, PhD (Dal)
M. Guido, PhD (Univ Nac Cordoba)
V. Kumar, PhD (Banaras Hindu Univ)
A. Frohlich, Diplom, Dr. rer. Nat. (Freie
Universitat Berlin), MSVU
E. Pyza, PhD (Jagiellonian Univ), Inst. of
Zoology, Jagiellonian Univ.
S.-W. Ying, MSc (Tianjin Medical Col)

Admission Requirements

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies.

Degree Programmes

The Department of Psychology offers graduate training leading to MSc and PhD degrees in Psychology, MSc and PhD degrees in Psychology/Neuroscience, and to a PhD degree in Clinical Psychology. Master's level students in Psychology and Psychology/Neuroscience are expected to advance into the corresponding PhD programmes. The Department does not have a "terminal" Master's programme nor does it offer a Master's degree in Clinical Psychology.

Psychology

The graduate programmes in Psychology emphasize training for research. They are best described as "apprenticeship" programmes in which students work closely with a faculty member who has agreed to supervise the student's research. Compared with many other graduate programmes, the Department places less emphasis on course work and greater emphasis on research, scholarship and independent thinking.

MSc Degree Programme in Psychology

In addition to the Master's thesis (PSYO 9000.00), which is the major requirement of this programme, the Master's student must complete the following classes:

- PSYO 7500.06R: Proseminar: Methods of Psychological Inquiry
- PSYO 6001.03A: Fundamentals of Statistics and Experimental Design
- At least one other full credit of elective seminar(s)

During each residency year Master's students must register for and attend the weekly colloquium series (PSYO 8000.06R) and are required to do some teaching in the undergraduate programme. The minimum amount of teaching is the equivalent of no more than 10 hours/week for one term. This consists of working as a laboratory instructor, seminar leader, or teaching assistant.

PhD Programme in Psychology

Students are expected to conduct research leading to empirical, methodological and/or theoretical advances in their field of study, some or all of which will be included in their dissertation and defended publicly. In addition to the dissertation (PSYO 9530.00), which is the major requirement of this programme, students in the PhD programme must complete the following classes (unless they were completed as part of the Master's programme):

- PSYO 7500.06R: Proseminar: Methods of Psychological Inquiry
- PSYO 6001.03A: Fundamentals of Statistics and Experimental Design, and at least one other 1/2 credit class in the quantitative/analytic area
- PSYO 7100.03A: Seminar in Teaching Effectiveness
- 1 full credit of elective (with approval, this may be taken outside the department)

During each year in the PhD programme students are required to register for Dissertation Research (PSYO 9530.00) and are encouraged to enrol in graduate seminars. During each residency year students must register for and attend the weekly colloquium series (PSYO 8000.06) and do some teaching in the undergraduate programme (see Master's programme description). At least one year before submission of the dissertation students must also satisfy the comprehensive examination requirement. This requirement, which is administered by an examination committee of between three and five faculty members, entails completing at least three comprehensive 'projects' that are not directly related to the student's dissertation research.

Psychology/Neuroscience

The graduate programmes in Psychology/Neuroscience are coordinated by the Psychology Department and an interdisciplinary Neuroscience Programme Committee with representation from the Departments of Anatomy, Biochemistry, Pharmacology, Physiology and Biophysics, and Psychology (see Neuroscience calendar entry). They are also designed as "apprenticeship" programmes in which students work closely with a Neuroscience faculty member who has agreed to supervise their research. Emphasis is placed on interdisciplinary research, scholarship and independent thinking rather than on course work.

MSc Degree Programme in Psychology/Neuroscience

In addition to the Master's thesis (PSYO 9000.00), which is the major requirement of this programme, the Master's student must complete the following classes:

- PSYO 7500.06R: Proseminar: Methods of Psychological Inquiry
- One full credit of Neuroscience (the core curriculum)
- Students are expected to take at least 1/2 credit of class work in the quantitative/analytical area

During each residency year Master's students must register for and attend a weekly colloquium series offered by one of the participating departments (such as PSYO 8000.06) and are required to do some teaching in the undergraduate programme. The minimum amount of teaching is the equivalent of no more than 10 hours/week for one term. This consists of working as a laboratory instructor, seminar leader, or teaching assistant. Master's students must register for PSYO 9000.00 (Thesis). The Neuroscience and Psychology Graduate Programme Committees, in collaboration with the student and supervisor, will assess the needs of the student and determine any other requirements beyond the minimum outlined above.

PhD Degree Programme in Psychology/Neuroscience

Students are expected to conduct research leading to empirical, methodological and/or theoretical advances in their field of study, some or all of which will be included in their dissertation and defended publicly. In addition to the dissertation (PSYO 9530.00), which is the major requirement of this programme, students in the PhD programme must complete the following classes (unless they were completed as part of the Master's programme):

- PSYO 7500.06R: Proseminar: Methods of Psychological Inquiry
- PSYO 7100.03A: Seminar in Teaching Effectiveness

During each year in the PhD programme students are required to register for Dissertation Research (PSYO 9530.00) and are encouraged to enrol in graduate Neuroscience and/or Psychology seminars. During each residency year students must register for and attend a weekly colloquium series offered by one of the participating departments (such as PSYO 8000.06) and do some teaching in the undergraduate programme (see Masters programme description). The Neuroscience and Psychology Graduate Programme Committees, in collaboration with the student and supervisor, will assess the needs of each student and determine any other requirements beyond the minimum outlined above. At least one year before submission of their dissertation students must also satisfy the comprehensive examination requirement. This requirement, which is administered by an examination committee of between three and five faculty members, entails completing at least three comprehensive 'projects' that are not directly related to the student's dissertation research.

PhD in Clinical Psychology

The PhD programme in Clinical Psychology is cooperatively administered by the Psychology Department and the Clinical Programme Committee with representation from Acadia University, Dalhousie University, Mount Saint Vincent University, Saint Mary's University and professional psychologists from the teaching hospitals. It is a structured five-year programme which follows the

"scientist-practitioner" model. It considers clinical psychology as part of the science of psychology and therefore emphasizes research.

During the first four years of the Clinical Psychology programme students complete required and elective classes, conduct supervised and thesis research, and gain clinical experience through field placements (PSYO 8333.06, a minimum of 600 hours are required). Students are involved in research from the outset, and are expected to conduct research leading to empirical, methodological and/or theoretical advances in their field of study, some or all of which will be included in their dissertation and defended publicly. In the fifth year, students are placed in a full-year clinical internship. Upon admission, students are assigned to a faculty member who will supervise their thesis and other research projects. The Department does not offer a Master's degree in the Clinical PhD programme, but students entering with a Master's degree in Psychology may receive advanced standing.

The following classes are required:

- PSYO 6001.03A: Fundamentals of Statistics and Experimental Design. At least one other ½ credit class in the quantitative/analytic area.
- PSYO 6201.03A or B: Psychological Assessment: Child
- PSYO 6202.03A or B: Psychological Assessment: Adult
- PSYO 6205.06R: Interviewing and Intervention
- PSYO 6215.06R: Psychopathology and Treatment
- PSYO 6220.06R: Seminar: Advanced Clinical Intervention
- PSYO 6800.03A or B: Clinical Neuropsychology
- PSYO 7100.03A or B: Seminar in Teaching Effectiveness
- PSYO 7500.06R: Proseminar: Methods of Psychological Inquiry
- PSYO 8005.03A or B: Research Seminar
- PSYO 8201.03A or B: Ethics and Professional Decision-making
- at least two credits of elective seminars must also be completed.

Students in year one of the programme are required to register for PSYO 5000.06 (Supervised Research). During each subsequent year in the PhD programme students are required to register for Dissertation Research (PSYO 9530.00). During each residency year students must register for and attend the weekly colloquium series (PSYO 8000.06), Clinical Rounds/Case Conference (PSYO 8010.06) and do some teaching in the undergraduate programme. The minimum amount of teaching is no more than 10 hours/week for one term. This consists of working as a laboratory instructor, seminar leader, or teaching assistant. At least one year before submission of their dissertation students must also satisfy the comprehensive examination requirement. This requirement, which is administered by an examination committee of between three and five faculty

members, entails completing at least three comprehensive 'projects' that are not directly related to the student's dissertation research.

Classes Offered

Required classes are offered on a regular basis. Other classes are offered, and seminar topics chosen, on the basis of faculty interests and student needs.

PSYO 5000.06R: Research Assignment. Staff

PSYO 5001.03A: Independent Study. Staff

PSYO 5002.03B: Independent Study. Staff

PSYO 6001.03A or B: Fundamentals of Statistics and Experimental Design. M. Sullivan

PSYO 6003.03A or B: Multivariate Methods. D. Santor

PSYO 6040.06R: Animal Learning. V.M. LoLordo

PSYO 6050.06R: Perception. D.E. Mitchell

PSYO 6051.03A or B: Neural Basis of Perception. D. Phillips, D.E. Mitchell

PSYO 6060.03A or B: Biological Basis of Mental Illness. J. Connolly, B. Rusak

PSYO 6071.03A or B: Physiological Psychology. Staff

PSYO 6081.03A or B: Topics in Personality and Social Psychology. J. Barresi

PSYO 6090.06R: Biosocial Issues in Development. P. Dunham

PSYO 6091.03A or B: Topics in Child Development. P. Dunham, C. Moore

PSYO 6100.03A or B: Instrumentation and Computers in Psychology. R. Hoffman

PSYO 6130.06R: Cognitive Psychology. R. Klein

PSYO 6160.03A or B: Comparative Psychology. R. Brown, J. Fentress, S. Adamo

PSYO 6201.03A or B: Psychological Assessment: Child. Staff

PSYO 6202.03A or B: Psychological Assessment: Adult. S. Stewart

PSYO 6205.06R: Interviewing and Intervention. Staff

PSYO 6211.03A or B: Topics in Assessments. J. Connolly

PSYO 6215.06R: Psychopathology and Treatment. J. Connolly, P. McGrath

PSYO 6220.06R: Advanced Clinical Intervention. P. McGrath

PSYO 6230.03A or B: Psychology of Reading. R. Klein

PSYO 6240.03A or B: Topics in Animal Learning. V.M. LoLordo

PSYO 6270.03A or B: Comparative Neurobiology. I.A. Meinertzhagen, S.R. Shaw

PSYO 6300.06R: Cognitive Neuropsychology. R. Klein

PSYO 6313.03A or B: Topics in Cognitive Psychology. R. Klein, P. McMullen

PSYO 6370.03A or B: Neuroscience Laboratory. M.G. Yoon

PSYO 6410.03A or B: Topics in Therapeutic Intervention. Staff

PSYO 6420.03A or B: Topics in Health Psychology. Staff

PSYO 6470.03A or B: Developmental Neuroscience. I.A. Meinertzhagen, S.R. Shaw

PSYO 6580.06R: History of Psychology. J.W. Clark

PSYO 6800.03A or B: Clinical Neuropsychology. Staff

PSYO 6801.03A or B: Dissociative Disorders. R. Klein

PSYO 6802.03A or B: Topics in Schizophrenia. J. Connolly

PSYO 6803.03A or B: Topics in Psychopathology. M. Sullivan

PSYO 6804.03A or B: Topics in Neuropsychology. J. McGlone

PSYO 6810.03A or B: Topics in Clinical Research Methods. P. McGrath

PSYO 7100.03A or B: Seminar in Teaching Effectiveness. P. Dunham

PSYO 7500.06R Proseminar: Methods of Psychological Enquiry. R. Klein

PSYO 8000.06R: Psychology Colloquium. Staff

PSYO 8005.03A or B: Research Seminar.

PSYO 8010.06R: Clinical Rounds/Case Conference.

PSYO 8040.06R: Learning. V.M. LoLordo

PSYO 8050.06R: Perception. D. Mitchell

PSYO 8071.03A or B: Selected Topics in Physiological Psychology. Staff

PSYO 8081.03A or B: Topics in Personality and Social Psychology. J. Barresi

PSYO 8090.06R: Biosocial Processes in Development. P. Dunham

PSYO 8091.03A or B: Topics in Child Development. P. Dunham, C. Moore

PSYO 8100.03A or B: Methodology in Psychology. Staff

PSYO 8120.03A or B: Clinical Methods and Issues. Staff

PSYO 8130.06R: Human Learning/Information Processing. B. Earhard, R. Klein, P. McMullen

PSYO 8160.03A or B: Ethology. S. Adamo, R. Brown, J. Fentress

PSYO 8201.03A or B: Ethics and Professional Decision Making. Staff

PSYO 8211.03A or B: Topics in Assessments. J. Connolly

PSYO 8240.03A or B: Topics in Animal Learning. V. LoLordo

PSYO 8313.03A or B: Topics in Cognitive Psychology. R. Klein, P. McMullen

PSYO 8333.06R: Field Placements.

PSYO 8410.03A or B: Topics in Therapeutic Intervention. Staff

PSYO 8420.03A or B: Topics in Health Psychology. Staff

PSYO 8801.03A or B: Topics in Clinical Research Methods. P. McGrath

PSYO 8802.03A or B: Topics in Schizophrenia. J. Connolly

PSYO 8803.03A or B: Topics in Psychopathology. M. Sullivan

PSYO 8804.03A or B: Topics in Neuropsychology. J. McGlone

PSYO 8820.03A or B: Topics in Community Psychology. Staff

PSYO 9000.00R: MSc Thesis

PSYO 9100.00R: Pre-Doctoral Internship. P. McGrath, Coordinator of Clinical Programme

PSYO 9530.00R: PhD Thesis

Public Administration

Location: 6152 Coburg Road, Halifax, N.S.
B3H 3J5
Telephone: (902) 494-3742
Fax: (902) 494-7023

Acting Director of School
A.M. Cassin

Associate Director and Graduate Co-ordinator
F.K. Siddiq

Professors

P. Aucoin, BA (SMU), MA (Dal), PhD (Queen's), jointly with Political Science
H. Bakvis, BA (Qu), MA (UBC), PhD (UBC), jointly with Political Science
M.P. Brown, BA (MtA), MA (Dal), PhD (Tor)
J.D. McNiven, MSc, PhD (Michigan), jointly with Business Administration
D.H. Poel, BA (Calvin), MA (W Mich), PhD (Iowa)

Associate Professor

F.K. Siddiq, BA, MA (Dhaka), PhD (Dal)

Assistant Professor

A. M. Cassin, BA (Man), MA (UBC), PhD, (Tor)

Honorary Adjunct Professors

M. Durler-Copp, BA, MA, PhD (McG)
E. Farjoy, BSc (Hons) (UNB)
A. O'Brien, BSc, LLD (Dal)
A.P. Pross, BA, MA (Queen's), PhD (Tor)
T. Regan, BA (Tor), MA, PhD (Duke) (Sociology, Acadia University)

Special Lecturers

C. McQueen, BSc (Tor), MA (Queen's), MPA (Dal)
R. Carroll, BBA, BEd (St.FX), MBA (Dal), CGA

Students seeking further information or help in planning courses of study in the School of Public Administration should address themselves to:

Graduate Co-ordinator
School of Public Administration
6152 Coburg Road
Halifax, Nova Scotia B3H 3J5
Tel: (902) 494-3742
Fax: (902) 494-7023

Degree Programmes

The graduate programmes of the School are designed to provide the professional education essential to a career in modern public service. They are offered to students who either are preparing for initial employment or are returning to university with work experience. The School's location in Dalhousie's Faculty of Management allows students to develop an

MPA programme that links public administration to business, the environment and the information sciences.

The programmes are professional in that they equip students with both the administrative skills required in public sector management and an understanding of the organization, process, and activities of government. Each component is essential, and consequently required of all students. They are expected to achieve an expanded awareness of the public interest and a personal appreciation of the ethical standards appropriate to a career in the service of the public. The professional requirements have been developed in consultation with senior officials of all levels of government (including graduates of the School).

Admission requirements for the GDPA and the MPA are those of the Faculty of Graduate Studies, and its standards must be maintained throughout the duration of the programme. The quantity and quality of work expected in individual classes will reflect the high scholarly standards of graduate education.

The curriculum encompasses the essential components of financial, personnel and statistical techniques on the one hand, and economic, organizational and policy analysis on the other. The Graduate Diploma programme and the first year of the two year MPA programme require students to complete courses in these basic fields. The second year of the MPA programme offers the student the opportunity to pursue further studies in one or more of these fields and to concentrate her or his programme in light of career plans. The offerings of related programmes and disciplines, such as economics, political science, planning, business administration, health services administration, education, social work, law, and resource management, can be used by students subject to the approval of the Graduate Coordinator. Students normally will take at least one-half of their elective classes from the offerings of the School, including classes that are cross-listed. The second year may also include a research project.

A one-year MPA, consisting of five full credits of course work, may be considered for students who have completed, with a first-class standing, a BA honours degree in Public Administration, Political Science or Economics. Admission to the one-year MPA may also be based on completion, with first-class standing, of an MA degree in these academic areas or a professional graduate-level degree in a field relevant to public administration (i.e., with public sector content). Coursework in the honours degree and/or the masters programme must have included at least three of the five course credits required in the first year of the two-year MPA programme.

The School and the Faculty of Law offer a joint LLB/MPA programme. The programme allows students to take the two degrees simultaneously and to complete them in four years, rather than in five years as is the case if each is taken independently. Students interested in entering the joint programme should apply separately to both the School of Public Administration and the Faculty of Law,

indicating on their applications that they wish to enter the MPA/LLB programme. The closing date for applications for the LLB is the end of February.

Applications Procedure

Application forms are available from the Admissions Office of Dalhousie University. Applications should be submitted as early as possible and not later than June 1 in the academic year in which studies are to commence.

General Admission Requirement for GDPA and MPA

Enrolment in the School is limited. In general, competitive applicants will have attained a good second class standing (B+ average) in their previous university work.

Admission is based on an assessment of:

- professional experience and/or promise;
- all previous academic work;
- letters of reference;
- TOEFL for foreign students (Test of English as a Foreign Language), a minimum score of 580 is required for acceptance in the Faculty of Graduate Studies. The TOEFL score must be submitted at the time of application;

Therefore, it is imperative that in addition to your application we receive:

- a statement of career interest (one page should be sufficient);
- a current résumé;
- at least two letters of reference (one of which should be academic);
- a TOEFL score (if applicable)

Students may submit a score from the Graduate Management Admission Test (GMAT) in support of their application. In the case of North American candidates, applications for the test are accepted by the ETS in Princeton until approximately six weeks before test dates. For candidates in other countries, closing dates are eight weeks before test dates.

The Dalhousie School of Public Administration GMAT Number is 0957.

Applicants for the test should use an order form obtainable from the Registrar's Office of the nearest University, Dalhousie University, or you may write to the address below to obtain an information bulletin and registration form for the GMAT. If the order form is lost or omitted from the materials you receive, you should write directly to:

Graduate Management Admission Test
Educational Testing Service
Box 966
Princeton, NJ, 08540, U.S.A.

Students are required to demonstrate at an early stage in their studies that they are proficient in writing reports and essays in English. Candidates from countries outside Canada whose mother tongue is not English will be required to take the Test of English as a Foreign Language as a requirement for admission. (See section 2 of this calendar.)

For further information, contact the Administrative Secretary of the School.

Part-time Study

The programmes offered through the School are available to students on a part-time basis. A part-time student may enrol in up to two and one half full credit classes during the 12 months, September to August.

In order to ensure that graduate students benefit from a reasonable concentration of their studies, part-time programmes leading to the GDPA must be completed within four years, and part-time programmes leading to the MPA must be completed within six years.

The Graduate Diploma in Public Administration (GDPA) Programme

The Graduate Diploma in Public Administration is a one-year graduate programme designed for public servants who hold a first degree, and for students wishing to obtain professional preparation for a career in public administration.

Course Requirements

The GDPA requires the successful completion of five credits:

- PUAD 5100.03A: Government Structure and Organization
- PUAD 5110.03B: Public Sector Management
- PUAD 5120.03A: Introduction to Public Policy
- PUAD 5121.03B: Introduction to Policy Analysis
- PUAD 5130.03A: Applied Economics I
- PUAD 5131.03B: Applied Economics II
- PUAD 5140.03A: Quantitative Methods I
- PUAD 5141.03B: Quantitative Methods II
- PUAD 5150.03A: Public Sector Accounting
- PUAD 5151.03B: Public Sector Financial Management

When a student has a demonstrated competence in the area of a required class, an alternate class may be substituted if approved by the Graduate Co-ordinator.

The Master of Public Administration (MPA) Degree Programme

The MPA is a graduate programme designed for individuals prepared to undertake advanced professional study. Individual programmes will vary in content to reflect each student's background and interests, while at the same time recognizing the central principles and functions of public administration.

Course Requirements

The two-year MPA will require the successful completion of 10 classes, which must include: PUAD 5100.03, 5110.03, 5120.03, 5121.03, 5130.03, 5131.03, 5140.03, 5141.03, 5150.03, 5151.03 and 6000.03. The remaining credits will be electives. Some advanced standing, resulting in a reduction of up to two and a half full-credits, may be granted to well qualified candidates.

The one-year MPA will require the successful completion of five credits, including up to two credits from the 5000-level classes, the Senior Seminar: Ethics in the Public Service (6000.03), and at least two and a half elective credits.

The LLB/MPA Programme

The combined LLB/MPA programme is a four-year programme which enables students to select classes leading to degrees of Master of Public Administration and Bachelor of Laws.

The suggested order of the programme is:

- Year 1: First year classes of the MPA programme
- Year 2: First year classes of the LLB programme
- Year 3: One and a half credits from the MPA programme plus Civil Procedure, Constitutional Law, and 16 hours of classes from the LLB programme.
- Year 4: One credit from the MPA programme plus a minimum of 23 hours of classes from the LLB programme, which must include The Legal Profession and Professional Responsibility.

Candidates for the LLB/MPA programme must satisfy the entrance requirements of both programmes, and may obtain further information about the combined programme by writing to the School of Public Administration and the Faculty of Law. For admission, students must apply to both the School of Public Administration and the Law School individually. Students applying for the MPA programme may submit LSAT results in lieu of GMAT results.

Advanced Standing

Advanced Standing of up to five credits (one year) may be granted to students who have completed graduate level classes which are relevant to the Masters in Public Administration Programme but which have not been used towards another degree. Students are advised to seek advanced standing when they apply for admission.

The Internship Programme

The internship provides for formal integration of practical public service experience with academic studies in the MPA programme. It involves work by students for employers in the public service sector on projects deemed to be significant by the employer and appropriate to the skills of career-oriented graduate students. The terms of reference are established through consultation between the student, the participating employer, and the School.

The opportunity for an internship placement is available to students who have completed one year of course work.

Previous work placements have been in the federal, provincial & municipal levels of government and in the private sector.

Classes Offered

PUAD 5100.03A: Government Structure and Organization. P. Aucoin

FUAD 5110.03B: Public Sector Management. P. Aucoin

FUAD 5120.03A: Introduction to Public Policy. P. Brown

FUAD 5121.03B: Introduction to Policy Analysis. J. McNiven

FUAD 5130.03A: Applied Economics I. F. Siddiq

FUAD 5131.03B: Applied Economics II. F. Siddiq

FUAD 5140.03A: Quantitative Methods I. D. Poel

FUAD 5141.03B: Quantitative Methods II. H. Bakvis

FUAD 5150.03A: Public Sector Accounting. R. Carroll

FUAD 5151.03B: Public Sector Financial Management. R. Carroll

FUAD 6000.03B: Senior Seminar: Ethics in the Public Service. P. Brown

FUAD 6100.03A: Financial Administration & Budgeting. C. McQueen

FUAD 6110.03A: Public Sector Auditing. Staff

FUAD 6230.03A: Intermediate Applied Economics I. F. Siddiq

FUAD 6231.03B: Intermediate Applied Economics II. Staff

FUAD 6235.03B: Issues in Applied Economics. F. Siddiq

FUAD 6240.03B: Social Cost Benefit Analysis. T. Pinfeld

FUAD 6300.03A: Privatization and Public Policy. P. Brown

FUAD 6400.03A: Local Government. D. Cameron

FUAD 6410.03B: Municipal Management. A. O'Brien

FUAD 6420.03B: Municipal Financial Administration. Staff

FUAD 6500.03A: Business & Government. J. McNiven

FUAD 6505.03B: Interest Groups. Staff

FUAD 6510.03A: Policy Analysis Project. F. Siddiq

FUAD 6520.03A: Programme Evaluation Seminar. D. Poel

FUAD 6521.03B: Programme Evaluation Practicum. D. Poel

FUAD 6530.03A: Natural Resource Administration. Staff

FUAD 6535.03B: Politics & Administration of Fisheries Management. Staff

FUAD 6537.03A: Environmental Policy. P. Brown

FUAD 6540.03B: Provincial and Municipal Business Development. J. McNiven

FUAD 6600.03A: Personnel Administration. M. Cassin

FUAD 6610.03B: Compensation & Collective Bargaining. Staff

FUAD 6620.03A: Women and Men and Management. M. Cassin

FUAD 6625.03B: Special Topics in Human Resource Management. M. Cassin

FUAD 6750.03A: Intergovernmental Relations. H. Bakvis

FUAD 6755.03B: Comparative Federalism. H. Bakvis

FUAD 6775.03B: Management of Sustainable Development. Staff

FUAD 6780.03B: Comparative Development Administration. D. Black

FUAD 6785.03B: Advanced Quantitative Methods. F. Siddiq

FUAD 6800.06R: Project. Staff

FUAD 6850.06R: Co-op. M. Cassin

FUAD 6900.06R: Directed Reading. Staff

FUAD 6910.03A: Directed Reading. Staff

FUAD 6920.03B: Directed Reading. Staff

FUAD 6925.03A or B: Management Information Systems. Staff

Not all classes are offered each year. Consult the School for current year offerings. In addition to the above, classes may be selected from other schools, departments, or faculties, subject to the approval of the Graduate Co-ordinator.

Recreation Physical & Health Education

Location: 6230 South Street, Halifax, N.S.
B3H 3H5
Telephone: (902) 494-2152
Fax: (902) 494-5120

Director of School

T.L. Maloney

Professor Emeritus

E.G. Belzer, Jr.

Professors

- R.P. Beazley, BA, BEd (Acadia), BPE (McM), MPE (Dal), EdD (Tennessee)
L.E. Holt, BS, MS (Springfield), PhD (S Illinois)
B. Keddy, BScN (MSVU), MA, PhD (Dal), RN, major appointment in the School of Nursing
L. Makrides, MCSP, BPT (Sask), MSc (Ottawa), PhD (McM), major appointment in School of Physiotherapy
A. Richards, Dip PE (Carnegie Schl PE, England), Teach Cert (Trent Park Col), MSc (Dal), EdD (Colorado)
J.F. Singleton, BA (Waterloo), MS (Penn State), PhD (Maryland)
A.J. Young, BS (West Chester State Col), MS, PhD (Maryland)

Associate Professors

- P.D. Campagna, BPHE (Windsor), BEd (Queen's), MEd (SUNY-Buffalo), PhD (Alta)
G.C.B. Elder, DipPE Adv (St. Mary's, London), MEd (Georgia Southern), PhD (McM)
N.M. Ipson, BA, MS, PhD (Brigham Young)
R.L. Kirby, MD (Dal), FRCP(C), major appointment in Medicine
C.L. Kozey, BPE (UNB), BSc (Waterloo), PhD (Dal), major appointment in the School of Physiotherapy
R.F. Lyons, BA (Dal), MEd (Xavier), PhD (Oregon)
T.L. Maloney, BPE, BEd (Alta), MA (Western), PhD (Alta)
J.F. McCabe, BPE, BA (UNB), MS, EdD (Tenn)
L.L. McIntyre, MD, MHSc (Tor), FRCP(C), Dean of the Faculty of Health Professions, joint appointment in Health Services Administration
C.A. Putnam, BPE (Man), MS (Wash), PhD (Iowa), Associate Director (Graduate Studies)
P.D. Richards, Teach Cert (Trent Park Col), Laban Arts of Movement Centre Cert (England), MA (Colorado)
C.A. Savoy, BPE (UNB), EdM (Boston), PhD (Tenn)
G.I. Turnbull, MCSP, DipTP, BPT (Man), MA (Dal), PhD (Rhodes), major appointment in Physiotherapy
L.J. Verabioff, BA, BPHE (Queen's), MS (Mich), PhD (Ohio State)

Assistant Professors

- L.J. Barnes, BPE, MSc (Dal)
C.D. Hood, BPE (Calgary), MS, PhD (Illinois)
C.R. Mangham, BEd, MA (UBC), PhD (Oregon)

D.P. McGuire, BA (Wright State), MA (Cincinnati)

Honorary Adjunct Professor

K.D.R. Travers, BSChEc, MAHEc (MSVU), PhD (Dal), PdT, major appointment at Mount St. Vincent University

The mission of the School is to develop leaders and scholars who can generate, disseminate, and apply knowledge that helps to maintain and enhance health. It does this by: engaging in research related to well-being; preparing leaders in education, scholarship and social action to maintain and enhance well-being; and playing an educational and advocacy role, with and beyond the University, to affect social change that maintains and enhances well-being.

The School of Recreation, Physical, and Health Education offers master's degree programmes in three areas: Master of Arts in Health Education, Master of Science in Kinesiology and Master of Arts in Leisure Studies. There are ongoing research programmes conducted in each of the areas of health education (basic health-related research and evaluation of health education/health promotion policies, programmes, practices and content), kinesiology (exercise physiology, neuromuscular physiology, ergonomics, motor behaviour, biomechanics) and leisure studies (leisure and social groups such as older adults, youth or persons with disabilities; historical analysis of leisure and sport; analysis of sport and recreation administration and cultural services).

For more detailed information on the regulations regarding these programmes, students are referred to the Graduate Student Handbook of the School of Recreation, Physical and Health Education, which is available from the Associate Director (Graduate Studies).

Admission Requirements

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies.

Students seeking admission to any of the master's programmes should have earned an excellent record during four years of undergraduate study. Candidates for the Master of Science in Kinesiology should have an honours or honours equivalent degree which includes the completion of an independent research project. Those with appropriate qualifications are normally registered in the one-year master's programme. Students from undergraduate programmes in related fields (other than Health Education, Kinesiology, or Leisure Studies) will be considered for graduate study in the School, but may be required to register in the two-year master's programme.

Qualifying work may be required of applicants whose background for advanced studies in Health Education, Kinesiology, or Leisure Studies is judged deficient.

Programme Requirements

One full academic year (12 months) of resident study at Dalhousie University is a minimum requirement for the one-year master's

degrees. Although the MA and MSc degree programmes officially have a one-year residency requirement, students should expect to take from 18 to 24 months of full-time work to complete the degree. Ordinarily, for full-time students, the degree must be completed within three year of first registration.

Five credits (30 credit hours) at the graduate level are required in all programmes - 18 credit hours of classes and 12 credit hours of thesis work. Required and elective classes for each programme are listed below. Each class is normally worth 3 credit hours. Electives may be chosen from the lists of classes below, or from graduate classes offered by other departments at Dalhousie University, or, to a limited extent, at other universities.

Students may take a maximum of 6 credit hours of ancillary classes above and beyond the required programme of study.

The thesis topic will be determined by the student and academic advisor. A thesis proposal must be approved by the candidate's thesis examination committee, which consists of at least three voting members (at least two of whom are members of the School's graduate faculty), before the thesis research may be undertaken. The candidate's advisor (i.e., research supervisor) is not a voting member of this committee.

Once the proposal has been approved by the thesis examination committee, it shall be submitted to the appropriate ethics committee for consideration. Only after approval has been received from both the thesis examination committee and the ethics committee, may the student proceed with data collection.

The thesis examination committee is responsible for approving the completed thesis after a final oral presentation by the student covering the nature and findings of the research.

Completion of the degrees is also possible through part-time study. However, financial assistance is not available for students undertaking the degree on a part-time basis.

Master of Arts Degree in Health Education

While the general goal of health education is to promote the maintenance and enhancement of individual, family, and community health through educational processes, the Master of Arts (Health Education) focuses on the evaluation of health education and health promotion policies and programmes. Its graduates are prepared to assume major roles and responsibilities in evaluation of and research concerning health education activities.

Required Classes: 24 credit hours

HEED 9000.00R: Thesis. 12 credit hours

LEIS 5501.09B: Advanced Social Research Methods. C. Hood

or comparable class approved by the thesis advisor

HEED 5503.03A: Intermediate Statistics for the Health Sciences. Staff

EDUC 625B: Intermediate Statistics & Research Design (Mount St. Vincent University)

Prerequisite: Before entering either LEIS 5503.03 or EDUC 625 students must have completed an introductory course in statistics with at least a "B" grade.

HEED 5595.03B: Measurement & Evaluation in Health Education and Health Promotion. R. Beazley

HEED 5514.03A: Trends in Health Education. C. Mangham

OR

HEED 5516.03B: Theoretical & Scientific Bases of Health Education. D. McGuire

Elective classes: 6 credit hours

HEED 5600.06R/5601.03A/5602.03B: Independent Studies. Open to independent completion of study. Interested students should consult the Associate Director (Graduate Studies).

Students are encouraged to elect classes outside the School that may help in the development of their research and/or professional interests, as well as courses within Health Education. Electives must be approved by the student's advisor.

The Health Education Division holds research-oriented seminars during the Fall and Spring semesters. It is expected that Master's students will attend and participate in these seminars as discussants and presenters.

Master of Science Degree in Kinesiology

Required Classes: 21 credit hours

KINE 9000.00R: Thesis. 12 credit hours

KINE 5501.03: Research Methods for Natural Sciences. C. Hood

Two of:

KINE 5510.03: Cardiorespiratory Dynamics in Exercise. P.D. Campagna

KINE 5516.03: Neuromuscular Physiology. G.C.B. Elder

KINE 5523.03: Biomechanics of Human Motion. C.A. Putnam

KINE 5530.03: Cognitive Ergonomics. J.F. McCabe

Elective Classes: 9 credit hours

KINE 5503.03: Interdisciplinary Statistics for Health Sciences. Staff

Prerequisite: Students must have completed an introductory class in statistics with at least a "B" grade.

KINE 5572.03: Topics in Human Performance. J.F. McCabe

KINE 5600.06/5601.03/5602.03: Independent Studies. Open to independent completion of study. Interested students should consult with the Associate Director (Graduate Studies).

Elective classes can be taken from within or outside the School. All classes must be approved by the student's advisor.

Kinesiology holds weekly research-oriented seminars during the academic year. Graduate students are expected to attend and participate as discussants and presentors.

Master of Arts Degree in Leisure Studies

Required Classes: 21 credit hours

LEIS 5501.03: Advanced Social Research Methods. C. Hood

LEIS 5503.03: Interdisciplinary Statistics for Health Sciences. Staff

or

another intermediate statistics class approved by the student's advisor.

LEIS 5592.03: Interdisciplinary Basis of Leisure Science. R.F. Lyons

LEIS 9000.00R: Thesis. 12 credit hours

Elective Classes: 9 credit hours

Please note: not all classes listed below are offered every year. Please consult the timetable for a current list of classes offered. Elective classes may also be taken outside the School.

LEIS 5512.03: Lifestyles of Ill and Disabled Persons. R.F. Lyons

LEIS 5550.03: Historical Analysis of Sport and Culture. A.J. Young

LEIS 5561.03: Gender, Leisure and the Family. C. Hood

LEIS 5562.03: New Perspectives on Youth. A. Richards

LEIS 5563.03: Leisure Behaviour in Older Adults. J.F. Singleton

LEIS 5600.06/5601.03/5602.03: Independent Studies. Open to independent completion of study. Interested students should consult with the Associate Director (Graduate Studies).

The Leisure Studies Division holds weekly research-oriented seminars during the academic year. Graduate students are expected to attend and participate as discussants and presentors.

Social Work

Location: 6414 Coburg Road, Halifax, NS B3H 3J5

Telephone: (902) 494-3760

Director of the School

J. Gilroy

Graduate Coordinator

Joan Gilroy

MSW Off-Campus Programme Coordinator

Susan Nasser

Coordinator of Admissions

Janet L. Densmore

Professors

R.W. Carlson, BS, MSW (Penn), PhD (Chicago)

F.C. Wien, BA (Queen's), MA, PhD (Cornell)

Associate Professors

G. Fitzgerald, BA (Dal), MSW (King's)

J. Gilroy, BA (Dal), MSW (King's), MA (Tor)

R. O'Day, BA (UBC), MA, PhD (Michigan)

Assistant Professors

W.T. Bernard, BA (MSVU), MSW (Dal), PhD (Sheffield)

J. Duplisea, BA, MSW (MtA)

J. Graveline, BSW (Calgary), MSW (Manitoba)

J. Harbison, BA, BSoc Stud (Dublin Trinity Coll), Grad Dip SW (Edinburgh), PhD (Tor)

M.M. MacDonald, BA (StFX), BJ (Carleton), MSW (Dal)

R. Neal, BA/BSW (McM), MA (OISE/Tor)

B.K. Richard, BA (MtA), MSW (Dal)

A. Sexton, BA (St.Thomas), MSW (Dal)

W. Thomas-Bernard, BA (MSVU), MSW (Dal), PhD (Sheffield)

Honorary Adjunct Professors

D. Moore, Dip Soc Stud (London), BA, MA (Dal), PhD (Boston)

D. Williams, AB (Calif State, Chico), MSW (Calif, Berkley), PhD (Brandeis)

R. Williams, BA (Acadia), MA (Tor), DEd (Oise)

Lecturer

S. Nasser, BA, BSW (McG), MSW, MPM (Minnesota)

Sessional Instructors

D.P. Kerans, BA (Loyola), MA (St. Louis), STL (Innsbruck), DRS Strasbourg)

C. Lambert, BA, MA (Goddard), BSW, MSW (McG)

The Maritime School of Social Work

The Maritime School of Social Work was founded in 1941 as an independent school serving the needs of the region for professionally educated social workers. The political, social, cultural, and economic conditions of the Maritime provinces have continued to give direction to the School's teaching programmes since its amalgamation with Dalhousie University in 1969. It has

pioneered in developing theories of practice that take account of systemic inequalities based on factors such as gender, sexuality, race, culture, ethnicity, class and (dis)ability.

Both the undergraduate and graduate programmes are accredited by the Canadian Association of Schools of Social Work. The School also offers a diversified Continuing Education programme.

Master of Social Work Degree

The Master of Social Work degree programme provides professional education for advanced, specialized social work practice and leadership positions in the practice field to persons already familiar with an area of social work specialization.

Opportunity for in-depth learning is provided both in the classroom and in the field. The student's critical ability to assess the nature and utility of interventions is developed in relation to social work values, especially with regard to social justice. Elective classes focus on skills development in an area of special interest to the student.

The Specializations

Two areas of specialization for the development of practice are offered:

- Community Practice, and
- Individual and Family Practice, in either of two concentrations:
 - Physical and Mental Health or
 - Family and Child Welfare

Community Practice:

Each year the Community specialization focuses on the theoretical and practical concerns of the particular students in the programme. The Community specialization also examines how social work practice is shaped by the interrelationships of place, class, race, ethnicity, gender and sexual orientation in diverse communities.

The Community specialization provides graduate students with an opportunity to work with community groups and to investigate and evaluate community action and community social work in relation to social movements and to social work values.

Individual and Family:

This specialization increases the student's ability to appraise and evaluate the efficacy and benefits of social work interventions by considering legislation, policies, and service delivery issues in relation to theories and models of practice interventions.

In the Family and Child Welfare concentration, the focus is on the family as a social entity and on child welfare. There is an emphasis on social analysis and policy.

In the Physical and Mental Health concentration, the focus is on theory, knowledge, and issues as they relate to the social work practice in the areas of adult health and mental health.

Programme Objectives

The Maritime School adheres to the principles of adult learning in its educational approach. This has special application for students of relative maturity with previous or concurrent professional social work experience. In the course of their study, MSW students are encouraged to identify and pursue their learning goals within the parameters of the curriculum and the objectives of the programme, which include the following:

- development of an understanding of the methods for critical appraisal and systematic inquiry related to existing practice theories, models of intervention and personal practice experiences and abilities;
- application of these means to existing and new knowledge regarding practice contexts, practice-related issues, practice theories, models of intervention and personal practice experience and abilities;
- acquisition of new knowledge with respect to practice contexts, theories and interventions, including an area of practice of particular interest to the student;
- integration of the new knowledge acquired into practice situations which support the development of personal and social change.

Admissions Requirements

All applicants must satisfy the admissions requirements of the Faculty of Graduate Studies, Dalhousie University, as stated elsewhere in this calendar. These include an undergraduate degree from an accredited university with no less than a "B" level average. Applicants from outside Canada whose first language is not English must submit a Test of English as a Foreign Language (TOEFL) prior to the application deadline of February 1st, with a minimum acceptable score of 580.

MSW Degree Programme Prerequisites

The MSW programme of advanced study in the theory and practice of Social Work is primarily intended for persons with a baccalaureate degree in Social Work and at least two years of social work experience. Successful candidates are able to complete the programme in one calendar year of full-time or three years of part-time study.

Prerequisites for the one-year MSW degree programme include:

- a baccalaureate degree in Social Work;
- a cumulative academic GPA of 3.00 (on a 4.30 scale), or an equivalent cumulative average of at least B;
- two years of full-time employment in a social work position, following the BSW degree;
- personal suitability for the study and practice of social work.

Qualifying Year:

Persons who do not have a Bachelor of Social Work degree may apply for a qualifying year provided that they have the following prerequisites:

- an outstanding employment background in social work or related community work for a duration of approximately five years;

- an undergraduate or graduate degree in a related academic discipline, with content that facilitates a five-credit preparatory year of Social Work study;
- personal suitability for social work education and practice.

Only a very limited number of applicants have the academic and employment backgrounds to be admitted to a qualifying year, which consists of five credits of study. A modified application for admission to the MSW degree programme is required on completion of the qualifying year credits, at which time the student's academic performance and personal suitability is reviewed by the Admission Committee.

Persons who meet the above prerequisites and who hold a graduate degree in a closely related discipline may be admitted directly to the MSW programme, but their acceptance is contingent upon satisfactory completion of a qualifying year of advanced undergraduate study.

Similar application procedures and selection criteria apply to all candidates.

Special Students

Special student status is not available for enrolling in graduate classes in Social Work. Classes are restricted to students who have applied and been accepted to the MSW qualifying year and the MSW degree programme.

Full-time and Part-time Study

The graduate programme, including the qualifying year, may be taken on a full-time or part-time basis. Classes begin in September. Full-time MSW students who choose to do the Master's project may complete the programme by late July and graduate in October. Full-time thesis students need an additional six to twelve months for completion. Graduation is possible in either May or October.

Each full-time year normally requires three years of part-time study. Part-time students who choose the thesis option need to allow an additional twelve to eighteen months for completion. It is important for prospective part-time students to note that the MSW core classes and the requisite agency field placement are available during daytime hours only.

Selection Criteria

The number of places offered each year to graduate students is limited. Candidates are selected in relation to the level of their qualifications and the number of places that will be available for each specialization and concentration in the Fall academic session. The MSW Admissions Committee makes its selection on the basis of the following criteria:

- academic performance, with particular reference to the Bachelor of Social Work degree;
- nature of social work employment experience (including community work), or otherwise, of positions directly related to social work and their relevance to the area of specialization applied for. Relevant volunteer involvement is taken into account;

- demonstration of a sound proposal for study;
- strength of academic, work and personal references;
- appropriateness of educational/professional goals to the School's class offerings;
- personal suitability for social work.

Proposal for Study

The plan of study is presented in a formal Proposal for Study, which is an important component of the MSW application material. Candidates specify their choice of specialization (and concentration); develop an in-depth focus of intended study; and indicate the relationship of their background experience to the chosen area of specialization. Applicants for the qualifying year are assessed on similar standards of excellence as candidates for the one-year MSW degree.

Personal Suitability

Aptitude and fitness for the profession of Social Work, as determined by the MSW Admissions Committee, is a requirement for admission as well as for continuation in the programme. (See Required Withdrawal on Grounds of Unsuitability section, below.)

Affirmative Action Policy

The Maritime School of Social Work has an affirmative action policy for residents of the three Maritime provinces who belong to regional Aboriginal, Acadian and indigenous Black populations, and for persons with disabilities. The School is committed to admitting and graduating the highest possible number of students who qualify under this policy.

The admissions prerequisites described in the above sections are similar for all applicants. Each candidate who applies under the affirmative action policy is, however, considered on the basis of her/his qualifications for graduate study in Social Work rather than in relation to other candidates.

Application Procedure

Applications for admission are reviewed once a year only following the application deadline date of February 1st.

MSW application packages include instructions, the three required reference forms, work/volunteer experience summary sheets, and guidelines for the Proposal for Study. The cover sheet for the latter includes a place for eligible candidates to indicate whether they wish to apply under the Affirmative Action policy. MSW application packages are available on request from the Dalhousie University Registrar's Office.

Incomplete and late applications can not be considered. Each applicant is notified by mail early in April of the Admission Committee's final recommendation to the Dean of Graduate Studies. Acceptances are conditional to the approval of the Dean followed by official notification from the University Registrar. First-time enrolment occurs in September only.

Curriculum Requirements

Qualifying Year

Students who meet the requirements for acceptance to a qualifying year undertake a five-credit programme of preparatory study based on individual needs as assessed by the Graduate Coordinator. Classes consist primarily of BSW class content offered in the regular Fall/Winter academic session.

MSW Degree Programme

BSW graduates are admitted directly to the regular one-year MSW programme. The course of study also applies to those students who have successfully completed their Qualifying Year requirements.

The professional MSW degree programme consists of five Social Work credits and a non-credit colloquium. This requirement cannot be reduced by advanced standing or transfer credit in relation to any graduate classes taken prior to MSW registration.

The curriculum consists of three components:

- core classes (3 credits)
- elective classes (varies from .5 to 1.5 credits)
- project or thesis (1 credit or 1.5 credits)

Attendance at a series of colloquia is also required.

Field Experience

Students should note that the required 1.5-credit core class of applied theory and practice for each specialization includes a field experience component of 400 hours in an appropriate agency other than the student's place of employment. This is undertaken in regular daytime hours between September and March concurrently with the classroom seminar. The MSW Field Manual contains the policy and procedures which define various aspects of the field placement.

Class Sequencing for Part-Time Students

In order to maintain the integrity of the part-time student's academic program, two of the core classes are taken in sequence, beginning in the first year with the one-credit advanced Social Work theory class in the Individual and Family Specialization, or the two .5-credit classes in the Community specialization. This is followed in the second year by the 1.5-credit core class of applied theory, which includes the field placement. The remaining classes may be taken concurrently with either of these, or in the third part-time year.

Classes Offered

Students register for the core classes that apply to the specialization and concentration to which they have been accepted.

Core Classes

Social Work Theory:

SLWK 6335.06R: Theory and Methods of Intervention. for students in Individual and Family, both concentrations

or

SLWK 6380.03A or B: The Social Policy Context of Community Work.

and

SLWK 6385.03A or B: Community and Social Change Analysis. for students in Community Practice

Applied Social Work Theory and Practice (includes 400-hour field placement):

SLWK 6340.09R: Social Work in Family and Child Welfare. for students in this concentration

or

SLWK 6345.09R: Social Work in Physical and Mental Health. for students in this concentration

or

SLWK 6390.09R: The Theory and Practice of Community Work. for students in the Community specialization

Core Content Both Specializations:

SLWK 6001.03A or B: Theory and Practice of Anti-Oppressive Social Work. for all students in both specializations and concentrations.

Electives

Students are required to complete 1 elective credit (or 2 x ½ credits) if they do a Master's project, or one ½ credit elective if they do a thesis.

At least one ½ credit elective must be taken outside the Maritime School. This also applies to thesis students who need the ½ credit elective only.

The following Social Work electives are offered:

SLWK 6370.03A or B: Advanced Practice Skills

SLWK 6365.03A or B: Community Socio-Economic Development. (may not be offered in 1996/97)

Master's Project or Master's Thesis

SLWK 6020.06R: Master's Project in Individual and Family Practice. for students in both concentrations of this specialization.

or

SLWK 6240.06R: Master's Project in Community Practice. for Community students.

or

SLWK 9000.00R: Master's Thesis. for students in both specializations and concentrations.

Students are assisted early in their MSW programme to choose between the project or thesis option and to select a suitable topic and faculty advisor. The thesis in particular may be completed off-campus.

Colloquium

SLWK 5990.00R: MSW Colloquium

Students also register for a non-credit series of colloquia dealing with contemporary issues in social work, which are discussed weekly during each term. Part-time students may include this requirement in any one year of study.

Regulations

All students are required to be familiar with and to observe University, Faculty of Graduate Studies and Maritime School of Social Work regulations. Students should therefore request a Graduate calendar when they register.

Grading Requirements

Students are governed by the grading regulations of the Faculty of Graduate Studies.

Required Academic Withdrawal

A student who fails to meet the minimum grade requirement of "B-" in each class may be withdrawn from the programme. Students who are withdrawn may submit a formal, written request to be readmitted. If the student is allowed to continue in the programme, the failed or uncompleted class or classes must be repeated if core, repeated or replaced if elective, and successfully completed with a final grade of at least "B-".

Required Withdrawal on the Grounds of Unsuitability

The MSSW acting through its 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 the nature of the study and practice of Social Work 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 MSW Programme Committee are requirements for continuation in the programme.

The following list of examples illustrates the criteria used to assess the unsuitability in aptitude and fitness. This list should not be considered to exclude other such behaviours:

- (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 judgements.
- (iv) unethical behaviour (see Nova Scotia Association of Social Workers Code of Ethics, 1994)

The MSW Committee will consider the student's situation to determine whether he/she is fit for the study and practice of Social Work. The principles of confidentiality, natural justice and due process are observed in all Committee deliberations.

Scholarships, Bursaries, Teaching Assistantships and Financial Aid

For information on prizes, bursaries, scholarships and loans available to graduate students, consult the relevant section of the graduate calendar and the School's information sheet at the back of the MSW brochure.

Sexual Harassment

The Maritime School is governed by the Sexual Harassment Policy and Procedures of Dalhousie University. For more information, see Graduate Calendar: Resources and Services - Advisory Committee on Sexual Harassment.

Sociology and Social Anthropology

Location: Corner of Seymour and South Streets, Halifax NS B3H 3J5
Telephone: (902) 494-6593
Fax: (902) 494-2897

Chairperson of Department

J.G. Morgan

Professors

R. Apostle, BA (Simon Fraser), MA, PhD (Calif, Berkeley)
 J.H. Barkow, AB (Brooklyn), AM, PhD (Chicago)
 M. Binkley, BA, MA, PhD (Tor)
 D.H. Clairmont, BA, MA (McM), PhD (Wash)
 H.V. Gamberg, BA (Brandeis), AM, PhD (Princeton)
 B. Keddy, BScN (MSVU), MA, PhD (Dal), major appointment in Nursing
 V. Thiessen, BA (Man), MA, PhD (Wis)

Associate Professors

J. Bencit, BA, MA (Guelph), PhD (Johns Hopkins), major appointment in Henson College
 P.M. Butler, BA, MA, PhD (Tor)
 D.H. Elliott, BA (Yale), PhD (Pitt)
 T. Li, BA, PhD (Cambridge)
 V.P. Miller, BA (Calif, Berkeley), MA, PhD (Calif, Davis)
 J.G. Morgan, BA (Nott), MA (McM), DPhil (Oxon)
 C. Murphy, BA (StFX), MA (Dal), PhD (Tor), Graduate Co-ordinator
 J.D. Stolzman, BA (Ore), MS (Fla), PhD (Ore)

Assistant Professors

P.G. Clark, BA, MA (McM), PhD (UBC)
 L. Dubois, BA (McG), MA (New School-NY)
 D. Findlay, BA, BSW, MA, PhD (McM)
 P. Gardiner Barber, BA, MA (Auckland), PhD (Tor)
 J. Jarman, BA, MA (Tor), PhD (Cambridge)
 E. vanRoosmalen, BA, BA (Waterloo), PhD (Alberta)

Honorary Adjunct Professors

J. Gordon, BA (Antioch), MA, PhD (S. Illinois), MSVU
 D. Looker, BA (Carleton), MA (Waterloo), PhD (McM), Acadia University

Honorary Research Associates

A. Davis, BA (SMU), MA (Man), PhD (Tor), St. Francis Xavier University
 T. Thomson, BA, BEd, MA (Dal), PhD (Cambridge), Acadia University

The Department of Sociology and Social Anthropology offers a programme of both full-time and part-time study leading to the degree of Master of Arts in Sociology or to the Master of Arts in Social Anthropology.

Admission Requirements

All candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies. Candidates will normally be expected to hold a four-year degree in sociology or social anthropology with at least an upper second class (B+) standing. It is expected that a candidate's undergraduate work will have included classes in theory and methods which are appropriate to the particular discipline, research methods and statistics. Promising applicants who fail to meet these requirements may be admitted to a qualifying year which, if successfully completed, would permit subsequent enrolment in the MA programme.

MA Degree Programme

For the minimum time required to complete these programmes, see Section 5.1. A full-time programme is normally of one year's duration. Part time students in a one-year programme are expected to complete all requirements within four years of their initial enrolment in the programme.

The normal programme is made up of five full credits. A thesis (SOSA 9000.00), worth two credits, is required as are the following classes: Graduate Seminar (SOSA 5200.06R) and Area Examination (SOSA 5300.06R). An elective class (or two one-half credits) approved by the Graduate Education Committee constitutes the final credit.

An examination in the student's chosen area of specialization as well as defence of a thesis proposal are required.

Classes Offered

Classes may not be offered every year. Please consult the current time table on registration to determine if these classes are offered.

SOSA 5001.03A or B: Survey Methods

SOSA 5002.03A or B: Social Statistics

SOSA 5003.03A or B: Contemporary Perspective in Ethnography

SOSA 5004.03A or B: Advanced Issues in Work and Industry: Regional and International Perspectives

SOSA 5005.03A or B: Advanced Issues in Social Disorder and Human Justice

SOSA 5006.03A or B: Advanced Issues in Health and Illness

SOSA 5011.03A or B: Advanced Issues in Social Theory

*SOSA 5012.03A or B: Special Topics in Sociology and Social Anthropology

SOSA 5200.06: Graduate Seminar

SOSA 5300.06: Area Examination

**SOSA 5510.03A or B: Graduate Readings in Sociology and Social Anthropology

**SOSA 5520.03A or B: Graduate Readings in Sociology and Social Anthropology

SOSA 5530.06: International Development Studies Through the Shastri Summer Institute in India

SOSA 9000.00 MA Thesis

* Please consult the department for specific class descriptions. The topics will change from year to year.

** Permission of the graduate education committee is required for registration in these classes.

*Sosa for
Henderson*

*Sosa for
undergraduate (mija)
only*

*Sosa - for
Hansen
only*

Statistics

Location: Chase Building
Telephone: (902) 494-2572
FAX: (902) 494-5130

Chair of the Department

R.P. Gupta

Acting Director of Division (1995-96)

C.A. Field

Professors

C.A. Field, MSc, PhD (Northwestern)
G. Gabor, MSc, PhD (Eotvos)
R.P. Gupta, MSc (Agra), PhD (Delhi)

Associate Professors

D. Hamilton, MA, PhD (Queens)
K. Thompson, MSc (Manchester), PhD (Liverpool), joint appointment with Oceanography

Assistant Professors

K. Bowen, PhD (Calif)
K.E. Manchester, MSc, PhD (Tor)
B. Smith, MSc (Calgary), PhD (Berkeley)

Post-Doctoral Fellow

A. Almudevar, PhD (Tor)

Honorary Research Associate

P. Cabilio, PhD (Columbia), Acadia University

Statistical Consultant

W. Blanchard, MSc (UBC)

Please refer to the entry for the Department of Mathematics, Statistics and Computing Science in this calendar for a full listing of the members of the Department and information on other programmes offered by the Department.

The department offers programmes leading to the degrees of MA, MSc and PhD in the following areas: statistical inference, robust statistics, data analysis, multivariate analysis, linear and nonlinear regression, time series analysis, statistical graphics and computing, information theory.

Admission Requirements

Candidates must satisfy the general requirements for admission to the Faculty of Graduate Studies.

Candidates will normally be expected to hold a degree recognized by Dalhousie University as the equivalent of a Bachelor's degree with Honours in one of its own faculties.

GRE Aptitude and Advanced Mathematics scores are recommended for all applicants for graduate studies whose undergraduate work has been completed outside of Canada, and TOEFL scores are required for applicants whose native language is not English. Valid score reports must be received directly from the Educational Testing Service. To ensure consideration for scholarship funds, application should be made early.

Masters Degree Programme

Requirements

1. At least three full-credit classes, not including seminar classes, at the graduate level to be chosen in consultation with a department adviser. In addition, students whose preparation is deficient will be required to complete appropriate classes which will be designated by the adviser.
2. Attendance and participation in seminars.
3. A satisfactory thesis.
4. Students are required to give an oral presentation of their thesis and at that time to answer questions about the thesis. This presentation will be made after the thesis is in the hands of the student's committee and will be taken into account when the committee makes it's decision.

Cross-listing: NURS 5000.03, PHAR 5980.03, LEIS 5503.03, KINE 5503.03, HEED 5503.03, HEAS 6500.03
Restriction: Not open to graduate students in Math, Stats., and C.S.

STAT 7320.03 Statistics Seminar

PhD Degree Programme

Requirements

Note: The minimum and maximum time required to complete this programme are set out in section 5 of the Faculty Regulations.

1. At least one full-credit class during each of the first two years of the programme.
2. Comprehensive examinations which must be taken for the first time within 12 months and successfully completed within 16 months of registration in the programme.
3. Attendance and participation in an appropriate seminar.
4. Preparation and defence of a satisfactory research thesis.

Classes Offered

A selection of the following graduate classes will be offered subject to demand.

STAT 5060.06/4060.06: Advanced Statistical Theory

STAT 5070.03/4070.03: Multivariate Distributions

STAT 5075.03: Multivariate Analysis

STAT 5090.03/4090.03: Probability

STAT 5100.03/4100.03: Survival Analysis

STAT 5200.03/4200.03: Nonlinear Regression Analysis

STAT 5300.03: Topics in Statistics and Probability

STAT 5350.03/4350.03: Applied Multivariate Analysis

STAT 5360.03/4360.03: Robust Statistics

STAT 5370.03/4370.03: Stochastic Process

STAT 5390.03/4390.03: Time Series Analysis I

STAT 5400.03/4400.03: Time Series Analysis II

STAT 5410.03/4410.03: Advanced Topics in Time Series Analysis

STAT 5500.03: Topics in Advanced Statistics

STAT 5620.03/4620.03: Data Analysis

STAT 5990.03A: Intermediate Statistics for Health Sciences

Format: Lecture 3 hours

Prerequisite: STAT 1060.03 or equivalent

Women's Studies

Location: 1444 Seymour Street
 Telephone: (902) 494-3814
 Fax: (902) 494-2105

Women's Studies Coordinator

Marjorie Stone

Graduate Programme Coordinator

Consult Department

Faculty

Consult Department. More than forty faculty members across the three universities are available to serve as student supervisors in the MA in Women's Studies.

Master of Arts in Women's Studies

This degree is offered jointly by Dalhousie University, Mount Saint Vincent University, and Saint Mary's University. The degree will be granted jointly by the three cooperating universities and each students' programme will be approved by the Joint Graduate Admissions and Programme Committee (GAPC). The MA in Women's Studies emphasizes the interdisciplinary basis of Women's Studies, its community linkage and the emerging body of feminist theories and methodologies. Drawing on the collective resource of faculty members across the three universities, the programme invites applications from students whose research interests fall within eight broad categories: feminist theory and methodology; women and work; gender and development; women and health; North American women's history; feminist literary/cultural theory and practice; gender and education; and women and social change.

Admission Requirements

To be admitted to the MA students normally will be expected to have completed an Honours BA or equivalent with a minimum of B average or equivalent. Admission will also be based on the availability of Women's Studies faculty to supervise in the student's proposed area of research. Some students may be required to do qualifying classes to develop their background in social sciences, humanities and/or Women's Studies.

In addition to following normal university procedures for application to graduate programmes, students must submit transcripts, three letters of references and a Supplementary Application Form.

Applications can be made to any of the three cooperating universities. Decisions in admission are made by the Interuniversity Graduate Admissions and Programme Committee (GAPC) for Women's Studies. Enrolment is limited.

Programme Requirements

The programme includes both course work and thesis and can be pursued either full time or part time. The normal time limits for the completion of MA degrees apply. The

programme requires a minimum of five credits (5.0) including four required half-credits (Theories of Feminism, Feminist Methodologies, Graduate Seminar and Directed Study) and a two-credit thesis. Remaining electives can be chosen from among a range of graduate-level classes offered by other departments at the three universities, in consultation with the students' faculty advisor.

Classes Offered

WOST 6010.03A: Theories of Feminism. This class provides an in-depth study of feminist theory. It explores the development of theories over time and across borders, focusing on common assumptions and debates among feminists.

WOST 6020.03A: Feminist Methodologies. This class examines feminist critiques and strategies around knowledge and research methodologies. It explores historical and contemporary debates on important research issues.

WOST 6030.03R: Graduate Seminar. (half-credit, meets through both semesters) This seminar will be used to discuss student research proposals and to provide a forum to integrate material from other classes. As part of this seminar, each student will be required to engage in field-based learning (i.e. community-based, developed in the context of each students programme). This will be a Pass/Fail class.

WOST 6090.03A or B: Directed Study.

WOST 6990.00: Master's Thesis

Interdisciplinary PhD Programme

Qualified students can carry out work at the doctoral level in Women's Studies or Gender Studies by applying to the Interdisciplinary PhD programme. See p. 54 of this Calendar, Interdisciplinary and Joint Programmes. Enrolment is limited.

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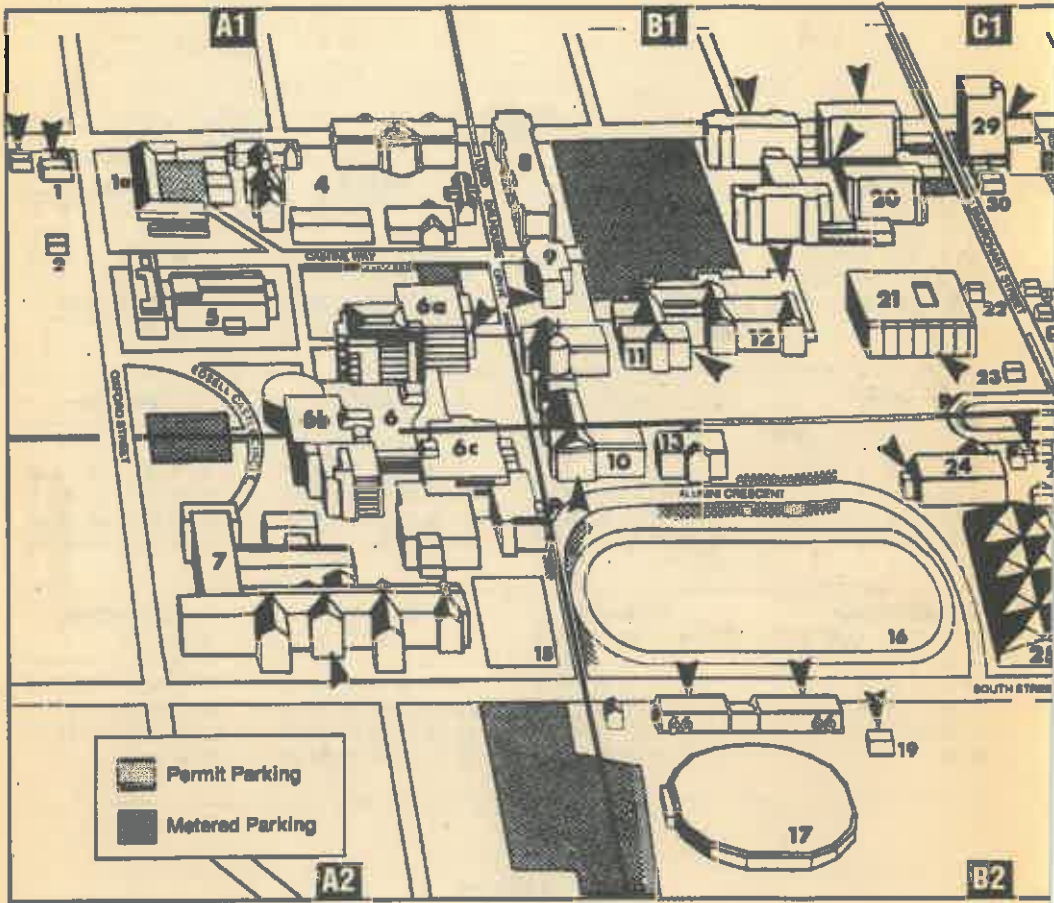
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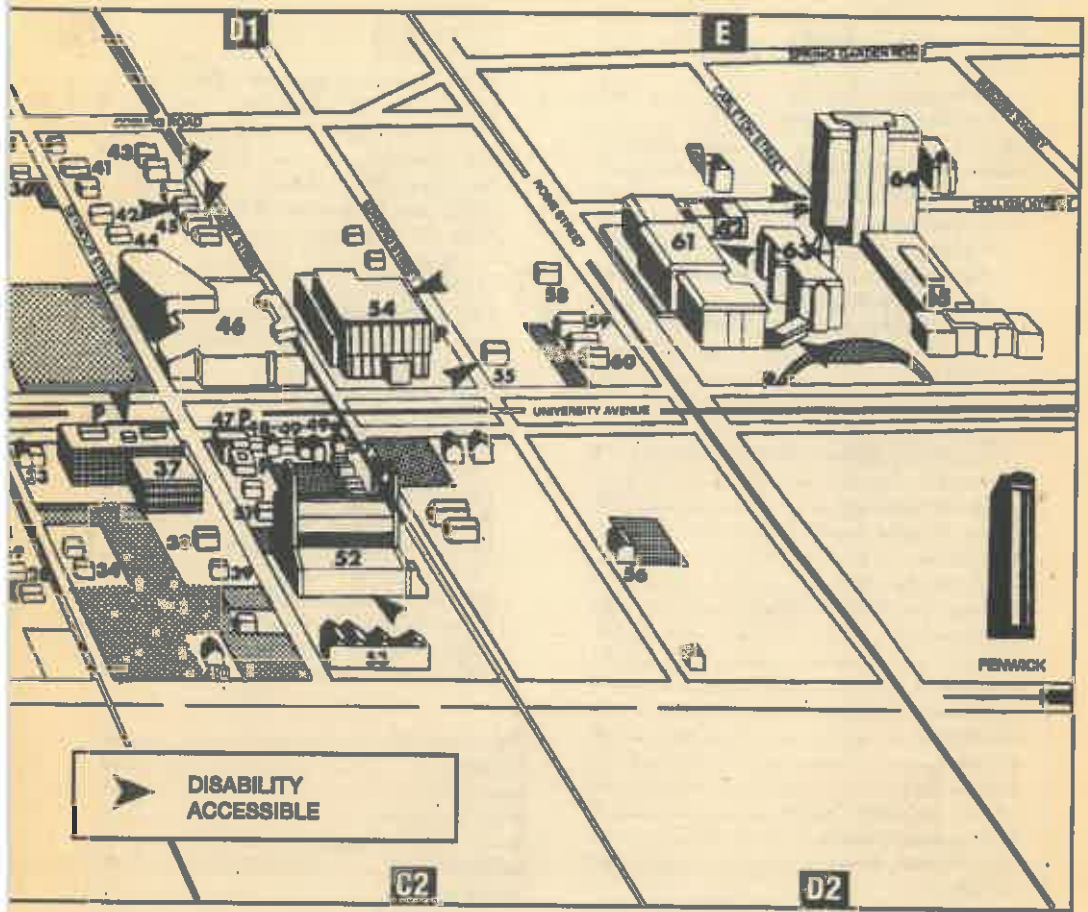
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- Bookstore — 37 (C2)
- Burbridge Pharmacy Building — 62 (E1)
- Business Administration — 29 (C1)
- Canadian Studies — 36 (C1)
- Central Services Building — 52 (C2)
- Chase Building — 9 (B1)
- Chemistry — 12 (B1)
- Classics — 27 (C2) (C2)
- Comparative Religion — 23 (B1)
- Computer Centre — 21 (B1)
- Counselling and Psychological Services — 37 (C2)
- Dalhousie Arts Centre — 46 (C1)
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- Macdonald Building — 11 (B1)
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- Mathematics, Statistics, Computing Science — 9 (B1)
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- Personnel/Payroll Services — 10 (B2)
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For specific locations of offices and departments, consult the university switchboard, 494-2211, the Halifax-Dartmouth telephone directory, or the Dalhousie telephone directory.

January 1996

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For further information

The Registrar's Office

Dalhousie University

Halifax, N.S. Canada B3H 4H6

Fax: 902-494-1630 or call: 902-494-2450