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**[www.stfx.ca](http://www.stfx.ca)**



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Students and other readers will appreciate that matters dealt with in this Academic Calendar are subject to continuing review. The university reserves the right to alter anything described herein without notice other than through the regular process of the university. Please refer to the online version of this academic calendar for updates. The university cannot accept responsibility or liability to any person or persons who may suffer loss or who may be otherwise adversely affected by such changes. The Academic Calendar takes precedence over all other publications.

In the interpretation of academic regulations, the University Senate is the final authority. The registrar will assist students in interpreting academic regulations; however, it is the responsibility of students to see that their academic programs meet university regulations.

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Fax: 902-867-5458  
Email: registrar@stfx.ca



The Academic Calendar is available online at  
[www.sites/stfx.ca/registrars\\_office/academic\\_calendar/](http://www.sites/stfx.ca/registrars_office/academic_calendar/)

# CALENDAR OF EVENTS 2012 - 2013

## JUNE 2012

- Mon. 18** **Course registration for the 2012-2013 academic year begins**  
Last day of spring examinations
- Thu. 21 Professors to submit grades by 9am

## JULY

- Tue. 3** **Summer classes begin**
- Fri. 13 Final date to apply for degree or diploma to be conferred at Fall Convocation

## AUGUST

- Mon. 13** **Last day for summer examinations**
- Mon. 20 Professors to submit summer grades by 9 a.m.
- Thu. 30 International Students arrive to attend the welcome program, the full schedule at [www.mystfx.ca/prospective/international](http://www.mystfx.ca/prospective/international)

## SEPTEMBER

- Sun. 2 New students arrive. Orientation program begins. Students will receive first week schedule listing events, times and locations. New students only may check into residence after 9:00 a.m.
- Mon. 3 Orientation program continues
- Tue. 4 Academic Day  
Orientation program continues  
Returning students may check into residence after 9:00 a.m.  
Xaverian Welcome ceremony for new students in the evening
- Wed. 5** **Classes begin**
- Sun. 9 Opening Mass of the Holy Spirit 5 p.m.
- Wed. 12** **Last day to change first term or full year courses**
- Tue. 18 Faculty of Science meeting 5:30 p.m.
- Thu. 20 Faculty of Education meeting 3:10 p.m.  
General faculty meeting 7:30 p.m.
- Fri. 21 Faculty of Arts meeting 2:15 p.m.  
Faculty of Business meeting 2:00 p.m.  
HKIN Fall Outdoor Camp begins
- Thu. 27 Final date for approval of senior honours and advanced major thesis topics and supervisors  
For Fall Convocation, final date for:
- seniors to submit senior theses
  - graduate students to submit theses

## OCTOBER

- Tue. 2 University Senate meeting 3:45 p.m.
- Mon. 8** **Thanksgiving Day, no classes**
- Tue. 9 October quiz period begins, ends Oct. 23
- Fri. 12 Final date to apply for degree or diploma to be conferred at Spring Convocation
- Fri. 19 HKIN Fall Outdoor Camp begins
- Mon. 22 Final day for tuition refunds for first term courses, when applicable
- Fri. 26 Professors to submit October quiz grades by 9 a.m.

## NOVEMBER

- Fri. 2 Last day to drop first-term courses
- Tue. 6 University Senate meeting 7:30 p.m.
- Sun. 11 **Remembrance Day**
- Mon. 26 Final day for tuition refunds for full year courses, when applicable  
University Senate meeting 3:45 p.m.
- Fri. 30** **Last day of classes for first term**

## DECEMBER

- Mon. 3 Feast Day of St. Francis Xavier, Alumni Memorial Mass  
Faculty of Education meeting 10:00 a.m.
- Wed. 5** **Term examinations begin**
- Sat. 8** **Fall Convocation**
- Sat. 15** **Christmas recess begins after last examination**
- Wed. 19 Professors to submit term grades by 9 a.m.

## JANUARY 2013

- Mon. 7** **Second term classes begin**
- Mon. 14** **Last day to drop full year courses or change second-term courses**  
University Senate meeting 3:45 p.m.
- Fri. 18 Faculty of Arts meeting 2:15 p.m.  
Faculty of Business meeting 2:00 p.m.
- Tue. 22 Faculty of Science meeting 5:30 p.m.
- Thu. 24** **Final date for submission of application to the B.Ed. program**

## FEBRUARY

- Mon. 4 University Senate meeting 7:30 p.m.
- Mon. 11 Final day for tuition refunds for second term courses, when applicable
- Fri. 15 Faculty of Education meeting 10:00 a.m.
- Mon. 25** **Midterm recess begins, offices closed**

## MARCH

- Fri. 1 Final date for nominations for faculty research award
- Mon. 4** **Classes resume**  
**Last day to drop second term courses**
- Tue. 5 University Senate meeting 3:45 p.m.
- Mon. 11 Formal Academic Advising Period Begins
- Thu. 21 Student Research Day
- Fri. 29** **Good Friday, no classes**  
For Spring Convocation, final date for:
- seniors to submit senior theses
  - graduate students to submit theses
- Final date for sophomores to apply for honours and advanced major programs

## APRIL

- Tue. 2 University Senate meeting 7:30 p.m.
- Fri. 5** **Last day of classes**
- Wed. 10** **Final examinations begin**
- Sat. 20** **Last day of examinations**
- Mon 22** **Spring classes begin**
- Thu. 25 Professors to submit final grades by 9:00 a.m. for graduation candidates

## MAY

- Fri. 3 Spring Convocation list published
- Sun. 5** **Spring Convocation**
- Mon. 6 Professors to submit final grades for returning students by 9:00 a.m.
- Fri. 10 Faculty of Education meeting 10:00 a.m.



# Quaecumque Sunt Vera

## Whatsoever things are true

The St. Francis Xavier University motto is taken from the letter of Paul to the Philippians. The following is an excerpt from the epistle.

*I want you to be happy, always happy in the Lord; I repeat, what I want is your happiness. Let your tolerance be evident to everyone: the Lord is very near. There is no need to worry; but if there is anything you need, pray for it, asking God for it with prayer and thanksgiving, and that peace of God, which is so much greater than we can understand, will guard your hearts and your thoughts, in Christ Jesus. Finally, brothers and sisters, fill your minds with **everything that is true**, everything that is noble, everything that is good and pure, everything that we love and honour, and everything that can be thought virtuous or worthy of praise.*

Phil. 4: 4-9



# ST. FRANCIS XAVIER UNIVERSITY

## A TRADITION OF EXCELLENCE

St. Francis Xavier University is widely recognized as one of the top post-secondary institutions in Canada. Since its founding in 1853, StFX has helped shape the world in which we live. From its halls have come a prime minister, provincial premiers, Rhodes scholars, scientists and religious and business leaders. Today, StFX continues to offer what so many of Canada's top students want: a high quality education focused primarily on the undergraduate, in a vibrant residential setting. StFX continues to meet the needs of its students through outstanding teaching, exceptional hands-on research experience, the very best in residential living, and unique opportunities to make a contribution to communities at home and abroad.

St. Francis Xavier University's Strategic Plan, which represents the ideals for which the university strives, and reflects its proud traditions, emphasizes commitment to the highest standards for its faculty and students. It stresses that excellence in its teaching and research programs is more important than growth in size of the institution. Our niche is to be an excellent, mid-size liberal arts university, with high academic standards and a character attractive to those who hold and respect social and religious values. Through the development of the whole person, we will continue to provide society with the leaders of tomorrow.

The development of the whole person requires attention to the quality of the cultural, spiritual, social, and recreational life of our students and not solely to the teaching and learning process. We look to our students to conduct themselves responsibly and we strive to provide an environment in which they can develop. Whether they are in residence on campus or in the local community, we are concerned about their quality of life.

Today, St. Francis Xavier University is a leading national university with a longstanding tradition of academic excellence, service to society and innovation in teaching. StFX takes pride in the Catholic heritage and character that have formed a vital part in its history and mission, and is dedicated to providing its students with a post-secondary education that is intellectually stimulating and personally enriching within an atmosphere of inclusiveness for students, faculty and staff of diverse backgrounds.

The university brings together over 4,500 full and part-time students from across Canada and around the world for quality programs in the traditional arts

and sciences, including professional and applied studies in Business, Education, Engineering, Human Kinetics, Human Nutrition, Information Systems and Nursing, as well as through the world-famous Coady International Institute. StFX students have the opportunity to excel in an intimate learning environment that nurtures the development of the whole person. The unique StFX brand of education offers small classes, innovative teaching methods and exceptional opportunities for personal growth in a close-knit campus community.

StFX students and faculty are engaged with the world around them. Through international internships, service learning experiences, international research partnerships and community outreach initiatives, our students and professors are making meaningful contributions to communities at home and abroad. It's all part of an educational experience built on the values of social justice and equality.

Today, StFX is in the midst of a major campus renewal. We are upgrading teaching and research facilities and strengthening the residential campus. This is the most ambitious facilities renewal program for StFX in the past 40 years.

StFX professors rank among Canada's top teachers and researchers. These exceptional faculty members, most with doctorates and many with teaching awards, inspire students to achieve their potential. Through small classes students get to know their professors - and each other. The result is individual attention, lively classroom discussions, and the opportunity for students to reach their personal best.

### Arts

The Arts Faculty includes programs in the social sciences and the humanities. Through their teaching and research, faculty members lead our students on a journey that is intellectually broadening, socially awakening and culturally rich. StFX Arts graduates have an understanding of the world, an appetite for learning and an ability to solve problems. They are prepared to assume leadership roles in our rapidly changing society.

### Business and Information Systems

The Faculty of Business is the home of the Gerald Schwartz School of Business. StFX keeps pace with the changing way the world does business by connecting theory with practice as a vital component of the learning process. This is why the Schwartz School offers a variety of hands-on learning experiences, interna-





tional exchanges and a co-op option. The business and the information systems programs uniquely integrate the liberal arts tradition. The information systems department is one of only two Canadian university programs that have official accreditation in management information systems from the Canadian Information Processing Society. Grads of both programs are consistently sought out by major firms and corporations.

## Education

StFX's Faculty of Education believes that learning is a lifelong endeavour. Faculty work hard in building collegial, professional relationships with their students, practicing teachers and those in a variety of educational organizations. A distinguishing feature of the school is that it educates teachers in priority needs areas through specialized cohort programs such as French language, math, and Aboriginal studies.

## Science

The Science Faculty includes both the theoretical and applied sciences and professional programs in Engineering, Human Kinetics, Human Nutrition, and in the School of Nursing. The Faculty includes accomplished scientists who conduct teaching and research of the highest standard. In doing so, they provide a solid academic foundation for bright minds that go on to award-winning research, further study and exciting scientific careers. They also make important contributions to scientific discovery in Canada.

## History of StFX

StFX traces its origin to a small school of higher studies established by Most Rev. Dr. Colin F. MacKinnon at Arichat in 1853. The previous year, on his consecration to the See of Arichat, Bishop MacKinnon was placed in charge of an extensive diocese with a relatively large but widely dispersed Catholic population. To solve the urgent need for pastoral clergy, he founded an institution of general education. The initial student body numbered only 15. Two years later, in 1855, the institution was relocated in Antigonish with Dr. John Schulte as the first rector, succeeded by Most Rev. Dr. John Cameron.

By 1856, an ambitious curriculum had been developed in nine subjects, taught by six professors to 49 students, and the institution was then known as St. Francis Xavier's College. The original building stood at the centre of the Antigonish community and served for 25 years as the home of the college. Dr. Cameron's appointment to the Diocesan See in 1877 spurred further development, including a relocation to the southern boundary of Antigonish and the erection of the first wing of Xavier Hall in 1880. These 100 acres are the university's home today.

Full university powers were conferred upon the college by an act of the provincial legislature in 1866. A board of governors was appointed and incorporated under another act in 1882. This granted to the board general control over the direction and internal affairs of the institution.

The early graduates of StFX received a Bachelor of Arts degree. This academic program was broadened through the energy of new faculty, well qualified in both the humanities and natural sciences, and encouraged always by Bishop Cameron. A Master of Arts degree was first awarded in 1890 and a Bachelor of Letters was available by 1899. Just prior to the turn of the century, the university had departments of law, commercial studies and a faculty of applied science, the first in Nova Scotia. Bachelor of Science degrees were awarded by 1904.

The foresight of Bishop Cameron led him to invite to Antigonish the Sisters of the Congregation of Notre Dame of Montreal, to staff a school for young women. This St. Bernard's Academy became affiliated with the university in 1894 as Mount Saint Bernard College. In 1897 St. Francis Xavier became the first Catholic coeducational university in North America to grant degrees to women. Members of the Congregation joined the faculty in later years. Women represented a small fraction of the student body for more than 100 years, but by 1985, they equalled men in numbers.

On the occasion of the university's golden jubilee, the chancellor, Bishop Cameron, declared, "No multi-millionaire laid its foundations in wealth and built the university's walls from his own private fortune. But it boasts a more precious and, let me add, a more secure foundation: the loving hearts of a loyal people." The well-being of StFX lay in the generous hands of the Scots, Irish and Acadians of eastern Nova Scotia. The priest faculty for over 100 years toiled essentially without remuneration. No university owes more to its loyal people, the alumni,

than does StFX. The gracious campus, the many academic programs and the research endeavors were possible only through their support, as very little assistance was received from the public, through governments, prior to the 1960s. Today StFX alumni remain dedicated and committed to their alma mater.

Under the inspiration of Dr. Cameron in 1900, the Congregation of the Sisters of St. Martha was founded on the campus. Their specific task was to provide household management of the university. Within a very few years, the sisters' apostolic mandate broadened to include nursing care, and formal nursing programs at St. Martha's Hospital were affiliated with the university for 65 years. In the trying years after World War I, and in the depression decade especially, the university would not have survived without the labor of the priest faculty and the unselfish devotion of the Sisters of St. Martha. Today the presence of the Marthas is still felt on campus with the establishment of Wellspring Centre, a homey, relaxing place of welcome and friendship. Staffed by the Sisters of St. Martha, it offers to the university community an environment for interaction and dialogue, quiet reading, reflection and prayer. Wellspring is located on the second floor of Morrison Hall.

A decade after the First World War, influential priest faculty, led by Dr. J.J. Tompkins, became concerned that StFX should relate more closely to the circumstances of ordinary people. Their view was that those outside the formal academic setting could, by study and cooperative action, find the power to solve economic and other problems through social reform. The product of their effort became known as the Antigonish Movement. The formal structure within the movement crystallized as the university's Extension Department in 1928. Its first director was Dr. M.M. Coady. As a result of this work, by the end of the Second World War, a formidable number of co-operative projects, leadership training programs, consumer, producer and credit co-operatives, and agricultural associations developed, bringing with them a new measure of social and economic vitality. Leaders from the developing world began to come to the university to study in the Extension program. To satisfy this quest for information the Coady International Institute was established in 1959. To date, over 5000 graduates of the institute hold economic and social development positions around the globe.

The rapid growth in student numbers following World War II, especially in the Cape Breton industrial area, prompted the extension of academic programs beyond the home campus. Xavier College was established in Sydney in 1951 to offer the first two years of degree programs. This campus not only grew rapidly over the next two decades, but the demands for technology training prompted both the government of Nova Scotia and the university to amalgamate the Nova Scotia Institute of Technology with Xavier College. The College of Cape Breton was born of this union in 1974 and it granted degrees in affiliation with StFX. These degrees, based on both traditional academic and innovative technological programs, were awarded until 1982. In that year, by provincial act, a charter was awarded to the college creating a wholly separate institution of higher education, the University College of Cape Breton.

Since its founding, StFX has remained true to its commitment to the development of the whole person in service to humanity.







## 1. ADMISSION PROCEDURES AND REQUIREMENTS

- 1.1 Admission Procedures
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- 1.8 Admission to the Bachelor of Education Program
- 1.9 Admission to Graduate Programs

### 1.1 ADMISSION PROCEDURES

Address all applications and inquiries concerning admission to:  
 The Admissions Officer, St. Francis Xavier University  
 PO Box 5000  
 Antigonish, NS B2G 2W5  
 Phone: 1-877-867-7839, 902-867-2219  
 Fax: 902-867-2329  
 Email: [admit@stfx.ca](mailto:admit@stfx.ca)

Applications for admission should be made on the appropriate form, which includes two letters of reference at the applicant's discretion and a resume indicating their personal, extra-curricular, and work experience. A non-refundable application fee of \$40 (subject to change) is required. All applicants should request their high school counsellor to submit a school transcript. Transfer students must submit official university or college transcripts.

The admission procedure is complete when the candidate has returned a confirmation form together with the appropriate fee. Admissions decisions are final.

All information supplied by an applicant may be used by the university in its normal course of business. St. Francis Xavier University (StFX) is required to abide by Freedom of Information and Protection of Privacy legislation (FOIPOP) and the Personal Information Protection and Electronic Documents Act (PIPEDA) as they apply to universities.

#### Entrance Scholarships

All applicants from high school with superior grades will be considered for entrance scholarships. See section 2.4 for information on university scholarships.

#### Transfer Candidates

The university may admit and grant advanced standing to a student who has attended another college or university. Official documents of all previous academic work must be submitted whether or not advanced standing is sought. Failure to supply such documents is considered grounds for subsequent academic dismissal.

#### Canadian Colleges

Applicants who have earned a diploma at a Canadian college, and achieved an overall minimum average of 75 may be granted up to 30 transfer credits. Only diplomas which are at least two years duration can be considered. Credits may count as electives or, if areas of study can be matched to appropriate courses offered at StFX, credits may count as courses in specific subjects.

#### Mature Students

Candidates who have not fulfilled the normal admission requirements and who have been out of school at least three years may be considered for admission. Candidates are required to submit transcripts of all previous academic work, letters of reference from employers, and an outline of future plans. Each applicant is considered on an individual basis.

#### Program for Students with Disabilities

StFX welcomes students with disabilities and offers a student-centered program of support. Students with disabilities are responsible for identifying and providing documentation of their disability to the co-ordinator of the program. Students are encouraged to make contact as soon as possible. For further information, call the Tramble Rooms Centre for Accessible Learning at 902-867-5349.

## 1.2 ADMISSION TO UNIVERSITY PROGRAMS

The university reserves the right to reject any application for admission on the basis of the applicant's overall academic record even if the entrance requirements are satisfied.

In special circumstances, a student lacking the specified requirements may be admitted. The university takes into consideration the overall demographics of its constituency.

Senate regulations limit enrolment in some programs. Admission to these programs is competitive and possession of the minimum requirements does not ensure acceptance into the program.

## 1.3 ADMISSION FROM NOVA SCOTIA GRADE 12

### a) Requirements:

- i) A minimum average of 70 in grade XII, to include English each year; no grade less than 65 in a course required for admission
- ii) Credit for five university preparatory courses in each of grade XI and grade XII.

The following university preparatory subjects are acceptable: English, entrepreneurship, geography, global history, global geography, history, mathematics (algebra, trigonometry, geometry, functions/relations), modern languages, classical languages, economics, biology, chemistry, earth sciences, and physics. Some university preparatory courses may not be listed above. Please contact the Admissions office if you have any questions.

b) In addition to English, all programs require additional grade XII credits as specified in the chart on page 3.

c) Admission to the music program is a two-part process. Students must apply to and be accepted by both the university and the music department.

Candidates must contact the music department to arrange for an audition or receive information regarding a taped audition. Call 902-867-2106 or write to the Department of Music, St. Francis Xavier University, PO Box 5000, Antigonish, NS, B2G 2W5. Only after acceptance to the university and completion of a successful audition are candidates fully enrolled in the music program. Successful candidates receive letters of acceptance from both the university and the music department.

d) Students are initially admitted to the Bachelor of Arts (BA) with major undeclared:

- i) Majors are offered in anthropology, aquatic resources, Catholic studies, development studies, Celtic studies, computer science, economics, English, French, history, mathematics, statistics, and computer science, music, philosophy, political science, psychology, religious studies, sociology, Spanish, and women's and gender studies.
- ii) Students are expected to declare major and minor subjects by registration for the third year. Students may choose the four-year BA advanced major or honours program during their second year of study.

e) Students are initially admitted to the Bachelor of Business Administration (BBA) and Bachelor of Information Systems (BIS) programs in the Faculty of Business with major undeclared. Students wishing to declare a major do so prior to registering for their third year.

The BBA degree with major or honours is offered in accounting, enterprise development, finance, information systems, leadership in management and marketing. The BIS degree with major and honours is offered in enterprise systems and IT management.

f) The Bachelor of Science (B.Sc.) degree with advanced major or honours is offered in biology, chemistry, computer science, economics, earth sciences, mathematics, physics, and psychology. A B.Sc. major degree is also offered in these subjects and aquatic resources, but not in economics or psychology. Students may choose the B.Sc. advanced major or honours during their second year of study.

g) Students applying for the Bachelor of Science in Nursing (B.Sc.Nursing) have four options: the traditional 4 year option, the post-degree option, or the part-time post RN option. See the table on page 3 and section 1.7 for program descriptions and entrance requirements. Students accepted into any B.Sc. Nursing option are required to provide proof of: current certification in Health Care Provider (HCP) and first aid; screening through the child abuse register in their home province (if this service is available in their home province); criminal records check completed at their nearest detachment of the RCMP; current certification in WHMIS; a copy of their birth certificate, valid driver's

license (or provincial health card) and required immunization records (Hepatitis B immunization and tuberculin-two step Mantoux testing is also required). Documents must be presented on registration day. Annual recertification of HCP and first aid is mandatory for clinical practice. Students will be screened through the Nova Scotia Child Abuse Register during first semester.

- h) Advanced Placement (AP): The AP program is accepted for admission on the same basis as Nova Scotia grade 12. Students who have completed courses in the AP program may be granted advanced standing for individual AP courses for which a grade of 3 or higher has been achieved. No course credit will be awarded.
- i) International Baccalaureate (IB): The IB program is accepted for admission on the same basis as Nova Scotia grade 12. For students who complete the IB Diploma, admission to the university requires a minimum of 24 points including bonus points. Due to limited enrolment, a higher score will be required for admission to some programs. Advanced standing or course credit may be granted for individual higher level subjects for which a grade of 5 or higher has been achieved. Subject to department approval.
- j) Early fall admission: Students who have a grade 11 average of at least 80 may be considered for early fall admission before their first set of grade 12 marks is available. Students applying for early fall admission should include their final grade 11 marks and a school-approved list of courses they are taking in grade 12 (both semesters) with their application. Grade 12 courses must be consistent with the guidelines listed above. For further information, contact the admissions office.

## 1.4 ADMISSION FROM OTHER PROVINCES

The requirements for admission from high schools in other provinces are stated below. The courses required for university programs are specified in the chart on page 3.

### Alberta

Applicants must have grade XII with subject distribution and minimum averages as for Nova Scotia. All five courses must be at the 30 or 31 level.

### Manitoba, Saskatchewan,

Applicants must have grade XII with subject distribution and minimum averages as for Nova Scotia.

### New Brunswick, Prince Edward Island, British Columbia, Northwest Territories, Nunavut, Yukon

Applicants must have grade XII with subject distribution and minimum averages as for Nova Scotia.

### Newfoundland and Labrador

Applicants must meet the same course requirements and minimum averages as Nova Scotia students. Courses needed to satisfy entrance requirements must be at the 3000 level and students must achieve at least 11 credits.

### Ontario

Ontario secondary school students must have a minimum of five grade XII courses of U and M levels (preferable four U level courses) to include the program-specific requirements outlined on page 3, and must have completed the Ontario Secondary School Diploma (OSSD) or equivalent to be considered for admission.

### Quebec

Applicants who have completed senior matriculation or one year of CEGEP will be considered for entry into the first year of a four-year program. Applicants who have completed the two-year CEGEP program with an average of at least 70, and who receive the DEC will be admitted to the second year in a four-year degree program.

**FACULTY OF ARTS CHART** Four-year programs unless otherwise stated

Program	Description	High School Requirements
Bachelor of Arts with Major	Offered in anthropology, aquatic resources, Catholic studies, Celtic studies, computer science, development studies, economics, English, French, history, mathematics, music, philosophy, political science, psychology, religious studies, sociology, Spanish, statistics, women's and gender studies. Students may choose the advanced major or honours degree during their second year of study.	English and four university preparatory courses in grade 12. See 1.3 d.
Bachelor of Arts in Human Kinetics	The study of human movement from an arts (humanities and social sciences) perspective prepares students for a variety of options: employment and careers in health and fitness, or further studies in education, occupational therapy, sport sociology, sport history, sport philosophy or sport psychology. Students must choose a major, advanced major or honours in kinesiology, or a major, advanced major or honours in pre-education during their second year of study.	English; one of math, biology, chemistry or physics; and three other university preparatory courses in grade 12 (grade 11 physics highly recommended). Limited enrolment
Bachelor of Arts in Music Jazz Studies Diploma in Jazz Studies (two years)	Students in the BA in Music often continue their studies in education. This program combines composition, arranging and performance. The diploma is for students who wish to enter the field of commercial music. The first and second years of the Bachelor of Arts in Music, the Bachelor of Music and the Diploma in Jazz follow a common curriculum in jazz studies. Students apply for admission to the Bachelor of Arts in Music with Advanced Major or Honours, or the Bachelor of Music with Honours during their second year of study.	Academic entrance requirements for both music programs are the same as those described above for the BA. Admission depends on the student's performance during an audition, which may be performed in person or submitted on a CD or tape. See 1.3 c. Limited enrolment

**FACULTY OF BUSINESS** Four-year programs

Program	Description	High School Requirements
Bachelor of Business Administration	Students may choose the general degree; the degree with major in accounting, enterprise development, finance, information systems, leadership in management and marketing; honours in accounting, enterprise development, finance, information systems, leadership in management and marketing; or joint honours in business administration and economics. Co-op programs are available.	English, math and three other university preparatory courses in grade 12. Limited enrolment
Bachelor of Information Systems	Designed to prepare graduates for positions such as systems analyst, applications programmer or information systems specialist. Students may choose the major or honours in enterprise systems, or IT management. Co-op programs are available.	English, math and three other university preparatory courses in grade 12. Limited enrolment

**FACULTY OF EDUCATION** Two-year program

Program	Description	High School Requirements
Bachelor of Education	A professional degree program that prepares graduates to enter the school system as teachers, at either the elementary or the secondary level.	Completion of an undergraduate degree (BA, B.Sc. or equivalent). Minimum average of 70 in senior year of the undergraduate program. Limited enrolment

**FACULTY OF SCIENCE** Four-year programs unless otherwise stated

Program	Description	High School Requirements
Bachelor of Science with Major	Major degree program offered in: aquatic resources, biology, chemistry, computer science, earth sciences, environmental sciences, mathematics, physics, psychology and statistics. During their second year of study, students may choose the advanced major, joint advanced major, honours or joint honours program in the above subjects and in economics and psychology but not aquatic resources.	English; pre-calculus math; two of biology, chemistry or physics; and one other university preparatory course in grade 12. See 1.3 f.
Bachelor of Science in Human Kinetics	The scientific study of human movement prepares students for a variety of options: employment and careers in the health and fitness sector; studies at the graduate level in biomechanics, motor control, or exercise physiology; and admission to programs such as education, physiotherapy, athletic therapy, or medicine. Students must choose a major, advanced major or honours in kinesiology, with a minor in human nutrition or health sciences, or a major, advanced major or honours in pre-education during their second year of study.	English; two of math, chemistry, biology or physics; and two other university preparatory courses in grade 12 (grade 11 physics highly recommended). Limited enrolment
Bachelor of Science in Human Nutrition	The program prepares students for a range of career possibilities in the field of nutrition and foods as well as advanced studies. Students may choose the advanced major or honours program during their second year of study. Students may meet the requirements for the Integrated Dietetic Diploma program and for the Graduate Dietetic Internship program.	English; math; two of biology, chemistry or physics (normally biology and chemistry); and one other university preparatory course in grade 12. Limited enrolment
Bachelor of Science in Nursing (four years plus two spring sessions)	The program prepares nurses to think critically and creatively by providing a sound education in nursing science, related sciences, and the humanities. Students may choose the advanced major or honours program during their second year of study. Graduates practice nursing in acute care or community settings, through teaching and leadership. See 1.7 for other program options.	English, math, chemistry, either biology or physics, and one other university preparatory course in grade 12. See 1.3 g. Limited enrolment
Engineering Diploma (two years)	Upon completion of the diploma, students continue their studies at Dalhousie University, or transfer the credits earned to any other university of their choice, to complete the remaining requirements for the Bachelor of Engineering degree.	English; pre-calculus math; chemistry; physics; and either biology or one other university preparatory course in grade 12. Limited enrolment

**GRADUATE STUDIES**

See chapter 8

**DIPLOMA IN ADULT EDUCATION**

See section 6.7

**DIPLOMA IN MINISTRY**

See section 4.2



### 1.5 ADMISSION FROM THE UNITED STATES

High school graduates who have completed 16 academic subjects will be considered for admission to a four-year degree. The 16 courses must include four English courses and the program-specific subjects listed in the following table.

Program (four years unless otherwise indicated)	Additional Subjects
Bachelor of Arts	see 1.3 d
Bachelor of Arts in Human Kinetics	3 sciences and/or mathematics
Bachelor of Arts in Music	see 1.3 c
Bachelor of Music	see 1.3 c
Diploma in Jazz Studies (two years)	see 1.3 c
Bachelor of Business Administration	3 mathematics
Bachelor of Information Systems	
Bachelor of Science	4 mathematics and 4 science
Bachelor of Science in Human Nutrition	
Bachelor of Science in Nursing (four years and two intersessions)	
Diploma in Engineering (two years)	
Bachelor of Science in Human Kinetics	4 science and/or mathematics

### 1.6 ADMISSION FROM OTHER SYSTEMS OF EDUCATION

International applications will be considered on an individual basis.

For applicants from a British system of education, all students must have completed English and four other academic courses with a minimum grade of B at the ordinary level. In addition, two General Certificate of Education (GCE) advanced-level examinations or the equivalent, with grades of A, B, or C, are normally required for admission to any program. A student who has successfully completed one year of study in an academic program beyond the GCE at the ordinary level may be considered for admission. English, mathematics, two sciences, and one other academic subject are required for admission to programs in the Faculty of Science. Students may also be granted advanced standing in certain programs.

For applicants whose first language is not English, or whose normal language of instruction has been other than English, a test of English language proficiency may be required. The Test of English as a Foreign Language (TOEFL) or its equivalent is recommended. If TOEFL scores are submitted, then a minimum score of at least 580 on the paper-based test, 236 on the computer-based test or 92 on the IBT (internet based TOEFL) is required. Other acceptable tests and the minimum scores include the MELAB (90), IELTS (6.5) or the CAEL (70).

### 1.7 ADMISSION TO THE BACHELOR OF SCIENCE IN NURSING

Besides the traditional four-year degree program described on page 3 for students applying from high school, other students may apply for the post-degree option or the part-time post-RN option. Admission is competitive and enrolment is limited. Students wishing to resume taking nursing courses must contact the Chair, School of Nursing, prior to June 30.

Program	Description	Admission Requirements
Post-Degree (may not be offered every year)	University graduates who hold a degree and the required prerequisite courses, and who completed this degree within the past 10 years, may complete the BScN program in a full-time 24-month option. This program starts in January.	Completed undergraduate degree with a minimum 70 average in their final year of study, successful completion of the following courses: 12 credits biology (cell biology, microbiology with lab, anatomy and physiology with lab); 6 credits chemistry (introductory chemistry with lab); 12 credits psychology (introductory psychology, developmental psychology); 6 credits nutrition (introductory human nutrition, applied human nutrition); 6 credits philosophy or religious studies.
Post-RN 63 credits By distance, with limited opportunity for courses on campus	Designed around core nursing competencies with extensive flexibility that enables students to select courses meeting their professional interests and practice needs.	Completion of an approved registered nursing program and current RN license.

### 1.8 ADMISSION TO THE BACHELOR OF EDUCATION PROGRAM

Admission to the B.Ed. program is limited. Consideration is given to those who have successfully completed an undergraduate degree, provided references, and had experience related to a career in teaching. Admission is competitive and the possession of minimum requirements does not ensure acceptance into the program.

See chapter 6 for admission and program requirements.

### 1.9 ADMISSION TO GRADUATE PROGRAMS

The requirements for admission to graduate programs are given in chapter 8.

## 2. GENERAL INFORMATION

### 2.1 Registration Fees

- 2.1.1 Tuition Fees
- 2.1.2 Other Registration Fees
- 2.1.3 Refunds
- 2.1.4 Students' Union Fees
- 2.1.5 Payment Regulations
- 2.1.6 Non-Payment of Tuition, Registration, Residence or Meal Plan Fees
- 2.1.7 Other Undergraduate Fees
- 2.1.8 Tuition and Fees for Graduate, Distance, Diploma in Adult Education and Diploma in Ministry Programs

### 2.2 Residence and Meal Plans

### 2.3 Student Services

- 2.3.1 Athletic and Recreational Programs
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### 2.4 Human Rights and Equity

### 2.5 Safety & Security

### 2.6 University Scholarships and Bursaries

### 2.7 University Prizes

## 2.1 UNDERGRADUATE REGISTRATION FEES

### 2.1.1 Tuition Fees

The tuition fees shown here are for 2011-2012 in Canadian dollars and are subject to change. An addendum to this Academic Calendar will show the fees for 2011-2012. For the most current and up to date information on tuition fees and refunds please refer to the accounting services online resources at [http://sites.stfx.ca/financial\\_services/StudentAccounts](http://sites.stfx.ca/financial_services/StudentAccounts)

Tuition fees including tuition, laboratories, library, and university health service are:

Fewer than 24 credits	\$ 225.00 per credit
24 to 30 Credits	\$6391.00
Above 30 Credits	\$6391.00 plus \$206.00 per credit

Students with disabilities enrolled in fewer than 30 credits qualify for the per credit rate upon recommendation of the Program for Students with Disabilities.

### 2.1.2 Other Registration Fees

Up to 18 credits, a pro-rated students' union fee is assessed at \$4.87 per credit hour. For 18 or more credits, the fee is a flat rate of \$146.12.

Students registered in 18 or more credits automatically make a contribution of \$25.00 to the university's capital campaign.

Students registered in 18 or more credits are automatically enrolled in the St. Francis Xavier Students' Union Health and Dental Plans. This plan supplements provincial health care plans, it does not replace them. The fees for 12 months are as follows:

Canadian students	\$159.00 (single), \$361.80 (family)*
International students	\$784.00 (single)*
Dental Plan	\$125.00*

\*Fees are subject to change from year-to-year dependent on changes to insurance premiums.

If a Canadian student is already covered under an extended health plan (this does not mean a provincial health plan), they may opt out of the students' union health and dental plan(s) and receive a refund for these fees. To opt out of the students' union health and dental plan(s), students can go online to [www.studentbenefits.ca](http://www.studentbenefits.ca) and select the StFX Students' Union logo and follow the steps to complete the opt out process. Students must have a digital copy of their proof of coverage to complete this process. Opt out for students will be open from September 1-30, 2012.

International students attending StFX are automatically enrolled in the StFX students' union health and dental plans. International students are provided through this plan, the coverage that Canadian students receive provincially, as well as additional health and dental coverage. International students cannot opt out of the health and dental plans. International students with Canadian citizenship are considered international students for the purposes of the health and dental plans.

While a member of the StFX students' union health and dental plans, a student's StFX ID number, name, gender and date of birth are used by the health and dental plan administrator to determine eligibility for benefits and are used for this purpose only. Personal data is stored securely, and is used only in relation to the health and dental plans. Without this information, a student would still be covered for benefits; however, claims may not be adjudicated. For information on the health and dental plan contact 902-867-2474 or email [sryan@stfx.ca](mailto:sryan@stfx.ca)

Up to 24 credits, a pro-rated technology fee is assessed at \$11.67 per credit. For 24 or more credits, the fee is a flat rate of \$350.00.

Students who are not Canadian citizens or permanent residents are required to pay an international student fee in addition to tuition. Up to 24 credits, a pro-rated fee is assessed at \$225.00 per credit. For 24 or more credits, the fee is a flat rate of \$6,391.00.

All fees are subject to change.

**Notes:**

- a) Students who audit courses (not for credit) are charged one-half of tuition and registration fees.
  - b) Senior citizens (age 65 and over) are not charged tuition or registration fees.
- A summary of tuition and registration fees is as follows:

Fees (Cdn \$)	Credits Up to 17.99	Credits 18 to 23.99	Credits 24 to 30	Credits Over 30
Tuition	per credit 225.00	per credit 225.00	6391.00	6391.00 + per credit 206.00
Technology	per credit 11.67	per credit 11.67	350.00	350.00
Students' Union	per credit 4.87	146.12	146.12	146.12
Recreational Facilities		100.00	100.00	100.00
Capital Campaign	--	25.00	25.00	25.00
Health Care Plan	--	Cdn 159.00	159.00	159.00
	--	Intl 784.00	784.00	784.00
Dental Plan		125.00	125.00	125.00
International Fee	per credit 225.00	per credit 225.00	6391.00	6391.00

**Total of All Fees for Full Time, 24 to 30 Credits**

Canadian Student	\$ 7296.12
International Student	\$ 14,312.12

**2.1.3 Refunds**

For students who drop one or more course(s) or withdraw from the university, refunds are applied according to the date, within the applicable term, on which the drop(s) occur(s) or the student withdraws. The percentage of the refund reduces on a weekly basis until the end of the applicable refund period. The final dates on which students will receive refunds are indicated in the calendar of events at the front of the Academic Calendar, for first term, second term and full year courses.

The refunding process applies the appropriate refund percentages to the credit-hour value of courses that are dropped and then sums all of the student's credit hours to determine the correct tuition and fee assessment.

For examples of refunding, select the links at student accounts, then refunds on the accounts receivable web page at <http://www.stfx.ca/campus/admin/accounting-services/>

**2.1.4 Students' Union Fees**

The students' union is the autonomous, democratic student organization at StFX. The union represents students' interests and provides a wide variety of academic, social, issue-oriented, and cultural services for students. Fees are collected at the request of the union and are administered by students.

**Students' Union fees fund the following:**

	full-time	part-time per credit
Students' union general budget	135.12	4.58
House dues (for students living in on-campus residence except Somers and Powers Hall)	60.00	--
Capital campaign fee	25.00	--
Athletic fee	7.00	0.29
Refugee student support	4.00	--
	<u>\$ 231.12</u>	<u>\$ 4.87</u>

The general budget covers: student societies; the student newspaper, radio station, yearbook, and handbook; orientation; the walk-home program, off-campus housing service, and tutoring service; activities and concerts; membership in the Canadian Campus Business Consortium (CCBC); the film and lecture series; lobbying and publicity; issue awareness campaigns; the resource centre; elections; the campus police force; and general operations.

**2.1.5 Payment Regulations**

Students can check their student fee account online at <http://mesamis.stfx.ca/reports/login.asp> by using their student number and PIN to access this information. Refunds on student accounts will reflect the method of payment. Cheques should be made payable to St. Francis Xavier University. All fees are subject to change at any time. Payment can also be made by debit card in person. Students can also pay by telebanking or online banking by setting up St. Francis Xavier University as a payee and the account number is the student ID number. A portion of the fees is due and payable at registration in September and the balance at registration in January. New students are required to pay first-term fees during the orientation session at the Millennium Centre in September.

Recipients of university scholarships may deduct one-half the value of their scholarship from fees required in September. The balance of the scholarship is applied to fees due in January. Students should note that no reduction in fees is allowed for late entrance.

Monthly late payment fee: a late payment fee of one percent per month, or 12 percent per annum, will be charged on overdue accounts as of the last banking day of each month. The charge will begin in the first semester at the end of September, and in the second semester at the end of January.

Students are expected to be familiar with and to understand all regulations in the StFX Academic Calendar, in particular to understand that adding and dropping courses or withdrawing from the university affects a tuition fee account. Students must ensure that tuition fees are paid in full without any notice from the university, and pay the fees regardless of receipt of a bill. A student who for any reason is unable to pay fees by the due dates should contact the business office regarding a possible deferment.

Students whose fees will be paid by an external sponsor must provide proof of funding to the business office prior to the payment deadline dates.

**2.1.6 Non-Payment of Tuition, Registration, Residence or Meal Plan Fees**

Students with a balance of fees owing from a previous term will not be permitted to register for a subsequent term unless they have made satisfactory arrangements with the business office.

The university reserves the right to cancel the registration of students who fail to pay any fees owing to the university. The university reserves the right to refuse to let students sit for examinations if their fees to the university are overdue. The university will not release a transcript unless arrangements satisfactory to the business office have been made by the student for the payment of any outstanding fees. The university is not responsible for deadlines missed by students who do not pay their fees on time.

The university reserves the right to cancel residence and meal contracts for non-payment of fees.

### 2.1.7 Other Undergraduate Fees

All fees are subject to revision.

Application fee for admission to undergraduate and B.Ed. programs	\$40.00
Late payment fee (each term) (see note a)	25.00
Confirmation payment:	
New and B.Ed. students (see note b)	300.00
New B.Sc.Nursing students (see note c)	100.00
Transcript of record (each copy)	10.00
Letter of permission (per 3 credit course)	20.00
NSF cheque fee	20.00
Unwarranted breakage of or damage to StFX University property will be charged to the student responsible.	

Notes:

- A late payment fee of \$25 is charged in the first term if payment is delayed beyond September 28, and in the second term if payment is delayed beyond January 31.
- A student who declines an acceptance within 30 days of paying a \$100 confirmation fee qualifies for an \$85 refund. No refunds are made after 30 days or after August 1. The B.Ed. confirmation fee is non-refundable.
- See b above except that no refunds are made after July 1.

### 2.1.8 Tuition and Fees for Graduate, Distance, Diploma in Adult Education and Diploma in Ministry Programs

For information about tuition, fees and refunding policy for graduate studies, distance education, the Diploma in Adult Education and Diploma in Ministry programs, refer to the information available from the applicable program office.

## 2.2 RESIDENCE AND MEAL PLANS

Students in residence agree to be governed by the StFX University Community Code, the Residence Life Community Standards and the University Alcohol Policy and Residence Contract and to assume responsibility for their own actions or those of their guests, for their room and, along with other residents, for the common areas and assets of their house.

No refunds of fees for residence or food service will be made if students are temporarily absent from residence. This includes absences for academic reasons such as practice teaching. Refunds are processed only after the appropriate paperwork has been completed and room keys have been returned.

All inquiries about residence or meal contracts should be made to Residence Services, Morrison Hall, email: residence@stfx.ca, phone: 902-867-5106.

### 2.2.1 Application for Residence

#### New, Re-Entry, Mature, Exchange and Transfer Students

Once a student applies to attend StFX, they will receive a residence questionnaire from the admissions office. New students direct from high school are guaranteed a space in residence if they confirm their acceptance to the university, submit the residence questionnaire and pay the \$400 deposit before May 15. These applications to residence will be placed in a priority queue based on receipt of your academic and residence applications and corresponding deposits. The deposit does not become owing until the student has been accepted to the university. The total deposit is applied toward the student's residence and board fees. In the case where a student wishes to cancel their residence contract, refer to section 2.2.4 Cancellation of Residence Applications and Contracts.

#### Returning Students

Returning students may reapply for residence using the online applications according to the dates established by the residence services office. Detailed information on the room assignment process for returning students can be found on the university website under residence services ([www.stfx.ca/services/residence](http://www.stfx.ca/services/residence)). Once a room assignment is offered and the contract is submitted by the student, a cancellation fee will apply if the student wishes to cancel their residence contract. The cancellation fee will be applied to the student's account according to the fee schedule listed in section 2.2.4 Cancellation of Residence Applications and Contracts.

Students wishing to return to residence must be in good standing with the Community Code and Residence Life Community Standards.

### 2.2.2 Residence and Meal Fees and Regulations

All students living in residence (with the exception of the apartment-style and Governors Hall residences) are required to participate in a combined room and board plan. Students living in apartment-style and Governors Hall residences must make a minimum commitment to the food service program usually in the form of

declining cash balance (DCB), though they have the option of any of the meal plans. Off-campus students may purchase a meal plan and/or DCB or buy meals on a cash basis. Visit the residence website for details [www.mystfx.ca/services/residence](http://www.mystfx.ca/services/residence).

### 2.2.3 Duration of Residence Occupancy

#### New, Re-Entry, Mature, Exchange and Transfer Students

The University shall permit the resident to occupy their assigned room from Sunday, September 2, 2012 until 24 hours after their final exam in December or by noon on December 16, 2012\* whichever date and time is earlier and Sunday, January 6, 2013 until 24 hours after their final exam in April or by noon on April 21, 2013\* whichever date and time is earlier.

#### Returning Students

The University shall permit the resident to occupy their room from Tuesday, September 4, 2012 until 24 hours after their final exam in December or by noon on December 16, 2012\*, whichever date and time is earlier and Sunday, January 6, 2013 until 24 hours after their final exam in April or by noon on April 21, 2013\* whichever date and time is earlier.

Note: Students may be permitted to occupy their room on dates outside of those identified above; however, they will be required to sign additional contract(s) and may be subject to additional charges.

\*These dates are subject to change pending Senate approval.

### 2.2.4 Cancellation of Residence Application and Contract

Where the resident notifies the university in writing prior to his/her scheduled arrival that he/she does not intend to take their assigned room in residence, the University will process the deposit or cancellation fee according to the following schedule:

Cancellation Date	New	Returning
	Room Deposit	Room Forfeiture Fee
	\$400 (non-refundable)	\$400
After August 15	You are responsible for 15% of the room fee for the full academic year	You are responsible for 15% of the room fee for the full academic year

Where the resident notifies the university in writing that they wish to decline their room assignment either after the resident takes up his/her room (this includes an off-campus move) or after the day when the resident was expected to take occupancy (this includes an off-campus move), the following provisions shall apply:

- The resident assumes full responsibility for room and meal plan fees for the 2012-2013 academic year except in the following cases:
  - In the case of an involuntary withdrawal from residence, the University shall credit to the resident 85% of the remaining room and meal plan fees. No credit is given after February 1; or
  - In the case of the resident withdrawing from the University up to and including November 1, they will receive a 85% credit for the remaining room and meal plan fees from the date they vacate the premises. If the resident withdraws in the first term after November 1 they will be charged room and meal plan fees for the first term. If the resident withdraws in the second term up to and including February 1, the resident will receive a 85% credit for the remaining room and meal plan fees from the date the resident vacates the premises. If the resident withdraws in the second term after February 1, the resident will be charged with room and meal plan fees to the end of the academic year according to the 2012-2013 St. Francis Xavier University Academic Calendar. Residents are required to vacate their residence within 24 hours of academic withdrawal; or
  - In the case where the resident is released from this contract due to compassionate or other grounds at the sole discretion of the University.

The university reserves the right to cancel any residence contract on the basis of violation of policies outlined in the Residence Life Community Standards and/or violation of the University Community Code and/or drug policy and/or alcohol policy for residence and dining hall.

## 2.3 STUDENT SERVICES

The StFX student services department strives to maintain an inclusive and welcoming environment. Along with residence and food service, programs are provided to help students develop their capabilities and interests as fully as possible within the university community. In addition to the services identified below, the student services department works with the students' union to co-ordinate the first-year orientation program.



### 2.3.1 Athletic and Recreational Programs

The university has a wide variety of athletic and recreational programs.

The campus recreation program provides all students with opportunities to participate in different forms of physical activity through intramural sports, which offer competitive leagues and tournaments; non-credit instruction in a variety of physical activities; self-directed activities; and sport clubs.

StFX has a long and distinguished record in intercollegiate athletics, offering students with superior athletic ability an opportunity to develop and utilize their talents in competition with students from other universities within the Atlantic University Sport and Canadian Interuniversity Sport organizations. There are women's teams in basketball, cross country, hockey, rugby, soccer, track & field and volleyball; and men's teams in basketball, cross country, hockey, football, soccer and track & field. StFX Club sports include men's baseball, men's lacrosse, men's rugby, cheerleading, curling, rowing, women's field hockey and dance.

### 2.3.2 Student Career Centre

The Student Career Centre (SCC) offers three primary services: career coaching, career information and employment services. Career coaching services are provided on an individual and group basis. The SCC can incorporate the Strong Interest Inventory in students' career decision-making process and further educational opportunities.

Throughout the academic year, the centre offers a variety of events and programs that help students make informed career decisions and develop effective job search strategies. Some examples include workshops on career planning, resumé writing, job search, interview skills and job fairs. Employment related services include advertising new graduate, summer and on-campus jobs as well as employer and school information sessions which help students gain an understanding of the skills required in today's workplace.

### 2.3.3 Chaplaincy Services

In keeping with the university's Catholic Christian character, a university chaplain and an associate chaplain co-ordinate a team ministry, which gives interested students an opportunity for religious expression. Part-time ministers of the Anglican, Pentecostal, Presbyterian, Evangelical, and United churches co-ordinate activities for students of their denominations.

### 2.3.4 Counselling Services

The StFX counselling centre provides a variety of services to help students handle the personal challenges of university life. Professional counsellors can work with students on all personal issues which may include homesickness, anxiety, depression, stress, eating disorders, relationship problems, academic struggles and career preparation - any issue big or small.

The counselling centre offers individual and group counselling. Counsellors can make referrals to other services as required. All contact with the counselling centre is strictly confidential, students may self refer or referrals may be made by others.

The counselling centre is located on 4th Floor Bloomfield Centre (Room 424). To contact us please visit our website at <http://www.sites.stfx.ca/counseling/or phone> (902) 867-2281.

### 2.3.5 Student Life Office

The student life office works closely with other area on and off campus to enhance student success. The office strives to provide a positive space for all students to feel welcome and included in the wider StFX and Antigonish community. Academic success is always the number one priority while attending university however, a close second is engaging with and being involved in all the things the campus community has to offer.

The office is responsible for non-academic student advising for LGBTQ, Aboriginal, International and African Nova Scotian students as well as the Student Career Centre. The office acts as the primary liaison with the students' union and works collaboratively to offer programming on student leadership, off campus resources and university transition. The student life office is responsible for the administration of the Community Code of Conduct which deals with all matters of non-academic student conduct.

### 2.3.6 Financial Aid Office

The university maintains a financial aid office to advise students regarding government student loans, help students with financial planning, administer the university bursary program, and provide information on scholarships and awards from sources outside the university.

### 2.3.7 Health Services

The StFX Health Centre encourages students to take care of their body while expanding their mind. The Health Centre offers holistic health care services that include general physicians, nurses and referrals to alternative health care providers.

The nurses provide ongoing residence and off campus consultations as well as health promotion sessions. Students can take advantage of special services like immunization clinics, liquid nitrogen treatment, sexual health information, flu and travel vaccines. StFX student wellness is at the core of a positive student experience.

The Health Centre is located on 3rd Floor Bloomfield Centre (Room 305). To contact us please visit our website at [www.mystfx.ca/services/healthcentre](http://www.mystfx.ca/services/healthcentre) or phone (902) 867-2263.

### 2.3.8 Special Advisors and Contact Persons

StFX offers advising which aids students transitioning into and through university and recognizes that students have a variety of needs in the many distinct communities within the broader StFX community. The university aims to foster an environment of cultural competency and diversity through a variety of programs and one-on-one assistance which encourages student academic and personal success. These include LGBTQ, Aboriginal and international and mature student advisors. More information is available at [http://sites.stfx.ca/student\\_life/](http://sites.stfx.ca/student_life/)

### 2.3.9 Tramble Rooms Centre Accessible Learning

StFX welcomes students with disabilities and offers a student-centered program of support. These supports can include; advocacy, tutoring, exam accommodation, registration assistance, assistive technology training, peer support, physical accessibility arrangements, transition workshops, speakers bureau and note taking assistance.

The program is located on the 4th floor of Bloomfield Center in the Tramble Rooms. Contact us at (902)867-5349 or visit the website at [www.mystfx.ca/campus/stu-serv/counseling/policy.html](http://www.mystfx.ca/campus/stu-serv/counseling/policy.html)

### 2.3.10 Wellspring Centre

The Sisters of St. Martha staff Wellspring Centre, a comfortable, relaxing environment for reflection, interaction, prayer, support, personal and spiritual growth.

### 2.3.11 Writing Centre

Writing Centre services complement course work by assisting students in developing their academic skills. StFX students can arrange free one-to-one appointments by calling the writing centre at 902-867-5221. In an appointment the Writing Centre instructor and student discuss ways to improve the student's writing. This may be at any stage in the writing process. Writing Centre appointments may also focus on improving other academic skills such as note-taking, time management, oral presentations, and exam preparation.

In addition, the instructors at the centre assist students through the following fee-for-service programs:

#### eXcel: A Success Program for First-Year Students

No matter how well students perform in high school, university presents a new set of challenges. This first-year-experience program introduces entering students to strategies that will help them receive the highest quality university education possible. eXcel is not a tutorial service or a remedial program. Instead, it enables students to develop or enhance their skills and become self-directed, responsible learners. The classes are once a week during both terms. In addition, students meet individually with their instructors several times during the academic year. Although eXcel is a non-credit program, successful completion of this course will be noted on the student's academic transcript. The course fee and other details are available on the Writing Centre's website.

#### APEX: Academic Program of Excellence

This is a mandatory university program for students accepted and placed on probation by StFX or another institution and for students re-admitted after suspension or dismissal as a result of a previous year's academic performance. See section 3.12. Students are required to register for and participate in this course. In addition to attending classes, students must meet regularly with their APEX instructor. The one-to-one appointments provide opportunities for students to focus on their specific academic needs.

Students who have completed APEX but have still not met the university's grade requirements must register for APEX-2, a series of one-to-one appointments throughout the academic year. Course fees and other details are available on the Writing Centre's website. Upon application by a student, the committee on studies of the appropriate faculty may excuse the student from taking APEX.

#### LEAP: Learning English for Academic Purposes

These interactive classes and practical sessions are designed for students at StFX whose first language is not English and who are now living and studying in English. LEAP is not an English-as-a-second-language (ESL) course; rather, the LEAP curriculum concentrates on reading critically, writing analytically, and applying these skills to academic material. Classes provide students with the opportunity to listen, learn, and put their academic skills into practice. LEAP-1 is a

four-week intensive course in August; LEAP-2 and LEAP-3 are offered during the fall and winter terms respectively. Course fees and other details are available on the Writing Centre's website.

For detailed information on these courses, refer to the Writing Centre's website: [www.mystfx.ca/resources/writingcentre](http://www.mystfx.ca/resources/writingcentre)

## 2.4 HUMAN RIGHTS & EQUITY

All members of the university including students, staff and faculty have the right to study, work and learn in an environment that promotes equity and that is free from harassment and discrimination on human rights grounds, as described in the Nova Scotia Human Rights Act, 1991. In support of ensuring a campus free of discrimination and harassment, and of creating a collegial study, work and living environment where all individuals are treated with respect and dignity, the StFX Human Rights & Equity Advisor assists with the resolution of discrimination and harassment issues, including arranging for informal or formal procedures for resolving concerns and complaints. The Human Rights & Equity Advisor also offers education and training on a wide variety of human rights and diversity issues, and advocates for educational and employment equity.

The Human Rights & Equity Advisor is located in the Bloomfield Centre room 313A. To contact Marie Brunelle, the Human Rights & Equity Advisor, phone 867-5306 or 867-3934 for an appointment, or email at [mbrunell@stfx.ca](mailto:mbrunell@stfx.ca).

The Discrimination and Harassment Policy can be found on the human rights' office website at <http://www.mystfx.ca/campus/stu-serv/equity/> or the human resources website at <http://www.mystfx.ca/administration/hr/policies>.

## 2.5 SAFETY AND SECURITY

Safety and security services provides a safe and welcoming environment to ensure the well-being of students, faculty, staff, visitors and guests while developing partnerships within the university and local community. The Director of Safety and Security works closely with local law enforcement and community response teams to ensure all feel safe to work, live, learn and play. Supported by a Security Operations Centre which issues identification cards, room key and parking permits, the Safety and Security Services team consists of a director, special constables, centre operators and students who augment regular patrols and provide emergency first response services.

## 2.6 UNIVERSITY SCHOLARSHIPS AND BURSARIES

The purpose of the university scholarship program is to recognize superior scholastic achievement on the part of high school graduates and in-course students. Awards are offered to students selected by the university scholarship awards committee and are tenable only at StFX University. If a student is eligible for more than one university-nominated scholarship, s/he will receive the largest to which s/he is entitled.

The university gratefully acknowledges the generosity of the persons and organizations whose contributions made possible the following scholarships, awards, and bursaries:

Adult Education Access Award  
 Dr. Louis J. Allain Scholarship  
 Daniel W. & Marjorie E. Almon Scholarship  
 Alumni Scholarship Endowment  
 Ambrose Allen Bursary  
 Christopher Amirault Award  
 Anderson Environmental Award  
 George Anderson Business Award  
 George Anderson Leadership X-Ring Award  
 Antigonish Diocese CWL Bursary  
 Justin Avery Memorial Award  
 Bank of Montreal Scholarship  
 Rev. R.V. Bannon Scholarship Fund  
 Barrick Gold Scholarship  
 Holly Bartlett Memorial Bursary  
 Bauer Bursary Fund  
 A.P. Beaton Scholastic Award  
 John Beaton Fellowship Bursary  
 Rev. Donald Belland Bursary  
 Bergengren Credit Union Scholarship  
 Lou Bilek Soccer Award  
 Rod & Betty Bilodeau Bursary  
 Birks Foundation Bursary  
 Michelle Birks Memorial Bursary  
 Black Student Bursary in Education  
 Harry and Martha Bradley Scholarship

Bishop Bray Foundation Scholarship  
 Cecilia Brennan Bursary  
 Jacqueline Brougham Award  
 Jo M. Brown Scholarship in Nursing  
 Claude Brunelle Memorial Scholarship  
 CJFX Scholarship  
 Rev. J.V. Campbell Bursary  
 Cape Breton Scholarship and Bursary Fund  
 Dr. J.J. Carroll Scholarship  
 Catholic Women's League Scholarship  
 Celtic Travel Bursary  
 Central Home Improvement Warehouse Scholarship  
 Clarence & Helen Chadwick Bursary  
 Chadwick-Hayes Scholastic Award  
 Chevrolet High Note Student Bursary  
 Dr. Leo P. Chiasson Scholarship  
 A.W. (Bill) Chisholm Bursary  
 Donald A. Chisholm Memorial Scholarship  
 Rev. J.C. Chisholm Scholarship in Biology  
 Rev. John Archie Chisholm Memorial Scholarship in Celtic Studies  
 J. Fraser Chisholm Scholarship  
 Rev. John W. Chisholm Fund  
 Joseph D. Chisholm Scholarship  
 Mary Ann Chisholm Nursing Bursary Award  
 Rod Chisholm Scholarship  
 CIBC Scholastic Award  
 Rosemary Landry Clark Memorial Award  
 Rev. Dr. E.M. Clarke Scholarship in Pure and Applied Sciences  
 Class of 1954 Bursary  
 Class of 1963 Scholarship  
 Class of 1965 Fund  
 Class of 1971 Scholarship  
 Paul Cogger Memorial Scholarship  
 Gerald P. Coleman Q.C. Award  
 Louis Connolly Fund  
 Daniel Cordeau Scholarship  
 Arleen Power Corey Memorial Fund  
 Rev. Cornelius B. Collins Scholarship  
 Rev. Cornelius J. Connolly Bursary  
 Rev. Cornelius J. Connolly Scholarship  
 General Romeo Dallaire African Leadership in Education Award  
 John & Selena Daly Scholarship  
 James E. & Mary D. Deagle Endowment  
 Edward P. Delaney Bursary  
 Edward P. Delaney Scholarship  
 Democracy 250 Leadership Bursary  
 Development Studies Internship Bursary  
 Alphonse Desjardins Commemorative Scholarship  
 L.A. DeWolfe Memorial Scholarship  
 Diploma in Ministry Bursary  
 Dr. John Dobson Memorial Award in Adult Education  
 Rev. John Dougher Bursary  
 Alexander Doyle Memorial Scholarship  
 Rev. D.A. Doyle Scholarship  
 The Sir James Dunn Foundation Internship Scholarship  
 Trudy Eagan Women in Business Award  
 Faculty Staff Scholastic Award  
 J. Wallace Farrell Memorial Scholarship  
 Margaret Martell Farrell Scholarship  
 Margaret Martell Farrell B.Ed. Award  
 Rev. Peter Fiset Fund  
 Florida Alumni Bursary in Memory of Jim Kenney  
 Irene & Joseph Francis Memorial Award  
 Roger Franklin Memorial Scholarship  
 Hugh Allen Fraser Scholarship  
 Fund for French Scholarships  
 Douglas P. Furlott Award  
 Gaelic Scholarship Fund  
 Danny Gallivan Memorial Scholarship  
 Wilfred J. Garvin Scholarship  
 General Motors of Canada Ltd. Women in Science Bursary  
 General Motors of Canada Ltd. Women in Science Scholarship

Dr. A. Marie Gillan Award in Adult Education  
 Anne Gillis (of Glen Alpine) Award  
 Donald and Margaret Gillis (of Glen Alpine) Award  
 Sister Henrietta Gillis Award for Education  
 Joseph and Tessie Gillis Fund  
 Margaret Gillis (of Glen Alpine) Award  
 Mary Gillis (of Glen Alpine) Award  
 John and Sarah Gillis-Campbell Award  
 Mary Margaret Gillis-Campbell Award  
 Colin and Christine Gillis-Chisholm Award  
 Joan Gillis-Lang Award  
 Margaret C. Gillis-MacDonald Award  
 Mary Ann Gillis-MacIsaac (of Glen Alpine) Award  
 Glen Scholarship  
 Fred Gormley Scholarship  
 Jeff Graham Memorial Scholarship  
 Mary Jane Graham Bursary  
 Daniel and Emeline Grant Scholarship  
 Rev. J. Edward Grant Bursary  
 Ray Greening Memorial Scholarship  
 Shirley (Martinello) Grinnel Scholarship  
 The Gulf Canada Scholarship  
 Dr. H.B. Hachey Scholarship  
 A.G. Hamilton Scholarship  
 Thomas J. Hayes Scholarship  
 Dr. H. Stanley and Doreen Alley Heaps Scholarship  
 Heaslip/Macdonald Award Fund  
 Bernard M. Henry Scholarship  
 Dr. Mary G. Hickman Scholarship  
 Rosemary & Stephen A. Holton Scholarship  
 Mitch Hudson Memorial Scholarship  
 Phil Hughes Leadership Award  
 Philip H. Hynes Memorial Scholarship  
 IBEW Local 625 Nursing Award  
 Dr. A.A. Johnson History Award  
 Julie Anne Award  
 B.J. Keating Memorial Award  
 Gisela Keck Outstanding Achievement Award  
 Rev. George Kehoe Memorial Bursary  
 Alexander and Mary Kell Memorial Scholarship  
 Angus Kell Memorial Bursary  
 Thelma May Kempffer Award  
 M. Colleen Kennedy Memorial Bursary  
 Margaret Kennedy Scholarship  
 Killam American Bursary  
 Rev. Martin Luther King, Jr. Award  
 Rev. John B. Kyte Scholarship  
 Dr. & Mrs. Francis E. Lane Scholarship  
 Joan Gillis Lang Fund  
 Livingstone-Topshee Award  
 Don Loney Scholarship  
 Rev. Dr. Dan MacCormack  
 Senator John MacCormick Scholarship  
 MacDonald-MacIntyre Scholarship  
 Anastasia MacDonald Bursary  
 Angus R. MacDonald Memorial Bursary  
 Rev. B.A. MacDonald Scholarship Fund  
 Rev. Hugh John MacDonald Memorial Fund  
 James M. MacDonald Bursary  
 Kathryn M. MacDonald Scholarship  
 Linda MacDonald Humanitarian Bursary  
 M. & N. MacDonald Bursary  
 The Honourable Hugh J MacDonnell Memorial Bursary  
 John H. MacDougall Engineering Bursary  
 Allan J. MacEachen Fellowship in Celtic Studies  
 Angus MacGillivray Bursary  
 Cotter MacGillivray Bursary  
 Rev. Rod MacInnis Bursary  
 Roddie MacInnis Memorial Bursary  
 Rev. R.K. MacIntyre Scholarship  
 Hon. Angus MacIsaac Democracy 250 Veteran's Memorial Leadership Bursary  
 Rev. Charles MacIsaac Memorial Bursary  
 Donald F. MacIsaac Memorial Scholarship  
 John C. MacIsaac Foundation Scholarship  
 Mary McNair MacIsaac Bursary  
 Minnie MacIsaac Award  
 J. Elizabeth Mackasey Memorial Award for Education  
 Michael and Jean MacKenzie Award  
 Hugh MacKinnon Scholarship  
 Ron MacKinnon BIS Scholarship  
 Dr. Cecil MacLean Award  
 Donald and Ethel Lyle MacLean Scholarship  
 Monsignor Donald A. MacLean Scholarship  
 Rev. Leonard (Butch) MacLean Bursary  
 Roderick D. MacLean Award  
 Joseph & Mary (MacNeil) MacLellan Bursary  
 Rev. J.D. MacLeod Bursary Fund  
 Joan M. and Douglas MacMaster StFX University Award  
 Daniel and Mary MacNeil Fund  
 John V. MacNeil Fund  
 Archie and Catherine MacPhee Memorial Bursary in Catholic Studies  
 Joseph B. MacSween Award  
 Rev. Rod J. MacSween Scholarship  
 Married Students Bursary  
 James A. Martin Award  
 Emerson Mascoll Bursary  
 Dr. James McArthur Memorial Fund  
 Harrison McCain Foundation Scholarship  
 Senator J.P. McCarthy Scholarship  
 Dr. Daniel McCormick Scholarship  
 Irene McFarland Memorial Bursary  
 Frederick J. McInerney Scholarship  
 Rev. Roderick McInnis Fund  
 Rev. Leo G. McKenna Scholarship Fund  
 Jack McLachlan Fellowship in Biology  
 Mary McNair MacIsaac Bursary  
 William Ian Meech and Lloyd Remington Meech Memorial Scholarships  
 Memorial Scholarship for a Woman in Engineering  
 Dr. Edward J. Meyer Memorial Scholarship  
 Yancy Meyer Memorial Bursary  
 Dr. Marguerite Michaud Scholarship  
 Myles Mills Class of 1959 Leadership Award  
 Moncton Student Fund  
 Alexander Moore Chisholm Bursary  
 Morrissey Sisters Endowment Fund  
 Benedict M. Mulronev Scholarship  
 Donald and Barbara Munroe Scholarship  
 Robert J. and Gertrude Gillis Munroe Scholarship  
 Dr. Frederick Murdock Scholarship  
 Daniel Joseph Murphy Fund  
 Nasha Murphy Memorial Award  
 William and Jenny Murphy Award  
 Rev. J.B. Nearing Scholarship  
 Rev. Dr. P.J. Nicholson Scholarship  
 Paul and Miki Norris Bursary  
 Nova Scotia Power Scholarships  
 Daniel and Margaret O'Brien Bursary  
 Dr. Ed O'Connor Scholarship  
 Commodore Bruce S. Oland Scholarship  
 Philip W. Oland Scholarship  
 Barry O'Leary Leadership Award  
 Rudy Pace Memorial Jazz Bursary  
 Pluta Family Bursary  
 Prodigy Consulting Scholarship  
 Rev. Donald M. Rankin Scholarship  
 RBC Leadership Award  
 Dr. Abraham Risk Award  
 Helen & Cyril Ross Bursary  
 Bruce and Dorothy Rossetti Scholarship  
 Dr. Ria Rovers Memorial Scholarship  
 Royal Bank Scholarship  
 B.A. Ryan Scholarship  
 Claire Sampson Nursing Scholarship  
 James P. Sawler Scholarship



Tom & Lieselot Scales Bursary  
 Schwartz School Scholarship/Bursary  
 T.J. Sears Family Scholarship  
 Service Learning Bursary  
 Dr. William Shaw Bursary in Earth Sciences  
 Sisters of St. Martha Scholarship in Nursing  
 Sisters of St. Martha Single Mothers Bursary  
 C. Gordon Smith Scholarship  
 St. Francis Xavier University Alumni Scholarships  
 St. Francis Xavier Association of University Teachers Bursary  
 St. Martha's Hospital School of Nursing Alumnae Bursary  
 J. Jarvis Stewart Bursary  
 Hon. John B. Stewart Scholarship for Political Science  
 StFX Halifax Alumni Kehoe Bursary  
 John L. Stoik Scholarship  
 Students for Life Bursary  
 Students' Union Bursary  
 Marjorie McLeod Sullivan Bursary  
 Tannenbaum Canada Israel Exchange Student Scholarship.  
 Fred L. Taylor Memorial Scholarship  
 TD Bank Scholarship in Jazz Studies  
 Allard Tobin Fund  
 Dr. J.J. Tompkins Memorial Scholarship  
 Rev. John F. Toomey Bursary Fund  
 Rev. John F. Toomey Scholarship Fund  
 Toronto Alumni Bursary  
 Judge D. Tramble Bursary  
 Arthur P.H. Tully Fund  
 Katherine Tully Scholarship  
 Paul Wacko Scholarship  
 Walker Wood Foundation Bursary  
 Ada MacNeill Wallace Bursary  
 Martin J. Walsh Bursary  
 Katherine Wdowiak Memorial Award  
 Kathie Wdowiak Bursary  
 Westbury Family Scholarship  
 James and Mary Whelan Scholastic Award  
 Rev. Robert Wicks Fund  
 XEDC Entrepreneurship Bursary  
 Angus F. and Jean A. Young Award  
 John H. Young Award  
 Young Family Award

### 2.6.1 Major and Entrance Scholarships

StFX is founded on the values of academic excellence, leadership, and service to others. The StFX National Entrance Scholarship program reflects these qualities. Students' efforts in achieving a high school average of 85 or greater in their grade 12 year are recognized with a guaranteed minimum award.

All scholarships are awarded on the grade 12 average of either December exams or first-semester final grades in grade 12. Scholarship averages are based on available marks of the five required courses for the program to which the student is applying. The deadline for all scholarships is March 1. All applications for renewable scholarships require the following:

- A grade 12 high school transcript with an average of 85% or higher;
- A detailed résumé, including a description of extra-curricular activities and awards;
- Two letters of recommendation from high school teachers, one of which must be from the current year.
- If a student is eligible for more than one university nominated scholarship, s/he will receive the largest to which s/he is entitled.

#### \$32,000 StFX President's Scholarships

These awards recognize outstanding academic achievement. They are for entering students who demonstrate the qualities and values honoured at StFX: high academic success, leadership, and dedication in service to others. These scholarships are based on grade 12 December exams or first-semester grade 12 results. They are renewable for four years at \$8,000 per year. The deadline for application is March 1.

#### \$24,000 Philip W. Oland Scholarships and J.P. McCarthy Scholarships

Students with the highest scholastic standing and demonstrated leadership ability are eligible for these scholarships. A nomination letter from their principal or

guidance counsellor is required for this scholarship. These scholarships are based on grade 12 December exams or first-semester grade 12 results. Philip W. Oland Scholarships are available to students from the Atlantic provinces only while the J. P. McCarthy Scholarships are open to entering students from across Canada. These scholarships are renewable for four years at \$6,000 per year. The deadline for application is March 1.

#### \$24,000 StFX Canadian Scholarships

These scholarships are awarded based on academic achievement and the province of origin of the student. Based on grade 12 December exams or first-semester grade 12 results, these scholarships are renewable for four years at \$6,000 per year. The application deadline is March 1.

#### \$24,000 StFX International Scholarships

These scholarships are awarded based on academic achievement in the country of origin of the student. Based on grade 12 December exams or first-semester grade 12 results, these scholarships are renewable for four years at \$6,000 per year. The application deadline is March 1.

#### \$12,000 StFX Merit Scholarships

These scholarships are awarded to outstanding students in arts, science, or the Gerald Schwartz School of Business and Information Systems. Based on grade 12 December exams or first-semester grade 12 results, these scholarships are renewable for four years at \$3,000 per year. The application deadline is March 1.

#### \$4,000 StFX Guaranteed Scholarships

These entrance scholarships are awarded to all applicants with an average of 90% or higher, based on grade 12 December exams or first-semester grade 12 results. These scholarships are renewable for four years at \$1,000 per year. The application deadline is March 1.

#### \$3,500 StFX Guaranteed Scholarships

These entrance scholarships are awarded to all applicants with an average of 85 to 89.9 per cent, based on grade 12 December exams or first-semester grade 12 results. These scholarships are renewable for four years at \$500 for the first year and \$1,000 per year for three additional years. The application deadline is March 1.

#### International Baccalaureate (IB) Scholarships

Students who successfully complete the IB Diploma will be eligible for StFX scholarships. Applicants with 24 points may be awarded an entrance scholarship in the amount of \$500. If a student is eligible for more than one university nominated scholarship, s/he will receive the largest to which s/he is entitled.

### 2.6.2 Major Scholarship Recipients, 2011-2012

StFX President's Scholarship  
 William Forsey, Kippens, NL  
 Bonnie Moore, Victoria, BC

Philip W. Oland Scholarship  
 Naomi Giberson, Moncton, NB  
 Michael Thomson, Truro, NS

J. P. McCarthy Scholarship  
 Alexander Hanmore, Black Point, NS  
 Rebecca Kennedy, Summerside, PE  
 Zachary Konings, Ridgeway, ON  
 Erin Orr, Antigonish, NS

Paul Cogger Scholarships  
 Jaclyn Caldwell, Simonds, NB  
 George Kennedy, Fredericton, NB

Barry O'Leary Scholarship  
 Courtney Sylvester, Smiths Falls, ON

Daniel Cordeau Scholarship  
 Ashley MacDonald, Sydney, NS

Dr. Ed O'Connor Scholarships  
 Mark Donald, Calgary, AB

Chadwick-Hayes Scholarship  
 Nancy MacLeod, Cardigan, PE  
 Alexandra Martell, Cornwall, ON

Canadian Scholarships  
 Caitlin Bridson-Pateman, Granville Ferry, NS  
 Laura Corbett, Unionville, ON  
 Emily Gale, Canning, NS  
 David Greencorn, Port Hawkesbury, NS  
 Laryssa Halat, Toronto, ON  
 Madison Links, Dundas, ON  
 Barbara Lothian, Windsor, NS

Amy Rahey, Sydney, NS  
 Regan Riordon, Bathurst, NB  
 Laura Sandre, Greely, ON  
 Graham Tompkins, Dartmouth, NS  
 Keirsten Wilson, Antigonish, NS

### 2.6.3 University In-Course Scholarships

In-course scholarships are awarded to students who have completed at least one academic year of 30 credits towards a first degree. They are awarded on the basis of academic performance at StFX University. A minimum average of 80 in each scholarship group is required. No application is necessary. The scholarships, ranging in value from \$1,000 to \$5,000, are awarded for one year.

For the purpose of scholarships, students are grouped by year of study and by degree programs as follows:

- Group A BA and Music
- Group B BBA and BIS
- Group C B.Sc. and Engineering
- Group D Nursing, Human Nutrition, and Human Kinetics

The following guidelines are used in making these awards:

- a) A student ranked first in each scholarship group will qualify for the amount of \$5000.
- b) A student ranked in top 5% in each scholarship group will qualify for the amount of \$2000.
- c) A student with average of 80% or higher will qualify for the amount of \$1000.
- d) If a student is eligible for more than one university nominated scholarship, s/he will receive the largest to which s/he is entitled.

### 2.6.4 Bursaries

A number of university bursaries are available, usually ranging in value from \$250 to \$3500. Grants are based on the demonstrated need of the student and the availability of bursary funds. The holder of a bursary is expected to maintain a satisfactory academic record. Bursaries are not automatically renewed; an application must be made each year.

Application forms for university bursaries may be obtained from the financial aid website ([www.mystfx.ca/services/financial-aid/](http://www.mystfx.ca/services/financial-aid/)). Each bursary has a separate due date. The bursary program runs from September to March of each year and can only be applied for once the student has begun classes. Bursaries are based on financial need, satisfactory academic standing, and may be based other criteria as specified by the donor(s).

### 2.6.5 Federal and Provincial Student Aid Programs

Details of these programs are available from provincial student aid offices and from the StFX financial aid office.

## 2.7 UNIVERSITY PRIZES

The university gratefully acknowledges the generosity of the persons and organizations whose contributions make possible the many prizes awarded at the end of each academic year. Recipients of prizes are normally full-time students in regular attendance in a degree program at StFX and must have given satisfactory evidence of merit. The university reserves the right not to make an award should there be no suitable candidate. Awards, unless otherwise specified, are tenable only at StFX.

At convocation the following prizes, listed by associated department, are awarded to graduating students:

Onex Corporation Gold Medal  
 Dr. Leo P. Chiasson Award for Biology to the Outstanding Advanced Major or Honours Student  
 Centre for Marine Biology Prize  
 Dr. Marguerite Michaud Prize for Canadian Studies  
 Angus L. Macdonald Memorial Scholarship for Celtic Studies  
 Flora MacDonald Prize  
 Rev. Malcolm MacDonell Award in Celtic Studies  
 Chemistry Industry Merit Award  
 Employer's Choice Award for X-culture in Co-operative Education  
 Dr. D.J. MacDonald and Dr. A.B. MacDonald Memorial Prize for Economics  
 Engineering Department Medal  
 Association of Professional Engineers of Nova Scotia Scholarship  
 Association of Professional Engineers of Nova Scotia Award  
 J. Wallace Farrell Memorial Award for Engineering  
 Nova Scotia Power Centennial Scholarship for Engineering  
 English Department Cape Breton Creative Writing Prize  
 Margaret MacGillivray-MacDougall Prize for English

Rev. R.J. MacSween Prize for English  
 Ambassador of France Book Prize for French  
 Ambassador of Switzerland Book Prize for French  
 Jean Babin Prize for Excellence in French  
 Consulate of Argentina Prize for Spanish  
 Angus Dan Gillis Prize in Gaelic  
 Professor Donald J. MacNeil Memorial Award for Earth Sciences  
 Mining Society of Nova Scotia Centennial Scholarship Medal  
 Dr. Randall F. Cormier Award for Best Thesis in Earth Sciences  
 Mary Tramble Memorial Award for Field Earth Sciences  
 Ambassador of Germany Book Prize for German  
 Ambassador of Austria Book Prize for German  
 Ambassador of Switzerland Book Prize for German  
 German Consulate General Montreal Prize  
 Hogan/Phillips Prize in History  
 Rev. A.A. Johnston History Award for Diocesan History  
 Ita MacDonald Prize for Canadian History  
 Dairy Farmers of Canada Award for Further Study in Dietetics/Nutrition  
 Nova Scotia Home Economics Book Award  
 Nova Scotia Health Research Foundation Award  
 Dr. H. Stanley and Doreen Alley Heaps Prize for Computing Science  
 Dr. A.A. MacDonald Prize for Mathematics  
 Canadian Academy of Recording Arts and Sciences Award for Music  
 Chevrolet High Note Student Bursary  
 Paul Groarke Philosophy Prize  
 Rev. Charles R. MacDonald Memorial Medal for Philosophy  
 Dr. M.S. Gautam Memorial Prize for Physics  
 Wallbank/Weingartshofer Prize for Experimental Physics  
 Yogi Joshi Prize for Excellence in Physics  
 G.P. Brooks History of Psychology Prize  
 Craig McDonald Mooney Prize for Psychology  
 Walter Kontak Prize in Political Science  
 Hon. John B. Stewart Scholarship for Political Science  
 John and Mary Fraser Memorial Prize for Senior Religious Studies  
 Rev. F. J. Miffien Sociology Prize  
 Allard Tobin Travel Endowment Fund Award  
 Dr. G.H. Murphy Prize for Proficiency in Pre-medical Studies  
 St. Francis Xavier Association of University Teachers Book Prizes  
 Nominations to the Kappa Gamma Pi Honour Society  
 Katherine Wdowiak Memorial Award in Nursing  
 Women's and Gender Studies Prize

At the end of each academic year the following prizes are awarded to undergraduate students:

Gaelic Scholarship for Summer Study in Scotland  
 Honourable Allan J. MacEachen Fellowship for Celtic Studies  
 Rev. Donald M. Rankin Scholarship for Celtic Studies  
 Rev. John Archie Chisholm Memorial Award for Celtic Studies  
 Cecil MacLean Prize for Achievement in First-Year French  
 B.J. Keating Memorial Award for Geology  
 Frank S. Shea Scholarship for Geology  
 Student-Industry Geology Field Trip Award  
 Canadian Society of Petroleum Geologists Stanley E. Slipper Award  
 Dr. F.J. Ginivan Prize for Mathematics  
 Elizabeth Tobin McGivern Prize for Music  
 Dr. Winston Jackson Honours Nursing Prize  
 David Davis Prize for First-Year Physics  
 David Davis Prize for Third-Year Physics  
 Charles Jordan Memorial Prize for Second-Year Physics  
 Bishop Campbell Prize for Second-Year Religious Studies  
 Camille LeBlanc Prize for First-Year Religious Studies  
 Flying Officer Wallace MacDonald Memorial Prize for Third-Year Religious Studies

### 3. ACADEMIC REGULATIONS

- 3.1 Registration and Course Load
- 3.2 Transfer Credit
- 3.3 Requirements for a StFX Degree or Diploma
- 3.4 Re-Admission to University
- 3.5 Directed Study and Selected Topics Courses
- 3.6 Student Classification
- 3.7 Class Attendance and Withdrawal from University
- 3.8 Academic Integrity Policy
- 3.9 Examinations
- 3.10 Grading System for Undergraduate Programs
- 3.11 Academic Penalties
- 3.12 Appeal of an Academic Penalty
- 3.13 Grade Appeal Procedure
- 3.14 Application for Degrees and Diplomas
- 3.15 Academic Records
- 3.16 Regulations for a Second StFX Degree
- 3.17 Continuing and Distance Education
- 3.18 Exchange and Study Abroad
- 3.19 Dean's List
- 3.20 Distinction and First Class Honours
- 3.21 Correspondence from the Registrar's Office to the Student
- 3.22 Obligations of Students
- 3.23 Research Ethics

#### 3.1 REGISTRATION AND COURSE LOAD

- a) Students are responsible for the accuracy of their course registrations and for ensuring that the courses they select are appropriate to their degree programs. They are responsible for dropping any second term courses if they have failed or dropped any required pre-requisite course(s) in the first term. Students who are uncertain about their course selection are encouraged to seek assistance from the academic advisors or the department chair or program coordinators.
- b) The regular academic year at StFX runs from September to April and is divided into two terms. Fall term runs from early September to mid-December and winter term from early January to late April. A course taught three hours a week for the academic year has a value of six credits and is called a full course. A course taught for three hours a week for one term has a value of three credits and is called a half course.
- c) In most programs the normal full load is 30 credits each academic year. Students are advised to maintain a balanced course load between the fall and winter terms, whenever possible. Students enrolled in 60% of a normal full course load, or 18 credits for the academic year are considered to be full-time students.
- d) Students may drop a course on or before the relevant deadline (through the online registration facility in mesAMIS). See the calendar of events for deadline dates for dropping full-year, first-term and second-term courses. A course that is dropped prior to the deadline will receive a grade of DC (dropped course). This grade will appear on the students' official transcripts but is not used in the calculation of the term average. Once the drop deadline has passed, students who stop attending class will receive a final grade based on the course grading components they have completed to date with a zero grade for those components not completed. This final grade will appear on students' transcripts and is used in the calculation of the term average. Students who cannot complete a course due to medical or other extenuating circumstances must contact the dean's office and provide appropriate documentation. Students must be aware that dropping a course may change their registration status from full to part time, and may have an impact on tuition, refunds, student loans, dean's list for the next year, in-course scholarships for the next year, athletic eligibility, or a StFX bursary or award.

- e) Students who wish to enroll in more than a full course load per term must apply to the registrar. A minimum grade average of 65 is required, either for the previous academic year or for the first term if the application is submitted at the start of the second term. Students may not enroll in more than 36 credits in one academic year (September-April). For spring and summer terms, students may not enroll in more than six credits in either term. Students who wish to enroll in more than this number must apply to the registrar and meet the 65 minimum grade average. The maximum number of credits permitted in either term is nine, however students are reminded that spring and summer courses are offered in a compressed time frame and are advised to carefully consider enrolling in more than the recommended six credits each term. See section 2.1 regarding fees for extra courses.
- f) Credit will not be granted for any course in which a student is not formally enrolled.
- g) Courses in education, engineering, human kinetics, human nutrition or nursing normally may be applied only to those programs respectively. See the individual faculty regulations for exceptions.
- h) A "pair" is 12 credits in one subject with six credits at the 200 level or higher. See glossary definition.

#### 3.2 TRANSFER CREDIT

- a) Transfer credit will be granted for all courses for which credit has been earned at an accredited university, if the associated courses can be used to meet the student's program requirements at StFX. See section 1.1 for transfer credit from colleges. Minimum grade and average requirements, as specified in the faculty regulations, apply to all transfer courses. Official transcripts from all post-secondary institutions are required at time of admission. Failure to do so could result in academic dismissal upon later disclosure.
- b) Restrictions may apply to the transfer of credit for business administration courses at the 300 and 400 level.
- c) See section 9.27 regarding French and Spanish immersion courses which may count as open electives only.
- d) Normally, transfer credit will not be granted for courses taken 10 years or more before the date of application.
- e) Transfer credits, to a maximum of 24 credits, may be granted for distance courses in recognized academic disciplines taken at Canadian universities. Transfer credit will not be granted for distance courses if the StFX equivalent has a laboratory component. Distance courses may be used only as electives or to meet requirements for pairs.
- f) To enroll in any course at another university, students must obtain a letter of permission from the appropriate dean; section 3.1e also applies.
- g) Students must be in good standing to enroll in spring or summer courses at StFX or at another university.

#### 3.3 REQUIREMENTS FOR A STFX DEGREE OR DIPLOMA

In order to earn a StFX degree, students must complete four years of study or typically 120 credits. Some degree programs require a greater number of credits. See the appropriate faculty sections for details on specific degree requirement and for details on diploma requirements.

- a) Honours Programs:
  - i) Normally require four years of study
  - ii) The last 60 credits must be completed at StFX
- b) Advanced Major, Major, and Four-Year Programs:
  - i) Normally require four years of study, unless the student is in the Faculty of Arts and chooses to complete the degree through part-time study
  - ii) The last 60 credits must be completed at StFX
- c) A student who enrolls in an undergraduate degree program must normally complete the degree requirements within 10 years from the date of initial registration.
- d) Students wishing to change degree programs must obtain permission from the appropriate dean.



### 3.4 RE-ADMISSION TO UNIVERSITY

- A student whose course of study is interrupted by one or more academic years is bound by any changes made in the curriculum and regulations after his/her first registration.
- Course requirements for a degree, whether three or four years, must be completed within 10 years of the initial date of registration.
- Courses taken for credit 10 years before acceptance into a degree program will be assessed by the appropriate dean.
- A student who has had no course registration at StFX for 12 months or more, or withdraws from StFX (See section 3.7) must re-apply for admission.
- If a student is suspended or dismissed from the university and is re-admitted, the student will be on probation for up to one year, and be required to enroll in the APEX program. See section 2.3.12. Upon re-admission to the university, students will be eligible to register in courses at StFX and elsewhere during the spring and summer terms preceding their term of re-admission.

### 3.5 DIRECTED STUDY AND SELECTED TOPICS COURSES

- Directed study courses permit students of exceptional ability and motivation to pursue, on a tutorial basis, individual programs of study in areas not normally offered by a department. Directed study courses are normally restricted to no more than two students. Normally a faculty member may offer no more than two directed study courses per year. A directed study course may earn no more than six credits. To be eligible for a directed study students must have:
  - completed 12 credits in the department;
  - attained a minimum average of 70 in the 12 credits;
  - obtained written consent from the department.
 Students interested in a directed study course should consult the department chair and the appropriate faculty member before September 1. Formal application must be submitted by the chair to the appropriate dean four weeks before the start of the term in which the course is to be offered.
- Subject to approval of the appropriate dean, departments may offer selected topics courses in their discipline. A selected topics course may be offered twice before the department must seek regular approval through the appropriate committee on studies and the University Senate. Selected topics courses may be offered in any department or interdisciplinary program at the 100-, 200-, 300- or 400-level and may be offered for three or six credits. The actual course number will be assigned by the registrar's office.

### 3.6 STUDENT CLASSIFICATION

Advancement in classification (first year to sophomore to junior to senior) is granted when a student earns 30 credits in the preceding classification.

Students who are six credits short of the next level will be placed in the next classification on a conditional basis. For example, first-year students who earn 24 credits will be considered sophomores.

### 3.7 CLASS ATTENDANCE AND WITHDRAWAL FROM UNIVERSITY

Students are expected to attend all classes and laboratory periods. Following an absence of more than one class, students should contact each professor or instructor. In the case of sudden emergency requiring an absence of more than five days, students should contact the dean's office. Faculty are required to report to the dean all unexplained absences in excess of three hours over at least two classes in any term.

When a mandatory class, quiz, exam, or class project is scheduled outside normal class hours, provision will be made to enable students to attend scheduled classes and laboratories in their other courses.

Students wishing to withdraw from the university must give formal notice to the appropriate dean in person or in writing. Formal notice of withdrawal is required for tuition refunds. See 2.1.3. Other departments and offices will receive a copy of the withdrawal notice: the business office, campus bookstore, campus post office, dean of students, financial aid, library, registrar's office, residence office, student lifer office, students' union (for health insurance), telecommunications, and TSG (technology support group).

### 3.8 ACADEMIC INTEGRITY POLICY

All members of St. Francis Xavier University are expected to conduct themselves in an ethical manner in their academic work. It is the policy of the university that academic dishonesty in any form is not acceptable. Academic dishonesty is defined as any act, practice or behaviour that gives a student an unearned academic advantage over another or that counteracts or undermines the integrity of academic or scholarly endeavor at St. Francis Xavier University.

#### 3.8.1 The Code of Academic Conduct

An academic community flourishes when its members are committed to five fundamental values. An academic community of integrity:

- advances the quest for truth and knowledge by acknowledging intellectual and personal honesty in learning, teaching, research, and service;
- fosters a climate of mutual trust, encourages the free exchange of ideas, and enables all to reach their highest potential;
- establishes clear standards, practices, and procedures and expects fairness in interactions among students, faculty, staff, and administrators;
- recognizes the participatory nature of the learning process and honours and respects a wide range of opinions and ideas; and
- upholds personal responsibility and accountability and depends upon action in the face of wrong-doing.

#### 3.8.2 Offenses Against Academic Integrity

The following is a list of offenses constituting academic dishonesty that are subject to discipline; this list is not intended to be exhaustive.

- Plagiarism
 

Although academic work often involves research on, or reference to, the ideas, data, and critical commentary of other scholars, academic integrity requires that any use of another person's work be explicitly acknowledged. Plagiarism is the misrepresentation of another's work—whether ideas or words, intellectual or creative works, images or data, published or unpublished—as one's own. Examples of plagiarism include:

  - quoting, paraphrasing, or summarizing text, even small portions of text, without proper acknowledgement;
  - paraphrasing too closely (e.g., changing only a few words or simply rearranging the text); and,
  - downloading from the Web or from a library or any other database all or part of a paper, a journal article, or a book, or downloading any other website material, excluding bibliography makers, and presenting it as one's own work.
- Cheating
 

Some examples of cheating are:

  - submission, in whole or in part, of any purchased written work as one's own;
  - sharing papers, including the buying or selling, borrowing or leasing of essays, tests, or other assignments;
  - submission, without the prior expressed written consent of the appropriate instructor(s), of any work for which credit has been, or is being, sought in another course, including any work that has been submitted at another institution;
  - collaboration (i.e., working together) on an assignment which an instructor did not specify was to be completed collaboratively;
  - use of unauthorized aids or assistance including copying during tests and examinations;
  - impersonating another student in a test, examination, assignment, or attendance record, or knowingly permitting another to impersonate oneself;
  - knowingly helping another to engage in academically dishonest behaviour (including, but not limited to, providing answers to a test or examination or providing an essay or laboratory report that is subsequently plagiarized or submitted by another student as his or her work);
  - obtaining or looking at a copy of a test or examination before it is administered; and
  - altering a test or examination after it has been graded and returned by the instructor.

- Falsification

Some examples of falsification are:

- falsification of any research results, whether in laboratory experiments, field trip exercises, or other assignments;
- alteration or falsification of transcripts or other academic records for any purpose;

- iii) submission of false credentials;
  - iv) making false representation on an application for admission;
  - v) making false representation on an application for ethical approval for a research project involving human or animal subjects; and
  - vi) requesting the extension of a deadline citing reasons known to be false, including submitting false documentation supporting that request.
- d) Tampering
- Examples of tampering are:
- i) unauthorized access to, use of, or alteration of computer data sets, including course, student, faculty, alumni, public, and corporate records;
  - ii) gaining unfair advantage by using software and computer tools that inhibit the use of the resources by others;
  - iii) damage to or destruction of library materials or laboratory resources; and
  - iv) willful or negligent damage to the academic work of another member of the university.
- e) Miscellaneous
- i) any other form of misrepresentation, cheating, fraudulent academic behaviour, or other improper academic conduct of comparable severity to the above.

### 3.8.3 Academic Integrity Policy and Procedures

The full academic integrity policies and procedures document is available at <http://www.stfx.ca/services/registrar/academic-integrity-document.pdf>

Further information is available at: [www.sites.stfx.ca/registrars\\_office/academic\\_integrity](http://www.sites.stfx.ca/registrars_office/academic_integrity)

## 3.9 EXAMINATIONS

Examinations are written during the examination periods indicated in the Academic Calendar (calendar of events). While every effort is made to avoid scheduling three exams in 24 hours, there is no rule against it.

Students unable to write an examination at its scheduled time must notify the deans' office prior to the examination. If there is a medical problem, the student must provide an original doctor's certification of the condition.

## 3.10 GRADING SYSTEM FOR UNDERGRADUATE PROGRAMS

- a) The passing grade is 50.
- b) The student's average is a weighted calculation. A six-credit course has a weight of one; a three-credit course has a weight of one-half. Grades in supplementary examinations are not used in average calculations. The average is based on the final grades in all courses attempted.
- c) An average of 55% is required each full academic year. Failure to achieve an average of at least 55% will result in academic penalties and may affect students' eligibility to proceed in some degree programs. The average used to make such determinations will be based on a minimum of two final grades.  
Students must obtain an average of at least 55% and receive credit for 60% of attempted courses, in their final year, to be granted a degree or diploma.
- d) The grade and average requirements for major, advanced major and honours degrees are stated in chapter 4 for arts degrees, chapter 5 for business degrees and chapter 7 for science degrees.
- e) At least 75% of the final grade in all courses will be based on written (not oral) work, and at least 40% of the final grade in a 100- or 200-level course will be based on invigilated written December and April examinations.
- f) When a student repeats a course, the original grade remains on the transcript and in the student's average. However, the credits originally earned are removed from the student's transcript.

## 3.11 ACADEMIC PENALTIES

To remain in satisfactory academic standing at the end of the academic year, students are required to earn:

- i) a year end average of 55 or better, and
- ii) earned credit as indicated in the following chart.

Credits									
Completed	30 or 30+	27	24	21	18	15	12	9	6
Earned, at least	18	18	15	12	12	9	9	6	3

Students who fail to meet one or two of these requirements will incur an academic penalty as listed below. However, students who require fewer than 30 credits to complete their degrees will not be subject to academic penalties.

Previous Penalty	Requirement(s) Not Met	Penalty at End of Year
None	One	Probation
None	Two	Suspension
One probation	One	Suspension
One probation	Two	Dismissal
One suspension	One	Dismissal
More than one	One	Dismissal

Students on probation must enroll in APEX unless, upon application by the student, the committee on studies of the appropriate faculty excuses the student on the grounds that the student would not benefit in a meaningful way from the program.

Academic penalties incurred for a full academic year are applied at the end of the following spring term. Students who are suspended or dismissed and who are enrolled in courses when the penalty is applied may complete their in progress courses. However, any courses that these students have enrolled in future terms will be dropped.

Students who are suspended from the university may return the next spring term following the term of their suspension.

Students who have been dismissed will not be eligible for further study at the university.

Students who successfully appeal a suspension or dismissal may return on probation, for the next full academic year following the appeal unless there will be 12 months or more between course registrations, in which case the student will be required to apply for re-admission. See section 3.4. No transfer credit will be granted for work completed elsewhere while a suspension or dismissal was in effect.

## 3.12 APPEAL OF AN ACADEMIC PENALTY

Academic penalties of suspension or dismissal may be appealed to the committee on studies of the appropriate faculty. Appeals of suspension must be received by July 15 of the calendar year in which the suspension was imposed. Appeals of dismissal must be received by July 15 of the calendar year in which the student wishes to return to studies. The decisions of the committee on studies are final.

## 3.13 GRADE APPEAL PROCEDURE

- a) Only final grades, including grades of composites used to calculate a final grade may be appealed.
- b) All appeals must be made in writing through the appropriate dean. The letter must state why an appeal is being made. The student must pay a fee of \$10 for each grade appealed. This fee is refunded if the appeal results in a change of grade.
- c) Appeals must be made before January 15 for first-term courses; before June 15 for full-year and second-term courses; before July 15 for spring courses; and before September 15 for summer courses.
- d) The dean will request a review from the instructor and report it to the student, or the student may request the dean to arrange an interview between the student and the instructor.
- e) If the student is dissatisfied, the dean will set up an appeal committee of three instructors from the department, one chosen by the student, one chosen by the instructor, and a third chosen by the first two members. To initiate this proceeding, the student must appeal in writing within 10 days of receiving notification of the results of the review. Both the student and the professor may present their respective cases in writing to the appeal committee.
- f) The student must pay a fee of \$25 if an appeal committee is established; this fee is refunded if the committee decides in his or her favour.

### 3.14 APPLICATION FOR DEGREES & DIPLOMAS

Candidates in their graduating year must apply to graduate. Application must be made in the prescribed manner no later than the deadline dates listed in the academic calendar for the spring and fall convocations. Students who are completing their degree requirements in the fall term are not eligible to graduate at fall convocation with the exception of students in those programs whose requirements are all completed well in advance of the end of the term.

Candidates who subsequently receive degrees, diplomas and certificates from St. Francis Xavier University automatically become members of the StFX Alumni Association. As members, alumni are eligible to receive the *Alumni News*, the alumni magazine, benefits and promotions exclusive to alumni, and information regarding development programs.

### 3.15 ACADEMIC RECORDS

#### 3.15.1 Release of Student Academic Records

##### Disclosure to students of their own records

- Students have the right to inspect their academic records and to challenge contents they believe to be inaccurate. This right does not extend to letters of reference given in confidence by the author. A member of the registrar's staff will be present during the inspection.
- Students have the right to receive transcripts of their own marks. Information on a student's record will not be given over the phone.
- No partial transcripts will be issued.
- The registrar will not provide students or third parties with copies of other documents on file, e.g., transcripts from other institutions.

##### Disclosure to University Officials

Information on students may be disclosed without their consent to faculty, university officers or committees at the discretion of the Registrar. Students' personal and academic information is stored securely and used solely for the university's normal course of business.

##### Disclosure to Third Parties

- The following information is considered public and may be released at the discretion of the registrar without restriction:
  - Name; hometown if in convocation program;
  - Certificates, diplomas, and degrees awarded;
  - Date of conferral.
- Information will be released without student consent in compliance with a judicial order, search warrant or subpoena, or as required by federal or provincial legislation.
- Necessary information may be released without student consent in an emergency, if knowledge of that information is required to protect the health or safety of a student or other persons. Such requests should be directed to the registrar.
- StFX is required to abide by the Freedom of Information and Protection of Privacy legislation of the provincial government, the federal Privacy Act, the Statistics Act, and the federal Personal Information and Protection of Privacy legislation. The university reports to Statistics Canada information on students' names, ID and social insurance numbers, contact information, demographic characteristics, enrolment information, previous education, and labour force activity. Further information is available at [www.statcan.ca/english/concepts/ESIS/index.htm](http://www.statcan.ca/english/concepts/ESIS/index.htm)

Students may request that Statistics Canada remove their identifying information from the national database. To do so, they may contact StatsCan via mail.

Address:

Post-Secondary Education and Adult Learning Section  
Centre for Education Statistics  
Statistics Canada, Jean Talon Building  
1-B-9 Tunney's Pasture, Ottawa, ON K1S 0T6

Email:

ESIS-SIAE\_contact@statcan.ca

Telephone:

1-613-951-1666

- other than in the above situations, personal information about a student will be released to third parties only with the written consent of the student, or in accordance with the purposes for which it was collected or as required by law.

A student's academic record will be released to third parties only at the written request of the student, or when the student has signed an agreement with a third party, a condition of which is access to his or her record (e.g., financial aid), or as required by law. This restriction applies to requests from parents, spouses, credit bureaus and police.

- Academic records, that is, paper files in the registrar's office, will be held for five years from the date of last attendance, and then destroyed. Former students who wish to re-apply after their files have been destroyed may have to re-submit academic transcripts from other institutions.

#### 3.15.2 Transcript Requests

Requests for transcripts must be made in writing by students and accompanied by the required fee. Requests by phone cannot be accepted. Requests are to be made on the appropriate form obtainable from the office of the registrar or online at [www.mystfx.ca/services/registrar/transcripts/](http://www.mystfx.ca/services/registrar/transcripts/). Transcript requests are processed in the order in which they are received. Although the normal processing time is 3-5 days, additional time may be needed during the weeks following the December and April exam periods. Transcripts include the following information, where appropriate:

- The student's program
- Courses and grades (failed as well as passed) for all academic work attempted or completed at StFX
- The rank and year-end average if the student is enrolled in a full-time undergraduate program. The average is calculated by weighing each grade by the credit value; see section 3.10.
- Transfer credits granted; grades for transfer credits are not shown
- Degrees and diplomas awarded and date conferred
- Academic penalties, including notations of academic dishonesty
- Distinctions, including placement on the Dean's List
- Transcripts will be issued only if all financial obligations to the university have been met.

Transcripts are considered official only when original, bearing the signature imprint of the registrar and either mailed directly from the office of the registrar to an institution or agency, or provided to the student in a sealed envelope.

### 3.16 REGULATIONS FOR A SECOND STFX DEGREE

Students can only obtain one BA, or one BBA, or one BIS, or one BSc from StFX. However, a graduate of the university with a BA, or a BSc, major or advanced degree may subsequently qualify for and receive an honours degree in the same major. The candidate must qualify by meeting the faculty and department course, residence, grade and average requirements for the honours degree, and satisfactorily complete at least 30 credits at StFX towards the second degree.

### 3.17 CONTINUING AND DISTANCE EDUCATION

The continuing and distance education department offers degree and non-degree learning opportunities onsite and by distance (print-based and online) during fall, winter, spring and summer sessions.

For degree-credit courses, see specific departments in chapter 9; section 9.29 for information on the part-time B.Sc.Nursing program; chapter 8 for programs leading to master's degrees in education; and section 4.3 for the diploma in ministry program.

Non-degree and non-credit courses offered through continuing and distance education are normally concentrated in two areas: general interest and professional development. Several non-degree programs are available by distance education, including a Diploma in Intellectual Disability Studies; and a Certificate in Spirituality. Non-credit workshops may also be offered on campus.

Current listings may be obtained from the continuing and distance education department's website at <http://sites.stfx.ca/continuingeducation> or by phone at 902-867-3906 or toll-free 1-877-867-3906.

### 3.18 EXCHANGE AND STUDY ABROAD

StFX has exchange agreements with a number of universities, normally for a third year international study experience. Many of these universities are listed below.

University	Language of Instruction
Aalborg University, Denmark	Danish/English
Amiens School of Management, France	French/English
Bangor University, Wales	English
Bond University	English
Charles University, Czech Republic	Czech/English



EDES, Université Catholique de Lyon, France	French/English
ESSCA School of Management, France, Hungary, China	English
Griffith University, Australia	English
HANKEN, Finland	Swedish/English
Heriot-Watt University, Scotland	English
IESEG, Université Catholique de Lille, France	French/English
Institut d'Etudes Politiques de Lille, France	French/English
Interdisciplinary Centre Herzliya, Israel	English
International School of Management, Dortmund, Germany	English
Pontificia Universidad Catolica, Peru	Spanish
Sabhal Mòr Ostaig, Isle of Skye, Scotland	Gaelic
St. Mary's University College, London	English
Universidad de Guanajuato, Guanajuato, Mexico	Spanish
Universidad del Salvador, Argentina	Spanish
Universidad Iberoamericana, Mexico	Spanish
Universität Koblenz-Landau, Germany	German/English
Universität Stuttgart, Germany	German/English
Université Catholique de l'Ouest, Angers, France	French
University of Limerick, Ireland	English
University of Newcastle, Australia	English
University of Southern Denmark, Denmark	Danish/English
University of the West Indies	English
Warsaw School of Economics, Poland	English
Yeditepe University, Turkey	English

Students on exchange pay full-time tuition to StFX and any other applicable fees to the host institution. A student may also apply to study abroad as a visiting student at any accredited university and pay tuition and other fees directly to that university. Both exchange and study abroad students must apply to the International Exchange Office and have the host university course of study approved by StFX in order to have these courses credited towards their StFX degree. Students in some programs may need additional semesters in order to complete their degree.

Students who wish to spend a semester or full year on exchange or study abroad must:

- be enrolled in a four-year program;
- be in good academic standing in all semesters prior to the exchange semester/year;
- earn an average of at least 70, based on a minimum of 15 credits, in the semester prior to submitting the exchange application;
- submit an application, with required supporting documents, to the International Exchange Co-ordinator.

Second year students applying by the January 15th deadline will be considered for host university spaces available in the following full academic year. After January 15 students may only apply to do an exchange during the winter semester of third year and will only be considered for remaining exchange spaces at host universities. These applications must be submitted by October 1st of that year. For more information contact the International Exchange Co-ordinator by email [briley@stfx.ca](mailto:briley@stfx.ca) or 902-867-4532.

### 3.19 DEAN'S LIST

At the end of each academic year students who have carried at least 30 credits, and have earned an average of at least 75, will be named to the Dean's List if they rank in the top:

- 20% in the first year;
- 25% in the sophomore year; or
- 33 $\frac{1}{3}$ % in the junior or senior year.

### 3.20 DISTINCTION AND FIRST CLASS HONOURS

#### Faculty of Arts and the Faculty of Business

The designation of Distinction is awarded to students whose general average over the final three years of the program is at least 80.

Candidates in the Faculty of Arts and Business who satisfy requirements for the degree with honours will be awarded the designation of First Class Honours when their general average is 80 or higher over the final three years, with an average of 80 or higher in all courses taken in the honours subject over the final three years.

For students who complete part or all of a degree through part-time study, the designation of Distinction is awarded to those who earn an average of at least 80 over the last 90 credits. Students must complete 80% of the courses at StFX.

#### Faculty of Science

The designation of Distinction is awarded to students whose combined average over the final three years of the program is at least 80 with a minimum average of 75 in each of the three years.

In the Faculty of Science, the designation of First Class Honours is awarded to students whose general average over the final three years is 80 or higher, with a minimum average of 75 in each year, and who have satisfied all other requirements for the degree with honours.

For students who complete part or all of a degree through part-time study, the designation of Distinction is awarded to those who earn an average of at least 80 on the best 60 credits completed at StFX, with no grade below 75 in any course completed at StFX or elsewhere.

For students in the B.Sc.Nursing for Registered Nurses by Distance program, the average of at least 80 will be calculated on the best 33 credits completed at StFX if the student's program is 63 credits. Of the grades considered in calculating the above average, none shall be below 75.

For students in the B.Sc.Nursing, accelerated post-degree option, the average of at least 80 will be based on the credits completed at StFX by calculating three averages, with no average less than 75, as follows:

- combined first-year, spring and summer courses,
- full academic year September to April, and
- combined second-year, spring, summer, and fall courses.

### 3.21 CORRESPONDENCE FROM THE REGISTRAR'S OFFICE TO THE STUDENT

Upon registration at StFX, all official correspondence from the registrar's office, with the exception of academic penalty letters, is sent to students via their WebFX email accounts. Students are reminded to check their email regularly and to keep their inbox open for delivery.

### 3.22 OBLIGATIONS OF STUDENTS

Upon registration at StFX, students agree to abide by all applicable rules and regulations and acknowledge that their right to remain at StFX is subject to their observance of these regulations. Students must familiarize themselves with such documents as:

- the StFX Academic Calendar available at [www.mystfx.ca/services/registrar/claendars/](http://www.mystfx.ca/services/registrar/claendars/) or from the registrar's office;
- the StFX Community Code, available at [www.mystfx.ca/pdfs/community-code.pdf](http://www.mystfx.ca/pdfs/community-code.pdf) or from the office of the vice-president, recruitment and student experience; and
- the Residence Handbook, available at [www.mystfx.ca/services/residence/](http://www.mystfx.ca/services/residence/) or the from the residence office.

Students are also expected to obey all federal, provincial, and municipal laws.

### 3.23 RESEARCH ETHICS

All faculty and student researchers at StFX who wish to carry out research involving human subjects, whether on campus or elsewhere, must have their projects approved by Research Ethics Board (REB) or one of its department sub-committees. Researchers must supply five copies of a completed application form and any supporting documentation. Researchers must have REB approval prior to the beginning of the study. The REB operates within the *Tri-Council Policy Statement Guidelines*; researchers may consult these for further information.

## 4. FACULTY OF ARTS REGULATIONS

### 4.1 General Regulations

### 4.2 Diploma in Ministry

### 4.3 Humanities Colloquium

## 4.1 GENERAL REGULATIONS

### 4.1.1 Degrees Offered

The Faculty of Arts offers degrees in Arts, Music and Human Kinetics.

Under the arts heading there are seven degrees:

- Bachelor of Arts with Major: in one of 18 majors listed below
- Bachelor of Arts with Joint Major: combines the study of two subjects
- Bachelor of Arts with Advanced Major: designed for the student who wishes both depth and breadth in subjects; requires high academic achievement
- Bachelor of Arts with Joint Advanced Major: an advanced major program that involves the combined study of two subjects
- Bachelor of Arts with Honours: in one of 13 subjects below; requires depth and breadth of subject study, and also superior academic achievement
- Bachelor of Arts Honours with Subsidiary: involves the combined study of two subjects and superior academic achievement
- Bachelor of Arts with a Major in Aquatic Resources: a major in economics or public policy and social research and a major in aquatic resources

Under the music heading, there are five degrees and one diploma:

- Bachelor of Arts in Music (Jazz Studies)
- Bachelor of Arts in Music (Jazz Studies) with Advanced Major

- Bachelor of Arts in Music (Jazz Studies) with Honours
- Bachelor of Arts with Major in Music
- Bachelor of Music (Jazz Studies) with Honours
- Diploma in Jazz Studies

The human kinetics degrees, each with a choice of kinesiology or pre-education major, are

- Bachelor of Arts in Human Kinetics
- Bachelor of Arts in Human Kinetics with Advanced Major
- Bachelor of Arts in Human Kinetics with Honours

### 4.1.2 Subjects Available (see chart below)

The subjects available chart lists the subjects available for study in the arts degrees within the Faculty of Arts and where these subjects can be a major, minor, pair or elective course, or where two subjects may be combined in a joint major, joint advanced major, or honours with subsidiary degree. Reference is also made to information in chapter 9.

### 4.1.3 Degree and Diploma Patterns (see chart next page)

Listed below are the degrees and diplomas in the Faculty of Arts with their course patterns and credit requirements. Each degree requires 120 credits.

In general at StFX courses are three credits for a one-semester course and six credits for a full-year (two-semester) course.

### First-Year Pattern

Students in the first year of the BA normally follow the pattern of courses listed below. Group I and Group II refer to departments that offer the full range of BA degree options, namely, majors, advanced majors, and honours programs. All courses are introductory with numbers in the range 100-199 (e.g., ENGL 100).

<b>Subjects Available Chart 4.1.2</b> M1 = Major 1; M2= Major 2; Mi = Minor; P = Pair; E = Elective; S = Subsidiary.		<b>BA Major</b>	<b>BA Joint Major</b>	<b>BA Adv Major</b>	<b>BA Joint Adv Major</b>	<b>BA Honours</b>	<b>BA Honours Subsidiary**</b>	<b>BA AQUA</b>
ANTH	Anthropology, see 9.2	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
CELT	Celtic Studies, see 9.9	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
CSCI	Computer Science, see 9.12	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
ECON	Economics, see 9.16	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
ENGL	English, see 9.19	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
FREN	French, see 9.29	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
HIST	History, see 9.21	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
MATH	Mathematics, see 9.26	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
PHIL	Philosophy, see 9.30	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
PSCI	Political Science, see 9.32	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
PSYC	Psychology, see 9.33	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
RELS	Religious Studies, see 9.34	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
SOCI	Sociology, see 9.35	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	M1, P, E	M1, S, P, E	—
DEVS	Development Studies, see 9.14	Mi, P, E	M1, M2, P, E	Mi, P, E	M1, M2, P, E	P, E	M1, S, P, E	—
CATH	Catholic Studies, see 9.8	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	P, E	S, P, E	—
MUSI	Music, see 9.28	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	P, E	S, P, E	—
STAT	Statistics, see 9.36	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	P, E	S, P, E	—
WMGS	Women's and Gender Studies, see 9.37	M1, Mi, P, E	M1, M2, P, E	M1, Mi, P, E	M1, M2, P, E	P, E	S, P, E	—
SPAN	Spanish, see 9.27	M1, Mi, P, E	M1, M2, P, E	Mi, P, E	P, E	P, E	S, P, E	—
ART	Art History, see 9.4	Mi, P, E	P, E	Mi, P, E	P, E	P, E	S, P, E	—
ART	Studio Art, see 9.4	Mi, P, E	P, E	Mi, P, E	P, E	P, E	P, E	—
BIOL	Biology, see 9.5 and note 5	Mi, P, E	P, E	Mi, P, E	P, E	P, E	P, E	—
CHEM	Chemistry, see 9.10 and note 5	Mi, P, E	P, E	Mi, P, E	P, E	P, E	P, E	—
CLAS	Classical Studies, see 9.11	Mi, P, E	P, E	Mi, P, E	P, E	P, E	P, E	—
ESCI	Earth Sciences, see 9.15 and note 5	Mi, P, E	P, E	Mi, P, E	P, E	P, E	P, E	—
PHYS	Physics, see 9.31 and note 5	Mi, P, E	P, E	Mi, P, E	P, E	P, E	P, E	—
CDNS	Canadian Studies, see 9.7	Mi, P	P	Mi, P	P	P	P	—
GERM	German, see 9.27	P, E	P, E	P, E	P, E	P, E	P, E	—
AQUA	Aquatic Resources, see 9.3	E	E	E	E	E	S, E	M2 see note 4
BSAD	Business Administration, see 9.6 and note 1	Mi, E	E	Mi, E	E	E	E	—
ENGR	Engineering, see 9.18 and note 2	E	E	E	E	E	E	—
HKIN	Human Kinetics, see 9.22 and note 3	E	E	E	E	E	E	—
HNU	Human Nutrition, see 9.23 and note 3	E	E	E	E	E	E	—
IDS	Interdisciplinary Studies, see 9.25	E	E	E	E	E	E	—
INFO	Information Systems, see 9.24 and note 1	E	E	E	E	E	E	—
NURS	Nursing, see 9.29 and note 2	E	E	E	E	E	E	—

Students in a BA program, including those who have transferred from another program, may count towards the BA a maximum of 18 credits in courses taken in professional programs. The following regulations, in notes 1-3, apply.

Note 1 Students may normally complete a maximum of 12 credits in BSAD or INFO but only students who transfer out of BBA or BIS programs may count these as a pair. Only students completing a major or advanced major in Economics may complete a minor in Business Administration.

Note 2 Students who transfer out of the engineering or nursing program may count a maximum of 6 credits in ENGR or NURS.

Note 3 A maximum of six credits in HKIN and/or HNU may be used as open electives; they may not be taken in the first year; permission of the professor and the department chair are required.

Note 4 The degree is BA Major in Economics or Public Policy and Social Research, and Major in Aquatic Resources.

Note 5 In addition to using science courses as electives, students may complete a minor or one pair in a science discipline.

\*\* A subsidiary may normally be done only in a subject in which a major is offered in the BA program with exceptions as noted.

The normal academic load is 30 credits per year. In first year, students in the BA carry courses as follows:

Group I	6 credits from Catholic studies, Celtic studies, English, history, mathematics, statistics, and computer science, philosophy, religious studies
Group II	6 credits from anthropology, economics, modern languages (French, Spanish), political science, psychology, sociology, women's and gender studies
Group I or II	6 credits
Arts/Science electives	6 credits (may not be a course from a professional program such as aquatic resources, business administration, engineering, human kinetics, human nutrition, information systems or nursing)
Open electives	6 credits

#### 4.1.4 Declaration of Major, Advanced Major, or Honours

Students wishing to follow the honours or advanced major in a subject are advised

to consult with the department chair as early as possible. In their second year of study, students declare a major or apply for admission to an advanced major or honours program when they complete the appropriate application form and submit the form, signed by the chair, to the dean's office by March 31. Students are advised of their acceptance to the program in the summer following submission of the form. Students in the advanced major or honours programs must be registered full time in their final year of study.

#### 4.1.5 Advancement & Graduation Requirements by Degree (see chart below)

All students must fulfill the pattern and credit requirements as specified above and the course, seminar, research report, senior paper, or honours thesis requirements of the major, advanced major or honours department(s). For any honours with subsidiary or joint degrees, students submit only one research report, senior paper, or honours thesis to the first named department on the student's application, after consultation with both departments.

Candidates who fail to meet the requirements for the degree for which they have

Degree and Diploma Patterns Chart 4.1.3 Req = Required; Elec = Electives								
Bachelor of Arts	Major 1	Major 2	Minor	Pair	Elective			
BA Major	36 credits	—	24 credits	3 x 12 credits	24 credits	Each of these six degrees requires a minimum of 36 credits at the 300- or 400-level.		
BA Joint Major	36	36 credits	—	2 x 12	24, See note 2			
BA Advanced Major	36	—	24	3 x 12	24			
BA Joint Advanced Major	36, see note 4	36	—	2 x 12	24, See note 2			
BA Honours	60	—	—	2 x 12	36			
BA Honours with Subsidiary (See note 3)	min 48	min 24	—	1 x 12	24-36, See note 3			
Human Kinetics	HKIN Req	HKIN Elec	BIOL	Arts A	Arts B	Arts/Sci Elec	Approved	Elective
BA HKIN Major Kinesiology	33	21	6	24	12	12	6	6
BA HKIN Major Pre-Education	42	12	6	24, See note 1	12	12	6	6
BA HKIN Advanced Major or Honours Kinesiology	36	18	6	24	12	12	6	6
BA HKIN Advanced Major or Honours Pre-Education	51	3	6	24, See note 1	12	12	6	6
Music	MUSI Req	Arts/Sci	Arts/Sci Total					
All degrees and Dip. Jazz years 1 and 2	48	12	—	—	—	—	—	—
Additional courses years 3 and 4:								
BA in Music (Jazz Studies)	30	30	(3 x 12) + 6	—	—	—	—	—
Bachelor of Music (Jazz Studies)	48	12	2 x 12	—	—	—	—	—
BA Major in Music (same as BA Major above)								

Note 1 For students intending the secondary teaching stream, a minimum of 24 credits must be in one of the subject fields taught in Nova Scotia schools. For students pursuing the elementary teaching stream option, Arts A becomes 18 credits and the approved electives become 12 credits.

Note 2 Courses in Major 1 or Major 2 may not be used as electives.

Note 3 Major 1 plus Major 2 up to a maximum of 84 credits. A minimum of 24 credits of electives must be from departments other than honours and subsidiary.

Note 4 Senior research paper must be written on a topic in Subject A

Note 5 A pair is 12 credits in one subject, with requirements and restrictions as outlined in the glossary section of this academic calendar.

Advancement & Graduation Requirements by Degree Chart 4.1.5			
Degree	Admission End of Second Year	Advancement End of Third to Fourth Year	Graduation and Fourth-Year Requirements
BA Major and BA Joint Major	average 55	average 55	—
BA Advanced Major	average 65 in each of first two years; grade of 65 in each major and minor course	average 70; average 70 in the major courses; average 70 in the minor courses	average 70; average 70 in the major courses; average 70 in the minor courses
BA Joint Advanced Major	average 65 in each of first two years; grade of 65 in each course in each major	average 70; average 70 in each major	average 70; average 70 in each major
BA Honours	average 75 on 60 credits completed in the first two years; average 75 in all courses completed in the honours subject during the first two years; grade of 70 in each course in the honours subject	average 75; average 75 in the honours courses; grade of 70 in each course in the honours subject	average 75; average 75 in the honours courses; grade of 70 in each course in the honours subject
BA Honours with Subsidiary	same as above for BA Honours, and applied to both subjects	same as above for BA Honours, and applied to both subjects	same as above for BA Honours, and applied to both subjects
Bachelor of Arts in Music (Jazz Studies) with Advanced Major	average 65 in each of first two years; grade of 65 in each MUSI course; honours pass in Level II	average 70; average 70 in MUSI courses	average 70; average 70 in MUSI courses
Bachelor of Arts in Music (Jazz Studies) with Honours	average 75 on 60 credits completed in the first two years; average 75 in MUSI courses completed during the first two years; grade of 70 in each MUSI course; honours pass in Level II	average 75; average 75 in MUSI courses; grade of 70 in each MUSI course	average 75; average 75 in MUSI courses; grade of 70 in each MUSI course
Bachelor of Music (Jazz Studies) with Honours	average 75 on 60 credits completed in the first two years; average 75 in MUSI courses completed during the first two years; grade of 70 in each MUSI course; first class honours pass in Level II	average 75; average 75 in MUSI courses; grade of 70 in each MUSI course; submit a thesis in the third year as a component of MUSI 390	average 75; average 75 in MUSI courses; grade of 70 in each MUSI course
Diploma in Jazz	average 55 and grade of 60 in MUSI 190 to advance to second year;	—	grade of 60 in MUSI 290; pass in Level II
BA Human Kinetics	average 55	average 55	—
BA Human Kinetics with Advanced Major	average 65 in each of first two years; grade of 65 in each HKIN course	average 70; average 70 in HKIN courses	average 70; average 70 in HKIN courses
BA Human Kinetics with Honours	average 75 in each of first two years; average 75 in HKIN courses completed during first two years; grade of 70 in each HKIN course	average 75; average 75 in HKIN courses; grade of 70 in each HKIN course	average 75; average 75 in HKIN courses; grade of 70 in each HKIN course



applied may be eligible for another degree, provided those requirements are met.

Exceptions to these requirements need the approval of the dean and the department chair. Additional requirements are listed below.

The averages and grades specified below are the minima required.

#### 4.1.6 Co-operative Education Program in Arts

This program is offered in conjunction with the Gerald Schwartz School of Business as part of the expanded classroom initiative. This is normally a five-year program leading to the BA in Computer Science, with a co-operative education designation. See section 9.13 for further information.

### 4.2 DIPLOMA IN MINISTRY

The Diploma in Ministry is a distance-education program offered to students across Canada. The program offers seven 12-week courses. Students must complete five in order to receive the diploma. Three courses are compulsory (\*), and students choose two from the remaining four as electives. Each course requires a minimum of 12 hours per week of study.

Course	Offered		Credits
MNST110	Ministry in the Christian Community*	September	2
MNST120	Adult Religious Education*	January	2
MNST130	Biblical Foundations	September	2
MNST140	Christian Sacraments	January	2
MNST150	Contemporary Catholic Issues	April	2
MNST160	Self-Directed Study	Open access	2
MNST170	Practicum*	Open access	4

Note: Not all electives may be offered each year.

### 4.3 HUMANITIES COLLOQUIUM

The Humanities Colloquium is an optional and interdisciplinary way of studying three first-year courses, usually ENGL 100, HIST 100, and PHIL 100. Three sections of these courses are taught in a historically co-ordinated way with a focus on the great books of Western Civilization. Students who enroll in the Humanities Colloquium are co-enrolled in all three of the HC sections, and these sections are restricted to HC students. The three courses present an intensive introduction to four historical periods: The Ancient World; The Middle Ages; The Renaissance to the Enlightenment; and The Modern Age. In each period, students learn the history while simultaneously reading the philosophy and literature of the same era. Assignments, essays, and examinations are co-ordinated to reflect common themes across the three courses.

Further information may be obtained by visiting the website at [http://sites.stfx.ca/humanities\\_colloquium/](http://sites.stfx.ca/humanities_colloquium/)



## 5. FACULTY OF BUSINESS REGULATIONS

### 5.1 General Regulations

- 5.1.1 Degrees Offered
- 5.1.2 Degree Patterns
- 5.1.3 Electives
- 5.1.4 Application for Major or Honours
- 5.1.5 Advancement and Graduation Requirements by Degree
- 5.1.6 Co-operative Education Programs in Business Administration and Information Systems

The Faculty of Business is located in the Gerald Schwartz School of Business. The Gerald Schwartz School of Business provides students with skills and knowledge to meet the challenges of managing effectively in the 21st century. The major benefactor of the school is Gerald Schwartz, founder and CEO of Onex Corporation, and distinguished Canadian business leader. The Schwartz School brings together the Departments of Business Administration and Information Systems and offers Bachelor of Business Administration (BBA) and Bachelor of Information Systems (BIS) degrees.

### 5.1 GENERAL REGULATIONS

#### 5.1.1 Degrees Offered

The following degrees are offered in Business Administration:

- Bachelor of Business Administration General Degree
- Bachelor of Business Administration with Major in accounting, enterprise development, finance, information systems, leadership in management, or marketing
- Bachelor of Business Administration with Honours in accounting, enterprise development, finance, leadership in management, or marketing
- Bachelor of Business Administration with Joint Honours in business administration and economics

The following degrees are offered in Information Systems:

- Bachelor of Information Systems General Degree
- Bachelor of Information Systems Major in enterprise systems or IT management
- Bachelor of Information Systems with Honours in enterprise systems or IT management

#### 5.1.2 Degree Patterns

Listed below are the basic degree patterns for degrees in the Faculty of Business. Each degree requires 120 credits. For more specific requirements for the major and honours degrees, see section 9.6 or 9.24.

All BSAD and INFO courses are three credits. While most courses offered by other departments at StFX are three credits some are six credits for a full-year (two-term) course.

Bachelor of Business Administration Degree

BSAD required	101, 102, 221, 223, 261, 231, 241, 471
BSAD electives	36 credits
ECON	101, 102
INFO	101, 102
MATH	205
STAT	201
Arts/Science electives	36 credits
Open electives	6 credits

Bachelor of Information Systems Degree

INFO required	101, 102, 225, 245, 255, 256, 275, 355, 415, 416, 425, 465, 482
INFO electives	12 credits
BSAD	101, 102, 221, 223, 231, 261, 381
ECON	101, 102
MATH	205
STAT	201
Arts/Science electives	30 credits
Open electives	6 credits

#### 5.1.3 Electives

- a) Arts and Science Electives
  - i) BBA students must earn 36 credits of arts/science electives. Normally these credits are completed prior to the fourth year of study. The arts/science electives must include a pair (12 credits) in each of two different subjects offered by the Faculty of Arts or the Faculty of Science with

- exceptions noted below. The third 12 credits of arts/science electives may be additional courses in paired subjects or courses in other subjects.
- ii) BIS students must earn 30 credits of arts/science electives. Normally these credits are earned as 6 credits in each of years one and two, 12 credits in year three and 6 credits in year four. The arts/science electives must include a pair (12 credits) in each of two different subjects offered by the Faculty of Arts or the Faculty of Science with exceptions noted below. The remaining 6 credits of arts/science electives may be additional courses in paired subjects or courses in other subjects.
  - iii) Economics, information systems, mathematics and statistics courses required to earn the BBA or BIS degree may not count as arts/science electives.
  - iv) At least one of the two pairs must be in an arts subject. For maximum flexibility, students are advised to complete one arts/science pair by the end of their second year.
  - v) The following professional and applied subjects are not permitted as arts/science electives: Adult education, aquatic resources, engineering, human kinetics, human nutrition, and nursing.
  - vi) BIS students may not count CSCI courses as arts/science electives. For BBA students, CSCI 100 may not count toward the degree if a student has credit for INFO 101. However, BBA students may use other CSCI courses as arts/science electives or as a pair.
  - vii) Economics courses beyond ECON 101 and 102 may count as an arts pair except for BBA students enrolled in the joint honours in business administration and economics program.
  - viii) Information Systems (INFO) courses may count as BSAD electives with permission of the chair.
- b) Earning a Minor in an Arts or Science Subject (BBA program)  
Any BBA student earning 24 credits in one arts or science subject may qualify for a minor in that subject. Any specific departmental requirements for the minor must be met. To have a minor officially recognized, a student must advise the dean's office of the desire to have the minor noted on the academic record.  
Students must also complete a pair (12 credits) in another subject.
- c) Open Electives  
Most BBA and BIS programs include six credits of open electives. Students may satisfy this requirement by completing BSAD or INFO courses, arts/science

courses (as above) or, with permission of the appropriate chair, courses in selected subjects not normally permitted as arts/science electives including engineering, human kinetics, human nutrition and nursing.

#### 5.1.4 Application for Major or Honours

Students wishing to follow the major or honours in a subject are advised to consult with their department chair as early as possible. In the second year of study, students apply for admission to a major or honours program when they complete the appropriate application form and submit the form, signed by the chair, to the dean's office by March 31. Students are advised of their acceptance to the program in the summer following submission of the form. Students in the major or honours programs must be registered full-time in their final year of study.

#### 5.1.5 Advancement and Graduation Requirements by Degree

All students must fulfill the pattern and credit requirements as specified above and the course, seminar, research report, senior paper, or honours thesis requirements of the major or honours department(s). For any joint degrees, students submit only one research report, senior paper, or honours thesis to the first named department on the student's application, after consultation with both departments.

Candidates who fail to meet the requirements for the degree for which they have applied may be eligible for another degree, provided those requirements are met.

Exceptions to these requirements need the approval of the dean and the department chair. Additional requirements are listed below.

The averages and grades specified below are the minima required.

#### 5.1.6 Co-operative Education Programs in Business Administration and Information Systems

These programs are offered in conjunction with the Gerald Schwartz School of Business as part of the expanded classroom initiative. They are normally a five-year program leading to a degree with a co-operative education designation. The Business and Information Systems Co-op Programs are accredited by the Canadian Association for Co-operative Education (CAFCE). See section 9.13 for further information.

Advancement and Graduation Requirements by Degree Chart 5.1.5			
Degree	Admission End of Second Year	Advancement End of Third to Fourth Year	Graduation and Fourth-Year Requirements
BBA General	average 55 in each of first two years; average 60 in the required first- and second-year BSAD, ECON, INFO, MATH and STAT courses	average 55	—
BBA with Major	average 65 in courses taken in the first two years; average 65 in the required first- and second-year BSAD, ECON, INFO, MATH and STAT courses	average 70; average 70 in all BSAD and required ECON and INFO courses taken in year three; grade of 65 in each of those courses or be in the top 25% of the third-year class	average 70; average 70 in all BSAD and required ECON and INFO courses taken in year four; grade of 65 in each of those courses or be in the top 25% of the fourth-year class
BBA with Honours	average 75 in courses taken in the first two years; average 75 in the required first- and second-year BSAD, ECON, INFO, MATH and STAT courses; grade of 70 in each of these required courses	average 75; average 75 in BSAD and required ECON and INFO courses; grade of 70 in each BSAD and required ECON and INFO course	average 75; average 75 in BSAD and required ECON and INFO courses; grade of 70 in each BSAD and required ECON and INFO courses; grade of 70 on the honours thesis
BBA with Joint Honours in Business Administration and Economics	average 75 in courses taken in the first two years; average 75 in the required first- and second-year BSAD, ECON, INFO, MATH and STAT courses; grade of 70 in each of these required courses	average 75; average 75 in BSAD and ECON courses; grade of 70 in each BSAD and ECON course	average 75; average 75 in BSAD and ECON courses; grade of 70 in each BSAD and ECON course; grade of 70 on the honours thesis
BIS General	average 60 in each of first two years; grade of 60 in each INFO and ECON course; average 60 in MATH 205 and STAT 201; average 60 in BSAD 101, 102, 221, 223 and 261	average 55	—
BIS with Major	average 65 in each of first two years; grade of 65 in each INFO and ECON course; average 65 in MATH 205 and STAT 201; average 65 in BSAD 101, 102, 221, 223 and 261	average 70; average 70 in INFO and required BSAD courses taken in year three	average 70; average 70 in INFO and required BSAD courses taken in year four
BIS with Honours	average 75 in each of first two years; average 75 in the required first- and second-year BSAD, ECON, INFO, MATH, and STAT courses; grade of 70 in each of these required courses	average 75; average 75 in INFO and required BSAD courses taken in year three; grade of 70 in each of these courses	average 75; average 75 in INFO and required BSAD courses taken in year four; grade of 70 in each of these courses

## 6. FACULTY OF EDUCATION REGULATIONS

- 6.1 B.Ed. Admission Requirements
- 6.2 B.Ed. Physical Education Specialization
- 6.3 B.Ed. Mi'kmaq Focus
- 6.4 B.Ed. Progression Requirements and Academic Penalties
- 6.5 B.Ed. Professional Conduct
- 6.6 B.Ed. Certification
- 6.7 Diploma in Adult Education

### 6.1 BACHELOR OF EDUCATION ADMISSION REQUIREMENTS

The Bachelor of Education (B.Ed.) is a two-year program following a first degree. Applicants must have completed a first degree in arts, science, human kinetics, kinesiology, physical education or equivalent. The B.Ed. program has two streams: elementary and secondary with an additional middle years option available in either stream. Specialist programs in teaching physical education and French as a second language are available in all streams and options.

#### 6.1.1 Admission Process

At the present time, admission to the B.Ed. program is limited to approximately 115 students. The admissions process consists of the three steps described below.

- a) File Review  
During the file review process, applicants are initially evaluated on four equally weighted criteria.
  - i) Academic record: Normally applicants must have a senior-year average of at least 70 or a GPA of 2.5. Consideration is also given to the applicant's performance throughout the entire undergraduate program.
  - ii) Life experiences and community involvement: Both breadth and depth of involvement are evaluated, as is the applicant's experience with diversity and with inclusive practices.
  - iii) Letters of reference: Evaluation of the applicant's personal and professional qualities as presented by three referees who know the individual well as a student, worker and community member-leader.
  - iv) Essay on why the applicant wants to teach: Evaluation of the essay is based on the applicant's articulation of his/her view of students, subject area, and vision for schooling.
- b) Interview  
Based on the above criteria, applicants will be short-listed for the next stage of the process in which interviews are normally required. Interviews are about 30-40 minutes in length and include core questions asked of all applicants applying to the B.Ed. program as well as specific questions relating to the elementary, middle years or secondary stream, as applicable. Secondary stream applicants are asked about the major and minor subject fields for which they are applying. Interview questions focus on a general understanding of teaching, teaching content and processes, personal and professional qualities, an understanding of diversity and inclusive practices, and communication skills.
- c) Decision  
The applicant's file review and interview are equally weighted. Composite scores from the two parts of the application process form the basis for offers in each stream of the program, and within subject fields in the secondary stream.

#### 6.1.2 Admission Timeline

Jan 24	Completed applications are submitted for the year in which admission is sought.
Feb 1-10	Applications are reviewed by Faculty of Education.
Feb 10-Mar 15	Selected applicants are invited for interviews by stream and by subject field throughout this period.
Mar 16-30	Letters are mailed to applicants either making an offer, placing individuals on a wait list, or expressing regret.

#### 6.1.3 Elementary Education (P-8) Requirements

There are five requirements for entrance into the B.Ed. elementary stream.

- a) Social Studies  
Nine credits are required in social studies from any one or combination of the following disciplines: history (with a preference for local and Canadian history), geography, economics, political science, anthropology, sociology, law,

classics, Acadian studies, African-Canadian studies, Mi'kmaq studies, and/or philosophy.

- b) Mathematics  
Six credits are required in the subject field of mathematics. Three of the six credits must include the investigation of fundamental concepts and ideas.
- c) English or French  
Six credits are required in the subject field of English, if the undergraduate degree was delivered in English. Six credits are required in the subject field of French, if the undergraduate degree was delivered in French. Applicants for the specialist program for teaching French are encouraged to have courses in oral and written communication; communication strategies (speaking, listening, reading, writing strategies); Acadian, Quebec and francophone culture courses; an introduction to French literature, which could include literature throughout the francophone world. In addition to this, elementary applicants are encouraged to have a course in children's French literature taught in French.
- d) Science  
Six credits are required in science from any one or combination of: biology, chemistry, physics, geology/earth sciences, oceanography and environmental studies. Please note that a full laboratory component is recommended and is required for teacher certification in some Canadian provinces outside of Nova Scotia.
- e) Developmental Psychology  
Three or six credits of developmental psychology are required.

A maximum of six credits of cognate courses may be recognized in fulfillment of the individual subject field requirements identified above.

Cognate coursework refers to coursework in which the content is consistent with the content in the discipline for which credit is being allocated, for example, classics as history, communications as English. Final decisions on cognates are determined by the Faculty of Education in consultation with the NS Department of Teacher Certification.

#### 6.1.4 Secondary Education

Secondary education students must prepare to teach two subject fields normally taught in the public secondary schools of Nova Scotia (English, French, social studies, diverse cultures, mathematics, science, physical education/health education, fine arts, Gaelic, family studies). Information on subject fields and related disciplines are outlined below:

##### English

Applicants are encouraged to have courses in Canadian, American, British (including Shakespeare), and post-colonial literature.

##### French

Applicants are encouraged to have courses in oral and written communication; communication strategies (speaking, listening, reading, writing strategies); Acadian, Québécois, and francophone culture courses; and an introduction to French literature which could include literature throughout the francophone world.

##### Social Studies

Applicants must have a concentration in one of the following related disciplines: African-Canadian studies, classics, Acadian studies, economics, geography, history, law, Mi'kmaq studies, political science, or sociology. Anthropology may be used for a minor subject field and as a major subject field only if the courses are cross-listed with sociology.

##### Diverse Cultures

Applicants must have a concentration in African-Canadian studies, Mi'kmaq studies, native studies or sociology. Courses in women's and gender studies, world religions, and interdisciplinary studies are only eligible if they are cross-listed with the aforementioned related disciplines. Anthropology may be used for a minor subject field and as a major subject field only if the courses are cross-listed with sociology.

##### Mathematics

Applicants are encouraged to take courses in calculus, algebra, geometry, and statistics.

##### Science

Applicants must have a concentration in one of the following related disciplines: biology, chemistry, geology/earth sciences, environmental studies, oceanography, or physics.



**Physical Education/Health Education**

See section 6.2.

**Gaelic**

Applicants must have a concentration in one of the following related disciplines: Celtic studies, Scottish Gaelic, or Irish Gaelic.

**Fine Arts**

Applicants must have a concentration in one of the following related disciplines: art, drama, music or theatre studies.

**Family Studies**

Applicants must have a dual concentration which covers two of the three threads of the family studies program: food and nutrition; textile arts and family dynamics. Applicants' transcripts will be assessed individually for suitability for the family studies field, but generally, a concentration in human nutrition, family studies, sociology, psychology, and consumer education is recommended.

**Secondary Education Requirements**

There are two requirements for entrance into the B.Ed. secondary stream.

**a) Major Subject Field**

A minimum of at least 30 credit hours of university coursework in one discipline of a subject field taught in Nova Scotia secondary schools. A maximum of 6 credit hours of cognate university coursework may be included in fulfillment of this requirement.

**b) Minor Subject Field**

A minimum of at least 18 credit hours of university coursework in one discipline of a second subject field taught in Nova Scotia secondary schools. A maximum of 6 credit hours of cognate university coursework may be included in fulfillment of this requirement.

Cognate coursework refers to coursework in which the content is consistent with the content in the discipline for which credit is being allocated, for example, classics as history, communications as English. Final decisions on cognates are determined by the Faculty of Education in consultation with the NS Department of Teacher Certification.

**Note:** A number of positions in the secondary stream have been set aside for applicants who have at least 18 credit hours in a second minor subject field. This may give potential teachers an advantage in applying for middle school or junior high school positions. With appropriate methods courses, endorsement could be achieved in three subject areas rather than the customary two.

**6.2 BACHELOR OF EDUCATION PHYSICAL EDUCATION SPECIALIZATION**

As a specialist discipline, physical education requires that prospective students meet recognized national standards. In addition to the general requirements for either the elementary or secondary stream, applicants must have a minimum of 30 credits in the major subject for their first degree in the related disciplines of physical education, human kinetics, or kinesiology, with at least half consisting of courses beyond the introductory level. In addition, students should present among their required courses the following:

- Courses illustrating knowledge of disciplinary content, including but not limited to, human anatomy/physiology, motor learning and control, and psychology of physical activity.
- Courses related to the curriculum of the provincial school system including basic movement, gymnastics, dance, and team/individual sports, recreation and leisure pursuits, outdoor education, and exercise and health-related fitness.
- Courses in health education and growth and development.
- A course in special populations in physical education.

Consideration may be given to applicants with unique skill sets or experiences.

**6.3 BACHELOR OF EDUCATION MI'KMAQ FOCUS**

Applicants pursuing a Mi'kmaq focus in their B.Ed. may develop a concentration in language and/or culture. The language focus requires oral fluency in Mi'kmaq, and at least 18 credits in Mi'kmaq language-related courses in the first degree.

**6.4 BACHELOR OF EDUCATION PROGRESSION REQUIREMENTS AND ACADEMIC PENALTIES**

To qualify for the B.Ed. degree an average of at least 65 is required in all courses taken in the program. The pass mark in each course is 60.

Given the compressed time frame of the B.Ed. program, students will be

reviewed at the end of each term. Students are expected to pass all of their academic courses and practicum each term.

- Students who fail one academic course in one term will normally be placed on academic probation.
- Students who fail more than one academic course in a term will normally be suspended.
- Students who fail practicum (ie. a student who receives two unsatisfactory reports in any single practicum term) will normally be suspended.
- If a student is re-admitted to the program after the suspension period and fails one or more courses or receives two more unsatisfactory practicum reports in a single practicum term, the student will normally be dismissed from the program.

The procedure for appealing two unsatisfactory practicum reports is given in Section VI (G) of the Faculty of Education Field Experience Handbook.

The procedure for appealing an academic penalty is given in section 3.12. A student who is suspended from the B.Ed. program may re-apply to the registrar after a period of one term. Other regulations in 3.11 may apply.

**6.5 BACHELOR OF EDUCATION PROFESSIONAL CONDUCT**

The Department of Teacher Education has adopted guidelines for the conduct of preservice teachers enrolled in the Bachelor of Education program. As students and aspiring teachers, all B.Ed. program members must adhere to the guidelines as outlined in the B.Ed. Handbook and the Nova Scotia Teachers' Union Code of Ethics.

In the event of unprofessional conduct of a Bachelor of Education student, a faculty advisor or faculty member is required to bring it to the immediate attention of the B.Ed. Chair. The B.Ed. Chair shall call a meeting of the B.Ed. Professional Committee which will examine the circumstances of the reported incident(s). Based on the advice of the committee, the B.Ed. Chair may recommend the imposition of penalties including probation and/or a letter a warning, or suspension from the B.Ed. program. In some cases, violation of professional conduct guidelines may result in the B.Ed. Chair will recommending dismissal of the pre-service teacher to the Faculty of Education Committee on Studies.

**6.6 BACHELOR OF EDUCATION CERTIFICATION**

Candidates for a teacher's certificate may be asked to disclose disciplinary action at an educational institution or violations of the law which resulted in penalty.

Upon completion of the B.Ed. program, students are eligible to apply for the Teacher's Certificate, ITC, awarded by the Nova Scotia Department of Education.

**6.7 DIPLOMA IN ADULT EDUCATION**

This program is offered in major centres across Canada throughout the year. The Diploma in Adult Education is a professional designation. The modules are arranged as a series, yet each is a complete unit of learning which may be taken independently of the others at the discretion of the program director. The modules cover knowledge and skills in the following areas and carry credit value as indicated:

		Credits
ADED 311	Module 1 - Assessing Training Needs	1
ADED 312	Module 2 - Setting Learning Objectives	1
ADED 321	Module 3 - Evaluation Strategies	1
ADED 322	Module 4 - Designing Learning Activities	2
ADED 331	Module 5 - Facilitating Learning	1
ADED 332	Module 6 - Practicum	6

Upon completion of the first five modules, the Certificate in Adult Education is awarded. The Diploma in Adult Education is awarded upon completion of the six modules. Students may count, in multiples of three, up to 12 credits as electives in BA programs.

## 7. FACULTY OF SCIENCE REGULATIONS

### 7.1 General Regulations

- 7.1.1 Degrees Offered
- 7.1.2 Subjects Available
- 7.1.3 Degree Patterns
- 7.1.4 Declaration of Major, Advanced Major, or Honours
- 7.1.5 Advancement and Graduation Requirements by Degree
- 7.1.6 Bachelor of Science with Joint Advanced Major
- 7.1.7 Bachelor of Science with Joint Honours
- 7.1.8 Co-operative Education Program in Science

### 7.2 Engineering

### 7.3 Possible Pathways in the Sciences

### 7.1 GENERAL REGULATIONS

The B.Sc., the B.Sc. in Human Kinetics, and the B.Sc. in Human Nutrition require 120 credits. The basic B.Sc. in Nursing, requires 126 credits; the accelerated option for post-degree students is 69 credits; and the option for RNs requires 63 credits. Courses for each degree must follow the pattern required by the program chosen.

Students wishing to apply for a major, advanced major or honours program are advised to consult with the department chair as early as possible.

Re-entry to degree programs in the Faculty of Science will not be granted automatically to students who have been absent from the university for more than 10 years. In each science discipline, an entrance examination may be required to determine the extent to which credit will be awarded for courses completed previously.

#### 7.1.1 Degrees Offered

The Faculty of Science offers undergraduate degrees in the natural and applied sciences (biology, chemistry, computer science, earth sciences, environmental science, mathematics, physics, statistics) and in the health sciences (human kinetics, human nutrition, nursing, psychology) and the diploma in engineering.

Under the science heading there are seven degrees:

- Bachelor of Science with Major: in one of seven majors listed below
- Bachelor of Science with Advanced Major: in one of ten majors listed below; requires high academic achievement
- Bachelor of Science with Joint Advanced Major: combines the study of two science subjects; see table 7.1.6 for combinations
- Bachelor of Science with Advanced Major in a Science with Business Administration: for students with an interest in science who desire some exposure to business
- Bachelor of Science with Honours: offered in one of nine subjects listed below; requires superior academic achievement
- Bachelor of Science with Joint Honours: combines study of two science subjects; see table 7.1.7 for combinations
- Bachelor of Science with a Major in Aquatic Resources: a major in biology, earth sciences or mathematics, statistics and computer science and a major in aquatic resources

Under the human kinetics heading there are three degrees, each with a choice of kinesiology or pre-education major:

- Bachelor of Science in Human Kinetics
- Bachelor of Science in Human Kinetics with Advanced Major
- Bachelor of Science in Human Kinetics with Honours
- For the BA in Human Kinetics, see chapter 4 and section 9.22.

Under the human nutrition heading there are three degrees:

- Bachelor of Science in Human Nutrition
- Bachelor of Science in Human Nutrition with Advanced Major
- Bachelor of Science in Human Nutrition with Honours

Under the nursing heading there are four degrees and two certificates:

- Bachelor of Science in Nursing: options for students direct from high school, transfer students, and post-degree students; see sections 1.3g and 1.7
- Bachelor of Science in Nursing with Advanced Major
- Bachelor of Science in Nursing with Honours
- Bachelor of Science in Nursing for Registered Nurses: courses by distance; some opportunity for on-campus courses if a student wishes
- Certificate in Gerontological Nursing
- Certificate in Continuing Care

Under the engineering heading there is one diploma:

- Diploma in Engineering

#### 7.1.2 Subjects Available (see chart below)

The following table lists the subjects available for study in the science degrees within the Faculty of Science and where each subject may be used within the degree pattern, where two subjects may be combined in a joint advanced major or joint honours degree.

#### 7.1.3 Degree Patterns (see chart next page)

Listed below are the degrees and the diploma in the Faculty of Science with the course patterns and credit requirements for each. Each degree requires 120 credits, except for the B.Sc. in Nursing degrees (see 7.1). The Diploma in Engineering requires 72 credits.

In science, the acceptable arts subjects are anthropology, art, Canadian studies, Catholic studies, Celtic studies, classical studies, development studies, economics, English, French, German, history, interdisciplinary studies, music, philosophy, political science, psychology, religious studies, sociology, Spanish, and women's and gender studies. Certain restrictions apply and are described in the table at 4.1.2.

For definitions of the humanities and social sciences, see the glossary at the end of this calendar.

#### 7.1.4 Declaration of Major, Advanced Major, or Honours

Students meet with an advisor in their major, advanced major, or honours department to discuss future course selection. In their second year of study, students apply for admission to the program when they complete the appropriate application form and submit the form, signed by the chair, to the dean's office by March 31. Students are advised of their acceptance to the program in the summer following submission of the form.

Science Degrees Offered Chart 7.1.2 A = Science A; B = Science B; C = Science C; E = Elective							
Code	Subject	B.Sc. Major	B.Sc. Advanced Major	B.Sc. Joint Advanced Major	B.Sc. Advanced Major Science with Business	B.Sc. Honours	B.Sc. Joint Honours
BIOL	Biology	A, B, C, E	A, B, C, E	A, B, C, E	A, B, C, E	A, B, C, E	A, B, C, E
CHEM	Chemistry	A, B, C, E	A, B, C, E	A, B, C, E	A, B, C, E	A, B, C, E	A, B, C, E
CSCI	Computer Science	A, E	A, E	A, B, E	A, E	A, E	A, B, E
ENSC	Environmental Sciences	—	A	—	—	A	—
ESCI	Earth Sciences	A, B, C, E	A, B, C, E	A, B, C, E	A, B, C, E	A, B, C, E	A, B, C, E
MATH	Mathematics	A, B, C, E	A, B, C, E	A, B, C, E	A, B, E	A, B, C, E	A, B, C, E
PHYS	Physics	A, B, C, E	A, B, C, E	A, B, C, E	A, B, C, E	A, B, C, E	A, B, C, E
STAT	Statistics	A, E	A, E	A, B, E	A, E	E	E
AQUA	Aquatic Resources	A	—	—	—	—	—
ECON	Economics	—	A, E	—	—	A, E	—
PSYC	Psychology	A, E	A, E	See Table 7.1.6	—	A, E	See Table 7.1.7
HKIN	Human Kinetics	—	—	See Table 7.1.6	—	—	—

### 7.1.5 Advancement and Graduation Requirements by Degree (see chart page 25)

All students must fulfill the pattern and credit requirements as specified above and the course, seminar, research report, senior paper, or honours thesis requirements of the major, advanced major or honours department(s). For joint degrees, students submit only one research report, senior paper, or honours thesis.

Candidates who fail to meet the requirements for the degree for which they have applied may be eligible for another degree, provided those requirements are met. Exceptions to these requirements need the approval of the dean and the department chair.

Additional requirements are listed below. The averages and grades specified below are the minima required.

### 7.1.6 Bachelor of Science with Joint Advanced Major

It is possible to pursue an advanced major program which involves combined study of two science subjects, where Y = yes, possible:

with	BIOL	CHEM	CSCI	ESCI	HKIN	MATH	PHYS	PSYC	STAT
BIOL	—	Y	Y	Y	Y	Y	Y	Y	Y
CHEM	Y	—	Y	Y	—	Y	Y	—	Y
CSCI	Y	Y	—	Y	—	—	Y	—	—
ESCI	Y	Y	Y	—	—	Y	Y	—	Y
HKIN	Y	—	—	—	—	—	—	—	—
MATH	Y	Y	—	Y	—	—	Y	—	—
PHYS	Y	Y	Y	Y	—	Y	—	—	Y
PSYC	Y	—	—	—	—	—	—	—	—
STAT	Y	Y	—	Y	—	—	Y	—	—

Pattern and Credits Required in Each Degree and Diploma Chart 7.1.3 Req = Required; Elec = Electives									
Bachelor of Science see notes 1-4	Science A	Science B	Science C	Science Elec	Arts X	Arts Y	Arts Z	Approved Elec	Elec
B.Sc. Major (see notes 5 and 6)	36 credits	12 credits	6 credits	6 credits	12 credits	12 credits	6 credits	—	30 credits
B.Sc. Advanced Major (see note 6)	42	12	6	—	12	6	—	18	24
B.Sc. Joint Advanced Major	42	36	6	—	12	6	—	12	6
B.Sc. Advanced Major Science with Business Administration (see note 7)	36, BSAD 30, CSCI 3	12	6	—	12	6	ECON 6	9	—
B.Sc. Honours	60	12	6	—	12	6	—	18	6
B.Sc. Joint Honours	Total of 84 in A & B		6	—	12	6	—	12	—
<b>Human Kinetics (see note 8)</b>	<b>HK Req</b>	<b>HK Elec</b>	<b>Biology</b>	<b>Science A</b>	<b>Science B</b>	<b>Arts X</b>	<b>Arts Y</b>	<b>Approved Elec</b>	<b>Elec</b>
B.Sc. HKIN Major Kinesiology	33	21	6	24	6	12	6	6	6
B.Sc. HKIN Major Pre-Education	42	12	6	24, see Note 10	6	12	6	6	6
B.Sc. HKIN Advanced Major or Honours Kinesiology	36	18	6	24	6	12	6	6	6
B.Sc. HKIN Advanced Major or Honours Pre-Education	51	3	6	24, see Note 10	6	12	6	6	6
<b>Human Nutrition</b>	<b>HN Req</b>	<b>HN Elec</b>	<b>BIOL</b>	<b>BSAD</b>	<b>CHEM</b>	<b>STAT</b>	<b>Humanities</b>	<b>Social Science</b>	<b>Elec</b>
B.Sc. HNU and Advanced Major	39 with HNU 491 for AdvM	18	12	3	12	3	12 (or 6)	6 (or 12)	15
B.Sc. HNU Honours	45	18	12	3	12	3	12 (or 6)	6 (or 12)	9
<b>Nursing</b>	<b>NURS Req</b>	<b>NURS Elec</b>	<b>BIOL</b>	<b>CHEM</b>	<b>HNU</b>	<b>PSYC</b>	<b>PHIL/RELS</b>	<b>Arts/Sci Elec</b>	<b>Elec</b>
B.Sc. Nursing	75	—	12	6	6	6	6	9	6
B.Sc. Nursing Advanced Major	78	—	12	6	6	6	6	6	6
B.Sc. Nursing Honours	78	3	12	6	6	6	6	6	3
B.Sc. Nursing for RNs	33	12	12	6	—	—	—	—	—
B.Sc. Nursing, Post-Degree option	69	—	—	—	—	—	—	—	—
<b>Engineering</b>	<b>ENGR Req</b>	<b>ENGR Elec</b>	<b>CHEM</b>	<b>PHYS</b>	<b>Other Sci</b>	<b>Arts Elec</b>	—	—	—
Diploma in Engineering	45	6 to 9	6	6	Up to 3	6	—	—	—

Note 1 Of science A, B or C one must be mathematics, and six credits of mathematics must be calculus. In the B.Sc. Advanced Major in Science with Business, either science A or B must be mathematics and must include six credits of calculus.

Note 2 With permission of the major department(s), courses from other science departments may be used to satisfy major, advanced major or honours requirements: up to 6 credits for the major; up to 12 credits for the advanced major, joint advanced major, or the advanced major with business; up to 18 credits for the honours; up to 12 credits for the joint honours.

Note 3 As an exception to regulation 3.1 f, students in B.Sc. major, advanced major or honours programs may take six credits of engineering, human kinetics or human nutrition with the approval of the chair of the professional department and the chair of the major, advanced major or honours department. The six credits will be counted as open electives in the B.Sc. major program, or as approved or open electives in the advanced major, honours, joint advanced major or joint honours program.

Note 4 Students in the B.Sc. Major may take up to 12 credits of business administration as open electives. Those in a single advanced major or single honours program may take up to 24 credits: 12 credits as science A, with the approval of their major or honours department, and 12 credits as approved or open electives. Students in joint advanced major or joint honours programs may take up to 12 credits as approved or open electives.

Note 5 In the B.Sc. Major, Arts X must be a subject from the humanities and Arts Y must be from the social sciences. Arts Z may be either humanities or social sciences, but must be a distinct subject from X and Y. See the glossary for definitions the humanities and social sciences.

Note 6 Students who transfer from a professional program (engineering, human kinetics, human nutrition, nursing) may include, as open electives, up to 18 credits of professional courses.

Note 7 If Science A is not mathematics, Science B must be mathematics.

Note 8 If science A is biology, normally science B is chemistry; if science A is physics, normally science B is math; alternate science B choices by permission of chair.

Note 9 For students pursuing the human nutrition minor, there are 15 credits fewer of human kinetics electives and 15 credits of additional science requirements. See section 9.22.

Note 10 For students pursuing the secondary teaching stream option, a minimum of 24 credits must be in one of the subject fields taught in Nova Scotia schools. For those intending the elementary teaching stream, science A becomes 18 credits and the approved electives become 12 credits.



### 7.1.7 Bachelor of Science with Joint Honours

It is possible to pursue an honours program which involves combined study of two science subjects, where Y = yes, possible:

with	BIOL	CHEM	CSCI	ESCI	MATH	PHYS	PSYC
<b>BIOL</b>	—	Y	Y	Y	Y	Y	Y
<b>CHEM</b>	Y	—	Y	Y	Y	Y	—
<b>CSCI</b>	Y	Y	—	Y	—	Y	—
<b>ESCI</b>	Y	Y	Y	—	Y	Y	—
<b>MATH</b>	Y	Y	—	Y	—	Y	—
<b>PHYS</b>	Y	Y	Y	Y	Y	—	—
<b>PSYC</b>	Y	—	—	—	—	—	—

### 7.1.8 Co-operative Education Program in Science

These programs are offered in conjunction with the Gerald Schwartz School of Business as part of the expanded classroom initiative. These are normally a five-year program leading to a degree with a co-operative education designation in biology, human nutrition, or computer science. See section 9.13 for further information.

## 7.2 ENGINEERING

The Bachelor of Engineering (B.Eng.) program in Nova Scotia is either a two-year diploma program at any of the associated universities followed by two years of

study at Dalhousie University in Halifax, or a four-year program at Dalhousie University.

The diploma consists of 72 credits taken over two academic years, 36 credits in each year. During the second term of the first year, students apply for conditional acceptance into one of the following engineering programs at Dalhousie University: chemical, civil, electrical, environmental, industrial, materials, mechanical, or mineral resource engineering. Conditional acceptance into a program allows the student to choose the appropriate courses to take in the second year of the diploma program. The 72 credits required for the diploma must satisfy the requirements of one of the engineering programs as listed in this calendar (see section 9.18). Any deviations must be with the written approval of the chair of the department and the Dean.

As Dalhousie and the associated universities form a unified system of engineering education, all diploma graduates from the associated institutions are guaranteed admission into the Faculty of Engineering, Dalhousie University. It is not possible, however, for Dalhousie to guarantee that students will gain entry to the program of their first choice, since all programs are subject to a known maximum number of annual admissions. Thus in the second half of the first year, students are required to specify their choice of at least three programs, in preferential order, and at a predetermined date (typically about May or June), the Faculty of Engineering at Dalhousie will notify the chair of the department of engineering of conditional admission of students to specific programs. Placement of students into programs is based on academic performance. A formal Memorandum of Understanding (MOU) exists between Dalhousie University and each of the Associated Universities. Article 4.0/1 of the MOU states that "The Faculty of Engineering at Dalhousie University

Advancement and Graduation Requirements by Degree Chart 7.1.5			
Degree	Admission End of Second Year	Advancement End of Third to Fourth Year	Graduation and Fourth-Year Requirements
B.Sc. Major	average 55	average 55	—
B.Sc. Advanced Major	average 65 in each of first two years; grade of 65 in each course in Science A	average 70; average 70 in Science A	average 70; average 70 in Science A
B.Sc. Joint Advanced Major	average 65 in each of first two years; grade of 65 in each course in Science A and B	average 70; average 70 in Science A; average 70 in Science B	average 70; average 70 in Science A; average 70 in Science B
B.Sc. Advanced Major Science and Business	average 65 in each of first two years; grade of 65 in each course in Science A	average 70; average 70 in Science A	average 70; average 70 in Science A; average 70 in BSAD courses over the program
B.Sc. Honours	average 75 in each of first two years; average 75 in Science A courses completed during the first two years; grade of 70 in each course in Science A	average 75; average 75 in Science A courses; grade of 70 in each course in Science A	average 75; average 75 in Science A courses; grade of 70 in each course in Science A
B.Sc. Joint Honours	average 75 in each of first two years; average 75 in Science A courses and average 75 in Science B courses completed during the first two years; grade of 70 in each course in Science A and B	average 75; average 75 in Science A courses; average 75 in Science B courses; grade of 70 in each course in Science A and B	average 75; average 75 in Science A courses; average 75 in Science B courses; grade of 70 in each course in Science A and B
B.Sc. Human Kinetics	average 55	average 55	—
B.Sc. Human Kinetics with Advanced Major	average 65 in each of first two years; grade of 65 in each HKIN course; average 65 in Science A (minor) courses in first two years	average 70; average 70 in HKIN courses; average 70 in Science A courses	average 70; average 70 in HKIN courses; average 70 in Science A courses
B.Sc. Human Kinetics with Honours	average 75 in each of first two years; average 75 in HKIN courses completed during the first two years; grade of 70 in each HKIN course	average 75; average 75 in HKIN courses; grade of 70 in each HKIN course	average 75; average 75 in HKIN courses; grade of 70 in each HKIN course
B.Sc. Human Nutrition	average 55 in each of first two years; combined average 55 in HNU and science courses in first year; average 60 in HNU courses in first two years	average 55; average 60 in HNU courses	average 55 in the final year; average 60 in HNU courses
B.Sc. Human Nutrition with Advanced Major	average 65 in each of first two years; combined average 65 in HNU and science courses in first year; average 65 in HNU courses in first two years	average 70; average 70 in HNU courses	average 70; average 70 in HNU courses
B.Sc. Human Nutrition with Honours	average 75 in each of first two years; combined average 75 in HNU and science courses in first year; average 75 in HNU courses in first two years; grade of 70 in each HNU course	average 75; average 75 in HNU courses; grade of 70 in each HNU course	average 75; average 75 in HNU courses; grade of 70 in each HNU course
B.Sc. Nursing, all program options see Note 1	average 55 in the required first- and second-level nursing and science courses; grade of 60 in each NURS course	average 55; grade of 60 in each NURS course	average 55 over final three years or levels; grade of 60 in each NURS course
B.Sc. Nursing with Advanced Major	average 65 in each of first two years; grade of 65 in each NURS course; no nursing practice alert in second year	average 70; grade of 70 in each NURS course; no nursing practice alert	average 70; grade of 70 in each NURS course; no nursing practice alert
B.Sc. Nursing with Honours	average 75 in each of first two years; average 75 in NURS courses completed during the first two years; grade of 70 in each NURS course; no nursing practice alert in second year	average 75; average 75 in NURS courses; grade of 70 in each NURS course; no nursing practice alert	average 75; average 75 in NURS courses; grade of 70 in each NURS course; no nursing practice alert
B.Sc. Nursing for Registered Nurses	average 55; grade of 60 in each NURS course	—	average 55 over whole program; grade of 60 in each NURS course
Diploma in Engineering	average 60 to advance to second year	—	average 60 over length of program

Note 1 The B.Sc. Nursing program options vary in the timeframes for completion. The four levels, from 1 to 4, correspond to the courses and course numbers at the 100 to 400 levels.

will treat students from the Associated University programs on an equal basis with students who entered the program as freshmen at Dalhousie University. Academic merit will be the only deciding factor on admission to disciplines." Students who do not gain entrance to their preferred program or do not wish to continue their studies at Dalhousie University may apply to an engineering program at any other institution and transfer the credits earned.

Students who transfer to this program from other universities must obtain credit for at least 36 credits taken at StFX in order to receive a diploma from StFX. Students cannot use a distance or online course to satisfy the requirement of an engineering course. An engineering science or design course may be taken during intercession or summer only in the situation where the course was taken during the regular academic term but the student obtained a failing grade.

Students who wish to earn the engineering diploma and a B.Sc. degree should consult with the dean and appropriate department chairs.

### 7.3 POSSIBLE PATHWAYS IN THE SCIENCES

#### 7.3.1 Architectural Studies

In association with Dalhousie University, StFX offers the first two years of a minimum of four calendar years of study leading to a Bachelor of Environmental Design Studies.

A student who has successfully completed two years in a BA, BBA, B.Sc. or engineering program may apply to enter the third year at Dalhousie University School of Architecture. Some mathematical facility is required and credit should be earned for at least six credits in statistics and/or calculus. For requirements, interested students are encouraged to contact the School of Architecture, Dalhousie University.

#### 7.3.2 Pre-Medical Studies

Most Canadian medical schools require or recommend that applicants earn credit for general biology, general chemistry, organic chemistry, physics, and English. They also require a superior academic record. It is possible to satisfy the entrance requirements while completing either a B.Sc. or a BA degree.

Dalhousie University Faculty of Medicine requires applicants to have a baccalaureate degree, or the equivalent of the three-year B.Sc. degree at Dalhousie University. Students are advised to take the courses listed above in order to do well on the science sections of the Medical College Admissions Test (MCAT). Beyond these courses, their education should include broad study in the physical, life and social sciences and the humanities. For more information, including what constitutes a program equivalent to the three-year B.Sc. degree at Dalhousie, please consult the assistant to the deans at StFX.

#### 7.3.3 Pre-Dental Studies

Admission to the four-year Dalhousie Doctor of Dental Surgery program requires the completion of a minimum of 10 full-year academic classes at the undergraduate level. These classes will normally be completed by May 1 of the year of expected entry to the Faculty of Dentistry. Two one-term academic classes in the same discipline are considered equal to one full-year academic class.

Academic requirements:

- One full-year academic class in each of biology, general chemistry, physics, organic chemistry (each of these courses must include laboratory instruction) an approved one-term bio-organic chemistry course may be substituted for the full year organic chemistry class.
- Two full-year academic courses (or four one-term courses) chosen from the humanities and/or social sciences
- One full year (or two one-term) writing course, English
- One university course (full year or one term) in each of the following: introductory biochemistry, introductory microbiology, and vertebrate physiology. These courses should be at the second year level or higher and applicants are encouraged to contact the Faculty of Dentistry for approval of selected courses.

#### 7.3.4 Pre-Veterinary Medicine

The Atlantic Veterinary College is located at the University of Prince Edward Island. Applicants are required to complete prerequisite courses and supply official Graduate Record Examination – General (GRE) results. A total of 50 points (or 50%) of the applicant score will be based upon grades attained in the 20 required courses (15 specified and 5 electives with the highest grades). These points will be determined as follows:

- 30% or 15 points from the average of the four biological science prerequisite courses, including genetics, microbiology, and two animal biology electives;
- 70% or 35 points from grades in the remaining 16 required courses as listed: two math courses (one being statistics), three chemistry courses (one being organic chemistry), one physics course, two English courses (one being composition), three humanities and/or social sciences, five electives in any area.

#### 7.3.5 Graduate Studies

Students with an excellent academic record may be interested in moving on to a master's degree. There are many graduate programs to choose from regionally, nationally, and internationally. Faculty are well poised to give you advice on potential graduate schools and programs. If you are interested in pursuing a master's degree at StFX, see section 8.

#### 7.3.6 Education and Teaching

Students may be interested in moving into the field of education and a becoming teacher. StFX offers a Bachelor of Education degree and students majoring in sciences may pursue teaching specializations in sciences, mathematics, physical education and family studies. Science students may also pursue additional teaching areas in departments in the arts. An option also exists for a degree in elementary education. See section 6.1.4 for additional information.

## COADY

INTERNATIONAL INSTITUTE  
ST. FRANCIS XAVIER UNIVERSITY

The Coady International Institute represents StFX's commitment to social justice in action. Founded in 1959 and named for one of Canada's great heroes, Rev. Dr. Moses Coady, the Institute has been educating development professionals from around the world for more than 50 years. Today, the Coady has an extensive network of more than 5,000 graduates and global partners working in more than 130 countries, helping millions of people in the world's poorest neighbourhoods to build better lives for themselves.

The Institute offers its flagship 19-week Diploma in Development Leadership program and specialized certificate courses (from one to three weeks) in: advocacy and citizen engagement; community-based microfinance (distance course also available); community-based conflict transformation and peace-building; community-based natural resource management; community development leadership by women; community driven health impact assessment; facilitation and training approaches for community change; livelihoods and markets; mobilizing assets for community-driven development; organizational learning and change; skills for social change; good governance and social accountability tools and communication and social media.

The new International Centre for Women's Leadership oversees the Global Change Leaders program, Indigenous Women in Community Leadership program, and is contracted to provide leadership education for the Canadian Women's Foundation. The Institute and the Department of Adult Education also jointly offer a community development stream in the existing Master of Adult Education program. Coady staff members collaborate with the Faculty of Arts to offer the undergraduate program in development studies.

The international development professionals who study at the Coady Institute add much to the multicultural atmosphere at StFX and provide a rich resource for students interested in international issues. StFX students are welcome to join the Coady Student Society and Xtending Hope Student Society, and to use the Institute's Marie Michael Library, which houses a specialized collection on international development.

StFX graduates can experience living and working overseas through the Coady's Youth in Partnership program. Since 1997, the Coady has provided more than 200 Canadian university and college graduates with the opportunity to live and work for six months with Coady's partners in Asia, Africa, the Caribbean and the Americas.



## 8. GRADUATE STUDIES

- 8.1 Admission Procedures and Requirements**
- 8.2 Full-Time and Part-Time Studies**
- 8.3 Program Requirements**
- 8.4 Thesis Regulations**
- 8.5 Outstanding Graduate Student Research Award**
- 8.6 Graduation**

Graduate Studies at StFX is supervised by an office of graduate studies under the direction of a committee, consisting of a chair appointed by the president, the deans of faculties, and members elected by and from the university faculty.

Courses of study leading to the following graduate degrees are offered:

- Master of Arts
- Master of Science
- Master of Adult Education
- Master of Education
- Ph.D. in Educational Studies

The degree of Master of Arts in Teaching is not offered at the present time.

### 8.1 ADMISSION PROCEDURES AND REQUIREMENTS

For all master's programs except the M.Ad.Ed. (see 8.1.2) and the M.Ed. (see 8.1.3), the following rules apply.

Applications for admission should be sent to the university admissions office at least two months before the date of proposed registration. Applicants may be required to write the Graduate Record Examinations (GRE) administered by the Educational Testing Service.

#### 8.1.1 Master of Arts and Master of Science

The MA program may be offered in Celtic studies; and M.Sc. degree programs may be offered in biology, chemistry, computer science, Earth sciences, and physics.

Minimum admission requirements for these degree programs are:

- a) a bachelor's degree with the equivalent of an undergraduate major (36 credits) normally in the same field of study;
- b) an overall average of 70 (B) or higher in the bachelor's program.

Admission to these programs is based on the following factors:

- a) The university must be able to provide a program of study and research which meets the expectations of the applicant as specified in the application for admission.
- b) The candidate's academic performance and references must indicate that s/he is able to complete the program of study and research prescribed in the degree program.
- c) A faculty member must be available who is competent to supervise the program of study and the research prescribed for the degree.

#### 8.1.2 Master of Adult Education

For admission to the M.Ad.Ed. program applicants must:

- a) have completed an appropriate bachelor's degree with an overall average of 70 (B) or higher; and
- b) have post-baccalaureate experience in work relating to adult education.

Applications for admission should be sent to the university admissions office. Upon acceptance to the M.Ad.Ed. program, candidates are assigned to begin their studies in one of the foundation institutes which are held in the spring and summer.

#### 8.1.3 Master of Education

The deadline for application to the M.Ed. program is March 1, with courses beginning in July of the same year. Students are responsible for checking with the admissions office to make sure that their application is complete. Only completed applications will be considered.

Normally, only students who have been accepted into the StFX M.Ed. program are eligible to enroll in M.Ed. courses offered by the university. Graduate students in good standing in M.Ed. programs at other universities may also apply to take up to 12 credits in M.Ed. courses at StFX. Such students should apply for admission as non-degree students to the continuing and distance education office with a letter of permission from their degree-granting institution.

Admission to the M.Ed. program is competitive and based on:

- a) completion of a B.Ed. or its equivalent, with an overall average of at least 70;
- b) at least two years of teaching experience prior to enrolment in the first graduate course.

Graduates who do not possess a B.Ed. will normally be considered when they have:

- a) met the university's admission requirements for the B.Ed.;
- b) gained a teaching license equivalent to a Nova Scotia Initial Certificate (TC5) or been employed in a teaching capacity for at least two years in a school of nursing or a post-secondary institution;
- c) completed a minimum of 12 credits in education;
- d) met all other conditions.

Meeting the minimum admission requirements does not ensure acceptance into the program. Decisions of the committee on graduate studies are final.

#### 8.1.4 Ph.D. in Educational Studies

The Ph.D. in Educational Studies is offered in partnership by St. Francis Xavier University, Mount Saint Vincent University, and Acadia University. This research-oriented doctoral program is jointly administered by the Inter-University Doctoral Administrative Committee (IDAC). Applicants are admitted to one university and graduate from that home institution of record.

Doctoral students can focus their studies on one or more of six interrelated themes: curriculum studies, educational foundations and leadership, inclusive education, lifelong learning, literacies, and the psychological aspects of education. Applicants are encouraged to review the research interests of education faculty members at all three participating universities, available at their respective websites. An average of 14 students will be admitted each year: six at MSVU, four at St FX and four at Acadia. The IDAC may consider applicants on a case-by-case basis and waive the fixed application date, if deemed warranted and if space is available in the program for that year.

Minimum admission requirements are:

- a) A master's level degree from a recognized university in education or in a related field of study (a cognate discipline);
- b) Normally, a graduate thesis in a field related to the proposed doctoral studies. Those applicants who have not completed a thesis are required to submit evidence of their ability to undertake research in education through the completion of a qualifying research paper of sufficient depth and scope to reflect their research competence;
- c) Evidence of scholarly preparation to conduct research, normally including graduate level courses in quantitative and/or qualitative research methods and design;
- d) Three letters of reference, normally including two academic and one professional;
- e) A recent curriculum vitae indicating current initiatives in education and any academic, scholarly work to date;
- f) A letter of intent indicating a proposed area of study from among the six interrelated themes of educational studies;
- g) A minimum of A- or 80% average in his or her highest degree.

Qualified applicants will only be admitted if a suitable supervisor and program can be provided. To achieve success in this doctoral program, applicants must demonstrate strong reading, writing and comprehension skills in the English language.

The application package is available from the doctoral program office in the faculty of education and online at the Inter-University Ph.D. website [www.educationphd.ns.ca](http://www.educationphd.ns.ca)

- a) Applicants apply for their institution of choice (Acadia, MSVU or StFX) through the doctoral program office by November 15 for July 1 entry;
- b) The IDAC will review all applications and, by majority agreement, recommend acceptance of applicants to the participating institutions;
- c) The StFX admissions office will inform the applicant, in writing after March 1, regarding the decision of the IDAC. StFX becomes the institution of record for all doctoral students formally admitted to StFX.
- d) In addition to specific doctoral program requirements and regulations, StFX students are bound by the regulations and procedures pertaining to graduate studies at StFX
- e) Each dissertation supervisor will arrange for an entry meeting for his/her student(s) to develop a preliminary program plan and an initial outline of the proposed research area. This preliminary plan will be submitted in writing to the IDAC for approval (within a time frame specified by the IDAC), through the Doctoral Program Coordinator. Normally, this plan is completed before the July 1 start date.

#### 8.1.5 Non-Degree Students

Students without previous admission to a degree program may be permitted to register in graduate courses provided they meet the program's entrance requirements and with the approval of the instructor and department chair and notification of the chair of the committee on graduate studies.



A student who has registered in courses in compliance with the previous paragraph, and who is later admitted to a degree program without condition, may, upon recommendation of the department chair, be granted advanced standing to a maximum of 12 credits provided they are acceptable as part of the program in which the student is enrolled.

## 8.2 FULL-TIME AND PART-TIME STUDIES

### 8.2.1 Full-Time Study

The university may admit suitable candidates for full-time study during the regular academic year in the MA, M.Ed., and M.Sc. programs.

Full-time students register for a minimum of 18 credits and a maximum of 24 graduate credits during the academic year, including thesis credits.

For purposes of classification as full-time, candidates for graduate degrees may take up to 12 undergraduate credits, to a combined total of 30 credits. However, undergraduate credits thus included will not count for graduate credit.

Full-time students must complete the program, including thesis, so that the thesis is completed within two years of the date of initial registration for students possessing an honours degree. An extension for a third year of studies may be obtained as outlined below.

### 8.2.2 Part-Time Study

The university may admit suitable candidates for part-time study for the MA, M.Ed. and M.Sc. programs.

Part-time students may register for only six graduate credits during any term or summer session and must complete the program so that the degree is awarded within six years of initial registration.

### 8.2.3 Combined Full-Time and Part-Time Study

Master's candidates who elect to complete their program by a combination of full-time and part-time study are governed by the following elapsed-time limitations: five calendar years if the candidate is registered as a full-time student for two or three terms and part-time for the balance; four calendar years if the candidate is registered for four or five terms as a full-time student and part-time for the balance.

### 8.2.4 Study in the Master of Adult Education Program

The M.Ad.Ed. program is, with the exception of the foundations institute, a distance-learning program. This program provides an effective learning experience for professional adult educators. Candidates come from a wide variety of career areas such as literacy, health education, higher education, vocational education, human resources training and development, community development, and educational technology. All program requirements must be completed within five years of commencement of the program.

### 8.2.5 Extensions

An extension to the time limit of up to one year beyond that indicated above may, upon recommendation of the department and subsequent approval of the chair of the committee on graduate studies, be granted to candidates who have demonstrated satisfactory academic progress and paid an extension fee. Requests for extensions beyond one year are normally not considered, these will only be granted with the approval of the graduate studies committee.

### 8.2.6 Leaves of Absence

Upon recommendation of her/his Department and the approval of the Chair of the Committee on Graduate Studies, a student may request a leave of absence from a program, of up to one year, for medical or family reasons (e.g., parental leave). The period of this leave of absence will not count towards the time limit in the program.

### 8.2.7 Transfer Credit

Once registered in a graduate program, students may be granted credit for six credits from another university if approval is obtained from the relevant department chair before registration in the course.

## 8.3 PROGRAM REQUIREMENTS

### 8.3.1 General

Students are expected to be familiar with all university and department regulations. See chapter 3 and the relevant department in chapter 9.

The passing grade in all graduate courses is 60 and a general average of 70 is required for graduation.

Students in part-time programs are assessed, and their academic standing is reviewed annually, by the committee on graduate studies. To maintain a satisfactory standing, students must be successful in 12 of any 18 consecutive credits with a passing grade of 60, and in addition must maintain a moving average of 70. Students who fail courses beyond this number or who do not maintain the required

average will be placed on academic probation. A student on academic probation who subsequently fails a course or does not achieve a moving average of at least 70 may be liable to academic dismissal.

If a student believes that work is not proceeding satisfactorily for reasons outside her/his control, the student may make representation to her/his supervisory committee, the department chair, the director of the school (if applicable) and, if the matter remains unresolved, the chair of the committee on graduate studies.

Research undertaken towards a thesis or research project involving human subjects normally requires approval by the university research ethics board (REB); see section 3.24. Before such a research project is initiated and before registration in the thesis is permitted, students must obtain REB approval, or must provide a letter signed by their research supervisor and by the chair of the REB, stating that the project does not require REB approval.

Research undertaken towards a thesis or research project involving animal use or testing normally requires review and approval by the StFX animal care committee.

### 8.3.2 Master of Arts

The degree requirements are:

- A minimum residence of 12 months for candidates with an honours degree, and a minimum residence of 18 months for other candidates.
- Students must earn a total of 36 credits in graduate work; original research may account for up to 12 credits.
- Candidates must satisfy course, seminar, and comprehensive examination requirements as determined by the candidate's supervisory committee and approved by the department chair.
- On the recommendation of the department chair, candidates may be required to demonstrate a reading knowledge of French, German or Russian, and an examination in the designated language must be passed within six months after registration.

### 8.3.3 Master of Science

The degree requirements are:

- A minimum residence of 12 months for candidates with an honours degree, and a minimum residence of 18 months for other candidates.
- Students must earn a total of 36 credits in graduate work, original research may account for up to 12 credits.
- Candidates must satisfy course, seminar, and comprehensive examination requirements as determined by the candidate's supervisory committee and approved by the department chair.

### 8.3.4 Master of Adult Education

The M.Ad.Ed. program is, with the exception of the Foundations Institute, a distance-learning program. Students must earn a total of 36 credits in graduate work. Students may not use courses taken elsewhere for credit towards the M.Ad.Ed. degree. There are two routes by which a student may complete the requirements for the M.Ad.Ed. a thesis route or a synthesizing examination route.

For successful completion of the degree, candidates must demonstrate a comprehensive knowledge of the area of study and an understanding of the principles and practices of adult education. To fulfill these requirements candidates must:

- design a learning program that includes
  - a learning plan that incorporates a professional portfolio;
  - a comprehensive annotated bibliography; and
  - a critical review of the literature;
- conduct a professional development research project;
- evaluate the program learning experience with reference to the learning plan;
- complete and submit an academic thesis or complete, present, and defend a research project and synthesizing examination which demonstrates that the learning objectives of the program have been achieved.

All program requirements must be fulfilled, and the completed thesis must be submitted and approved, within five years of commencement of the program. Exceptions to the five-year requirement may, upon recommendation of the department and the approval of the chair of the committee on graduate studies, be granted to a limited number of candidates who have demonstrated satisfactory academic progress and paid an extension fee equal to one-third of the tuition for the M.Ad.Ed.

All program requirements must be fulfilled within five years of commencement of the program unless an extension has been granted. Students who have been unable to pursue their course of study for four months or more due to medical reasons and who have otherwise demonstrated satisfactory progress, may request a medical extension of up to one year. This request must be made in writing to the



department chair, be accompanied by a physician's statement, and requires the approval of the department and of the chair of graduate studies. In such cases, no tuition or extension fee is required.

A final corrected copy of the successful thesis must be approved by the chair of the Committee on Graduate Studies no later than April 15 for Spring Convocation and November 15 for Fall Convocation.

### 8.3.5 Master of Education

StFX offers the M.Ed. degree with specialization either in educational administration and policy or in curriculum and instruction. In both streams students must complete the specified core courses, though they may also select classes appropriate to their own interests.

There are two options by which a student may complete the requirements for the M.Ed.: a thesis route and a course-based route; see section 9.17. Students who choose the thesis route must complete 24 credits in graduate education courses and a thesis worth 12 credits. Those in the course-based route must complete 36 credits in graduate education courses.

This degree fulfills the requirements of the Nova Scotia Department of Education for an increase in level of teacher certification. Graduate courses which may be taken for credit towards a M.Ed. are listed in section 9.17.

### 8.3.6 Ph.D. in Educational Studies

Students must complete GEDU 9001-9005 and 9010 by fulltime studies during four consecutive semesters (14 month residency). Candidates who have defended their comprehensive portfolio may choose to attend on a part-time basis while completing their proposal and dissertation. They must defend their dissertation within two years after the comprehensive examination, but no later than six years after entering the doctoral program, unless an extension has been granted. Students must register in a minimum of one course per year.

Students enroll in GEDU 9001 and 9002 on site in July at one of the three universities. The site for these two courses will rotate amongst the three universities from year-to-year. Students complete GEDU 9010 and 9100 with their dissertation advisor and their committee at their home institution of record. The remaining courses are delivered using an e-learning platform. In some instances, doctoral students may arrange to enroll in an existing topic-related Master level course, augmented with doctoral level analysis and applications. Doctoral students have the right to take courses and seminars and use the academic facilities of any of the three participating universities in accordance with their approved plan of study.

The required courses are: 9001; 9002; 9003; 9004, 9005; 9010, and 9100. At the time of admission, students will be advised if they are required, and they may choose, to complete (in consultation with pro-tem advisor and with approval from IDAC): GEDU 9006, 9007, 9008, and 9009.

## 8.4 THESIS REGULATIONS

### 8.4.1 M.Ad.Ed. Program

M.Ad.Ed. students choosing to follow the thesis route are required to prepare a thesis based on original research under the guidance of the chair or faculty advisor. Theses are evaluated by two faculty members of the Department of Adult Education, and an external examiner. A final corrected copy of the successful thesis must be submitted to the chair of the committee on graduate studies for approval at least two weeks prior to the date of the convocation at which the candidate expects to graduate. The final copy of any thesis based on a research project requiring ethical approval must include a copy of the appropriate certificate of approval. Students are responsible for providing copies of the approved thesis so that they may be deposited with the StFX university library, the department thesis collection, and the National Library of Canada, and for paying the appropriate thesis fee.

### 8.4.2 MA, M.Sc., M.Ed. Programs

Upon admission to, or registration in, a thesis program, and after consultation with the candidate and with Department faculty members, each candidate will be assigned a thesis Supervisory Committee by the Department Chair. This Committee will include the candidate's thesis advisor and at least one other faculty member, normally chosen from the Department.

Candidates must make a formal presentation of the thesis proposal. The formal presentation is normally made to the faculty of the Department for which the thesis is being written, and it is open to members of the Committee on Graduate Studies, other interested faculty members, and graduate students. The Department Chair (and/or the candidate's thesis supervisor) will ensure that at least two weeks notice is given of the date, time, and place of the presentation of the thesis proposal.

After presentation of the proposal, after obtaining the approval of the appropriate ethics committee(s), and on the recommendation of the candidate's thesis supervisory committee, and the Department Chair or Director of the School, the candidate will be permitted to register in the thesis.

When completed, the thesis is submitted to the Chair of the candidate's supervisory committee for approval. The thesis is read by at least one other faculty member, designated by the Department Chair. The thesis is also read by an external examiner chosen by the Department Chair after consultation with the candidate's Supervisory Committee. The external examiner is a faculty member external to the candidate's Department and may be, as appropriate, external to the University. After consultation with the candidate's Supervisory Committee, the Department Chair will appoint a thesis examination committee consisting of the external examiner, the candidate's thesis advisor, and at least one (but no more than three) other members of the Department. (Members of the Supervisory Committee may serve as members of the Examining Committee.) The Chair of Graduate Studies or her/his designate will be a non-voting member of this Committee ex-officio.

The external examiner must submit a report on the thesis to the Chair of the Supervisory Committee and to the Chair of the Committee on Graduate Studies.

A public presentation and defence of the thesis is presented by the candidate after receipt of the external examiner's report and following the approval of the supervisory committee. Normally, at least two weeks notice is given (to the Chair of Graduate Studies) concerning the date, time, and place of the presentation and defence. Immediately following the public presentation, an examination of the candidate is held. Normally, the public presentation and examination will not exceed 120 minutes.

The examining committee will then, in camera, arrive at a unanimous decision, agree on any changes to be made to the thesis, determine who will be responsible for ensuring that these changes are made, and consider whether the student is to be nominated for an Outstanding Graduate Student Research Award. Should the Committee not be able to arrive at a decision on the disposition of the thesis, the matter will be referred to the Committee on Graduate Studies.

The decision of the Examining Committee, along with their names and signatures, will be recorded on the thesis examination form, with a copy retained by the Department and a second copy sent to the Chair of Graduate Studies.

A final corrected copy of the successful thesis must be submitted to the Chair of the Committee on Graduate Studies for approval at least two weeks prior to the date of the convocation at which the candidate expects to graduate. Students are responsible for a) providing copies of the approved thesis; b) for ensuring that they are deposited with the University Library and the National Library of Canada; and c) for completing and submitting the required 'non-exclusive use' form, and for paying the appropriate thesis fee.

## 8.5 OUTSTANDING GRADUATE STUDENT RESEARCH AWARD

Students who have completed their degree with a master's thesis of outstanding quality may be considered for an outstanding graduate student research award.

## 8.6 GRADUATION

Students are responsible for ensuring that they have registered for convocation by the required date and that they have fulfilled all degree and program requirements by the requisite deadlines.

## 9. DEPARTMENT AND PROGRAMS

- 9.1 Adult Education
- 9.2 Anthropology
- 9.3 Aquatic Resources
- 9.4 Art
- 9.5 Biology
- 9.6 Business Administration
- 9.7 Canadian Studies
- 9.8 Catholic Studies
- 9.9 Celtic Studies
- 9.10 Chemistry
- 9.11 Classical Studies
- 9.12 Computer Science
- 9.13 Co-operative Education
- 9.14 Development Studies
- 9.15 Earth Sciences
- 9.16 Economics
- 9.17 Education
- 9.18 Engineering
- 9.19 English
- 9.20 Environmental Sciences
- 9.21 History
- 9.22 Human Kinetics
- 9.23 Human Nutrition
- 9.24 Information Systems
- 9.25 Interdisciplinary Studies and Service Learning
- 9.26 Mathematics, Statistics, & Computer Science
- 9.27 Modern Languages
- 9.28 Music
- 9.29 Nursing
- 9.30 Philosophy
- 9.31 Physics
- 9.32 Political Science
- 9.33 Psychology
- 9.34 Religious Studies
- 9.35 Sociology
- 9.36 Statistics
- 9.37 Women and Gender Studies

Unless otherwise noted, all courses meet for three hours of lecture each week. Laboratories are normally three hours each week. Six-credit courses normally meet for a full year, three-credit courses for one term (a half year). In addition to the courses listed, students may request a directed study course as described in section 3.5. Certain advanced-level courses are not offered every year. Others are offered on an alternating basis, as noted in course descriptions. See glossary for degree and subject abbreviations.

### Course Restrictions

Credit may be earned for only one of the following: STAT 201, 231, PSYC 292, SOCI 305 and 300. Normally, STAT 201 and PSYC 292 may not be taken for credit in a B.Sc. program.

Students may not receive credit for both a full-year six-credit course and any course that is equivalent to one-half of the full-year course. For example, students may not earn credit for ESCI 171 or 172 and ESCI 170.

Credit may not be earned for both courses that are cross-listed. Applicable equivalent course information is included in the course description.

### 9.1 ADULT EDUCATION

M. Coady, Ph.D.  
L. English, Ph.D.  
B. Foroughi, Ph.D.  
E. Lange, Ph.D.  
C. Roy, Ph.D.

#### Adjunct Professors

P. Cranton, Ph.D.  
J. Dawson, Ph.D.  
D. Lander, Ph.D.  
J. Merrifield, Ph.D.  
A. Quigley, Ph.D.

StFX offers both a masters in adult education (M.Ad.Ed.) and a diploma in adult education (see section 6.7 for Diploma in Adult Education)

### Graduate Program

The admission procedures and requirements for the M.Ad.Ed. degree are given in

chapter 8. Students have five years to complete 36 credits. Further details can be found on the department's web page: [www.mystfx.ca/academic/adulted/](http://www.mystfx.ca/academic/adulted/)

### Foundations Institute

This is an intensive three-week residential session during which students become familiar with the foundations of, and requirements for, the master's program.

### Master of Adult Education Courses

#### 500 Learning Plan and Annotated Bibliography

Development and submission of a learning plan including: a learning narrative, learning goal statement, research project proposal, and learning contract with learning intents. Second, development and submission of an annotated bibliography demonstrating critical reading of a broad range of foundational literature, as well as literature in the chosen area and aspect of study as seen in the learning plan. Six credits.

#### 510 Professional Portfolio and Literature Review

Development and submission of a professional portfolio consisting of learning experiences, accomplishments, and demonstrated professional competencies, supported by documentation. Second, development and submission of a critical review of the literature in the field with an emphasis on the area and aspect of study as seen in the learning plan. Six credits.

#### 520 Practical Research Project

Developing a practical research project to achieve learning intents. This project is typically completed in the student's place of practice and typically requires approval of the StFX Research Ethics Board. At the end of this phase, the student submits a project report that includes a detailed description of the learning intents, program design, means of implementation, and evaluation of the project. Twelve credits.

#### 530 Learning Program Evaluation

This phase includes a report on the student's personal and professional learning with reference to the learning plan developed in ADED 500. This reflective report evaluates knowledge gained and changes in practice, and is accompanied by a narrative. Six credits.

### Alternate Routes to Graduation

There are two routes by which a student may complete the requirements for the M.Ad.Ed.

- 1) complete and submit an academic thesis (ADED 600) or
- 2) complete, present, and defend a project and synthesizing examination which demonstrates that the learning objectives of the program have been achieved (ADED 601).

#### 600 Thesis

The thesis is a scholarly contribution to the field of adult education. Upon completion of the preceding phases of the program, students draft an outline and write a thesis in consultation with their faculty advisor. The thesis provides an opportunity for students to analyze and reflect on their professional project, in light of the relevant adult education literature. The completed thesis is submitted to an external examiner and to the committee on graduate studies for approval. Credit will be granted for only one of ADED 600 and ADED 601. Six credits.

#### 601 Synthesizing Examination

The synthesizing examination is the alternative route to complete the M.Ad.Ed. It follows satisfactory completion of the preceding phases of the program. The synthesizing examination is intended to provide an opportunity for students to reflect on their professional project and bring the relevant literature and student's research project together with the particular reference to practice. The synthesizing examination will be attended by two faculty members of the adult education department, chair of the committee on graduate studies or designate, and will be open to the public. Credit will be granted for only one of ADED 600 and ADED 601. Six credits.

### 9.2 ANTHROPOLOGY

C. Fawcett, Ph.D.  
M. Haller, Ph.D.  
J. McMillan, Ph.D.  
S. Vincent, Ph.D.

Anthropology is the holistic study of human culture and biology in the past and present. Anthropologists teach about human evolution and global archaeology as well as contemporary cultures around the world. The anthropology program offers honours, advanced major or major degrees. Students may select program elective courses to meet their own interests in a general anthropology stream, or may choose to follow suggested patterns in the following core areas: Archaeology,

the Anthropology of Development or First Nations Anthropology. These streams are described on the anthropology program website. Students not pursuing degrees in anthropology may take a minor, a pair or electives. For general program regulations, see section 4.1.

### Minor and Subsidiary

Requirements include 24 credits as follows:

- ANTH 111 and 112 (6 credits);
- 3 credits from ANTH 243, 253;
- 3 credits from ANTH 218, 223, 233;
- 12 additional credits in ANTH.

### Major and Advanced Major

Requirements include 36 credits as follows:

- ANTH 111 and 112 (6 credits);
- 3 credits from ANTH 243, 253;
- 3 credits from ANTH 218, 223, 233;
- ANTH 303 (3 credits);
- 3 credits from ANTH 304, 305;
- 18 additional ANTH credits, 12 of which must be at the 300/400 level;
- Advanced major students are required to write a senior paper in a 400 level ANTH course.

### Honours

Requirements include 60 credits as follows:

- ANTH 111 and 112 (6 credits);
- 3 credits from ANTH 243, 253;
- 3 credits from ANTH 218, 223, 233;
- ANTH 303, 304 and 305 (9 credits);
- 33 additional ANTH credits, of which 12 must be at the 300/400 level;
- ANTH 400 (6 credits).

### 111 Introduction to Physical Anthropology/Archaeology

Archaeology and physical anthropology provide a unique opportunity to examine the development of human society. With their long temporal depth, we can examine how humans, and their ancestors, evolved and populated the entire globe. The nature of modern archaeological and physical anthropological research including topics of hominid evolution, primatology, genetic research, origins of agriculture and civilization and First Nations archaeology will be discussed. Students will have an opportunity to apply this knowledge using real research data. Credit will be granted for only one of ANTH 111 and ANTH 110. Three credits.

### 112 Introduction to Socio-cultural Anthropology

Socio-cultural anthropology involves the comparative study of societies throughout the world. Students will learn how societies differ from each other, as well as observing similarities among them. The course surveys traditional ways of understanding cultures while incorporating current insights and research. Topics include diverse political and economic systems, kinship patterns, religion, forms of ethnic and gender identity, health and medicine, development and migration. Department foci relating to First Nations, development and general anthropology are introduced. Credit will be granted for only one of ANTH 112 and ANTH 110. Three credits.

### 218 Anthropology of Health and Illness

An examination of global health and illness from an anthropological perspective, this course applies key anthropological concepts to topics such as the meaning of health and illness cross-culturally, cultural construction of the body, medical pluralism, cross-cultural psychiatry, critical medical anthropology and the health of indigenous peoples in Canada and other parts of the world. Prerequisite: ANTH 110 or ANTH 111 and 112 or permission of the instructor. Three credits.

### 223 Anthropology of Globalization

Globalization has affected more than the world economy: people, politics and culture all travel globally, with wide-ranging consequences. This course will examine the history of global processes by focusing on how different peoples around the world have engaged in or resisted them. Ethnographic studies will be used to explore global diversity as well as the effects of efforts to impose global uniformity. Prerequisite: ANTH 110 or 111 and 112, or DEVS 201, 202 or permission of the instructor. Three credits.

### 233 Ethnographic Studies

This course explores the rich cultural diversity of human societies around the globe through an ethnographic lens. Using a variety of ethnographic works, students will analyse how anthropologists have represented this diversity. Course material will include classic and current texts about 'other' and 'own' societies, the representation of indigenous peoples, ethnographic film, as well as portrayals of culture in new

media. Cross-listed as DEVS 223. Prerequisite: ANTH 110 or 111 and 112 or permission of the instructor. Three credits.

### 243 Principles of Archaeology & Prehistoric Societies

This course offers an examination of modern archaeological research including how archaeologists work in the field, their analytical techniques, and some of the principal methodological and theoretical issues facing the field. A wide variety of archaeological examples (from lavish Egyptian tombs to simple nomadic settlements) will be used to illustrate the main themes of the course. Students will participate in the process of archaeological research through a series of practical exercises and assignments. Prerequisite: ANTH 110 or 111 and 112 or permission of the instructor. Three credits.

### 253 Origins of Cities

Urban living is an increasingly common experience for humans across the globe. City life, however, is not a modern phenomenon. This course is a broad introduction to the process of urbanism and the rise of early pre-industrial cities in both the New and Old Worlds. Specific cases are examined in order to elucidate the varying roles cities played in ancient civilizations and how knowledge of these roles can aid in our current understanding of modern urban life. Prerequisite: ANTH 110 or 111 and 112 or permission of the instructor. Three credits.

### 303 Anthropological Theory

This course will give students an understanding of past and present trends in anthropological theory, including approaches such as historical particularism, structural functionalism, culture and personality, neo-evolutionism, cultural ecology, Marxist anthropology, structuralism, ethno-science, symbolic anthropology, applied anthropology, feminism, and post-modernism. Prerequisites: ANTH 110 or ANTH 111 and 112 and at least 6 ANTH credits at the 200 level. Three credits.

### 304 Principles and Methods of Fieldwork

This course introduces students to qualitative field methods used by anthropologists. Through lectures, seminars and field assignments students will learn skills such as participant observation, writing field notes, interview techniques, research ethics, the analysis of documents, and writing up fieldwork. Prerequisites: ANTH 110 or ANTH 111 and 112. Three credits.

### 305 Anthropological Data Analysis

This course introduces students to the basic principles of statistics and quantitative analysis of anthropological data. Through lectures, seminars and lab assignments students will learn skills such as quantitative research design and methods, data analysis, and computer applications in anthropological research. Prerequisite: ANTH 110 or ANTH 111 and 112. Three credits.

### 310 Anthropology of Tourism

Tourism is an important industry as well as a source of identity and meaning for individuals, local groups, and nations. This course examines tourism using a variety of theoretical frameworks. Students analyse various forms of tourism, such as historical tourism, cultural heritage tourism, eco-tourism, ethnic tourism and development tourism. Attention is given to gender, ethnicity, nationalism, class, environmental and economic impact, and the political importance of tourism in a globalizing world. Prerequisite: ANTH 110 or ANTH 111 and 112. Three credits.

### 320 Anthropology of Development

This course explores how development practice has affected the people it aims to help. Case studies allow students to learn about and consider the strengths and weaknesses of strategies promoting popular participation, gender equity, small-scale business, local knowledge and democratic reform. Students are also introduced to critiques of various approaches to development and an anthropological analysis of development institutions. Prerequisites: ANTH 110 or ANTH 111 and 112 or DEVS 201, 202; ANTH 223 is recommended. Cross-listed as DEVS 321. Three credits.

### 324 Anthropology of Gender

From a cross-cultural perspective and using examples from physical anthropology, archaeology, linguistic anthropology and socio-cultural anthropology, students will explore various questions such as: Can the differences observed between men and women best be explained by biology or culture? What factors explain the subordination of women found in many societies around the world? How are political, economic and symbolic powers acquired and used by men and women in cultural contexts around the world? Prerequisite: ANTH 110 or ANTH 111 and 112 or WMGS 100 or 200 or permission of the instructor. Cross-listed as WMGS 324. Three credits.

### 326 Issues in the Anthropology of Kinship

This course explores current themes and debates about the constitution of families cross culturally. It will examine topics such as: cultural understandings of kinship; historical transformations of kinship systems; current reconfigurations of marriage;



partnering strategies; new reproductive technologies; transnational adoption; intra-familial conflict; the role of kinship for individuals and in societies; and the influence of the state on kin patterns. Course material will include ethnographic examples from around the world. Prerequisite: ANTH 110 or ANTH 111 and 112, or WMGS 100 or 200 or permission of the instructor. Cross-listed as WMGS 326. Three credits.

### 331 Anthropology and Indigenous Peoples

Students are introduced to issues of colonialism, self-determination, Aboriginal title, development, and the conflicts of indigenous peoples from a critical anthropological perspective. The course is comprised of three sections. The first examines Indigenous diversity in the early contact period. The second explores the impact of colonization on Indigenous cultures. In the third we analyze contemporary politics, economic and social development, resource use, health, law, gender, and environmental issues in indigenous communities. Prerequisite: ANTH 110 or ANTH 111 and 112 or permission of the instructor. Three credits.

### 332 Mi'kmaq Studies: Advanced Critical Issues in Indigenous Anthropology

Using theories and methods relevant to indigenous knowledge, self-determination, resistance and sustainability of Mi'kmaq of Atlantic Canada, in the first section we explore Mi'kmaq oral histories, cosmology and sociocultural organization. In the second section we look at the impact of colonization on the Mi'kmaq culture. In the third section we look at contemporary issues such as the impact of court decisions on treaty implementation, justice practices, economic development, resource use and cultural production. Prerequisites: ANTH 110 or ANTH 111 and 112 and 331. Three credits.

### 341 North American Archaeology

This course explores the prehistory of North America's Native Peoples as well as how these societies were radically transformed by European colonization. Students will discover that even though great spans of time separate modern and ancient native cultures, cultural continuity exists. Prerequisite: ANTH 243 or 253 or permission of the instructor. Three credits.

### 342 Ancient Mesoamerica

This course will use archaeological and ethnohistorical information to examine the people who lived in Mesoamerica (currently, Mexico, Belize, Honduras and Guatemala) prior to and at the time of early contact with Europeans. Students will use archaeological data to study the Aztecs, Maya and Zapotecs and their predecessors. Students will also refine their knowledge of archaeological inquiry and methods. Prerequisites: ANTH 243 or 253 or permission of the instructor. Three credits.

### 371 Archaeological Field Methods

This course teaches students the basic archaeological field methods of site survey and excavation through participation in an actual archaeological field project either locally or in another part of Canada or abroad. The course will examine a range of archaeological techniques and methodological approaches. It will also introduce students to the ethical issues they need to consider when conducting archaeological field research in Canada and abroad. Prerequisite: ANTH 243 or permission of the instructor. Three credits.

### 372 Archaeological Laboratory Methods

This course teaches students methods of analysing, cataloguing and reporting on materials recovered from archaeological site survey and/or excavation. Students will learn how to disseminate information to professional and public audiences. Prerequisite: ANTH 371 or permission of the instructor. Three credits.

### 400 Honours Thesis Research

A required course for all senior honours students. Six credits.

### 415 Anthropology of HIV/AIDS

This course examines global HIV/AIDS from an anthropological perspective. Using a holistic and cross-cultural approach, students will think about how kinship systems, gender, class, sexual orientation, nationality, ethnicity and global economic and political structures affect how individuals in different populations learn about and give meaning to HIV/AIDS, the risks they face, and the degree to which they can protect themselves and receive treatment if infected. Prerequisite: ANTH 211 or 218 or DEVS 201 and 202 or permission of the instructor. Three credits.

### 425 Power and Change

Power and change can be volatile processes. This course allows students to understand and analyse them from an anthropological point of view. Topics may include topics as the tension between indigenous collective rights and individual human rights; the tortuous local politics of constructing identity; the effects of and reactions to globalization; the cultural causes and consequences of terror and war. Prerequisite: 12 credits ANTH or permission of instructor. Three credits.

### 435 Advanced Indigenous Issues

A course for senior students who want to use anthropological work to learn about specific issues of concern to Canada's First Nations people. Topics may include contemporary in-depth analyses of: Indigenous law, treaty and aboriginal rights, governance, cultural production and sustainability. Prerequisite: ANTH 331. Three credits.

### 445 Advanced Archaeological Seminar

This course will examine various topics of interest to archaeologists. Students may learn about topics such as zooarchaeology, human osteology, regional settlement patterns and GIS, archaeological theory, chiefdoms, archaeology and society, archaeology and Canada's First Nations or Roman archaeology. Prerequisite: ANTH 243 or 253. Three credits.

### 492 Selected Topics in Anthropology

This course explores contemporary issues in anthropology. The subject focus will change from year to year to reflect faculty involvement in a specific area of research. Students should consult with the program co-ordinator for current information. Prerequisites: ANTH 110 or ANTH 111 and 112 and 6 credits of ANTH courses at 200 level, or permission of the instructor. Three or six credits.

### 499 Directed Study

Under the direction of a professor, students will work in an area of anthropology not available in other course offerings. Interested students must consult with a faculty member or with the program co-ordinator. See section 3.5. Three or six credits.

## 9.3 AQUATIC RESOURCES, INTERDISCIPLINARY STUDIES IN

J. Williams, Ph.D., ISAR Co-ordinator

L. Patterson, M.Sc., ISAR Program Assistant

### Advising Faculty

J. Amoako-Tuffour, Ph.D.

P. Clancy, Ph.D.

D. Garbary, Ph.D.

L. Harling-Stalker, Ph.D.

R. Lukeman, Ph.D.

D. Risk, Ph.D.

S. Vincent, Ph.D.

### Department

Economics

Political Science

Biology

Sociology

Mathematics, Statistics & Computer Science

Earth Sciences

Anthropology

Water, a dynamic natural resource, is used as a focal point around which students can examine our changing world in terms of climate change, environmental management, freshwater policy, aboriginal use, erosion and flood events, adaptation of fisheries, cultural perceptions and ancient use, economic valuation, to name but a few.

Interdisciplinary Studies in Aquatic Resources (ISAR), a four-year program (comprised of 120 credits) leading to a BA or a B.Sc. degree, offers an integrated approach to the understanding, use and sustained management of aquatic resources as both natural and social systems. Aquatic ecosystems include groundwater, watersheds, wetlands, lakes, rivers, oceans, etc.

ISAR prepares students for careers in natural resource management, government or private sector research and/or policy development, consultancy services, community development, and private enterprise. Depending on their program of study, students will also be positioned favourably for graduate or professional study in such areas as environmental law, public policy and administration, marine biology, oceanography, environmental sciences, human ecology, fisheries science and/or management, geographic information systems, conservation, and social science research.

All students complete a major in aquatic resources, and a major in one of: biology; economics; earth sciences; mathematics, statistics, and computer science; or public policy and social research (political science; sociology and/or anthropology). ISAR students complete a mandatory work term (AQUA 400) and participate in the senior seminar (AQUA 450).

Students may enter the ISAR program in their 1st or 2nd year of study at StFX. Students entering the program in 2nd year will complete AQUA 100 and AQUA 200 simultaneously.

ISAR students interested in completing an advanced major or honours degree in their second major field of study: biology; economics; earth sciences; mathematics, statistics and computer science; political science; sociology or anthropology; must satisfy the requirements outlined in chapters 4, 5 or 7.

### Major Program

Major candidates are required to complete:

a) a core ISAR major program of AQUA 100, 200, 325, and 400, 450; ESCI 171;



- BIOL 112; ECON 101, 102; plus BSAD 101;
  - b) 36 credits in the second major discipline, or 48 credits for public policy and social research majors, including at least 18 credits of AR-designated courses from that discipline;
  - c) at least 12 credits of AR-designated courses in at least two of the participating academic departments other than the major.
- Candidates must also satisfy the requirements outlined in chapters 4, 5 or 7.

**Progression Requirements**

All full-time ISAR major students completing the first-year required courses (AQUA 100; ECON 101, 102; BIOL 112; ESCI 171) must achieve a minimum average of 65 in order to maintain their ISAR major and proceed to the second year of study in the program.

Students are encouraged to meet regularly with the co-ordinator or program assistant to discuss their academic progress, work term opportunities and career aspirations.

**BA Major in Economics and Major in Aquatic Resources**

- Year 1 AQUA 100; BIOL 112; ECON 101, 102; ESCI 171; ANTH 111/112 or PSCI 100 or SOCI 100; 6 credit arts/science elective at the 100-level.
- Years 2 and 3 AQUA 200, 325 and preparation for AQUA 400; BSAD 101; ECON required and/or elective courses; AR-designated courses; arts or science electives.
- Year 4 AQUA 400, 450; ECON required and/or elective courses; AR-designated courses; arts or science electives.

**BA Major in Public Policy and Social Research and Major in Aquatic Resources**

- Year 1 AQUA 100; BIOL 112; ECON 101, 102; ESCI 171; ANTH 111/112 or PSCI 100 or SOCI 100; 6 credit arts/science elective at the 100-level.
- Year 2 AQUA 200; BSAD 101; 6 credits PSCI at the 200-level; 6 credits SOCI or ANTH at the 200-level; PSCI, SOCI and/or ANTH electives; AR-designated courses; arts or science electives.
- Year 3 AQUA 325 and preparation for AQUA 400; PSCI, SOCI and/or ANTH courses; AR-designated courses; arts or science electives.
- Year 4 AQUA 400, 450; PSCI, SOCI and/or ANTH courses; AR-designated courses; arts or science electives.

**B.Sc. Major in Biology and Major in Aquatic Resources**

- Year 1 AQUA 100; BIOL 112; ECON 101, 102; ESCI 171; MATH 111,112; 6 credit science elective at the 100-level (CHEM 100 is recommended for those intending to major in biology or earth sciences).
- Years 2 and 3 AQUA 200, 325 and preparation for AQUA 400; BIOL 111, 201, 202, 203, 204, BSAD 101;STAT 231; AR-designated courses; arts or science electives.
- Year 4 AQUA 400, 450; minimum of 3 credits BIOL at the 400-level; BIOL electives; AR-designated courses; arts or science electives.

**B.Sc. Major in Earth Sciences & Major in Aquatic Resources**

- Year 1 AQUA 100; BIOL 112; ECON 101, 102; ESCI 171; MATH 111,112; 6 credit science elective at the 100-level (CHEM 100 is recommended for those intending to major in biology or earth sciences).
- Years 2 and 3 AQUA 200, 325 and preparation for AQUA 400; BSAD 101; 3 or 6 credits CHEM; ESCI 201, 215, 216, 271, 272, 375 or 376, 305, 366; AR-designated courses; arts or science electives.
- Year 4 AQUA 400, 450; ESCI 406 and/or 465; AR-designated courses; arts electives.

**B.Sc. Major in Mathematics, Statistics, and Computer Science and Major in Aquatic Resources**

- Year 1 AQUA 100; BIOL 112; ECON 101, 102; ESCI 171; MATH 111,112; 6 credit science elective at the 100-level.
- Years 2 and 3 AQUA 200, 325 and preparation for AQUA 400; BSAD 101; CSCI 125, 235; MATH 253, 267, 277, 287; STAT 231; AR-designated courses; arts and/or science electives.
- Year 4 AQUA 400, 450; MATH 367, 387; AR-designated courses; arts and/or science electives.

All courses are restricted to Aquatic Resources Majors or permission to enroll may be requested of the ISAR co-ordinator and instructor.

**100 Introduction to Aquatic Resources I: Natural Science Applications**

This course explores the living and non-living characteristics that determine the nature of aquatic resource ecosystems, and examines human interaction with these resources. Case studies expose students to the natural as well as some of the social science applications of aquatic resource use, while field trips and laboratory exercises introduce the methodologies used to study these ecosystems. Lab and field trips. Six credits.

**200 Introduction to Aquatic Resources II: Social Science Applications**

This course explores the political, economic and sociological dimensions of aquatic resource systems. It examines both freshwater and ocean environments. In the process, key concepts and frameworks of social science are applied to a variety of case studies, historical and contemporary. Topics include watershed politics, multiple resource use, integrated watershed management, alternative governance arrangements, coastal communities, the move toward sustainable fisheries and aquaculture and coastal and ocean management. Six credits.

**325 Aquatic Resources Field Camp**

This course is a week-long field camp on integrated watershed management. It consists of assigned reading, talks by experts in watershed management and field trips to watershed sites. Students must complete the field camp prior to the beginning of either their third- or fourth-year of study. No credit.

**400 Work Experience/Student Internship**

Students will spend the equivalent of one term, normally the summer between the junior and senior year, gaining hands-on experience in an aquatics-related work or volunteer setting. Placements may include research labs, aquatic resource businesses, community organizations, public policy agencies. To focus the applied learning experience, students develop a topic for special study, in collaboration with the work experience provider and an academic advisor. Prerequisite: AQUA 200. Three credits.

**450 Senior Seminar in Aquatic Resources**

The seminar represents the capstone for students completing their aquatic resources major. Each year the seminar considers an important interdisciplinary theme in the aquatics field. Students also develop and present the results of their major essay projects. Visits by ISAR guest speakers are co-ordinated with seminar work. Three credits.

**AQUATIC RESOURCES DESIGNATED COURSES**

		Credits
<b>Anthropology</b>		
ANTH 223	Anthropology of Globalization	3
ANTH 233	Ethnographic Studies	3
ANTH 243	Principles of Archaeology and Prehistoric Societies	3
ANTH 253	Origin of Cities	3
ANTH 303	Anthropological Theory	3
ANTH 304	Principles and Methods of Fieldwork	3
ANTH 305	Anthropological Data Analysis	3
ANTH 310	Anthropology of Tourism	3
ANTH 320	Anthropology of Development	3
ANTH 331	Anthropology and Indigenous Peoples	3
ANTH 332	Mi'kmaq Studies	3
ANTH 341	North American Archaeology	3
ANTH 342	Ancient Mesoamerica	3
ANTH 371	Archaeological Field Methods	3
ANTH 372	Archaeological Laboratory Methods	3
ANTH 435	Advanced Indigenous Issues	3
<b>Biology</b>		
BIOL 201	Animal Biology	3
BIOL 202	Plant Biology	3
BIOL 203	Introductory Ecology	3
BIOL 221	Issues in Resource Management	3
BIOL 222	Topics in Environmental Ecology	3
BIOL 231	Plants and Civilization	3
BIOL 306	Ichthyology	3
BIOL 307	Field Biology	3
BIOL 311	Marine Biology I	3
BIOL 312	Marine Biology II	3
BIOL 321	Environmental Ecology of Mariculture	3
BIOL 407	Integrated Resource Management	3
BIOL 472	Freshwater Ecology	3

Computer Science		Credits
CSCI 235	Micro-computers in Science	3
Development Studies		
Inquire with ISAR co-ordinator or program assistant		
Earth Sciences		Credits
ESCI 271	Environmental Earth Science	3
ESCI 272	Global Change and the Climate System	3
ESCI 305	Geochemistry of Natural Waters	3
ESCI 366	Hydrology	3
ESCI 386	Oceanography	3
ESCI 387	Coastal Oceanography	3
ESCI 406	Advanced Environmental Geochemistry	3
ESCI 465	Hydrogeology	3
ESCI 471	Geographic Information Systems	3
ESCI 472	Ocean-Atmosphere Interactions	3
Economics		Credits
ECON 201	Intermediate Microeconomic Theory I	3
ECON 202	Intermediate Macroeconomics I	3
ECON 211	Local and Community Development Economics	3
ECON 241	Canadian Economic Prospects and Challenges	3
ECON 281	Environmental Economics	3
ECON 301	Intermediate Microeconomic Theory II	3
ECON 341	Regional Economics	3
ECON 342	Maritime Economy	3
ECON 381	Natural Resource Economics	3
Mathematics		Credits
MATH 287	Natural Resource Modelling	3
MATH 387	Mathematical Modelling	3
Philosophy		Credits
PHIL 210	Philosophy of Science	6
PHIL 333	Environmental Ethics	3
Political Science		Credits
PSCI 221	Canadian Politics I	3
PSCI 222	Canadian Politics II	3
PSCI 240	Business and Government	6
PSCI 247	Environmental Social Sciences I: Problems & Paradigms	3
PSCI 248	Environmental Social Sciences II: Power & Change	3
PSCI 250	World Politics	6
PSCI 321	Federalism	3
PSCI 322	Atlantic Canada	3
PSCI 341	Canadian Public Administration	3
PSCI 342	Canadian Public Policy	3
PSCI 343	Law and Politics	3
PSCI 346	The Politics of Resource Management	3
PSCI 347	Politics of the Environment	3
PSCI 351	Canadian Foreign Policy	3
PSCI 355	Global Issues	3
Sociology		Credits
SOCI 247	Environmental Social Sciences I: Problems & Paradigms	3
SOCI 248	Environmental Social Sciences II: Power & Change	3
SOCI 300	Research Methods	6
SOCI 301	Classical Social Theory	3
SOCI 302	Topics in Contemporary Theory	3
SOCI 307	Qualitative Research Methods	3
SOCI 321	Sociology of Atlantic Canada	3
SOCI 330	Sociology of First Peoples	6
SOCI 360	Social Policy	3
SOCI 366	Coastal Communities	3
SOCI 433	Advanced Problems in Environment & Society	3
Statistics		Credits
STAT 201	Elementary Statistics	3
STAT 231	Statistics for Students in the Sciences	3
STAT 331	Statistical Methods	3

## 9.4 ART

S. Gregory, Ph.D.

*Part Time*

K. Brown, BFA

B. Elliott, MA

J. Fecteau, BA

M. Gibson, MFA

G. Hills

S. Jan, BA

T. Kellman, Ph.D.

S. Korczynski, Ph.D.

M. MacFarlane, BFA

M. Nicholson, B.Ed.Sc.

I. Pygott

B. Sparks, BFA, MA

A. Syperek, BFA

O. Tetu

R. Young, M.Ad.Ed.

Art courses may be used as electives, a pair, or minor.

### Minor in Studio Art

ART 100, 141 and 142 and 12 additional credits in studio courses. It is recommended that students take ART 141 and 142 before their senior year.

### Minor or Subsidiary in Art History

ART 141, 142, and 18 additional credits in art history courses.

Students with advanced drawing experience and a portfolio can apply to enroll in advanced drawing and painting courses without the prerequisite of ART 100.

### 100 Drawing

An elementary course in drawing and composition with mixed media, including some work in colour. The focus will be on line, skeletal forms, planes, mass forms, still life and the figure. Six credits.

### 115 Introduction to Design

This studio course introduces basic design elements and principles providing students with a working knowledge of how visual communication is structured. Three credits.

### 125 Materials and Methods

Students will create small works in watercolour, oil, acrylic, egg tempera, and contemporary medium. The goal is a working knowledge of each medium's properties, brush handling, supports, preservation, and three-dimensional art work. Prerequisite: ART 100 recommended. Three credits.

### 141 History of Art I

A survey of the visual arts in the western world from prehistoric cave paintings to the great Gothic cathedrals of the late Middle Ages. This will include the art of the ancient world-Egypt, Greece and Rome-as well as Byzantine, Islamic and European art of the Medieval period. Credit will be granted for only one of ART 141 and ART 341. Three credits.

### 142 History of Art II

Beginning with the Italian Renaissance this course continues with an examination of the Western European tradition: the Baroque, Neoclassicism, Romanticism, the 19th Century, and the revolution of Modernism in the early 20th century. Credit will be granted for only one of ART 142 and ART 342. Three credits.

### 145 Introduction to Colour

This course deals with the vocabulary, nature and physical properties of color: hue, value and intensity. Studio assignments provide practice in learning color relationships in unified and contrasting color schemes. Prerequisite: ART 100 recommended. Three credits.

### 200 Painting I

An introduction to watercolour and acrylic painting techniques. Work on drawing skills, design, color and composition will be emphasized. Prerequisite: ART 100 or portfolio demonstrating drawing and design skills. Six credits.

### 202 Scenic Design

This course will cover the steps in the creation of theatre sets. The course will be, principally, project based with 'hands on' experience at each stage of the growth from conception to finished project. Facts and theory, while covered, will be subordinate to the creative process. There will be a series of smaller projects each week, which in turn will lead to the completion of a major design project for a play chosen by the instructors. Prerequisite: ART 100 or permission of the instructor based on the student's resume of theatre experience or letter of interest. Three credits.

### 203 Stage Properties and Costume Design

This course will concentrate on lighting design for theatre. Prerequisite: Art 100 or permission of the instructor based on the student's resume of theatre experience or letter of interest. Three credits.

### 211 Stained Glass Studio I

Original design and color compositions are combined with studio work in stained glass. Prerequisite: ART 100 or portfolio. Three credits.

**212 Stained Glass Studio II**

Original design and color compositions are combined with studio work in stained glass. Prerequisite: ART 211. Three credits.

**221 Batik Studio**

Batik, an art form dating back thousands of years, is a method of making coloured designs on textiles by waxing the parts not to be dyed. Prerequisite: ART 100 and/or 115 or portfolio demonstrating drawing and design skills. Three credits.

**222 Weaving Studio**

This course teaches the fundamentals of tapestry weaving. Students learn basic skills while completing a sampler tapestry, and then apply their newly acquired knowledge to a small tapestry of their own design. Students are introduced to the history of tapestry production through visual presentations. On occasion this course may be offered in conjunction with SFX Service Learning. Prerequisite: One of ART 100, 115, or portfolio demonstrating drawing and design skills. Three credits.

**231 Etching Studio I**

Students will learn the basic techniques of intaglio printmaking: hardground, softground, drypoint and aquatint. They will be required to produce a series of prints demonstrating competence in each technique. Prerequisite: ART 100 or portfolio demonstrating drawing skills. Three credits.

**232 Etching Studio II**

Students will complete a portfolio of prints using the techniques learned in Etching Studio I. The emphasis will be on creativity. Prerequisite: ART 231. Three credits.

**236 20th-Century Chinese Art History**

This course will begin with a review of the late Qing Dynasty art of the nineteenth century and then cover twentieth-century visual culture in China. This period brought many political changes as the last dynasty ended and factions within and outside of China fought for control. The arts of this turbulent time were influenced by thousands of years of tradition as well as by contemporary political events, and ideas from the West. Prerequisite: ART 235. Three credits.

**240 Pastels**

This studio course introduces pastels as a painting medium. Pastels consist of crayon-like sticks of compressed pigment in either a chalk or wax binder. It is an expressive, direct medium that has been widely used by the European and English masters. In this course, colour mixing and pastel techniques on a variety of papers will be explored. Students will complete a number of landscape, still life, and portrait paintings. Emphasis will be put on developing compositional skills using pastels. Prerequisite: ART 100. Three credits.

**251 Medieval Art**

A survey of major development in the art and architecture of the Middle Ages in Europe, from Early Christianity through the late Gothic period. The course will examine the how works of medieval art and architecture reflect and respond to changing theological, devotional and societal needs. Prerequisites: ART 141, 142 or HIST 100 or 110. Three credits.

**252 Baroque Art**

A survey of painting, sculpture and architecture and related visual arts in Europe during the 17th and early 18th centuries. The course will consider some of the major artistic centres of the period, in Italy, France, the Netherlands and Spain; and the work of major artists including Bernini, Caravaggio, Poussin, Rubens, Rembrandt, Vermeer and Velázquez. Prerequisites: ART 141, 142 or HIST 100 or 110. Three credits.

**255 Watercolour - Techniques and Approaches**

Students familiarize themselves with the materials and the basic techniques of transparent watercolour in this course. Instruction will include various classic and innovative approaches to this versatile medium, using paintings by well-known masters of the art of watercolour as a jumping-off point for their own exploration in the watercolour medium. Prerequisite: ART 100 or equivalent. Three credits.

**258 Impressionism**

An important movement in French painting during the second half of the 19th century, Impressionism greatly influenced modern art. This course will critically examine the subject in an historical and international context. Prerequisite: a survey course in art history or permission of the instructor. Three credits.

**260 20th Century: Modern Art**

This course examines the origins of modernist endeavour in the late 19th century and covers art up to the end of World War II. Attention will be paid to major movements and artists, parallel movements in literature and music, the social and political context, and new technologies. Prerequisite: a survey course in art history. Three credits.

**261 Contemporary Art**

This course examines art from the end of World War II to the present day. Attention will be paid to major movements and artists, the social and political context, and changing assumptions about what art should be and do. Prerequisite: a survey course in art history. Three credits. Not offered 2012-2013.

**300 A Cultural and Intellectual History of Canada**

This course is an historical analysis of Canadian literature, art, and architecture, and the intellectual forces that have shaped Canadian society. Cross-listed as HIST 300. Six credits.

**312 Art and Politics**

Cross-listed as PSCI 312; see PSCI 312. Three credits.

**320 Painting II**

A continuation of ART 200 with emphasis on composition, technique and materials with special attention to individual creativity and development using acrylics or oils. Prerequisite: ART 200 or portfolio demonstrating painting skills. Six credits.

**331 Catholicism and the Arts I**

Cross-listed as CATH 331; see CATH 331. Six credits.

**332 Catholicism and the Arts II**

Cross-listed as CATH 332; see CATH 332. Six credits.

**343 Issues in Canadian Art through World War II**

Students will consider Canadian art practice and institutions from pre-European contact up to the Group of Seven. Topics can include aboriginal practice and the representation of native peoples, the construction of wilderness and place, and the role of the church in Quebec in the context of social and political change. Prerequisites: ART 141, 142 or survey of Canadian art or permission of the instructor. Three credits. Not offered 2012-2013.

**344 Issues in Contemporary Canadian Art**

Students will consider selected topics which can include: Michael Snow and his contemporaries, post-colonialism and contemporary aboriginal art, landscape and the critique of nature, feminism. Prerequisites: ART 141, 142 or survey of Canadian art, or permission of the instructor. Three credits.

**346 Botanical Art and Illustration: Drawing**

This course will be concerned with developing drawing to accurately reproduce plant forms. Non flowering and flowering plant form and diversity will be covered using pencil, pen and ink. Prerequisite: ART 100 or BIOL 202 or portfolio demonstrating drawing or painting skills. Three credits.

**347 Botanical Art and Illustration: Painting**

This course will be concerned with developing drawing to accurately reproduce plant forms. Non flowering and flowering plant form and diversity will be covered using pencil and watercolour. Prerequisites: ART 100 or 346 or BIOL 202 or portfolio demonstrating drawing or painting skills. Three credits.

**350 Anatomy for the Artist: Skeleton and Musculature**

This course covers anatomical terminology, the drawing of the skeletal bones (axial and appendicular) and musculature. Prerequisite: ART 100 or portfolio demonstrating drawing skills. Six credits. Not offered 2012-2013.

**356 Christian Art: The Life of Christ**

Iconography is the identification and interpretation of images. This course is an introduction to the iconography of Christian art, with an emphasis on images of the Life and Passion of Christ. The course will examine how images develop over history, and how they may be understood in light of historical events, changes in theological thought, and in the artist's own spirituality. Cross-listed as RELS 353. Prerequisites: ART 141, 142 or permission of the instructor. Three credits.

**357 Christian Art: The Saints**

This course is an introduction to the iconography of Christian art, with an emphasis on images of Mary and the saints. The course will examine how images develop over history, and how they may be understood in light of historical events, changes in theological thought, and in the artist's own spirituality. Discussion will include how such images were used as objects of personal devotion but also for the conveying of important theological and social values. Cross-listed as RELS 354. Prerequisites: ART 141, 142 or permission of the instructor. Three credits.

**363 Advanced Drawing I**

Through the use of still life and the figure, this course concentrates on drawing techniques and materials. It reinforces composition and the elements of good design introduced in Art 100 and 200. Prerequisite: ART 100 or 364 or a portfolio approved by the instructor.



**364 Advanced Drawing II**

This course deals with exclusively with the figure, the classic subject of drawing. Live models are present for all classes. The professor will demonstrate techniques and give critiques of class work. Students are required to do assignments outside of class. Prerequisite: ART 100 or 363 or a portfolio approved by the instructor.

**371 Italian Renaissance Art I**

A survey of the visual arts in Italy from the late 13th C through the end of the 15th C (from early Gothic painters such as Giotto to the precursors of the High Renaissance in Florence and Venice). The course will consider works of art from the point of view of artistic style and technique, and will also examine how the work of art functions within its social and cultural context. Prerequisites: ART 141, 142 or HIST 100 or 110 or permission of the instructor. Credit will be granted for only one of ART 371 and ART 370. Three credits.

**372 The Northern Renaissance**

This course is an examination of the art of the Renaissance in Northern Europe. It will proceed more or less chronologically from the late Gothic period through the mid-sixteenth century. We will consider matters of artistic style and technique (in painting, sculpture and the graphic arts), but will also examine what works of art can tell us about what people thought was important in Renaissance France, Germany, and the Netherlands. Many interesting social changes during the period, such as the Protestant Reformation, had profound consequences for art in the North. Prerequisites: ART 141, 142 or HIST 100 or 110 or permission of the instructor. Credit will be granted for only one of ART 372 and ART 370. Three credits.

**373 Italian Renaissance Art II**

A survey of the visual arts in Italy from the late 16th C, beginning with the new grand manner developed by Leonardo da Vinci and Michelangelo. With the development of the idea of artistic genius, problems linked to artistic license arose as the century progressed. The course will consider works of art from the point of view of artistic style and technique, and will also examine how the work of art functions with its social and cultural context. Prerequisites: ART 141, 142 or HIST 100 or 110 or permission of the instructor. Three credits.

**386 Selected Topics II**

Prerequisite: ART 100 or 350 or permission of the instructor. Three credits.

**399 Directed Study Seminar**

See section 3.5. Three credits.

**435 Seminar in Italian Renaissance Art**

This course will be an intensive investigation into an aspect of Italian Renaissance art. Topics may include: Michelangelo and his biographers; Giorgio Vasari's *Lives of the Artists*; Raphael in Rome; Renaissance art in Venice; Italian Mannerism. Students will learn to use and assess important primary sources from the Renaissance period, and will also examine the secondary literature in some depth. Prerequisite: ART 371 or 372 or permission of the instructor. Three credits.

**499 Directed Study**

See section 3.5. Three or six credits.

**9.5 BIOLOGY**

A. Beye, Ph.D.	J. E. McKenna, Ph.D.
C. D. Bishop, Ph.D.	M. Pulsifer, M.Sc.
K. Brebner, Ph.D.	R. Rasmussen, Ph.D.
M.E. DeMont, Ph.D.	R.A. Scrosati, Ph.D.
M.E. Galway, Ph.D.	B.R. Taylor, Ph.D.
D.J. Garbary, Ph.D.	P.J. Williams, Ph.D.
L.L. Graham, Ph.D.	R.C. Wyeth, Ph.D.
D. Kane, Ph.D.	Senior Research Professors
V. Karunakaran, Ph.D.	J.A. Buckland-Nicks, Ph.D.
R.F. Lauff, M.Sc.	A.G. Miller, Ph.D.
W.S. Marshall, Ph.D.	

Biology is the science of living organisms and their interactions in the world around us. Many biology courses deal with the human condition, as well as the influence that humans have on the global environment. The biology department offers courses that emphasize the structure and function of organisms from the molecular level to the level of global ecology. Programs of study are available in microbiology, animal and plant biology, cell and molecular biology, ecology and evolution.

The major, advanced major, and honours degrees prepare students for advanced training and careers in basic and applied biology and in the biomedical sciences; for graduate study in biology, medicine, dentistry, physiotherapy, and veterinary science; for teaching at both the primary and the secondary level.

Biology is a highly integrative science that is informed by a conceptual

background in other sciences including mathematics, chemistry, physics, and earth sciences. Joint degree programs with these and other sciences are available. In addition to the regular biology programs, students may also study biology through the Interdisciplinary Studies in Aquatic Resources program or the Environmental Sciences program.

First year biology students normally register for BIOL 111, 112, CHEM 100 or 120, MATH 111 and 112 and 6 credits in humanities subject and 6 credits in a social sciences. See glossary for definitions of the humanities and social sciences. Superior students may consider a third science, usually PHYS 100 or ESCI 171 and 172 instead of 6 credits of arts.

**Department Requirements**

The biology core program is BIOL 111, 112, 201, 202, 203 and 204.

Students wishing to complete a pair in biology should take BIOL 111, 112, 201 and 202. BIOL 201, 202, 203, 204 are normally taken in the second year.

Science students who must take BIOL 203 as part of their program cannot be granted credit for BIOL 221.

Credit for BIOL 111 and 112 with an average of 55 is required for all students continuing in biology programs.

BIOL 222 cannot be used as science A in biology major, advanced major or honours programs.

CHEM 100 is a prerequisite for BIOL 201, 202, 203 and 204 courses.

Advanced major and honours students normally take CHEM 225, 255 and STAT 231 in their second year. Students interested in the health professions should take CHEM 220 in their second year.

Biology students may take no more than six credits of cross-listed courses as BIOL credits.

The biology department provides guidelines for students wishing to explore a specific area of biology. Joint programs are available for those interested in studying two scientific areas.

**Major Program**

Program requirements are given in chapter 7. Students in the major program must take BIOL 111, 112, 201, 202, 203, 204 and 18 additional biology credits, of which 12 credits must be at the 300 or 400 level, to complete 36 credits for science A.

**Advanced Major and Honours Program**

Program requirements are given in sections 5.1 through 5.3. Honours and advanced major students select their courses in consultation with the department chair. PHYS 100 or 120 is required in the honours program and may count as science A. In the advanced major program PHYS 100 or 120 is strongly recommended but may not count as science A. BIOL 491 is a required, non-credit course taken in the fourth year. Course requirements are shown below.

**Advanced Major Program**

Students must take BIOL 111, 112, 201, 202, 203, 204, 391, 491; CHEM 100, 225 (or 220) and 255; MATH 111, 112; STAT 231. An additional 24 BIOL credits, of which 18 must be at the 300 or 400 level (at least 3 credits must be BIOL at the 400 level, other than 491); 18 credits arts electives, to include one pair; 15 credits approved electives; 24 credits open electives.

**Honours Program**

Students must take BIOL 111, 112, 201, 202, 203, 204, 391, 491, 493; CHEM 100, 225 (or 220) and 255; MATH 111, 112; PHYS 100 or 120; STAT 231; An additional 33 credits of BIOL or other approved science courses, of which 24 credits must be at the 300 or 400 level (at least 3 credits must be BIOL at the 400 level, other than BIOL 475, 491 or 493); 18 credits arts electives to include one pair; 15 credits approved electives; 6 credits open electives.

**Joint Honours and Joint Advanced Major**

Joint honours and joint advanced major programs may be offered with other departments. For course patterns see sections 7.2 and 7.3. Students considering a joint honours or advanced major should consult with the relevant department chairs as early as possible.

**Biology and Environmental Sciences**

See section 9.20

**Co-operative Education Program in Biology**

This program is offered in conjunction with the Gerald Schwartz School of Business and Information Systems as part of the expanded classroom initiative. This is normally a five-year program leading to a degree with a co-operative education designation in biology. See section 9.13 for further information.



**105 Introductory Cell and Molecular Biology**

This course will focus on the structure and function of cells, cell division, patterns of inheritance, and the molecular basis of inheritance. Restricted to nursing students. Three credits and tutorial.

**111 Introductory Cell Biology**

An introduction to cells, their structure and function, and the techniques used to study them. Provides a basic introduction to cells as the building blocks of all life. Required for all students continuing in biology. Three credits and lab.

**112 Diversity of Life**

This course emphasizes the interrelationships of living systems and their roles in the global ecosystem. Students explore evolution and the origins of life, organismic diversity, adaptations and ecology. Human interactions with the diversity of life are considered throughout the course. Required for all students continuing in biology. Three credits and lab.

**115 Microbes in Human Biology**

An introduction to microorganisms from a human perspective, this course deals with viruses, bacteria and fungi. Topics include bacterial structure and function, bacterial genetics and antibiotic resistance, and viral structure and infection. Restricted to nursing students. Prerequisites: BIOL 105. Three credits and tutorial.

**201 Animal Biology**

An introduction to major groups of animals, emphasizing the structure, physiology and way of life of certain species. Prerequisite: an average of 55 in BIOL 111, 112. Three credits and lab.

**202 Plant Biology**

An introduction to the diversity, form and function of plants emphasizing the biology of land plants. Organisms are treated from the perspectives of evolution, reproduction, physiology, and ecology. Prerequisite: an average of 55 in BIOL 111, 112. Three credits and lab.

**203 Introductory Ecology**

An introduction to the fundamental concepts of ecology, focusing on factors affecting the abundance and distribution of plant and animal populations. Prerequisite: an average of 55 in BIOL 111, 112. Three credits and lab.

**204 Introductory Genetics**

An introduction to the mechanisms of inheritance, genome structure, and genetic analysis. Concepts include: DNA structure and function; gene regulation, mutation, repair, linkage; gene manipulation. Laboratory involves problem solving and genetic crosses with fruit flies. Prerequisite: an average of 55 in BIOL 111, 112. Three credits and lab.

**215 Microbiology for Human Nutrition**

An introduction to microorganisms from a human health perspective, that focuses on immunological concepts, viruses, bacteria and fungi. Laboratories cover basic microbiological techniques and tutorials cover applications from a health perspective to communicable disease control, infection control, food and water quality, and food hygiene. Restricted to Human Nutrition students and Human Kinetics students with Nutrition minor. Prerequisites: BIOL 111 and CHEM 100. Three credits and lab/tutorial.

**220 Selected Topics in Biology**

This course is for non-science students who are interested in understanding biological concepts. The course deals with how scientific principles are established and illustrates this by discussing selected topics of biological and human interest. Topics include evolution and diversity, ecology and food, human evolution and population, diabetes, homeostasis, HIV and vaccines, antibiotic resistance, and cancer. Offered through distance education. Acceptable for credit only in the Faculties of Arts and Business and as an open elective in the B.Sc. Nursing. Credit will be granted for only one of BIOL 220 and BIOL 221, 222. Six credits.

**221 Issues in Resource Management**

This course introduces the basic science necessary to understand a number of current environmental resource issues such as forest and wildlife management. Within each broad area, the mechanisms and dynamics of living systems will be covered, with the goal of understanding resource decision making, and how human activities can alter the structure and function of terrestrial ecosystems. Closed to biology majors. Credit will be granted for only one of BIOL 221 and BIOL 220. Three credits. No lab component.

**222 Topics in Environmental Ecology**

This course introduces current environmental issues related to resource use and environmental degradation from an ecological perspective. Water, mineral, and food/soil resources will be discussed, followed by non-renewable and renewable energy sources, with emphasis on ecological implications of resource use. The

last half of the course will deal with environmental degradation, and will provide students with an understanding of cause, extent, and impacts of all forms of pollution. Prerequisites: BIOL 112 or third or fourth-year status in the Arts program. Credit will be granted for only one of BIOL 222 and BIOL 220. Cannot be used as Science A for biology majors. Three credits.

**231 Plants and Civilization**

An introduction to the role of plants in human affairs. Topics will include plants as medicine, food, fibres, and psychoactive agents. The course will introduce basic plant structure, and integrate chemistry with utilization. Important themes will be the role of plants in aboriginal cultures and the processes of plant domestication and breeding. Prerequisite: BIOL 112 (science students); ANTH 111, 112 (110) (arts students); or permission of the instructor. Three credits and lab.

**251 Human Anatomy and Physiology I**

Using an integrated approach to the study of the integumentary, skeletal, muscular, nervous, endocrine and lymphatic immune systems, this course provides students with a comprehensive working knowledge of the anatomy and physiology of these systems. First priority given to students in human kinetics, human nutrition and nursing. Credit may be granted for only one of BIOL 251 and 304. Three credits and lab.

**252 Human Anatomy and Physiology II**

An integrated study of the cardiovascular, respiratory, urinary, reproductive and digestive systems, this course provides students with a comprehensive working knowledge of the anatomy and physiology of these systems. First priority given to students in human kinetics, human nutrition and nursing. Prerequisite: BIOL 251. Credit may be granted for only one of BIOL 252 and 304. Three credits and lab.

**285 Paleontology: The History of Life**

Cross-listed as ESCI 285; see ESCI 285. Three credits and lab.

Note: Any student wishing to take a 300-level course must have either the biology core program or a minimum average of 70 in BIOL courses and permission of the instructor.

**301 Form and Function in Animals**

This course will introduce and apply the physical concepts required to understand form and function in the complexity of biological processes. Prerequisites: BIOL 201; PHYS 100. Three credits and lab.

**302 Evolution**

An introduction to the evolutionary process, including natural selection and adaptation, Darwin and his detractors, the process of speciation, methods of phylogenetic reconstruction, human evolution. Prerequisites: BIOL 201, 204. Three credits and evening lab.

**304 Vertebrate Physiology**

This course uses an integrative approach to study the function of organ systems, including neural, cardiovascular, muscular, respiratory, renal, reproductive and endocrine. Examples of how vertebrates, including humans, respond to different demands imposed by their environment and activities will be discussed. Prerequisite: BIOL 201. Credit will be granted for only one of BIOL 304 and BIOL 251/252. Three credits and lab.

**306 Ichthyology**

Introduces students to the diversity of fish in terms of morphology, physiology, ecology, and behaviour, as well as the basic concepts of fisheries science and management. The emphasis will be on a global perspective for the lecture component, while laboratory work will focus on Atlantic Canadian species. Prerequisites: BIOL 201, 203. Three credits and lab.

**307 Field Biology**

Provides practical experience in the observation, collection, identification and quantification of organisms in nature. Held for two weeks in intersession, the course emphasizes field ecology, dealing with some or all of the following groups of organisms: birds, small mammals, fish, plants, marine algae, marine invertebrates, insects. Prerequisite: BIOL 203. Three credits and lab.

**311 Coastal Marine Ecology**

An introduction to marine habitat and the ecological factors that determine population regulation and community structure for marine organisms. The course will include an overview of marine ecological theory, field work, and laboratory observations, focusing on Nova Scotia shores. Prerequisite: BIOL 203. Three credits, lab and research project.

**312 Marine Biology**

A course that considers life in all marine zones. While focused on animal life, the course will consider the history of the ocean, its physical nature, a survey of its inhabitants, their adaptations to life in the sea and biodiversity. Life histories and reproduction of animals will be discussed, including selected symbioses. The

physiology and development of organisms will be considered with respect to human impacts on marine systems. Prerequisites: BIOL 201, 202, 203, 204; Aquatic Resources students exempt. Three credits, lab and research project.

### 315 Introductory Microbiology

Provides a broad perspective on the microbial world and its role in the biosphere. The diversity, morphology and physiology of prokaryotic microorganisms will be discussed. Laboratories stress basic microbiological techniques including microscopic examination, isolation from natural environments, enumeration and examination of physiology. Prerequisites: biology core program; CHEM 220 or 225; and 255. Open to human kinetics students upon completion of BIOL 201, 204; CHEM 220 or 225; and 255. Three credits and lab.

### 317 Molecular Biology

An introduction to the analysis of peptides and nucleic acids using standard molecular methodology. Topics include electrophoretic techniques; manipulation of DNA, the introduction of foreign DNA into host bacterial cells and the use of gene cloning, gene amplification, and DNA sequencing. In labs students will apply these methods to interpret gels and to generate genetically modified bacteria. Prerequisites: BIOL 204, 315. Three credits and lab.

### 320 Biology of Cancer

An introduction to the problem of cancer, emphasizing the cellular and molecular biology of carcinogenesis in humans. The multi-causal, multi-step nature of the process will be highlighted, including the role of viruses, oncogenes, carcinogens and ionizing radiations. Prerequisites: BIOL 204, 395. Three credits and lab.

### 321 Environmental Ecology of Mariculture

This course explores the environmental implications of mariculture, the aquaculture of marine species. Students are introduced to the various types of mariculture with emphasis on Canadian examples, and then to the environmental impact of mariculture on coastal marine ecosystems, including legal implications and licensing practices. Prerequisites: AQUA 100 and BIOL 203; or the biology core program. Three credits and lab. Not offered 2012-2013.

### 331 Statistical Methods

Cross-listed as STAT 331; see STAT 331. Three credits and a one-hour lab.

### 335 Developmental Biology

Reproduction is a fundamental biological process. The course provides an introduction to the means by which animals replicate themselves. Several different animals will be discussed, as well as a glance at plant development. Students will be introduced to experimental methods, intercellular communication, the diversity of different ways that animals develop and the role of gene regulation therein. Laboratories will highlight topics covered in lecture and introduce students to some experimental techniques. Prerequisites: BIOL 201, 204. Three credits and lab.

### 342 Invertebrate Zoology

A comparative study of the morphology, behaviour, physiology, ecology and taxonomy of invertebrate animals. Students will learn in both lecture and lab the remarkable diversity of both form and function in these animals, while also learning to ask critical questions about the organisms and designing experiments that will lead to further insight into invertebrate zoology. Prerequisite: BIOL 201. Three credits and lab.

### 343 Comparative Anatomy of Vertebrates

A comparative study of the anatomy and evolution of chordate animals with emphasis on the vertebrates, including humans. In the laboratory, students will study the anatomy of representative vertebrates and will complete a project focusing on native species. Prerequisite: BIOL 201. Three credits and lab.

### 345 Communities and Ecosystems

A course outlining the theory of ecosystem ecology. Included are the fundamental processes of mineral cycles, energy flow and internal regulation of communities. The concepts of succession, food webs and biodiversity are illustrated with comparative examples drawn from aquatic and terrestrial ecosystems. Prerequisite: BIOL 203. Three credits.

### 384 Experimental Research in Biology

This course provides training in experimental design and data analysis, with emphasis on research questions that are common in biology. All relevant aspects of experimental research will be covered, i.e., identifying a problem, formulating a hypothesis, designing an experiment, analyzing and interpreting data, and delineating future research steps. Concepts and techniques will be applied with numerical examples. Prerequisite: BIOL 203. Three credits and lab.

### 385 Animal Behaviour

An introduction to the principles of ethology drawing on examples from all animal phyla, with an emphasis on vertebrates. Students learn both the physiological and evolutionary bases of behaviour. Topics covered will span simple reflexes

through complex social behaviours, including survival, predation, habitat selection, communication, and mating behaviors. Participation in field trips is required. Prerequisite: BIOL 201. Three credits and lab.

### 391 Junior Seminar

This course will assist students in choosing a career, gaining admission to graduate or professional school and help honours students choose a supervisor and prepare for their honours thesis work. Required for all biology advanced major and honours students in their third year. No credit.

### 395 Cell Biology

An introduction to the eukaryotic cell, including relationships between biochemical mechanisms and organelle functions, and techniques used to study cell function. Prerequisite: CHEM 220 or 255. Three credits and lab.

### 401 Comparative Physiology and Biophysics

An introduction to the physical aspects of biological systems, including the application of solid and fluid mechanics to living systems and the mechanics of locomotion. Prerequisite: BIOL 301. Three credits and lab.

### 402 Membrane Physiology

Molecular biology, physiology, and the biophysics of membranes in animal cells are studied in order to integrate single membrane function into the operation of tissues and organs. Emphasis is on transport channels, enzymes and their regulation in normal cells and in membrane disorders. Prerequisites: BIOL 304 or 251; PHYS 100 or 120; CHEM 255. Three credits and lab.

### 403 Physiology of Sensations

This course introduces students to the anatomical structures, neural pathways, and physiological mechanisms utilized by humans to sense our external environment. Emphasis will be placed on proprioception in humans, spinal reflexes, equilibrium, vision, touch, smell, taste, and auditory perception. Current literature will be discussed as it relates to each of the senses. Prerequisites: BIOL 201, 251 and 252 or BIOL 304. Three credits and lab. Not offered 2012-2013.

### 404 Comparative Endocrinology

Covers principles and concepts in vertebrate and human control systems, including the principal actions of hormones and neurohormones, hormone interactions, and endocrine disorders. Prerequisite: BIOL 252 or 304. Three credits and lab. Not offered 2012-2013.

### 407 Integrated Resource Management

An introduction to integrated resource management planning and land-use decision-making in an industrial landscape, using the principles of landscape ecology, ecosystem management and conservation biology. Lectures examine the challenges of biodiversity conservation, and wildlife and water management using these methods within the context of forest management. Guest lecturers from industry and other land user groups will discuss the opportunities, constraints, and problems presented by multi-stakeholder approaches. Prerequisite: BIOL 203. Three credits and lab.

### 411 Evolutionary Developmental Biology

Evolutionary Developmental biology or "evo-devo" is a contemporary interdisciplinary field that has been challenging existing evolutionary theory and making major new discoveries about organismal diversity in relation to genetic diversity. In this course we will explore: (i) how natural selection acts on the developmental process, (ii) whether development constrains evolution, (iii) developmental mechanisms of evolutionary change, (iv) the interaction of the environment with developmental processes and (v) the genetics of development. Prerequisite: BIOL 302 or 335 or permission of instructor. Three credits.

### 415 Biogeography

A lecture and seminar course on the description and interpretation of past and present distributions of plants and animals. There will be integration of evolutionary, ecological and historical concepts, and both aquatic and terrestrial organisms will be considered. Prerequisite: BIOL 302. Three credits and evening tutorial. Not offered 2012-2013.

### 417 Microbial Pathogenics

This course provides a general overview of a human host's defense mechanisms, including immune and inflammatory responses, and describes the pathogenic interactions between humans and different types of microbes with an emphasis on bacterial pathogens. Prerequisites: BIOL 201, 204, 315. Three credits and tutorial.

### 430 Genes and Development

Introduces the molecular-genetic basis of development in multi-cellular organisms, and the use of model organisms, mutants, gene cloning and gene engineering to explore how genes, proteins and cells interact in the development of animal and plant bodies. Laboratory work focuses on the development of the fruit fly, *Drosophila* and the mustard cress, *Arabidopsis*. Prerequisites: BIOL 204, 395.

Three credits and lab.

#### 445 Experimental Phycology

A lecture and laboratory based course in which algae are used as experimental models in cell and developmental biology. Students will develop practical skills in fluorescence microscopy, photo-microscopy and algal culturing. Prerequisite: permission of instructor. Three credits and lab. Not offered 2012-2013.

#### 450 Advanced Topics in Behavioral Neuroscience

Cross-listed as PSYC 430; see PSYC 430.

#### 452 Bioinformatics

Bioinformatics is the field of science that uses computers to archive, organize, retrieve and analyze biological information. This course will introduce bioinformatics with the emphasis on "bio". This course will focus on how the data is generated, accessed and managed, how to retrieve particular types of data and what some of the end users of these data are. No computing background required. Prerequisite: BIOL 317 or at least 75% in BIOL 204 or permission of the instructor. Three credits.

#### 465 Advanced Microscopy

An introduction to the theory and application of electron and confocal microscopy. Laboratories will emphasize the use of microscopy techniques to investigate current research problems as well as the imaging techniques required to prepare a manuscript for publication. Prerequisite: permission of the instructor. Three credits and lab.

#### 470 Environmental Microbiology

Examines the contributions of prokaryotes to the biogeochemical cycling of elements; and to the development of soils, microbial mats and stromatolites, bog metal deposits and acid drainage. Topics also include some of the more unusual prokaryotes such as the ecto- and endosymbionts of marine organisms, photosynthetic and bioluminescent bacteria. Labs examine microbial ecosystem development and diversity. Prerequisites: BIOL. 203, 204, 315. Three credits and lab.

#### 472 Freshwater Ecology

A study of the physical, chemical and biological features of fresh water that affect the abundance and distribution of plants and animals. Includes field trips to local freshwater ecosystems. Prerequisite: BIOL 203. Three credits and lab.

#### 474 Environmental Biology of Soils

An introduction to the diversity of soil organisms and their roles in ecosystem processes. The nature of soil as habitat for bacteria, fungi, and animals, and the connections between soil and the aboveground environment will be considered along with the role of soils and soil organisms in decomposition, nutrient cycling, plant nutrition and ecosystem succession. Students must complete a semester-long lab project. Prerequisite: BIOL 203. Three credits and lab.

#### 475 Accessing the Biological Literature

Library resources and on-line databases will be used to write an essay relevant to the honours student's interest or thesis. Restricted to honours students. Three credits.

#### 481 Selected Topics

Three credits.

#### 491 Senior Seminar

Seminars on topics of major biological interest are presented by faculty members and visiting scientists. Required for all biology advanced major and honours students in their final year of study. No credit.

#### 493 Honours Thesis

For details, see the department website or the chair. Three credits.

#### 499 Directed Studies

Students with an average of at least 75 may, on a tutorial basis under the guidance of a professor, pursue an area of interest not normally offered by the department. Three credits and seminar.

### GRADUATE COURSES

501	Advanced Biomechanics
502	Advanced Topics in Membrane Biology
504	Topics in Vertebrate Physiology
511	Advanced Marine Ecology
515	Topics in Microbiology
517	Topics in Molecular Biology
525	Advanced Cell Biology
533	Advanced Topics in Biometrics
551	Advanced Population Ecology
571	Advanced Topics in Ecology

580	Seminars in Phycology
581	Selected Topics
585	Topics in Avian Biology
590	Topics in Botany
595	Topics in Cell Biology
598	Research
599	Thesis

### 9.6 BUSINESS ADMINISTRATION

D. Anthony, Ph.D.	K. MacAulay, Ph.D., CA
K. Collins, Ph.D.	R.F. Madden, MBA, FCA
R. Delorey, PMP, MBA	T. Mahaffey, Ph.D.
M. Diochon, Ph.D.	N. Maltby, Ph.D.
G. Durepos, Ph.D.	B. Morrison, MBA
M. Fuller, Ph.D.	B. Mukerji, Ph.D.
C. Galea, Ph.D.	M. Oxner, Ph.D., CA, CFA
L. Gallant, MBA, CFP, FCA	V. Vishwakarma, Ph.D.
D. Gunn, CA	<i>Part Time</i>
S. Litz, Ph.D.	L. Allan, LL.B.
B. Long, Ph.D.	C. Gillies, LL.B.

The objective of the Bachelor of Business Administration program is for students to acquire the knowledge, skills, perspectives, and attitudes needed to either start a business of their own or to establish a career in the 'for-profit', the 'not-for-profit' or the public sector. To attain this objective the BBA program combines the acquisition of conceptual knowledge with the development of analytical, communication and leadership skills. Each stream in the BBA program consists of an integrated set of required courses in BSAD, ECON, INFO, MATH, and STAT, complemented by elective courses in the arts and/or sciences.

BBA students work with faculty who have significant practical business experience and whose research interests are relevant to practicing managers. Faculty employ a variety of applied learning approaches (projects, presentations, simulations, field trips). In-class learning approaches include class discussions, case analyses, lectures, readings, films and guest speakers. The goal is to ensure that each graduate is prepared to contribute effectively in large or small organizations, or to begin graduate study.

The BBA program provides 13 streams: BBA general; BBA Major in accounting, enterprise development, finance, information systems, leadership in management, and marketing; BBA Honours in accounting, enterprise development, finance, leadership in management, and marketing; and BBA Joint Honours in business administration and economics. Each BBA stream offers a primarily classroom-based option and a co-op, work-study option.

Students who wish to study business administration and another discipline may choose the B.Sc. with Advanced Major in a Science with Business Administration (see chapter 7); the BA with Major or Advanced Major in economics and a minor in business administration (see section 9.16); or the BIS program (see section 9.24).

To earn a BBA degree, students must successfully complete courses with a combined value of 120 credits. All BSAD courses are one-term, three-credit courses. Normally BBA students earn 30 credits per year for each of four years. At least 36 of each student's 60 BSAD credits must be earned at StFX.

Transfer students should consult with the department chair prior to registration to confirm their course selections.

#### Department Requirements:

##### Arts/Science Electives

BBA students must earn 36 credits of arts/science electives. Normally these credits are earned in years one to three. The arts/science electives must include a pair (12 credits) in each of two different subjects. The third 12 credits of arts/science electives may be additional courses in paired subjects or courses in other subjects.

Economics, information systems, mathematics and statistics courses required to earn the BBA degree may not count as arts/science electives.

At least one of the two pairs must be in an arts subject. For maximum flexibility, students are advised to complete one arts/science pair by the end of their second year. For allowable arts and science subjects, see section 5.1.3.

The following professional and applied subjects are not permitted as arts/science electives:

Adult Education	Human Kinetics
Aquatic Resources	Human Nutrition
Education	Information Systems (see below)
Engineering	Nursing



Computer Science 100 (CSCI 100) may not count toward the BBA degree since BBA students have credit for INFO 101. However, students may use other CSCI courses as arts/science electives or as a pair.

Economics courses (ECON, excluding ECON 101, 102) may count as an arts pair except for BBA students enrolled in the joint honours in business administration and economics degree. All BBA students may count ECON courses as electives.

Information Systems (INFO) courses may count as BSAD electives with permission of the chair. INFO courses may also count as open electives. INFO courses may not count as arts/science electives for BBA students.

### Earning a Minor in an Arts or Science Elective Subject

Any BBA student earning 24 of the 36 arts/science electives in one arts subject qualifies for a minor in that subject. BBA students contemplating a minor in a science subject should consult the department chair as some restrictions apply. Students earning a minor in an arts or science subject must still earn a pair in a second subject.

### Open Electives

All BBA streams except joint honours in business administration and economics include six credits of open electives. Students may satisfy this requirement by completing BSAD courses, arts/science courses (as above) or, with permission of the appropriate chair or dean, courses in selected subjects not normally permitted as arts/science electives including information systems, engineering, human kinetics, human nutrition and nursing.

### Admission to the BBA Program

General admission requirements for the BBA program are outlined in chapter 1. Admission to the BBA program may be restricted based on quotas, general average, and course grades, as specified by the StFX University Senate.

### Advancement in the BBA Program

BSAD 200-level courses are prerequisites for 300-level courses. Admission to 400-level courses normally requires completion of one or more courses at the 300 level. Permission of the instructor to register in a course may override the normal prerequisites.

### Substitutions

A BBA student may substitute courses in subjects other than business administration for BSAD electives. Substitutions are not automatic. Students must apply in writing to the department chair indicating the career or program rationale for requesting a substitution.

Students with credit for MATH 111 may wish to substitute MATH 111 for the MATH 205 requirement.

Students in the joint honours in business administration and economics, majors in finance, and majors in information systems may substitute ECON or INFO courses for selected BSAD courses with the permission of the chair.

### Affiliations with Professional Associations

The Department of Business Administration maintains ongoing relationships with the Atlantic School of Chartered Accountancy, the Certified General Accountants' Association, and the Society of Management Accountants. Graduates may earn credit for most courses toward completion of the CA, CGA or CMA professional accounting designations. Graduates may also earn credit for courses toward the Canadian Institute of Management Program, the Fellows Program of the Institute of Canadian Bankers, and other professional certification programs.

### 300- and 400-Level BSAD Electives

Many BSAD electives at the 300 and 400 level may be taken in either the third or fourth year. Permission of the instructor to register in a course may override the normal prerequisites.

### Co-op Education Programs in Business Administration and Information Systems

These programs are offered in conjunction with the Gerald Schwartz School of Business as part of the expanded classroom initiative. These are normally five-year programs leading to degrees with co-operative education designations. See section 9.13 for further information.

### BBA General Degree

Year 1	BSAD 101, 102; ECON 101, 102; INFO 101, 102; 12 credits arts/science electives
Year 2	BSAD 221, 223, 231, 241, 261; MATH 205; STAT 201; 9 credits arts/science electives
Year 3	15 credits BSAD electives; 15 credits arts/science electives
Year 4	BSAD 471; 21 credits BSAD electives; 6 credits open electives

### BBA Major Degrees

The BBA program offers majors in accounting, enterprise development, finance, information systems, leadership in management, and marketing.

<b>Accounting</b>	
Years 1 & 2	Same as general degree
Year 3	BSAD 321, 322, 323, 324, 342; 15 credits arts/science electives
Year 4	BSAD 424, 471; 18 credits BSAD electives (at least 6 credits must be from the 420 series); 6 credits open electives
<b>Enterprise Development</b>	
Years 1 & 2	Same as general degree
Year 3	BSAD 331, 356; 9 credits BSAD electives; 15 credits arts/science electives
Year 4	BSAD 332, 457 (or 456), 458, 471; 12 credits BSAD electives; 6 credits open electives
<b>Finance (For the major in finance ECON 201, 202 are regarded as BSAD electives.)</b>	
Year 1	Same as general degree
Year 2	ECON 201, 202; BSAD 221, 223, 231, 241, 261; MATH 205; STAT 201; 3 credits arts/science electives
Year 3	BSAD 342; 12 credits BSAD electives; 15 credits arts/science electives
Year 4	BSAD 471, 492; 3 credits BSAD electives; 9 credits from the BSAD 34_ or 44_ series or BSAD 454; 6 credits arts/science electives; 6 credits open electives
<b>Information Systems</b>	
Year 1	BSAD 101, 102; ECON 101, 102; INFO 101, 102; 12 credits arts/science electives
Year 2	BSAD 221, 223, 231, 241, 261; MATH 205; STAT 201; INFO 245, 275; 3 credits arts/science electives
Year 3	BSAD 361, 381; 9 credits BSAD/INFO electives; 15 credits arts/science electives
Year 4	BSAD 415, 419, 471, 492; BSAD/INFO 416; INFO 415; 6 credits BSAD/INFO electives; 6 credits open electives
<b>Leadership in Management</b>	
Years 1 & 2	Same as general degree
Year 3	BSAD 358, 361, 363; 12 credits BSAD electives; 9 credits arts/science electives
Year 4	BSAD 461, 467, 471, 492; 6 credits BSAD electives; 6 credits open electives; 6 credits arts/science electives
<b>Marketing</b>	
Years 1 & 2	Same as general degree
Year 3	BSAD 331; 12 credits BSAD electives including 3 from the BSAD 33_ or 43_ series; 15 credits arts/science electives
Year 4	BSAD 332, 471, 492; 15 credits BSAD electives including 9 from the BSAD 33_ or 43_ series; 6 credits open electives

### BBA Honours Degrees

The BBA program offers honours degrees in accounting, enterprise development, finance, leadership in management, and marketing; and a Joint Honours Degree in Business Administration and Economics.

All BBA Honours degrees follow the same patterns as the major degrees except students substitute BSAD 391 for a BSAD elective in year three and substitute BSAD 494 for 492 in year four.

### BBA Joint Honours Degree

The normal course sequence for the BBA with Joint Honours in Business Administration and Economics.

<b>Joint Honours in Business Administration and Economics</b>	
Year 1	Same as general degree
Year 2	BSAD 221, 223; ECON 201, 202, 301, 302; MATH 111 or 205; STAT 201; 6 credits arts/science electives
Year 3*	BSAD 231, 241, 261, 391; 6 credits ECON electives at the 300/400 level; 12 credits arts/science electives
Year 4*	BSAD 471, 494; ECON 493; 9 credits ECON electives at the 300/400 level; 6 credits BSAD elective; 6 credits arts/science electives

\* If the honours thesis is done in the economics department, BSAD 494 is replaced by ECON 494, and three credits ECON elective are replaced by three credits BSAD elective.

### Business Administration Courses

All BSAD courses are one-term, three-credit courses. Normally students take 200-level courses in second year, primarily 300-level courses in third year and primarily 400-level courses in fourth year. Not all BSAD electives at the 300 or 400 level are offered every year.



**101 Introduction to Business**

An introduction to the Canadian business environment including exposure to the issues, trends, forces, organizations and personalities affecting businesses in Canada. The course exposes students to the types of teaching/learning experiences they will encounter in the BBA program, including case studies, teamwork, exercises, presentations, simulations, readings and lectures. Three credits.

**102 Business Decision-Making**

Introduces students to the challenge of making business decisions, to the primary areas of business (management, marketing, operations, finance), and to the role of the general manager. The course provides an introduction to the core vocabulary and analytical tools appropriate to the functional areas, and helps students develop their analytical, presentation, small group management, and self-management skills. Three credits.

**221 Introductory Financial Accounting**

An introduction to the basic concepts, principles and procedures underlying financial accounting and financial statement preparation and interpretation. Required for all BBA students; a prerequisite for all 300- and 400-level financial accounting and finance courses. Prerequisite: second-year status or higher. Three credits.

**223 Introductory Managerial Accounting**

An introduction to the basic concepts of management accounting and the use of accounting information for managerial decisions. Required for all BBA students; a prerequisite for all 300- and 400-level courses in managerial accounting. Prerequisite: second-year status or higher. Three credits.

**231 Foundations of Marketing**

Customers do not buy products: they buy benefits, satisfactions, and solutions to their problems. This course provides students with the customer and marketplace focus central to effective marketing. The course employs exercises and cases to develop students' analytical skills and provides opportunities to demonstrate these skills through memos and reports. Prerequisites: BSAD 101, 102. Three credits.

**241 Introductory Financial Management**

Covers fundamental aspects of financial decision-making, including financial analysis and planning, valuing stocks and bonds, capital budgeting, accessing capital markets, the cost of capital, and working capital management. Prerequisites: BSAD 221; MATH 205. Three credits.

**261 Organizational Behaviour**

Organizational behaviour introduces students to the context, concepts, principles and theories of human behaviour in organizations. The topics explored range from motivation to teamwork to communication. The objective is twofold: to understand how an organizational member might experience, interpret, and manage human relations as an individual and a group member; and to understand how the influences on human behaviour in turn contribute to organizational effectiveness. Prerequisites: BSAD 101, 102. Three credits.

**321 Intermediate Managerial Accounting I**

Develops the ability to request and use accounting information in the process of planning and control. Topics include cost accounting, cost and revenue analysis for decision-making, budgeting, and performance analysis. Prerequisite: BSAD 223. Three credits.

**322 Intermediate Managerial Accounting II**

Examines in greater depth the topics introduced in BSAD 321, applying the concepts to more complex cases. Essential for students pursuing a career in accounting; useful to non-accounting students with an interest in managerial uses of accounting information. Prerequisite: BSAD 321. Three credits.

**323 Intermediate Financial Accounting I**

An examination of accounting and reporting issues of the public reporting companies as they relate to published financial statements. The course examines controversial aspects of financial accounting with reference to current writings and the pronouncements of professional accounting bodies including IFRS. Emphasis is placed on income measurement and accounting for assets. Prerequisite: BSAD 221. Three credits.

**324 Intermediate Financial Accounting II**

A continuation of the examination of accounting and reporting issues of the public reporting companies as they relate to published financial statements. Emphasis is placed on accounting for debt, equity and special topics. Prerequisite: BSAD 323. Three credits.

**331 Marketing Management**

Marketing strategies are developed to capitalize on marketplace opportunities and overcome marketplace problems. The key components of an overall marketing strategy are selection, positioning, product-service, pricing, distribution, and

promotion. Students will create and implement marketing strategies in a variety of settings, using cases and projects to develop effective communication skills. Prerequisite: BSAD 231. Three credits.

**332 Marketing Research**

The role of marketing research is to provide relevant, timely, valid information to reduce uncertainty in decision-making. This course examines the research process, including problem definition, data sources, research types, sampling, measurement, data collection and data analysis. Although the context is marketing, the research process examined is applicable to all areas of business research. Prerequisites: BSAD 231; third- or fourth-year status. Three credits.

**333 Professional Sales: Building Relationships**

This course addresses the nature of professional selling. The course covers changes in the traditional selling process; strategically planning sales within a larger account strategy; strengthening communications; and building partnerships. Prerequisite: BSAD 231. Three credits.

**335 Consumer Behaviour**

Marketers study consumer behaviour to understand and predict how and why products and services satisfy consumer's needs. This course examines the internal and external influences on consumers' purchase decision-making process including perception, motivation, attitude, culture, and reference groups in an interactive class setting. Students will complete exploratory consumer behaviour projects and will use theoretical concepts to create marketing solutions to cases. Prerequisite: BSAD 231. Three credits.

**342 Cases in Financial Management**

Enhances students' knowledge of the financial management topics covered in BSAD 241 through the application of financial decision-making techniques and theories to business cases. Topics include risk and capital budgeting, dividend policy, leasing, and bond refunding. Prerequisite: BSAD 241. Three credits.

**345 Personal Financial Management**

This course draws on the principles of finance and applies them to decisions faced by individuals in the management of their personal finances. The course explores the planning process using readings, cases and problems. Prerequisite: BSAD 241 or permission of the instructor. Three credits.

**351 Business Law**

Introduces the legal system in Canada and provides a practical examination of laws affecting Canadian businesses, including: forms of ownership; the management and composition of corporations; the powers and duties of the board of directors; contract law (sale of goods, employment, insurance, real estate); creditor-debtor rights including bankruptcy; and the initiation and conduct of civil court actions. Third- or fourth-year status. Three credits.

**356 Entrepreneurship/New Venture Development**

This course uses a new venture context to examine small business and entrepreneurship. Students will develop, operate, and wind down a campus-based business, building the knowledge and skills to launch a new venture successfully, and learning that both technical business knowledge and entrepreneurship are needed to deal effectively with uncertainty and change. Prerequisites: BSAD 221, third or fourth-year status. Three credits.

**357 International Business**

This course examines the theory and methods of engaging in business internationally. The course involves selected aspects of globalization, culture, international trade theory, political economy, foreign direct investment, regional economic integration, the global monetary system, global strategy and international operations. Prerequisites: BSAD 221, 223, 231, 261. Three credits.

**358 Business Ethics**

An application of philosophical theory to a variety of current issues relevant to businesses. By examining the consequences of business decisions upon a wide range of stakeholders, students are provided with an overview of the many ways in which business interacts with society and the social and moral responsibilities that this interaction may generate. Prerequisite: BSAD 261 or permission of the instructor. Three credits.

**361 Organizational Analysis**

Introduces students to important organizational theories and organizational design principles. The course focuses on topics ranging from organizational strategy, structure and culture to organizational change. It also addresses the historical development of the modern business corporation and its changing role in society currently as an agent and vehicle of globalization. Classes feature lectures and discussions, student presentations, and case-based applications of the covered material. Prerequisites: BSAD 261. Three credits

**362 Career Dynamics**

Introduces students to key concepts, theories, and principles of career management from the perspective of the individual and the organization. The course focuses on topics ranging from occupational choice, individual career patterns, and organizational career systems to career performance. The course provides students with conceptual knowledge which will be helpful not only for developing their own career strategies and tactics but also for making informed decisions as organizational leaders. Classes feature lectures, discussions, and workshops. Prerequisites: BSAD 261, 361. Three credits.

**363 Human Resource Management**

A review of the many functions of human resource management, including but not limited to employee selection, development, appraisal and compensation, in addition to the broader social and legal context which influences the HR practice. This course makes a case for the strategic role that proper management of human resources plays in successful organizations while providing an important critique of the practice. Prerequisite: BSAD 261. Three credits.

**367 Current Challenges: Women in Management**

Reviews the recent growth of women managers in today's organizational world. Students examine gender roles in organizations and identify some of the barriers women experience in reaching the top. The course explores the systemic discrimination facing women, and presents potential management models for women and men. Cross-listed as WMGS 367. Prerequisite: BSAD 261. Three credits.

**381 Operations Management**

This course takes an integrated, systems-oriented approach to the operations function of manufacturing and service organizations. Students will explore operations decision-making using the underlying disciplines: behavioural, quantitative, economic, and systems. Prerequisite: third- or fourth-year status. Three credits.

**391 Foundations of Management Research**

An introduction to effective research in business and management. Topics include the scientific method in management research; approaches to issues in management; developing conceptual models and hypotheses; defining a thesis; conducting a literature search; evaluating research; and understanding the limitations of management research. Required for all honours students; open to other third- and fourth-year BBA students with an average of at least 70 as a BSAD elective. Three credits.

**415 Electronic Business**

Cross-listed as INFO 446; see INFO 446. Three credits.

**416 Project Management and Practice**

This course covers the factors necessary for successful management of system development or enhancement projects. Technical and behavioural aspects of project management are discussed. Cross-listed as INFO 416. Three credits.

**418 Topics in Information Systems**

This course will explore in detail a current topic or issue in information systems. Content will vary from year to year. Restricted to BIS and BBA/IS major students. Prerequisite: INFO 102. Cross-listed as INFO 418. Three credits.

**419 Management of Information Technology**

Cross-listed as INFO 482; see INFO 482. Three credits.

**424 Financial Accounting Theory**

A study of the development of accounting theory and the relationship of theory to practice. Major contributions to accounting theory will be examined. Prerequisite: BSAD 323. Three credits.

**425 Auditing**

An examination of audit strategy, procedures, and risk, as well as reporting standards and ethical and legal considerations in the current business environment. Emphasis is placed upon the theory of auditing in the context of the attest function. Prerequisite: BSAD 323. Three credits.

**426 Advanced Accounting I**

Develops an understanding of the financial reporting process by examining theory and practice in the management of financial disclosure. The course also deals with the accounting treatment of inter-corporate investments and consolidations. Prerequisite: BSAD 324. Three credits.

**447 Selected Topics**

The topic for 2012-2013 is Financial Economics. This course introduces students to the theory and practice of finance as seen from the economist's point of view. It examines the following topics: The theory of decision-making under uncertainty; the basic portfolio models, such as CAPM and APT; equilibrium aspects of financial markets, such as the role of arbitrage in the pricing of financial assets; the pricing of derivative securities, such as options; and an introduction to financial econometrics,

with an emphasis on volatility modeling. Prerequisites: BSAD 332, ECON 201, 202. Three credits.

**427 Management Control Systems**

Focuses on managing organizational performance to optimize the implementation of organizational strategies. Within an established framework, this course reviews the process through which an organization manages performance, and specific techniques that are used to control the implementation of strategy. Concepts are reinforced via case analysis. Prerequisite: BSAD 321. Three credits.

**428 Advanced Accounting II**

Examines such accounting topics as the financial reporting of international activities, non-business organizations, and estates and trusts. The reporting requirements for interim and segmented financial statements and bankruptcy and receivership are examined. Prerequisite: BSAD 426. Three credits.

**431 Services Marketing**

This course augments other marketing electives by focussing on (intangible) services. Services now account for more than 78% of Canada's GDP and most graduates will work in a service firm. Unlike products, most services are intangible, time constrained, co-produced by the provider and the customer, perishable and highly variable. These characteristics pose unique challenges to services as diverse as insurance, investment advice, banking, entertainment, tourism and hospitality, healthcare, consulting, transportation and education. Course methods are highly experiential and include presentations, exercises, cases and journals. Prerequisite is BSAD 231. Three credits.

**432 Retailing**

Focuses on improving the management of retail institutions in Canada using a marketing orientation. Areas of retail strategy include the retail environment, store location, product mix control, channel effort, store layout and financial management. Exercises, cases and projects will be used to develop analytic proficiency and emphasize evidence based solutions. Prerequisite: BSAD 231. Three credits.

**434 Marketing Communications**

Focuses on the design and implementation of integrated marketing communication strategies. Advertising and sales promotion activities are emphasized. Topics include defining the roles and objectives of marketing communications; selecting media; creating advertisements; and evaluating results. Prerequisite: BSAD 231. Three credits.

**435 Sales Force Management**

An introductory course in sales force management. Topics include organizing the sales effort; establishing territories and quotas; hiring, training, compensating and supervising sales people; analyzing and evaluating the sales effort; and the ethical responsibilities associated with a sales career. Prerequisite: BSAD 231. Three credits.

**443 Investment Management**

Examines marketable securities as an investment medium, and the analytical techniques that may be employed in selecting a security and meeting an individual investor's requirements. Prerequisite: BSAD 241. Three credits.

**444 Advanced Financial Management**

Considers a broad range of financial management issues using the theory and procedural skills developed in earlier courses and applied to comprehensive case situations. Topics include working capital management, capital structure, dividend policy, cost of capital, capital budgeting, and mergers and acquisitions. Prerequisite: BSAD 342. Three credits.

**445 Derivatives**

This comprehensive course in derivative markets and instruments focuses on analyzing standard derivative instruments such as forwards, futures, swaps, and options. By the end of the course, students will have good knowledge of how these products work, how they are used, how they are priced, and how financial institutions hedge their risks when they trade the products. Additionally, they will better understand the social and economic consequences of derivatives, and their implications for the larger investment community. Prerequisite: BSAD 443. Three credits.

**446 Selected Topics in Finance**

The topic for 2012-2013 is Real Options. Real Options are a marriage of finance and strategy. This course is concerned with the analysis of Real Options strategies in pursuit of more robust and probable expectations of project value. The course will teach students how to model, evaluate, and make recommendations on investment opportunities that exist in an uncertain environment, taking into consideration the possible actions and reactions of competitors. The course will cover scenario analysis, game theory, contingency planning, and proactive and reactive strategies management may pursue to maximize value to the firm. Prerequisite: BSAD 241. Three credits.

**448 International Financial Management**

This course focuses on financial management of the firm in the international marketplace. It provides grounding in the academic literature on international financial management, and develops professional decision-making skills. Students will read extensively and class discussions will include current issues and business cases. Prerequisites: BSAD 241, 342 or permission of the instructor. Three credits.

**454 Taxation**

Examines the Canadian tax system with emphasis on the Income Tax Act and its effect on business decisions. The course examines the determination of income for corporations and individuals, the taxation of corporate distributions, and the computation of tax. Prerequisite: BSAD 241. Three credits.

**456 Small Business Management**

This course examines the unique aspects of managing a small firm, its growth and its harvest. The course incorporates current theory and practice in dealing with a variety of general management topics, and students will gain practical decision-making experience in small business management issues. Prerequisites: BSAD 221, 223, 231, 261. Three credits.

**457 Social Entrepreneurship**

The context, models, trends, opportunities, and challenges associated with social entrepreneurship focus on areas of public concern such as economic development, education, community welfare, and healthcare. These issues are examined using case studies, group projects, and experiential learning. Emphasis is on how entrepreneurship is combined with the tools of business to create effective responses to social needs and innovative solutions to social problems. Cross-listed as DEVS 457. Prerequisite: third or fourth year status. Three credits.

**458 Research Project: Enterprise Development**

Students in the enterprise development major are required to complete a field-based project. This project may be completed for or with a community-based economic development organization, a small business or as the implementation of a new venture business plan. Approved projects may be completed either during the summer after third year or during the fourth year. Restricted to enterprise development majors; equivalent to BSAD 492 for other majors. Three credits.

**461 Leadership**

A theoretical and a practical exploration of leadership. Using a range of materials and individual examples, students will develop an understanding of the leadership role in organizations and the behaviours of exemplary leaders. Experiential learning techniques will allow students to perform, observe and reflect upon leadership to gain a better sense of themselves as a leader. Prerequisite: BSAD 261. Three credits.

**462 Industrial Relations**

Examines the history, current structure, and future of industrial relations in Canada, including trade unions and management, collective bargaining, and contract administration. Students will benefit from guest lectures and from engaging in negotiation-simulation exercises. Prerequisite: BSAD 261. Three credits.

**464 Negotiation and Conflict Management**

Managers are constantly negotiating and dealing with conflict. This course will equip students with the tools to negotiate their personal and corporate objectives and to deal with and resolve conflicts in organizations. The key elements of negotiation and conflict-resolution will be learned through theoretical discussion, skill-building workshops, and negotiation and conflict resolution exercises. Prerequisite: BSAD 361. Three credits.

**466 Lessons in Leadership from Legends & Literature**

This course extends students' knowledge of leadership theory to analyze case studies in leadership. Cases are drawn largely from film, both fiction and non-fiction, and lessons are applied to a modern business context. Prerequisite: BSAD 461 recommended. Three credits.

**467 Leading Change: The Challenge of Creating and Sustaining Organizational Change**

A major challenge facing all organizations is how to adapt to change. Pressures for change come from many areas, including social, technological, demographic, environmental, and political. This course explores the challenge of leading and sustaining organizational change, including starting a change process, the challenges leaders face when initiating change, and sustaining change. Prerequisite: BSAD 361. Three credits.

**471 Strategic Management**

This is the capstone course in business and is required of all students. The course takes a strategic approach to integrating concepts from management, marketing, accounting, finance and information systems. From the perspective of senior executives, students study vision and mission statements, analyze internal

and external environments, and the formulation, implementation and monitoring of business and corporate strategy in order to achieve sustainable competitive advantage. Course methods may include lectures, guest speakers, cases, presentations, simulations and traditional examinations. Prerequisite: BSAD 241; fourth year status. Three credits.

**472 Business, Sustainability, and Profitability**

For years, business has been portrayed as responsible for much of the social inequity and environmental degradation around the world. This course explores ways in which business can be a positive force in global sustainability. From this perspective, business is the dominant organizing force with the capital, global reach, flexibility, dynamism, and self-interest to make economic, social, and environmental sustainability a reality. Prerequisite: BSAD 361. Three credits.

**492 Consulting Project for Majors**

Exposes students to applied research in business through completion of a consulting assignment. Required for all majors in finance, information systems, leadership in management, and marketing. Open to fourth-year honours students as a BSAD elective. Prerequisite: fourth-year status. Three credits.

**494 Honours Thesis**

Under the supervision of a faculty member, honours students will prepare and submit a thesis. Normally students develop and present draft proposals as part of BSAD 391, then complete the proposal, conduct the fieldwork and present/defend their theses as part of BSAD 494. Prerequisite: BSAD 391. Three credits over the full year.

**9.7 CANADIAN STUDIES**

J. Bickerton, Ph.D., Co-ordinator

Students in BA programs may count as a pair or minor (subject B) courses that have as their common characteristic substantial Canadian content. The minor must be made up of at least two subjects and not more than three, and may not include any course at the 100 level. Subjects (but not courses) drawn upon to make up such a concentration may also be used to make up other subject requirements for the BA degree. Courses acceptable for such a pair or minor are listed below.

Anthropology		Credits
ANTH 310	Anthropology of Tourism	3
ANTH 331	Anthropology and Indigenous Peoples	3
ANTH 332	Mi'kmaq Studies	3
ANTH 341	North American Archaeology	3
ANTH 435	Advanced Indigenous Issues	3
Art		
ART 300/HIST 300	A Cultural and Intellectual History of Canada	6
ART 343	Issues in Canadian Art through World War II	3
ART 344	Issues in Contemporary Canadian Art	3
Development Studies		
DEVS 202	International Development: Canada	3
Economics		Credits
ECON 232	History of the Canadian Economy up to 1867	3
ECON 241	Canadian Economic Prospects and Challenges	3
ECON 332	History of the Canadian Economy after 1867	3
ECON 341	Regional Economics	3
ECON 342	Maritime Economy	3
ECON 391	Public Finance I: Expenditures	3
ECON 392	Public Finance II: Taxation	3
English		Credits
ENGL 263	Canadian Literature I: 18th and 19th Centuries	3
ENGL 264	Canadian Literature II: The 20th Century and After	3
ENGL 298	Selected Topics: Indigenous Canadian Literature	3
ENGL 347	African-Canadian Literature	3
ENGL 365	Canadian Prose Genres	3
ENGL 366	Special Topics in Canadian Literature	3
ENGL 367	The Canadian Novel	6
ENGL 368	Canadian Poetry	6
French		Credits
FREN 361	Acadian Literature	3
FREN 362	Acadian Language and Culture	3
FREN 363	Québécois Literature I	3
FREN 364	Québécois Literature II	3
History		Credits
HIST 202	Western Canada: The Prairies	3



HIST 204	Western Canada: British Columbia	3
HIST 207	History of Quebec	6
HIST 209	The Maritime Provinces, 1500-1950	6
HIST 213	A History of Canada: Pre-Confederation	3
HIST 215	A History of Canada: Post-Confederation	3
HIST 300	A Cultural and Intellectual History of Canada	6
HIST 303	The Working Class in Early Canadian Society	3
HIST 304	The Working Class in Modern Canada	3
HIST 310	Canadian Immigration and Ethnic History	6
HIST 314	Canada and the Cold War Era	3
HIST 317/WMGS 317	Canadian Women's Gender History: from Colony to Nation	3
HIST 318/WMGS 318	Canadian Women's Gender History: Modernity	3
HIST 341	A History of Canadian-American Relations	3
HIST 355	The Sixties: A Social History	3
HIST 398/WMGS 398	Themes in the History of Sexuality	3
HIST 401	Seminar in Canadian History	3
Human Kinetics		Credits
HKIN 332/WMGS 332	Gender in Sport and Physical Activity	3
HKIN 352	Historical Foundations of Sport & Physical Activity in Canada	3
Political Science		Credits
PSCI 221	Canadian Politics I	3
PSCI 222	Canadian Politics II	3
PSCI 240	Business and Government	6
PSCI 321	Federalism	3
PSCI 322	Atlantic Canada	3
PSCI 323	Parties and Elections	3
PSCI 324	Provincial Politics	3
PSCI 341	Canadian Public Administration	3
PSCI 342	Canadian Public Policy	3
PSCI 343	Law and Politics	3
PSCI 344	Citizenship and Identity	3
PSCI 345/WMGS 345	Women and Politics	3
PSCI 346	Resource Management	3
PSCI 351	Canadian Foreign Policy	3
PSCI 421	Canadian Politics I (Seminar)	3
PSCI 422	Canadian Politics II (Seminar)	3
Sociology		Credits
SOCI 210/WMGS 210	Sociology of Marriage and the Family	6
SOCI 215/WMGS 215	Race, Class, Gender, and Sex	6
SOCI 230	Sociology of Education	6
SOCI 290	Social Inequality	6
SOCI 312	Social Movements	3
SOCI 321	Sociology of Atlantic Canada	3
SOCI 322	The Antagonist Movement as Change & Development	3
SOCI 330	First Peoples	6
SOCI 350	Criminal Justice and Corrections	6
SOCI 352	Policing and Society	3
SOCI 360	Social Policy	6
SOCI 366	Coastal Communities	3
SOCI 424/WMGS 424	Women and Work	3

Other courses, not listed here, may be considered designated courses with permission of the Canadian studies co-ordinator.

## 9.8 CATHOLIC STUDIES

W. Sweet, Ph.D., D.Ph., Co-ordinator

### Advising Faculty

S. Baldner, Ph.D.  
S. Gregory, Ph.D.  
L. Groarke, Ph.D.  
R. Kennedy, Ph.D.  
J. Khoury, Ph.D.  
J. G. Lalonde, Ph.D.  
A. Thompson, Ph.D.

### Department

Philosophy  
Art  
Philosophy  
Religious Studies  
English  
History  
Human Kinetics

*Catholicism stands essentially for a universal order in which every truth of the natural or social order can find a place.*

- Christopher Dawson

Catholic studies is an interdisciplinary program in the theology, history, artistic culture, literature, philosophy, and institutions associated with Roman Catholicism.

Students who major in Catholic studies must take 24 credits from the following core courses in Catholic studies; and 12 credits from the electives listed below.

### 100 Introduction to Catholic Traditions and Culture

This course examines major themes, institutions, and practices in Catholicism, providing an interdisciplinary overview of Catholic traditions and culture. Topics include: Catholic perspectives on reading the Bible; the person and work of Jesus of Nazareth; institutions and change in the Catholic Church, including the history of the papacy; Catholicism and modern science; and Catholic teaching on ethics and social justice. Each unit will include an historical overview, illustrating themes through art, music, film, and other media. Credit will be granted for only one of CATH 100 and CATH 200. Six credits.

### 241 Sin and Salvation in the Catholic Tradition

This course will study the themes of sin and salvation as they appear in the Bible, in literature, and in two great theological controversies, the Pelagian controversy of the 5th century, and the Protestant Reformation of the 16th century. Three credits.

### 245 Christ in the Catholic Tradition

This course will examine the person, nature, and work of Christ as these are understood in the Catholic tradition. Topics and texts will include: the Bible, theological works from different historical periods, literary presentations of Christ, and artistic depictions of Christ. Three credits.

### 251 The End of the World in the Catholic Tradition

The purpose of this course is to give students an interdisciplinary understanding of eschatology, which is the study of theological and religious views about 'last things' (death, heaven, purgatory, hell). This topic will be presented from three points of view: historical sources, including scripture; doctrinal issues; artistic depictions. Three credits.

### 298 Selected Topics

Three credits.

### 301 Classic Texts in Roman Catholicism I

An interdisciplinary seminar on the works of important thinkers in the Catholic tradition from the early and mediaeval Church, such as St. Augustine, St. Anselm, St. Thomas Aquinas, and Hildegard of Bingen. The seminar will normally focus on one thinker. Prerequisites: CATH 100 or 200 or permission of instructor. Credit will be granted for only one of CATH 301 and CATH 300. Three credits.

### 302 Classic Texts in Roman Catholicism II

An interdisciplinary seminar on the works of important thinkers in the Catholic tradition from the early modern and contemporary Church, such as St. Theresa of Avila, St. John of the Cross, John Henry Newman, Jacques Maritain, and Thomas Merton. The seminar will normally focus on one thinker. Prerequisites: CATH 100 or 200 or permission of instructor. Credit will be granted for only one of CATH 302 and CATH 300. Three credits.

### 321 Classic Debates in Christianity & Science

This course reviews the major historical developments in Christian teaching on science. The course has four parts: understanding the relationship between secular and Scriptural knowledge (or reason and faith) in the Early Church; creation and the philosophy of nature in the 13th century; Galileo and the Inquisition; and 19th-century debates over evolution. Credit will be granted for only one of CATH 321 and CATH 320. Three credits.

### 322 Contemporary Issues in Christianity & Science

This course examines the contemporary interaction between the sciences and Christianity. Topics may include: recent Christian responses to methodologies in the sciences; evolutionary theory and the interpretation of creation narratives in the book of Genesis; the meaning of human embodiment and its relevance to understanding sexuality and issues in bioethics; neuroscience and the phenomenon of religious experience; the impact of contemporary cosmology, technology, and biology on Christian theology. Credit will be granted for only one of CATH 322 and CATH 320. Three credits.

### 331 Catholicism and the Arts I

This course will trace Catholic themes and ideas about Catholicism in literary, musical, architectural, or artistic works from the beginnings of Christianity to the early Renaissance. Cross-listed as ART 331. Credit will be granted for only one of CATH 331 and CATH 330. Three credits.



**332 Catholicism and the Arts II**

This course will trace Catholic themes and ideas about Catholicism in literary, musical, architectural, or artistic works from the Renaissance until the contemporary era. Cross-listed as ART 332. Credit will be granted for only one of CATH 332 and CATH 330. Three credits.

**341 Catholic Social Thought**

Rooted in scripture, philosophy, and theology, Catholic social thought proposes principles of justice that emphasize the dignity of the person, the value of economic and political institutions, and the importance of a common good. This course explores these principles and their application to contemporary social, political, and economic issues with reference to official documents of the Catholic Church. Three credits.

**344 Education in the Catholic Tradition: History, Theories, and Practices**

This course provides an historical overview of models of education in the Catholic tradition, of debates on the purposes and structure of education, and of texts that have influenced Catholic education and its applications. Three credits.

**Electives**

The following courses may be chosen as electives to complete the program in Catholic studies. Normally a student will take no more than 9 credits from any one of these subject areas. Should a student take CATH 330, only 6 further credits may be taken from the art electives.

Art		Credits
ART 251	Medieval Art and Architecture	3
ART 252	Baroque Art and Architecture	3
ART 371	Italian Renaissance Art I	3
ART 372	The Northern Renaissance	3
ART 373	Italian Renaissance Art II	3
ART 435	Seminar in Italian Renaissance Art	3
Celtic Studies		Credits
CELT 230	Celtic Christianity	3
English		Credits
ENGL 207	World Masterpieces II: Medieval and Renaissance	3
ENGL 312	17th-Century Literature	6
ENGL 390	Chaucer	6
ENGL 392	Medieval Literature	6
French		Credits
FREN 318	Classical French Theatre	3
FREN 319	Literary Works of the grand siècle (Les Moralistes)	3
FREN 410	Medieval French Literature	3
FREN 415	Renaissance French Literature	3
History		Credits
HIST 335	Thought and Art in the Middle Ages: Monks, Scholastics, Scientists and Artists	6
Music		Credits
MUSI 315	History of Music I	3
Philosophy		Credits
PHIL 240	Philosophy of Religion	6
PHIL 361	Early Medieval Philosophy	3
PHIL 362	Philosophy in the High Middle Ages	3
Religious Studies		Credits
RELS 253	Introduction to the Hebrew Bible	3
RELS 255	Introduction to the New Testament	3
RELS 265	Introduction to the Gospels	3
RELS 275	Introduction to Paul's Letters	3
RELS 323	Mary and the Identity of Women	3
RELS 325	Early Christian Women	3
RELS 363	The First Christians	3
RELS 365	Spirituality in Medieval Christianity	3
RELS 383	Reformation Christianity	3
RELS 385	Modern Christianity	3
RELS 440	Jesus	6
Sociology		Credits
SOCI 322	The Antigonish Movement as Change & Development	3

**9.9 CELTIC STUDIES**

M. Linkletter, Ph.D.

M. Newton, Ph.D.

Professor Emerita, Sr. M. MacDonell, Ph.D.

Celtic studies encompasses a wide range of history, geography, and culture: from the ancient Celts of continental Europe to the modern Celtic peoples of Scotland, Ireland, Wales, Cornwall, Brittany, and the Isle of Man. The program focuses on the Gaelic language, history, and culture of Scotland, Nova Scotia, and Ireland. The department offers four years of Scottish Gaelic and two years of Irish Gaelic. The Celtic literature, history and folklore courses are taught in English and have no language requirement. However, CELT 420, an honours seminar, is taught in Gaelic.

Interest in Celtic studies has grown in recent years. Some graduates have pursued advanced degrees in Celtic or related fields. Others have found employment in the region involving Gaelic.

Students may count courses in Celtic history (CELT 131, 132, 331, 332) as courses in the Department of History. Students may count SOCI 373 Irish Society as a credit in Celtic studies.

Suggested streams of specialization in Celtic Studies:

- Scottish Gaelic Studies: CELT 100, 200, 253, 300, 331, 332, 341, 342, 352, 420
- Irish Studies: CELT 110, 210, 351, 431, 432; SOCI 373
- Gaelic Studies (Ireland/Scotland): CELT 100, 110, 200, 210, 221, 253, 341, 342, 351, 352, 431, 432
- Celtic Studies (comparative/medieval): CELT 100, 110, 115, 131, 132, 200, 210, 221, 220, 230, 221, 222, 331, 341, 431

**Major Program**

See chapter 4.

**Advanced Major**

Advanced majors must complete 36 credits in Celtic studies, including: CELT 100 or 110; 131 and 132, or 221 and 222; 200 or 210; 331 and 332, or 351 and 352; six credits CELT at the 400 level; six additional credits CELT, and a senior paper.

**Honours Program**

Honours candidates are required to complete: CELT 100; 131 and 132, or 221 and 222; 200; 110 or 115 or 300; 420, or 431 and 432; 490 (thesis); 27 credits CELT.

**Master of Arts**

The Master of Arts degree may be offered in Celtic studies. See chapter 8.

**100 Scottish Gaelic**

Designed for students who have no knowledge of the language, this course provides instruction in basic Gaelic grammar, phonetics, and sentence structure. Texts and recordings are used for practice in reading and conversation. May not be taken concurrent with CELT 110. Six credits.

**110 Irish Gaelic**

An introduction to the Irish language as it is spoken in the Gaeltacht or Irish-speaking districts. Students will be introduced to the basics of spoken and written Irish. May not be taken concurrent with CELT 100. Six credits.

**115 Modern Welsh**

This course will provide an introduction to the language. Students will learn to read, write and speak elementary Welsh. The class will also learn a number of Welsh folksongs and proverbs. Six credits.

**131 Celtic Civilization I**

This course provides an introduction to the Celtic peoples from the Bronze Age to interactions with the Greeks and Romans. It discusses the types of evidence available for the understanding of Celtic cultures relating to archaeology (including art and architecture, numismatics (coins), weaponry, trade, votive offerings), history (Greek and Roman sources, geography), linguistics (inscriptions, place-names, Celtic language family-tree), and customs (burial, dining, drinking, dress, warfare, religion). Three credits.

**132 Celtic Civilization II**

This course covers the Celtic languages and cultures of Scotland, Ireland, Wales, Brittany, the Isle of Man, and Cornwall from the early historic to the early modern period. Topics will include music, folklore, literature, present-day revival movements, and the meaning of Celtic culture in North America today. Prerequisite: CELT 131. Three credits.

**161 Selected Topics**

Six credits.

**200 Second-Year Scottish Gaelic**

Includes selected readings of riddles, proverbs, poetry, and folktales as well as conversation and composition. Six credits.

**210 Second-Year Irish Gaelic**

A continuation of CELT 110, this course introduces advanced grammatical concepts and includes conversation and composition practice. Readings from modern Irish literature and folklore will be used to illustrate differences in the three major dialects. The course will include an introduction to Irish script and the manuscript tradition. Six credits.

**220 Celtic Paganism**

This course examines the religious practices and beliefs of the ancient Celtic peoples that we can glean from archaeology, reports of Greek and Roman commentators, place-name evidence, and the mythology in medieval Irish and Welsh narrative tradition. Other topics include syncretism, the adaptation of pagan festivals into Christian holidays, the persistence of elements of paganism into the Christian era, witchcraft in Scotland and Ireland in the context of the European phenomenon and neo-paganism today. Cross-listed as RELS 219. Three credits.

**221 Celtic Literature: Early Ireland**

CELT 221 and 222 are designed to acquaint students with the wide scope of early Celtic literature, one of the oldest vernacular literary traditions in Europe. CELT 221 in particular is a survey of the prose and poetry of medieval Ireland in translation. Types of tales to be read include stories of heroes, kings, saints, place-names, and gods and goddesses of the Gaels. Samples of poetry to be read include early monastic/hermit poetry as well as the Classical Gaelic praise poetry of the "Bardic Period." Credit will be granted for only one of CELT 221 and CELT 120. Three credits.

**222 Celtic Literature: Early Wales**

This course is a survey of medieval Welsh prose and poetry. Tales to be read will include those in the Mabinogi as well as some of the earliest tales extant concerning King Arthur. Various genres of poetry will be read including samples of early heroic verse, Welsh Bardic Praise Poetry, and satirical verse. An important aspect of this course will be a comparison of early Irish literature with early Welsh literature as discussed in CELT 221. Prerequisite: CELT 221 or permission of the instructor. Credit will be granted for only one of CELT 222 and CELT 120. Three credits.

**230 Celtic Christianity**

This course is an exploration of the development of Christianity amongst the Celtic peoples. A major facet will be the medieval hagiographic tradition and saints' cults from the fourth to the twelfth centuries. Other topics include monasticism, peregrini, the Hiberno-Scottish mission to the continent, conflict with Roman Catholicism, material culture, the modern use of the term "Celtic Christianity," and the various types of Christianity in the Celtic countries. Cross-listed as RELS 229. Three credits. Not offered 2012-2013.

**253 Gaelic Music and Dance**

This course examines the development of musical and dance traditions of Gaelic Scotland and Nova Scotia including Gaelic song, bagpipe and fiddle music, and various forms of solo and social dancing. The course emphasizes that music and dance cannot be studied in isolation but must be placed in the larger cultural context and in response to social and technological change. The concepts of "tradition" and "authenticity" guide our examination of the past and present. Three credits.

**300 Third-Year Scottish Gaelic**

An advanced-level course with emphasis on attaining fluency. The course will concentrate on the Gaelic of Nova Scotia with readings from local publications. The class will also work on transcribing recordings of local speakers. Prerequisites: CELT 100, 200. Six credits. Not offered 2012-2013.

**331 The Scottish Gael in Scotland**

This course is a survey of the history of Scotland from the earliest times to the present with special emphasis on the role of the Gael. Topics that will be covered include the Dalriadic Scots and the consolidation of the kingdom of Alba, the early Gaelic church, the Kingdom and Lordship of the Isles, the rise of the clans, the decline of Gaelic, the Scottish Wars of Independence, the Reformation, union with England, the Highland Clearances, and the fortunes of the Gaels in more recent times. Credit will not be granted for both CELT 331 and CELT 333. Three credits.

**332 The Scottish Gael in North America**

This course will follow the fortunes of the Gaels of the Highland diaspora. Emphasis will be placed on studying the Highland settlements of North America with an in-depth look at the history of the Gaels in the Maritime Provinces, particularly Nova Scotia, from the earliest settlements to more recent times. Pre-requisite: CELT 331. Credit will not be granted for both CELT 332 and 333. Three credits.

**341 Scottish Gaelic Poetry I**

A survey of Scottish Gaelic poetry from the 6th to the 16th century. It familiarizes students with some of the masterpieces of Gaelic literature, provides a grounding in the historical and cultural aspects of literary production in the Scottish Gaelic world, and introduces aspects of metrical and literary analysis. Taught through the medium of English. Credit will not be granted for both CELT 341 and 340. Three credits. Not offered 2012-2013.

**342 Scottish Gaelic Poetry II**

A survey of Scottish Gaelic poetry from the 17th and 18th centuries. It familiarizes students with some of the masterpieces of Gaelic literature, provides a grounding in the historical and cultural aspects of literary production in the Scottish Gaelic world, and introduces aspects of metrical and literary analysis. Taught through the medium of English. Prerequisite: CELT 341. Credit will not be granted for both CELT 342 and 340. Three credits. Not offered 2012-2013.

**351 Folklore of Gaelic Ireland**

Studies in the oral traditions of Gaelic Ireland including the folktale, the storyteller, folklore collectors, folksong tradition, fairies and calendar customs. Credit will not be granted for both CELT 351 and 350. Three credits.

**352 Folklore of Gaelic Scotland and Nova Scotia**

An introduction to the Gaelic folklore of Scotland and Nova Scotia, with an emphasis on wonder tales, clan sagas, Fenian tales, calendar customs, rites of passage, the supernatural and the history of folkloristics. Credit will not be granted for both CELT 352 and 350. Three credits.

**361 Selected Topics I**

The topic for 2012-2013 is Early Irish History and Society. A course on Irish history in the medieval period with emphasis on the native sources, such as the ancient law tracts, which provide insight on the structure of early Irish society. The historical kings, the sacral nature of kingship, and the pseudo-historical tales of the kings will also form a significant part of the course. Three credits.

**362 Selected Topics II**

The topic for 2012-2013 is Scottish Gaelic Traditions of Nova Scotia. Through the lens of ethnology, "the study of everyday life," we will examine the Gaelic culture of Nova Scotia in its various facets from storytelling and musical traditions to kinship and vernacular folkways with specific reference to the *cèilidh*. Three credits.

**420 Seminar on Scottish Gaelic Immigrant Literature**

A study of prose and poetry written in North America, emphasizing Nova Scotian examples, and including material from such current and historical publications as *MacTalla*, *Mosgladh*, *The Casket*, *Clàrsach na Coille*. Taught through the medium of Scottish Gaelic. Prerequisite: three years of Gaelic. Six credits. Not offered 2012-2013.

**431 Irish Gaelic Poetry I**

Explores the early stages of poetry in the Irish language: 500-1650 AD. The class will cover Filíocht na Sgol, metrics, religious poetry and eulogy. The course work will be in English but some knowledge of Irish or Scottish Gaelic is recommended. Prerequisite: Three credits Celtic studies. Credit will not be granted for both CELT 431 and 430. Three credits.

**432 Irish Gaelic Poetry II**

Explores Irish language poetry from 1650 AD to the present. The course work will be in English but some knowledge of Irish or Scottish Gaelic is recommended. Prerequisite: Three credits Celtic studies. Credit will not be granted for both CELT 432 and 430. Three credits.

**490 Honours Thesis**

Three credits.

**499 Directed Study**

A directed study course in advanced topics in Celtic studies. See section 3.5. Three or six credits.

**GRADUATE COURSES**

Master of Arts in Celtic Studies

Consult the department chair for a list of available courses.

## 9.10 CHEMISTRY

M.A.S. Aquino, Ph.D.  
 J.F. Beck, Ph.D.  
 J.F. Cormier, Ph.D.  
 D. Klapstein, Ph.D.  
 D. Leaist, Ph.D.  
 D.G. Marangoni, Ph.D.  
 B.J. MacLean, Ph.D.  
 D. Morgan, Ph.D.  
 G. Orlova, Ph.D.  
 T. Smith-Palmer, Ph.D.

Professor Emeritus  
 E. J. McAlduff, Ph.D.

Senior Research Professor  
 B. Lynch, Ph.D.

Chemistry deals with matter at the molecular and atomic levels, seeking to explain structures, properties, and reactions, and to develop syntheses of new substances and new uses for known substances. The study of chemistry prepares graduates for advanced work in biology, engineering, geology, medicine, and other professions; for careers in industry, government agencies, science journalism, and teaching. StFX chemistry graduates can be found carrying out tasks as varied as art conservation, pharmaceutical research, and industrial product development.

Faculty members are actively engaged in pure and applied chemistry research, and opportunities exist for students to participate. Chemistry laboratories are equipped with a wide range of modern instrumentation, including spectroscopic equipment (atomic absorption, FT-infrared, multi-nuclear magnetic resonance, photoelectron, ultraviolet/visible); chromatographic analyzers; and instrumentation to carry out calorimetry, capillary electrophoresis, differential thermal analysis, polarography, and thermogravimetric analysis. Junior and senior courses involve frequent practical experience with this equipment.

The department offers honours, advanced major, and major programs at the B.Sc. level. Joint honours and advanced major programs are offered in conjunction with other science departments and business administration. General requirements are given in chapter 7.

### Department Requirements

Students must choose their courses in consultation with the department chair; programs and required courses are listed below. Students considering an advanced major or honours degree must complete the physics and second mathematics requirements (see below) by the end of their second year and take CHEM 220, 245, 265 in their second year. Potential honours students should also take CHEM 231, 232 in their second year. All chemistry students are required to take CHEM 325 in the first term of their junior year. For the recommended course sequence, see the department's website at [sites.stfx.ca/chemistry/](http://sites.stfx.ca/chemistry/)

Chemistry students are required to attend all department seminars during their third and fourth years. Credit for a course may not be earned if the lab component is not reasonably completed. Students who are concerned that their health may be adversely affected by a lab should consult the professor or department chair. As well, students who are subject to a medical condition, e.g., frequent fainting, seizures, that may endanger them or others in a lab setting, are required to inform the professor, in confidence, so that steps can be taken to minimize the danger to the student and others in the lab.

### Major

The course pattern for major in chemistry is:

CHEM	6 credits introductory (100 or 120); 3 credits analytical (265); 3 credits inorganic (245); 6 credits organic (220); 3 credits physical (231); 3 credits structural (325); 6 credits electives from 255, 321, 322, 331, 332, 341, 342, 355, 361, 362, 421, 422, 451, 452; 6 credits CHEM (or other science with permission of the department chair); for a total of 36 credits; plus 391, 491(department seminars); if 331 is taken then CHEM 232 is also required
Science B	12 credits in another science
Science C	6 credits in another science (science B or C must be MATH and include MATH 111, 112 or 121 and 122)
Science Elec	6 credits, PHYS 100 or 120 (120 preferred)
Arts X	12 credits in a humanities discipline
Arts Y	12 credits in a social science discipline
Arts Z	6 credits in a humanities or social science discipline. Subjects X, Y, and Z must be different.
Open Elec	30 credits

### Advanced Major

The course pattern for advanced major in chemistry is:

CHEM	6 credits introductory (100 or 120); 9 credits analytical (265, 361, 362); 6 credits inorganic (245, 341); 6 credits organic (220); 6 credits physical (231, 232); 3 credits biochemistry (255); 6 credits electives from 331, 332, 342, 421, 422; for a total of 42 credits; plus 391 and 491
Science B	12 credits in another science
Science C	6 credits of in another science (science B or C must be MATH and include MATH 111, 112 or 121 and 122)
Arts X	12 credits in a humanities or social science discipline
Arts Y	6 credits in a humanities or social science discipline
Approved Elec	18 credits approved electives; unless it is taken as a science B or C course, these electives must include CHEM 325 (structural), PHYS 120, and 6 credits must be from MATH 253, 254, 267, 367 (or 221). The balance must come from science, MATH, or CSCI courses or PHIL 210
Open Elec	24 credits

### Honours

The course pattern for honours in chemistry is:

CHEM	6 credits introductory (100 or 120); 9 credits analytical (265, 361, 362); 9 credits inorganic (245, 341, 342); 12 credits organic (220, 421, 422); 12 credits physical (231, 232, 331, 332); 3 credits biochemistry (255); 3 credits honours thesis (493); 6 credits electives (may be in another science with permission of the department chair); for a total of 60 credits; plus 391 and 491
Science B	12 credits in another science
Science C	6 credits in another science (science B or C must be MATH and include MATH 111, 112 or 121, 122)
Arts X	12 credits in a humanities or social science discipline
Arts Y	6 credits in a humanities or social science discipline
Approved Elec	18 credits approved electives; unless they are taken as science B or C courses, these electives must include CHEM 325(structural), PHYS 120, and 6 credits must be from MATH 253, 254, 267, 367 (or 221). The balance must come from science, MATH, or CSCI courses, or PHIL 210
Open Elec	6 credits arts or science electives

The honours and advanced major degrees are accredited by the Canadian Society for Chemistry.

### B.Sc. with Joint Honours and B.Sc. with Joint Advanced Major Degree

Joint honours and joint advanced major degree programs are available between chemistry and each of the following: biology, computer science, earth sciences, mathematics, physics, business administration (advanced major only). Please note that a joint program may take more than four years to complete, and, where applicable, the physics and second six credits of mathematics must be completed by the end of the sophomore year. Interested students should consult the chair of the chemistry department.

The joint honours degrees with biology, computer science, earth sciences and mathematics, and the joint advanced major with biology degree are accredited by the Canadian Society for Chemistry.

### Chemistry and Environmental Sciences

See section 9.20

### Master of Science

Research fields available include various aspects of analytical, environmental, inorganic, organic and physical chemistry. General requirements for graduate degrees are outlined in chapter 8. For specific requirements, consult the chemistry faculty or department chair.

Note: All 200-level and higher chemistry courses require CHEM 100 or 120 as a prerequisite.

### 100 General Chemistry

The fundamental principles of chemistry, including atomic and molecular structure, bonding, elementary thermo-chemistry and thermodynamics, oxidation-reduction reactions, kinetics and equilibrium reactions with particular reference to the behaviour of solutions, and an introduction to organic chemistry. This course emphasizes the application of chemical principles in areas of interest to students in the life sciences. Credit will be granted for only one of CHEM 100 and CHEM 120. Six credits and lab.



**120 Principles of Chemistry**

Reaction types and stoichiometry; applications of equilibria; principles of chemical thermodynamics; electrochemistry; atomic structure and models of chemical bonding; chemical kinetics; properties of gases, liquids, solids, and solutions; chemistry of the representative elements; introduction to organic chemistry. The applications are in areas of interest to students contemplating further studies in chemistry, engineering, mathematics, and the physical sciences. Credit will be granted for only one of CHEM 120 and CHEM 100. Six credits and lab.

**150 Fundamentals of General and Biological Chemistry**

Topics include basic concepts of general chemistry; introduction to organic nomenclature and the reactivities of functional groups; coverage of the fundamentals of biological chemistry. May not be used as a prerequisite for any other chemistry course. Open to students in nursing, human kinetics, and arts; may not be taken for credit by other science students. Restricted enrolment. Six credits and lab.

**220 Organic Chemistry**

Areas of study include: the properties and reactions of common classes of organic compounds; relationships between the structures of organic compounds and their physical and chemical properties; relationships between these properties and their technological uses and biological activities; reaction mechanisms; spectroscopic techniques with emphasis on nuclear magnetic resonance; and stereochemistry. Prerequisite: CHEM 100 or 120. Credit will be granted for only one of CHEM 220 and CHEM 221, 222, 225. Six credits and lab.

**222 Organic Chemistry II**

The second term of CHEM 220; topics include aromatics, reaction mechanisms and spectroscopy. Prerequisite: CHEM 221. Three credits and lab.

**225 Principles of Organic Chemistry**

An introduction to organic chemistry. The course focuses on the properties and reactions of common classes of organic compounds; the relationship between the structures of organic compounds and their physical and chemical properties. Some reaction mechanisms are also covered. Prerequisite: CHEM 100 or 120. Credit will be granted for only one of CHEM 225 and CHEM 220, 221, 222. Three credits and lab.

**231 Physical Chemistry I**

An introduction to physical chemistry, this course begins with the properties of ideal and real gases; covers the fundamental principles of thermodynamics (the three laws of thermodynamics) and their application to physical and chemical transformations, and chemical reaction equilibrium and concludes with the chemical potential and its application to phase equilibria. Prerequisites: CHEM 100 or 120; MATH 111 and 112 or 121 and 122. Three credits and lab.

**232 Physical Chemistry II**

Building upon the principles developed in CHEM 231, this course describes the thermodynamics of real systems. Students will learn the applications of chemical thermodynamics, including phase equilibria in multi-component systems, ideal and real solutions, and electrochemistry; the principles governing the dynamics of systems, including the kinetic molecular theory of gases, transport properties, and the rates of chemical reactions. Prerequisite: CHEM 231. Three credits and lab.

**245 Basic Inorganic Chemistry**

An introductory course on the properties and uses of the main group elements; the practical and commercial uses of various inorganic compounds and elements; and the factors contributing to the energies and types of chemical bonds. Prerequisite: CHEM 100 or 120. Three credits and lab.

**255 Introductory Biochemistry**

Areas of study include the chemistry of carbohydrates, fats, proteins, nucleic acids and some enzymes. Biochemical energetics, metabolism pathways and some commonly used experimental biochemical techniques are also examined. Prerequisite: CHEM 220 completed (recommended) or concurrent or CHEM 225 or 221. Three credits and lab.

**265 Basic Analytical and Environmental Chemistry**

An introductory course which includes a survey of aqueous titration methods, the evaluation of analytical data, and an introduction to electrochemistry, UV visible absorption spectroscopy and chromatography. Prerequisite: CHEM 100 or 120. Three credits and lab.

**321 Intermediate Organic Chemistry**

A continuation of CHEM 220, this course covers: addition and condensation polymerization; di-valent carbon compounds; pericyclic reactions; Woodward Hoffmann rules; mass spectrometry of organic compounds; organic chemistry of sulfur, phosphorous, and silicon compounds; mechanisms of nucleophilic substitutions. Prerequisite: CHEM 220. Three credits and lab.

**322 Heterocyclic Chemistry**

The course consists of a survey of aromatic compounds, focusing mainly on aromatic heterocycles containing one or two heteroatoms. Synthesis, structural aspects, and chemical properties of these compounds will be examined. Some more complex special cases, including purine and pyrimidine systems, will also be included. Prerequisites: CHEM 220. Three credits and lab.

**325 Organic Structural Methods**

Methods for deducing the structural features of organic compounds will be examined, with emphasis on the use of spectroscopic techniques. While the theory and instrumentation of each technique will be presented, the course will focus on the interpretation of spectral data to provide information on functional groups, bonding, and stereochemistry. Use will be made of spectral data correlation charts, compilations and databases. Required for, and restricted to, students in degree programs where chemistry is science A. Required in the first term of the junior year. Prerequisites: CHEM 220, PHYS 120. Three credits and tutorial.

**331 Introduction to Quantum Mechanics**

The course deals with quantum mechanics and its applications to the structure of atoms and molecules. The topics covered are: the postulates of quantum mechanics and their applications to simple physical systems, including particle in a box; the quantum mechanical model for vibration and rotation of molecules; the hydrogen atom and many electron systems; introduction to the Variation Principle and Hückel's molecular orbital method. Prerequisite: CHEM 232. Credit will be granted for only one of CHEM 331 and CHEM 330. Three credits and lab/tutorial.

**332 Introduction to Molecular Spectroscopy & Statistical Thermodynamics**

The course deals with the characterization of patterns of molecular quantized energy levels in rotational, vibrational and electronic spectra of both linear and non-linear molecules. Other Topics include photoelectron spectroscopy and magnetic resonances; introduction to statistical thermodynamics including partition functions and calculations of various thermodynamics properties, equilibrium constants and rate constants. Prerequisite: CHEM 331. Credit will be granted for only one of CHEM 332 and CHEM 330. Three credits and lab/tutorial.

**341 Inorganic and Theoretical Chemistry I**

An introduction to molecular symmetry and group theory and its applications to vibrational spectroscopy. Also included are basic coordination chemistry of the transition metals, including discussion of some common inorganic techniques, as well as electronic magnetic properties of transition metal compounds. Prerequisite: CHEM 245. Three credits and lab.

**342 Inorganic and Theoretical Chemistry II**

Electronic and magnetic properties of transition metal compounds. Introduction to organometallic chemistry, homogeneous and heterogeneous catalysis, inorganic reaction kinetics and mechanisms and bio-inorganic chemistry. Prerequisite: CHEM 341. Three credits and lab.

**355 Advanced Biochemistry**

The course focuses on the biosynthesis and metabolism of important biological molecules. Topics include lipids, amino acids, nucleotides, other carbohydrate metabolism pathways, and plant hormones. Prerequisites: CHEM 220, 255. Three credits and lab.

**361 Instrumental Analytical Spectroscopy**

The course deals with instrumental design and the analytical application of UV/visible, atomic, and infrared absorption spectrometers, Raman spectrometers, and fluorimeters. Topics include sample preparation, data analysis, method optimization and radiochemistry. Prerequisite: CHEM 265. Credit will be granted for only one of CHEM 361 and CHEM 360. Three credits and lab/tutorial.

**362 Instrumental Separations & Analysis**

This course deals with liquid and gas chromatography, capillary electrophoresis and electrochemistry. Included are sample preparation, data analysis, and method optimization. Prerequisite: CHEM 361. Credit will be granted for only one of CHEM 362 and CHEM 360. Three credits and lab.

**381 Industrial Chemistry**

May be used as a chemistry elective in the majors program and as an approved or open elective in other chemistry degree programs. Prerequisites: CHEM 221 or 225 or 220 (concurrent), 231, 232 (concurrent). Three credits and problem session.

**391 Chemistry Seminar I**

Introduction to seminar techniques using topics in modern chemistry, chemical information sources, basic molecular modeling and drawing. Required for, and restricted to, students in degree programs where chemistry is science A. Required in the first term of the junior year. No credit.



**411 Computational Chemistry**

A survey of modern computational chemistry methods, focusing mainly on Density functional theory. This course is addressed to honors students mainly. Areas of interest include accurate predictions of geometries, energetics, and reaction mechanisms as well as IR, Raman, UV and NMR spectra. Prerequisites: CHEM 332, 341 (completed or concurrent). Three credits and research project.

**421 Physical Organic Chemistry**

A survey of theoretical models and experimental tools to correlated data related to the structure, property, and reactivity of organic compounds. This course is intended for advanced majors and honours students in chemistry. Topics include qualitative models (resonance, hybridization, VSEPR, qualitative molecular orbital theory), quantitative computational chemistry methods (Hartree-Fock, semi-empirical and density functional theory methods), and spectroscopic methods (IR and NMR). Extensive use is made of theoretical and spectroscopic studies in assignments, computational and experimental labs. Prerequisites: CHEM 220, 232; PHYS 120. Credit will be granted for only one of CHEM 421 and CHEM 420. Three credits and lab.

**422 Advanced Organic Chemistry: Structure & Mechanism**

Building on the structures and energetics of organic reactive intermediates, this course will examine their role in reaction mechanisms. Several important classes of reactions will be analyzed in detail with respect to stereoelectronic effects. This course will also examine some of the methodology used to determine organic reaction mechanisms. The synergy between experimental and computational results will be discussed. Prerequisite: CHEM 220; CHEM 421 recommended. Credit will be granted for only one of CHEM 422 and CHEM 420. Three credits and lab.

**432 Electrochemical Methods**

This course investigates modern electrochemical techniques, including potential step and potential sweep methods, pulse voltammetry, controlled-current experiments, hydrodynamic voltammetry, and AC impedance. Particular attention will be given to processes that occur at the electrode-solution interface in the use of these techniques (mass transport, charge transport kinetics, current-time and current-potential profiles). Topics of current interest, such as fuel cells, chemically modified electrodes, corrosion, ion-selective electrodes, ultramicroelectrodes, and catalysis are included. Prerequisite: CHEM 232, 361, 362 (concurrent). Three credits and lab.

**434 Colloids and Interfaces**

Covers the properties of colloids, surfaces, interfaces, and polymers, and provides a qualitative description of the colloidal state, including colloids and their preparation and properties. Topics include experimental techniques used to determine colloidal properties; interfacial phenomena; the properties of surface active agents; the stabilization of colloidal systems. Prerequisites: CHEM 231, 232. Three credits and lab.

**435 Introduction to Polymer Chemistry**

This course introduces the basic principles and techniques employed in polymer chemistry. The following topics are emphasized: polymerization reactions and mechanisms; kinetics of polymerization; molecular mass methods; molecular sizes and shapes; polymer morphology; thermal, mechanical and rheological properties; and the thermodynamics of polymer solutions. Prerequisites: CHEM 220, 231, 232. Three credits. Not offered 2012-2013.

**442 Bio-Inorganic Chemistry**

A survey of metal ions in biological systems. Topics include ion pumps, oxygen carriers such as hemoglobin, metalloenzymes, nitrogen fixation, photosynthesis, biologically important trace metals, biomimetic systems and inorganic drugs. Discussion of various physical techniques used in bio-inorganic chemistry will also be included. Prerequisites: CHEM 341; CHEM 342 completed or concurrent. Three credits and lab. Not offered 2012-2013.

**443 Inorganic Materials**

Discussion of current areas of interest in inorganic materials research. Topics include superconductors, magnetic and electronic materials, nonlinear optics, polymeric co-ordination complexes, biogenic materials, intercalation compounds and liquid crystals. Prerequisites: CHEM 341; CHEM 342, completed or concurrent. Three credits and lab.

**451 Bio-Organic Chemistry I**

A discussion of isomerism and proisomerism is followed by an analysis of the reactions observed in the biosynthesis of amino acids. The dominant theme is a development of reaction mechanism possibilities in biological reactions. The course is intended for advanced majors and honours students in chemistry and in biology and is conducted at that level. Prerequisite: CHEM 220; CHEM 391 completed or concurrent; or permission of the instructor. Credit will be granted for only one of CHEM 451 and CHEM 450. Three credits.

**452 Bio-Organic Chemistry II**

The dominant theme, continuing from CHEM 451, is the development of reaction mechanism possibilities in biological reactions. An analysis of the reactions observed in the biosynthesis of terpenoids is followed by an examination of the mechanisms of action of a number of enzymes based on the protein structure, active site geometry and amino acid residues therein. Prerequisite: CHEM 451. Credit will be granted for only one of CHEM 451 and CHEM 450. Three credits.

**455 Medicinal Chemistry**

Topics include the drug development process, receptors, drug interaction, pharmacodynamics, pharmacokinetics and quantitative structure activity relationships. Chemical properties and mode of action of some of the following classes of drugs will be discussed: antibacterial drugs, drugs that work on the central nervous system, anticancer drugs, antiviral drugs, and analgesics. Case studies of current drugs going through approval processes will be included. Prerequisites: CHEM 220, 255. Three credits and lab.

**461 Topics in Instrumentation and Analysis**

This course typically starts with a brief introduction to electronics, signals, noise and data manipulation. This is followed by a survey of molecules with bioanalytic applications (enzymes, immunoglobulins, avidin/biotin, cyclodextrins), and a discussion of selected bioanalytic methods and their applications in sensors. A variety of instrumentation is used in the lab, with some attention paid to assembly of equipment, maintenance and repair. Prerequisite: CHEM 361, 362; may be taken concurrently. Three credits and lab. Not offered 2012-2013.

**462 Topics in Analysis and Spectroscopy**

Topics are typically selected from the following: NMR, fluorescence, FTIR, Raman, methods used for surface analysis, capillary electrophoresis, mass spectrometry, flow injection analysis and process analytical chemistry. Prerequisite: CHEM 361, 362; may be taken concurrently. Three credits and lab. Not offered 2012-2013.

**471 Topics in Chemistry**

This course examines current specialized chemistry topics not normally covered in other courses. See section 3.5. Three credits.

**491 Chemistry Seminar II**

Presentations by visitors, faculty, staff, senior honours and advanced major students on aspects of chemical science. Attendance is mandatory for students in all B.Sc. and M.Sc. degree programs where chemistry is science A. No formal credit is given for this course, but satisfactory completion of senior essays from majors students, senior essays and presentations from advanced majors students, and presentations based on their theses from honours students, are requirements for the B.Sc. degree.

**493 Honours Thesis**

Based upon a program of experimental research involving the use of modern chemical techniques to solve a problem in the areas of analytical, inorganic, organic, or physical chemistry. An acceptable thesis based on the research must be submitted before the conclusion of lectures for the academic year to satisfy the department requirements for the B.Sc. with Honours in chemistry. Three credits and lab.

**499 Directed Study**

Designed for students with high academic standing. Explores current topics in chemistry and new methods in chemical research. See section 3.5. Three credits.

**GRADUATE COURSES**

		Credits
511	Computational Chemistry	3
521	Advanced Organic Chemistry	3
530	Physical Chemistry III	3
532	Electrochemical Methods	3
534	Colloids and Interfaces	3
535	Polymers	3
536	Advanced Topics in Colloid Chemistry	3
540	Advanced Topics	6
542	Advanced Inorganic Chemistry	3
543	Inorganic Materials	3
561	Adv Analytical Chemistry I	3
561	Topics Instrument & Analysis	3
562	Advanced Analytical Chemistry II	3
591	Advanced Instrument I: Bioanalytic	3
593	Advanced Instrument II: Capillary	3
594	Instrumentation III Electronic	3
595	Nucleic Acids	6

598	Research	6
599	Thesis	18

Additional courses are available depending on the requirements and interests of the student and the availability of faculty.

## 9.11 CLASSICAL STUDIES

C. Byrne, Ph.D., Co-ordinator  
S. Baldner, Ph.D.  
E. Carty, M.Litt.

Students in arts, science, and applied programs may take any of the courses listed below as electives or use 12 credits for a pair in classical studies. Students in BA programs may also use classical studies as a minor.

### BA with a Minor in Classical Studies

Course requirements for the minor are: CLAS 110 or 120; CLAS 230 or 240; one of CLAS 110, 120, 230 or 240 or 6 credits from CLAS 211, 212, 213, 214, or ENGL 206 and 207; PHIL 351, 352 or RELS 340 or 345.

### 110 Latin I

For students with no previous knowledge of Latin, this course will teach a reading command of the language. Recommended for those interested in classical languages, literature, history, philosophy, and religious studies. Six credits.

### 120 Introductory Greek

The aim of this course is to familiarize students with the basic structural features of classical Greek. In addition to grammar and vocabulary, the class will consider simple texts from classical Greek philosophy and literature as well as from the New Testament. Six credits.

### 211 Greek History during the Classical Period

A survey of Greek political, social, economic, and cultural history from Minoan-Mycenean times to the end of the Greek city-state. Special emphasis will be placed on Sparta and the "Golden Age" of fifth-century Athens. Three credits.

### 212 Greek History during the Hellenistic Period

A survey of ancient Greek history during the Hellenistic period, including the conquest of classical Greece by King Philip of Macedon, the rise and fall of Alexander the Great, and the conquest of Hellenistic Greece by Rome. Three credits.

### 213 History of the Roman Republic

A history of Rome from its origins in the 8th century B.C. to the fall of the Roman republic. Special attention will be paid to political and constitutional developments under Republican Rome and its rise to dominance of the entire Mediterranean. Three credits.

### 214 A History of the Roman Empire

A history of the Roman Empire from its origins in the Roman republic until the collapse of Roman authority in the West. Special attention will be paid to the reign of Augustus; the pax Romana; the expansion of the empire in Europe and the Near East; the political and constitutional transformation of the Roman republic into an empire; Constantine and the rise of Christianity; the fall of Rome in the West. Three credits.

### 230 Latin II

A follow-up to CLAS 110, this course includes oral work designed to enhance reading skills, and the study of hymns, poems, epitaphs, and speeches, as well as selections from the New Vulgate. Prerequisite: CLAS 110. Six credits.

### 240 Greek Literature in Translation

The study of selected works of ancient Greek literature, read in translation, concentrating on the principal figures and themes of ancient Greek mythology. Texts will include the epic poetry of Homer and the tragedies of Aeschylus, Sophocles, and Euripides. Six credits.

## 9.12 COMPUTER SCIENCE

I. Gondra, Ph.D.  
M. Lin, Ph.D.  
W. MacCaul, Ph.D.  
M. van Bommel, Ph.D.  
P. Wang, Ph.D.  
L.T. Yang, Ph.D.

Computer science is the study of computation. For any given problem, a central question is whether a solution can be computed, and, if so, what are the most efficient and practical ways to carry out the computation. Computer science also involves questions that have the potential to change how we view the world. What

is the nature of intelligence and can we reproduce it in a machine? How do we represent the knowledge we have about the world and apply this knowledge to help make better decisions?

A computer is a mechanical device that manipulates symbols according to specified rules. As a discipline, computer science lies at the intersection of mathematics, science, and engineering, but it also has very strong ties to many other disciplines. Bioinformatics employs computers for storing and analyzing protein and genome sequences in order to interpret and predict biological structure and function. Business is served by providing the means to perform complex calculations and to interpret large amounts of data to make informed business decisions. The film industry relies on computer-generated graphics for three-dimensional animation. Psychology and philosophy share with computer science the desire to understand the nature of reasoning, learning and intelligence. Computer Science has many subfields, such as algorithms, artificial intelligence, automated theorem proving, databases, graphics, high-performance computing, networking, programming languages, robotics, security, and verification. A common misconception is that computer science is equivalent to programming. Programming is a necessary tool, but it is not the focus.

The Department of Mathematics, Statistics, and Computer Science offers courses leading to BA and B.Sc. degrees with Major, Advanced Major, and Honours in Computer Science as well as a B.Sc. Advanced Major degree in Computer Science with Business. All degrees closely follow the Computer Science curriculum recommendations of the 2001 ACM and IEEE Computing Curricula. Students must meet the general requirements of both the faculty and the department in which they are registered; course and program regulations for mathematics and statistics are listed in sections 9.26 and 9.36.

Students completing a program in computer science have a wide variety of options, including graduate studies in emerging areas of computer science such as robotics, computer-aided vision, and artificial intelligence; and employment in areas such as systems and network analysis, software engineering and computer programming, database, information technology consulting, and data communications. Students are advised to choose their program of study in consultation with faculty and the chair of the Department of Mathematics, Statistics, and Computer Science.

Students pursuing a major, advanced major or honours degree in computer science must take certain core courses: CSCI 161, 162, 255, 365, 375, 491; MATH 111, 112, 277. MATH 111 and 112 are counted as approved or open electives in advanced major and honours programs. CSCI 100 and 235 are available only as approved or open electives in all programs in the department.

### Major in Computer Science

In addition to the core requirements, students must take an additional 12 credits which may be chosen from CSCI, MATH, or STAT.

### Advanced Major in Computer Science

In addition to the core requirements, students must take CSCI 256, 275, 465, 485; MATH 253, and a STAT course. B.Sc. students require an additional six credits, which may be taken from CSCI, MATH, or STAT; CSCI 493 is optional.

### Typical Advanced Major Pattern:

Year 1 CSCI 161, 162; MATH 111, 112  
Year 2 CSCI 255, 256, 275; MATH 253, 277; STAT 231  
Year 3 CSCI 365, 375; additional CSCI courses  
Year 4 CSCI 465, 485, 491; additional CSCI courses

### B.Sc. Advanced Major in Computer Science & Business

In addition to the requirements for Advanced Major in Computer Science, students take CSCI 235, plus 36 credits in Business and Economics. Details of the program can be obtained from the department chair.

### Honours in Computer Science

In addition to the core requirements, students must take CSCI 256, 275, 356, 465, 485, 487, 493, 495; MATH 253 and a STAT course, plus 12 credits chosen from CSCI, MATH or STAT.

### Typical Honours Pattern:

Year 1 CSCI 161, 162; MATH 111, 112  
Year 2 CSCI 255, 256, 275; MATH 253, 277; STAT 231  
Year 3 CSCI 356, 365, 375; additional CSCI courses  
Year 4 CSCI 465, 485, 487, 491, 493, 495; additional CSCI courses

### Co-operative Education Program in Computer Science

This is a five-year program leading to the BA or B.Sc. in computer science, with a co-operative education designation. The program is offered in conjunction with the Gerald Schwartz School of Business as part of the expanded classroom initiative. See section 9.13 for further information.

## Master of Science Program

A research-based M.Sc. program is available covering the areas of systems, theory, and applications. General requirements for graduate degrees are outlined in section 8. For specific requirements, consult the department chair or visit [www.sffx.ca/academic/mathcs/masters/](http://www.sffx.ca/academic/mathcs/masters/)

### 100 Introduction to Computing

An introduction to computer systems, hardware, and software, covering practical applications of computers in society. The course will use standard microcomputer software packages and access external databases to focus on information collection, analysis, and presentation. Two projects will provide the opportunity for a student to show an understanding of the concepts. Acceptable for credit in the Faculties of Arts and the Departments of Human Kinetics, Human Nutrition and Nursing. Credit will be granted for only one of CSCI 100, CSCI 235, INFO 101. Six credits.

### 125 Computer Programming in C

Cross-listed as ENGR 144; see ENGR 144. Three credits and a two-hour lab.

### 161 Introduction to Programming

An introduction to computers, algorithms and programming. Topics include problem analysis, algorithm development, data representation, control structures, arrays, and file manipulation. Credit will be granted for only one of CSCI 161, CSCI 125, ENGR 144. Three credits and a two-hour lab.

### 162 Programming and Data Structures

Continuing from the material in CSCI 161, this course covers memory management and data abstraction via classes and objects, and introduces the linear data structures lists, stacks, and queues. Structured programming is encouraged via modular development. Prerequisite: CSCI 161. Three credits and a two-hour lab.

### 235 Micro-Computers in Science

An introduction to the hardware, operating systems and utilities of microcomputers. Typical micro-computer applications include word processing, spreadsheets, and database management systems. Examples and applications are taken from the sciences. Restricted to students in the Faculty of Science. Credit will be granted for only one of CSCI 235, CSCI 100, INFO 101. Three credits and a two-hour lab.

### 255 Advanced Data Structures

Linear data structures such as lists, stacks, and queues are reviewed. Objects are introduced using C++ classes and templates. Multi-linked lists and trees together with their fundamental algorithms are covered. Searching, sorting, and hashing are described and implemented in C++. Prerequisite: CSCI 162. Three credits and a two-hour lab.

### 256 Data Structures and Algorithm Analysis

Analysis and design techniques are applied to non-numeric algorithms for data structures. Algorithmic analysis is used to select methods of manipulating data. Prerequisite: CSCI 255; MATH 277. Three credits and a two-hour lab.

### 275 Database Management Systems

An introduction to the theory associated with the design and implementation of databases. Topics include database models (relational model in detail), design, normalization, SQL, and a DBMS (ORACLE). Prerequisite: CSCI 255. Credit will be granted for only one of CSCI 275 and INFO 275. Three credits and a two-hour lab.

### 335 Operations Research

The course will cover selected topics from linear programming; transportation and assignment models; networks; scheduling; inventory models; decision-making; queuing theory; forecasting and simulation. Packaged software and spreadsheets will be used. Prerequisites: MATH 112; CSCI 125 or 161. Three credits. Not offered 2012-2013.

### 345 Computer Graphics

Covers fundamental mathematical, algorithmic, and representational issues in computer graphics. Topics include graphics programming, geometrical objects and transformations, 2-D and 3-D data description, manipulation, viewing projections, clipping, shading and animation. Prerequisites: MATH 253; CSCI 255. Three credits and a two-hour lab.

### 356 Theory of Computing

An introduction to the theoretical foundations of computer science, examining finite automata, context-free grammars, Turing machines, undecidability, and NP-completeness. Abstract models are employed to help categorize problems as undecidable, intractable, tractable, and efficient. Prerequisites: CSCI 256; MATH 277. Three credits. Not offered 2012-2013.

### 365 Computer Organization

This course covers basic computer arithmetic, architectures, and instruction sets;

in-depth study of the central processing unit, memory and input/output organization; and microprogramming and interfacing. Credit will be granted for only one of CSCI 365 and INFO 225. Prerequisite: CSCI 255. Three credits and a two-hour lab.

### 375 Operating Systems

An overview of operating systems functions: file management, CPU scheduling, process management, synchronization, memory management, and deadlock handling. UNIX will be introduced and used in this course. Prerequisite: CSCI 365. Three credits and a two-hour lab.

### 383 Object-Oriented Programming and Design

An in-depth study of the object-oriented programming paradigm. Topics include objects, messages, classes; inheritance, polymorphisms, encapsulation; pure and hybrid languages; object-oriented problem solving. Concepts will be practiced with C++. Prerequisite: CSCI 255. Three credits and a two-hour lab.

### 455 Parallel Computing: Architectures, Algorithms, and Applications

Introduces parallel programming techniques as a natural extension to sequential programming. Students will learn techniques of message-passing parallel programming; study problem-specific algorithms in both non-numeric and numeric domains. Topics will include: numeric algorithms; image processing and searching; optimization. Prerequisites: CSCI 255, 365. Three credits and a two-hour lab. Not offered 2012-2013.

### 465 Data Communication Systems and Networks

This course covers communication systems; environments and components; common carrier services; network control, design and management; distributed and local networks. Prerequisite: CSCI 365. Credit will be granted for only one of CSCI 465 and INFO 465. Three credits and a two-hour lab.

### 467 Computer and Network Security

Covers the theory and practice of computer and network security, including cryptography, authentication, network security, and computer system security. Topics include secret and public key cryptography; message digests; authentication, including password-based, address-based, and cryptographic; network security; system security, including intruders, malicious software, and firewalls. Students will use and implement algorithms. Prerequisite: CSCI 465. Three credits.

### 471 Topics in Computer Science

This course explores current topics in computer science, such as interface design, real-time control, and simulation. Prerequisite: CSCI 256. Three credits. See [www.mystfx.ca/academic/mathcs/](http://www.mystfx.ca/academic/mathcs/) for the current offering.

### 483 Interactive Programming with Java

This course introduces the object-oriented language Java and its application to interactive programming. Topics include Java syntax and object inheritance structure, exception handling, GUI and Applet programming, Java networking and multithreading. Prerequisite: CSCI 375 completed or concurrent. Credit will be granted for only one of CSCI 483 and INFO 355. Three credits and a two-hour lab.

### 485 Software Design

The course covers techniques for the design and management of large software projects, including structured programming, debugging, and testing methodologies. Examples of large systems will be provided and a programming project will be completed. Prerequisite: CSCI 375, completed or concurrent. Three credits and a two-hour lab. Not offered 2012-2013.

### 487 Organization of Programming Languages

Topics include structure of language definitions; control structures; data types and data flow; compilers vs. interpreters; introduction to lexical analysis and parsing. Prerequisite: CSCI 365. Three credits and a two-hour lab. Not offered 2012-2013.

### 491 Senior Seminar

Cross-listed as MATH 491 and STAT 491. The purpose of this non-credit course is to assist students in carrying out research, composition, and oral presentation. Students will present a project topic in the fall term and their project in the spring. Attendance at departmental seminars is mandatory. No credit.

### 493 Senior Thesis

Students will prepare and present a thesis based on original research conducted under the supervision of a faculty member. Required for honours students; permitted for advanced major students. Three credits.

### 495 Artificial Intelligence

An introduction to the core concepts of artificial intelligence, including state space, heuristic search techniques, knowledge representation, logical inference, uncertain reasoning, and machine learning. Specific methods covered include neural



networks, genetic algorithms, and reinforcement learning. Prerequisite: CSCI 255. Three credits and a two-hour lab.

### GRADUATE COURSES

		Credits
521	Real Time Systems	3
522	High Performance Computing	3
526	Embedded Systems	3
541	Theory of Computing	3
542	Representation & Reasoning	3
543	Specification & Verification	3
544	Computational Logic	3
545	Artificial Intelligence	3
554	Matrix Computation	3
561	Computer & Network Security	3
562	Computer Graphics	3
563	Advanced Database Systems	3
564	Constraint Processing & Heuristic Search	3
598	Research	6
599	Thesis	18

### 9.13 CO-OPERATIVE EDUCATION

J. MacDonald, MLIS, M.Ad.Ed., Manager

Co-operative education utilizes experiential learning partnerships between the university and employer to provide students with opportunities for relevant, paid employment while completing academic studies. A combination of professional development training and practical work experience empowers students to apply and further develop the knowledge and skills they have acquired in their degree program.

Admission to the program is selective. Students must demonstrate professional qualities that are suitable for employment sponsorship by the University.

Students are eligible to join the co-operative education program after at least one full year of academic study. Students may apply to the program at any time but must apply before published deadlines in September or January to participate in professional development seminars in that term. A minimum overall first year average of 65% is required for students joining the program in their second year. A minimum overall average of 70% in the second and subsequent years is required for students who join and remain in the program.

Students must successfully complete mandatory professional development seminars to be eligible for co-op work terms and must complete all required levels of professional development seminars, a minimum of 12 months of work term employment and a formal debrief process to receive a passing grade, three academic credits and a certificate for co-operative education.

Students who apply for the Co-operative Education Program prior to declaring their major subject must commit to a degree program that includes a co-op option. Academic programs with a co-op option: biology, business administration, computer science, human nutrition and information systems. Students' degree programs and registration will be monitored and academic averages will be assessed annually to determine eligibility to continue in the program.

Students must be registered in a minimum of 12 credits per term in the full academic year to be considered for, and to remain in, the Co-operative Education Program.

Students are permitted to commence professional development seminars in their second year of study. Students will be permitted to commence the work term component of the program after completion of their second year of study, subject to meeting pre-requisite requirements. After completing the work terms, students must return to full time studies at StFX for minimum of one term.

Work terms must occur in at least two of the three semesters and must be preceded and followed by an academic term. "Academic Semesters" are January to April, May to August, and September to December. This is a three semester model. Eight-month or back-to-back work terms are acceptable as long as they are also preceded and followed by an academic term. The 12-16 month work term is considered a co-op internship and must be with one employer. The co-op team and academic advising will help you make a plan that is right for you.

All work placements must be approved by the co-op office in advance. Failure to obtain the required approval or to submit documentation may result in the work term not counting toward the program.

Students will be encouraged to spread out their professional development seminars and work terms if possible. However, work terms must be scheduled in a way that accommodates students' academic program requirements. Required courses must be available to students during their on-campus terms. Also, the requirement to complete their degrees with a minimum of one term of on-campus

study in a full course load will present a major consideration in scheduling work term placements.

Participation in the Cooperative Education Program is voluntary, obtaining a Cooperative Education work assignment is competitive, and students are not guaranteed a cooperative education work placement.

Students may withdraw from the Co-operative Education Program at any time by submitting a formal withdrawal application, available on the program website. There will be no refund of fees collected for professional development seminars or work terms completed prior to the date of withdrawal. For students who withdraw during a PDS session or while completing a work term, normal refunding will apply.

Students who successfully complete all co-op requirements and all academic requirements for their degrees will receive a certificate with their degree parchment. Also, a "Co-operative Education" designation will be displayed in the degrees awarded section of their official transcripts. Students must graduate with the associated degree to also complete the Co-operative Education Program.

The Co-operative Education Programs in Business and Information Systems are accredited by the Canadian Association for Co-operative Education (CAFCE). Biology, computer science, and human nutrition co-op programs also follow the same guidelines as our accredited programs.

#### 110 Introduction to Co-operative Education Program and Professional Development

This course provides an overview of program requirements and materials needed to attain relevant professional experience. Students are presented with models for self-evaluation and improvement as well as information on transitioning into the work force, self-marketing and applying effective job search strategies. No credit.

#### 120 Intermediate Co-operative Education Program and Professional Development

This course offers students an overview of different types of organizations with a focus on organizational theory, culture and reporting structures. Students will also be provided with tools for securing co-operative education employment and evaluating personal success on the job search process and as an employee. No credit.

#### 130 Advanced Co-operative Education and Professional Development

Students enhance their knowledge of self-evaluation and personal preparation and learn how to optimize their opportunities for personal success in the job market. Students will develop a professional portfolio that is a representation of their skills, abilities, and knowledge and learn how to incorporate portfolio thinking into future learning. No credit.

#### 401-404 Co-operative Education Work Terms

COOP work terms parlay professional development theory and academic knowledge into practice in employment that is related to student's degree program. The Co-operative Education Program staff, as well as their direct reporting managers, will evaluate the student. While on work terms, students will document their work term learning objectives, participate in a work site evaluation by the Co-op staff, submit formal performance evaluation and write a reflective essay. No credit.

#### 405 Co-operative Education Work Term and Integrated Learning

Following the completion of work term requirements, students reflect on, discuss and report on their co-op experience. Prerequisites: COOP 110, 120, 130, 401, 402 and 403. Three credits used to satisfy elective requirements.

### 9.14 DEVELOPMENT STUDIES

J. Bickerton, Ph.D., Co-ordinator

#### Advising Faculty

S. Dodaro, Ph.D.  
B. Foroughi, Ph.D.  
D. Garbary, Ph.D.  
J. Langdon, Ph.D.  
B. Long, Ph.D.  
A. Mathie, Ph.D.  
S. Vincent, Ph.D.

#### Department

Economics  
Coady International Institute  
Biology  
Adult Education  
Business Administration  
Coady International Institute  
Anthropology

This interdisciplinary program in development examines the local and global social, economic, political, and cultural contexts in which development takes place. Students will investigate the theory and practice of development and social justice, and learn about the Antigonish Movement.

Students may complete an honours with subsidiary, a joint advanced major or



a joint major in development studies and another subject, a subsidiary or a minor in development studies, pair two courses, or simply take DEVS 201 and/or 202 as electives. See section 4.1 for degree regulations. Students interested in DEVS degree options should consult the co-ordinator as early as possible. Students graduating with an honours, joint advanced major or joint major in development studies and another subject must complete ECON 101 and 102.

Note: For honours, joint advanced major and joint major, no more than 12 credits of development studies designated courses (see below) may be in a single subject. Also, none of the development studies cross-listed or designated courses may be in the student's other declared subject.

### Honours in Development Studies with a Subsidiary Subject

See section 4.1 for general regulations on degree requirements.

Requirements:

- a) 48 credits in DEVS (subject A) and 30 credits in the subsidiary subject (subject B). Students must complete the following:
- |  |            |
|--|------------|
| i) DEVS 201, 202, 302, 303, 311, 312, 401, 405 | 24 credits |
| ii) DEVS 490 (thesis)                          | 6 credits  |
| iii) DEVS core or designated courses           | 18 credits |
| iv) ECON 101, 102                              |            |

No more than 12 credits of DEVS designated courses may be in a single subject. Also, none of the DEVS cross-listed or designated courses may be in the student's subsidiary subject (subject B).

### Joint Advanced Major in Development Studies

Requirements:

- a) 36 credits in DEVS (subject A) and 36 credits in another subject (subject B; see definition of subject at 4.1.2) or 36 credits in another subject (subject A) and 36 credits in DEVS (subject B). The program or department requirements for advanced majors are applicable in both subjects.

Students using DEVS as subject A or B must complete the following:

- |   |            |
|---|------------|
| i) DEVS 201, 202, 302, 303, 311, 401, 405 | 21 credits |
| ii) DEVS core or designated courses       | 15 credits |
| iii) ECON 101, 102                        |            |

- b) Course Pattern: see section 4.1.3

- c) A senior paper is required for all advanced major students. The senior paper will be written in either DEVS 401 or 405 when development studies is subject A. When development studies is subject B, the senior paper will be written for the department or program that is subject A.

### Joint Major in Development Studies

Requirements:

- a) 36 credits in DEVS (subject A) and 36 credits in another subject (subject B). The program or department requirements for majors are applicable in both subjects.

Students must complete the following:

- |  |            |
|--|------------|
| i) DEVS 201, 202, 302, 303, 311        | 15 credits |
| ii) Minimum of 3 credits from 401, 405 | 3 credits  |
| iii) DEVS core or designated courses   | 18 credits |
| iv) ECON 101, 102                      |            |

- b) Course Pattern: see section 4.1.3

### Subsidiary in Development Studies

Requirements:

- a) 24 credits in DEVS and 48-60 credits in the honours subject. Students are encouraged to include an additional six credits of DEVS core or designated courses if possible. No more than six credits of DEVS designated courses may be from a single department. None of the development studies cross-listed or designated courses may be in the student's honours subject.

Students must complete the following:

- |                                     |            |
|-------------------------------------|------------|
| i) DEVS 201, 202, 302, 303          | 12 credits |
| ii) DEVS core or designated courses | 12 credits |

### Minor in Development Studies

Requirements:

- a) 24 credits in DEVS. No more than six credits of DEVS designated courses may be from a single department. None of the cross-listed courses may be in the student's declared major subject. Students must complete the following:

- |                                     |            |
|-------------------------------------|------------|
| i) DEVS 201, 202                    | 6 credits  |
| ii) DEVS core or designated courses | 18 credits |

### Pair

- |                                     |           |
|-------------------------------------|-----------|
| i) DEVS 201, 202                    | 6 credits |
| ii) DEVS core or designated courses | 6 credits |

## DEVELOPMENT STUDIES CORE AND CROSS-LISTED COURSES

### 201 Introduction to International Development: The Global South

An introduction to development theory and practice as it applies to inequality between countries, and within countries of the Global South. The course provides students with a critical framework for analyzing development policies, programs, trends, and impacts, especially since the formation of the Bretton Woods institutions. Students will explore the concepts of sustainable development and of social and economic justice as they relate to development. Prerequisite: 24 credits or permission of the co-ordinator. Credit will be granted for only one of DEVS 201 and DEVS 200. Three credits.

### 202 Introduction to International Development: Canada

In this course, Canada's place in the world, its path to development, and the challenges it currently faces will be explored. These include the retention of its capacity to generate sufficient wealth to provide a high standard of living to its citizens, the persistence of inequalities that raise questions about the distribution of the benefits of development, and the challenge of sustainability, given the stresses that industrialized societies such as Canada's place on their physical and social environment. Prerequisite: 24 credits or permission of the co-ordinator. Credit will be granted for only one of DEVS 202 and DEVS 200. Three credits.

### 211 Local and Community Development Economics

Cross-listed as ECON 211; see ECON 211. Three credits.

### 223 Anthropology of Globalization

Cross-listed as ANTH 223; see ANTH 223. Prerequisite: ANTH 111, 112 (110) or DEVS 201 and 202. Three credits.

### 302 Globalization and Development

The course provides an analysis of the forces affecting the globalization process, its evolution over time, and its impacts on development. It takes a broad view, from an interdisciplinary perspective, of the factors at work, their nature and their consequences. Topics that are considered include the fact and policy dimensions of globalization, questions that pertain to equity and fairness, issues concerning production, consumption, global markets, governance, and the role of various international institutions. It also analyzes the mechanisms that link the global to the local level. Prerequisite: DEVS 201, 202 or ECON 101, 102. Credit will be granted for only one of DEVS 302 and DEVS 300. Three credits.

### 303 Topics in Globalization and Development

The course considers in detail a range of topics that pertain to the globalization process that are important to development. It provides an interdisciplinary analysis of such issues as: international trade and finance and their impacts, regionalization versus globalization, the environment and sustainability, culture and ideas, justice and human rights, gender and health issues, migration, MNCs, NGOs and civil society. The course also considers alternatives to the existing reality in terms of changes in institutions, practices, policies, local and grassroots responses (including the Antigonish Movement). Prerequisite: DEVS 302 or permission of the instructor. Credit will be granted for only one of DEVS 303 and DEVS 300. Three credits.

### 305 Economic Development I

Cross-listed as ECON 305; see ECON 305. Three credits.

### 306 Economic Development II

Cross-listed as ECON 306; see ECON 306. Three credits.

### 311 Issues in Development Practice

In this course student make the link between theoretical discussion of development and actual development practice, both locally and internationally. An in-class component addresses the practicalities of development interventions and the major issues that affect them, such as: gender/ethnic/class stratification; power relations within and between localities and external agents; and indigenous versus dominant forms of knowledge. Student will then apply this in an experiential learning component in a local or international context. Prerequisite: DEVS 201, 202 or permission of the instructor. Credit will be granted for only one of DEVS 311 and DEVS 310. Three credits.

### 312 Internship in Development Studies

This internship builds on DEVS 311. Students may extend their placement from 311 or undertake a new posting. The class will be largely experiential. Students will be required to blog regularly, to submit critical reflection papers, to produce a research product of use to their host organization, to make an oral presentation and to submit a final written report. Students will do their internship during the spring and summer before their senior year and complete this course in the fall term of

their senior year. Prerequisite: DEVS 311 and permission of the instructor. Credit will be granted for only one of DEVS 312 and DEVS 300. Three credits.

### 321 Anthropology of Development

Cross-listed as ANTH 320; see ANTH 320. Prerequisites: ANTH 111, 112 (110) or DEVS 201, 202. Three credits.

### 322 Antigonish Movement as Change & Development

Cross-listed as SOCI 322; see SOCI 322. Prerequisites: SOCI 100 or DEVS 201, 202. Three credits.

### 354 International Political Economy

Cross-listed as PSCI 354; see PSCI 354. Prerequisites: PSCI 100 or DEVS 201, 202; PSCI 250 recommended. Three credits.

### 355 Global Issues

Cross-listed as PSCI 355; see PSCI 355. Prerequisites: PSCI 100 or DEVS 201, 202; PSCI 250 recommended. Three credits.

### 370 Third World/South-North Politics

Cross-listed as PSCI 370; see PSCI 370. Prerequisites: PSCI 100 or DEVS 201, 202. Six credits.

### 391 Selected Topics

Course content will cover current topics in Development Studies.

### 401 Theories of Development

This seminar takes an interdisciplinary approach to the study of theories that have shaped the conceptualization and practice of development around the world. The seminar focuses on current versions of general development theories such as: modernization, structuralism, Marxism, dependency theory, neoclassical and neoliberal theory, alternative development, and post-development. Examples of current theories that focus on key development issues are also covered. Prerequisite: DEVS 201, 202. Three credits.

### 405 Community-Based Development: Strategies and Practice

This seminar is an examination of community-based development. It explores and evaluates strategies, practices and techniques used to strengthen people's capacity to build sustainable livelihoods, and examines the role of different agencies (e.g. local citizens, government, non-government organizations, and the private sector) in stimulating development at the community level. The course will include development strategies used in the Global South and practices used in Canada, especially Atlantic Canada. Prerequisite: DEVS 201, 202. Three credits.

### 457 Social Entrepreneurship

Cross-listed as BSAD 457; see BSAD 457. Prerequisite: DEVS 201, 202. Three credits.

### 490 Thesis

Students will work under the supervision of a faculty member who guides the selection of a thesis topic, use of resources, research methodology, and quality of analysis. Restricted to honours students. Six credits.

### 499 Directed Study

Students will work with a course instructor on a topic which is not available through other course offerings. Prerequisites: DEVS 201, 202 and six additional credits in core development studies courses. See section 3.5. Three credits.

## DEVELOPMENT STUDIES DESIGNATED COURSES

Anthropology		Credits
ANTH 218	Anthropology of Health & Illness	3
ANTH 310	Anthropology of Tourism	3
ANTH 324	Anthropology of Gender	3
ANTH 331	Anthropology and Indigenous Peoples	3
ANTH 332	Mi'kmaq Studies	3
ANTH 415	Anthropology of HIV/AIDS	3
ANTH 425	Power and Change	3
ANTH 435	Advanced Indigenous Issues	3
Aquatic Resources		Credits
AQUA 200	Introduction to AR II: Social Science Applications	6
Biology		Credits
BIOL 221	Issues in Resource Management	3
BIOL 222	Topics in Environmental Ecology	3
BIOL 345	Communities and Ecosystems	3
BIOL 407	Integrated Resource Management	3

Business Administration		Credits
BSAD 357	International Business	3
BSAD 358	Business Ethics	3
Catholic Studies		
CATH 341	Catholic Social Teaching	3
Earth Sciences		
ESCI 271	Environmental Earth Science	3
ESCI 272	Global Change and Climate System	3
ESCI 274	Health Impacts of Global Environmental Change	3
Economics		Credits
ECON 241	Canadian Economic Prospects and Challenges	3
ECON 281	Environmental Economics	3
ECON 332	History of the Canadian Economy after 1867	3
ECON 341	Regional Economics	3
ECON 342	Maritime Economy	3
ECON 361	Human Resources and Labour Economics	3
ECON 365	International Trade	3
ECON 366	International Payments and Finance	3
ECON 381	Natural Resource Economics	3
English		Credits
ENGL 247	Post-Colonial Literature	6
ENGL 347	African-Canadian Literature	3
History		Credits
HIST 202	The Prairies	3
HIST 204	British Columbia	3
HIST 207	Quebec	3
HIST 209	The Maritime Provinces, 1500-1950	6
HIST 213	A History of Canada: Pre-Confederation	3
HIST 215	A History of Canada: Post-Confederation	3
HIST 255	History of Colonial Latin America	3
HIST 256	History of Modern Latin America	3
HIST 275	Modern Japan	6
HIST 303	The Working Class in Early Canadian Society	3
HIST 304	The Working Class in Modern Canada	3
HIST 310	Canadian Immigration and Ethnic History	6
HIST 317	Canadian Women and Gender History: From Colony to Nation	3
HIST 318	Canadian Women's and Gender History: Modernity	3
HIST 326	Cuba from Independence to Revolution	3
HIST 337	History of Modern Mexico	3
HIST 347	American Social Movements, 1945-Present	3
HIST 355	The Sixties: A Social History	3
HIST 370	Modern China	6
HIST 462	Latin America	3
Human Nutrition		
HNU 365	Community Nutrition	3
HNU 405	Food Availability	3
Interdisciplinary Studies		Credits
IDS 305	Immersion Service Learning	3
IDS 306	Service Learning: Theory and Practice	3
Philosophy		Credits
PHIL 333	Environmental Ethics	3
PHIL 371	Social and Political Philosophy	3
Political Science		Credits
PSCI 211	Comparative Politics I	3
PSCI 212	Comparative Politics II	3
PSCI 215	Contemporary Politics of Latin America	3
PSCI 240	Business and Government	6
PSCI 247	Environmental Social Sciences I	3
PSCI 248	Environmental Social Sciences II	3
PSCI 250	World Politics	6
PSCI 291	Violence, Conflict and Politics	3
PSCI 315	Democratization	3
PSCI 322	Atlantic Canada	3
PSCI 335	Human Rights & International Justice	3
PSCI 346	The Politics of Resource Management	3
PSCI 347	Politics of the Environment	3
PSCI 353	International Organizations	3

PSCI 361	Eastern Europe	3
PSCI 362	Chinese Politics	3
PSCI 365	Russian Politics I	3
PSCI 366	Topics in Russian Politics	3
PSCI 372	Iran and the Muslim World	3
PSCI 380	African Politics and Society	6
PSCI 391	Democratization & Development in Latin America	3
PSCI 395	Mexican Politics	3
Nursing		
NURS 364	Social Justice and Health	3
Sociology		
SOCI 248	Environmental Social Science II: Power and Change	Credits 3
SOCI 290	Social Inequality	6
SOCI 312	Social Movements	3
SOCI 320	The Black/African Diaspora	6
SOCI 321	Sociology of Atlantic Canada	3
SOCI 330	Sociology of First Peoples	6
SOCI 360	Social Policy	6
SOCI 364	Food and Society	3
SOCI 366	Coastal Communities	3
SOCI 370	Sociology of Work	6
SOCI 424	Women and Work	3
SOCI 426	Consumer Society	3
Women's and Gender Studies		
WMGS 364	Social Justice and Health	3

Other courses, not listed here, may be considered designated courses with permission of the development studies co-ordinator.

## 9.15 EARTH SCIENCES

A.J. Anderson, Ph.D.  
H. Beltrami, Ph.D.  
E. Bourlon, Ph.D.  
J. Braid, Ph.D.  
L. Kellman, Ph.D.  
M.J. Melchin, Ph.D.  
J.B. Murphy, Ph.D.  
D. Risk, Ph.D.  
R. Tobin, Ph.D.

The Earth is a dynamic and exciting planet, which has continually evolved over its 4.6 billion-year history. During this time, oceans and mountains were created and destroyed; catastrophic events occurred, such as meteorite impacts, volcanic eruptions and earthquakes; global greenhouses and icehouses developed; life forms evolved and became extinct. Earth science is devoted to understanding the origin, significance and order of these events so that we may more fully understand our planet; this is vital if we are to locate, use, and harness the Earth's resources and face the environmental challenges that confront us. Earth science employs physical, chemical, biological and mathematical methods to study the Earth's materials, behaviour, history and environment. An Earth scientist studies and interprets the Earth's evolution as revealed by its atmosphere, ocean and fresh waters, rocks, minerals and fossils; explores and develops valuable resources; and evaluates the environmental implications of these activities.

A degree in Earth sciences prepares students for graduate studies, as well as a wide range of careers in geology, climatology, oceanography, environmental science, resource exploration and development, government, industry, and financial institutions where geological knowledge is vital for investments and economic planning.

A number of options and concentrations are available for students interested in a B.Sc. in Earth sciences. We offer options in geoscience, environmental geoscience, geochemistry; joint programs with biology, business administration, chemistry, information systems, mathematics, and physics; and non-specialist courses for students interested in understanding the planet on which we all live. The most important laboratory instruction is in the field, where studies bridge the gap between textbook descriptions and actual occurrences.

### Department Requirements

Recommended course sequences are shown below; variations in content require the permission of the department chair and/or the dean of science. See chapter 5 for information on the degree patterns, declarations of major, advanced major and honours, advancement and graduation requirements.

Approved electives may be in any discipline normally accepted for credit for

science students: BIOL, CHEM, MATH, STAT, CSCI and PHYS (including PHYS 271, 272). However, some programs have recommended electives; students should consult the department chair for details. We strongly recommend that students take French or Spanish as one of their arts electives.

### Major in Earth Sciences

Required courses for the Earth sciences major are ESCI 171, 172, 201, 215, 216, 375 or 376, 305; 15 additional ESCI credits from among the required courses of the geoscience concentration, the environmental earth science concentration, or the geochemistry concentration listed below. All earth sciences majors must take: CHEM 100 or 120; MATH 111, 112; 6 credits CHEM or MATH at the 200 and/or 300 level; additional ESCI, arts and elective courses as outlined in section 7.1. Variation in content requires the permission of the department chair and/or dean of science.

### Advanced Major and Honours in Earth Sciences

#### Geoscience Concentration

Year 1	ESCI 171, 172; MATH 111, 112; CHEM 100 or 120; PHYS 100 or 120, or BIOL 111, 112; 6 credits arts electives
Year 2	ESCI 201, 202, 215, 216, 245, 285; 6 credits science B or PHYS 100 or 120; 6 credits arts electives; (6 credits science B may be BIOL; 6 credits of CHEM 231, 232, 245 or 265; 6 credits MATH; or PHYS 241 and 3 credits PHYS)
Year 3	ESCI 301, 302, 305, 365, 366, 375; 6 credits science B or science electives; 6 credits arts electives
Year 4	ESCI 426, 435, 446, 475, 476, 491 (non-credit), 493 or 499; 12 credits science electives from ESCI, BIOL, CHEM, MATH or PHYS

#### Environmental Earth Science Concentration

Year 1	ESCI 171, 172; MATH 111, 112; CHEM 100 or 120; PHYS 100 or 120 (PHYS 120 strongly recommended); 6 credits arts electives
Year 2	ESCI 201, 216, 246, 271, 272, 386; BIOL 111, 112; 6 credits arts electives
Year 3	ESCI 215, 305, 365, 366, 376, 387; 6 credits science B; 6 credits arts electives; (6 credits science B may be BIOL 203 and 3 credits BIOL; 6 credits of CHEM 231, 232, 245 or 265; 6 credits MATH; or PHYS 241 and 3 credits PHYS)
Year 4	ESCI 406, 465, 471, 472, 475, 491 (non-credit), 493 or 499; 12 credits science electives from ESCI, BIOL, CHEM or PHYS

#### Geochemistry Concentration

Required courses for students in the honours and advanced major programs of the geochemistry concentration are: ESCI 171, 172, 201, 202, 215, 216, 245, 301, 302 or 435, 305, 375, 406, 491 (non-credit), 493 or 499; CHEM 100 or 120, 220, 231, 232, 245, 265; MATH 111, 112; PHYS 100 or 120; additional ESCI, arts and elective courses as outlined in section 7.1.

#### Joint Honours and Joint Advanced Major Programs

Joint honours and joint advanced major programs are offered in conjunction with aquatic resources and with the departments of biology, chemistry, mathematics, statistics, and computer science. Joint advanced major programs are offered with the departments of business administration and physics. For general information on course patterns see section 7.1. Students should consult the appropriate department chair or program co-ordinator. Typical programs are shown below; variations are available at the discretion of the department.

#### Earth Sciences with Aquatic Resources

ESCI 171, 201, 215, 216, 271, 372, 375 or 376, 305, 366, 406, 465. For additional ESCI credits, students should follow either the geoscience or environmental geoscience concentration listed above, and consult the chair of the Earth sciences department, as well as the co-ordinator of aquatic resources.

#### Earth Sciences and Biology

ESCI 171, 172, 201, 215, 216, 375 or 376, 271, 272, 285, 386; 27 credits BIOL; CHEM 100 or 120, 221, 255; MATH 111, 112, 231; CSCI 235; additional ESCI, arts and elective courses as outlined in section 5.1; interdisciplinary thesis and seminar.

#### Earth Sciences with Business Administration

Science A	(ESCI) 36 credits: ESCI 171, 172, 201, 215, 216, 305, 365, 366; 12 additional credits ESCI
Science B	(MATH) 12 credits: MATH 111, 112; any 6 additional credits MATH, STAT or CSCI
Science C	(CHEM) CHEM 100 or 120
BSAD	101, 102, 221, 223, 231, 261, 241, 471; 6 credits electives
CSCI	235



ECON	6 credits
Arts X	12 credits humanities or social science
Arts Y	6 credits
Approved electives	9 credits BIOL, CHEM, ESCI, or PHYS

### Earth Sciences and Chemistry

ESCI 171, 172, 201, 202, 215, 216, 375 or 376, 301, 302 or 435, 305, 406; CHEM 100 or 120, 220, 231, 232, 245, 246, 341, 342, 360; MATH 111, 112, 253 or 267; 3 additional credits MATH; PHYS 100 or 120; additional ESCI, arts and elective courses as outlined in section 7.1; interdisciplinary thesis and seminar.

### Earth Sciences and Mathematics

ESCI 171, 172, 201, 215, 216, 245, 246, 375 or 376, 272, 475 (for additional credits, consult the Earth sciences department chair); 36 credits MATH; CHEM 100 or 120; PHYS 100 or 120; additional ESCI, arts and elective courses as outlined in section 7.1; interdisciplinary thesis and seminar.

### Earth Sciences and Physics

ESCI 171, 172, 201, 215, 216, 245, 246, 272, 375 or 376, 302 or 435, 446, 472, 475 (for other credits, consult the Earth sciences department chair); 30 credits PHYS (consult the physics department chair); CHEM 100 or 120, 231 and 232 or 245 and 265; MATH 111, 112, 253, 267, 367; additional ESCI, arts and elective courses as outlined in section 7.1; interdisciplinary thesis and seminar.

### Environmental and Earth Sciences

See section 9.20

### Minor in Earth Sciences

Students will take ESCI 171 or 172 and 21 other credits ESCI.

### Master of Science Program

See chapter 8 for admission regulations.

#### 171 Understanding the Earth I

An introduction to the study of rocks and minerals and the materials that make up planet Earth; the Earth's origin and internal structure and composition; the plate tectonic and continental drift theory, crustal processes (the early history of the Earth and its atmosphere, evolution and extinction of life forms; composition and structure of the Earth, origin of continents, oceans, volcanoes, earthquakes, mountains), crustal deformation and mountain building; resources from earth. Three credits.

#### 172 Understanding the Earth II

An introductory treatment of the processes driving Earth's ocean, atmosphere, hydrosphere and cryosphere. Course includes study of the environment and problems such as soil erosion, ozone layer, waste disposal, Earth's energy resources (solar, geothermal, etc), surface and ground waters, water quality in humanity's future, an introduction to biogeochemical cycles, and a current examination of climate change, future scenarios and issues of impact, migration and adaptation to climate change. Three credits.

#### 201 Crystal Chemistry and Mineralogy

Examines the foundations of crystal chemistry and mineralogy. Explores the characterization of and relationship among chemical, physical and optical properties of minerals and other transparent solids. Prerequisite: ESCI 171; ESCI 172 or AQUA 100; or with permission of instructor; CHEM 100 or 120, concurrent with permission of the instructor. Three credits and lab.

#### 202 Introduction to Igneous and Metamorphic Systems

Uses physicochemical and thermodynamic principles to explain the origin and composition of Earth materials, with particular reference to the genesis of igneous and metamorphic rocks. Applies the phase rule and phase equilibria to natural systems using thermo-chemical and experimental data, binary and ternary phase diagrams. Prerequisite: ESCI 201. Three credits and lab.

#### 215 Sedimentology and Stratigraphy

A study of the major processes involved in the origin, transport and deposition of marine and non-marine clastic, carbonate and evaporite sediments. Covers the principles of sedimentation, environmental analysis, marine and non-marine depositional systems and facies models. Basic stratigraphic principles are introduced. Prerequisite: ESCI 171; ESCI 172 or AQUA 100. Three credits and lab.

#### 216 Earth History

An overview of the evolution of planet Earth from its origin some 4.6 billion years ago to the present. Students will examine changes in the distribution and character of continents and ocean basins, mountain ranges, continental glaciers and other features of the Earth's surface in light of plate tectonic theory, while studying the evolution of plant and animal life as revealed by fossils. Cross-listed as ENGR 216. Prerequisite: ESCI 171; ESCI 172 or AQUA 100, concurrent with permission of the instructor. Three credits and lab.

#### 245 Structural Geology

An introduction to rock mechanics, three-dimensional analysis of stress and strain, mechanisms and concepts of deformation; classification and interpretation of folds, faults, fractures; introduction to Earth graphic and stereographic analysis of three-dimensional structures. Prerequisite: ESCI 171. Three credits and lab.

#### 246 Quantitative Methods in Earth Science

This course is intended to familiarize students with modern analytical techniques to provide them with the theoretical and quantitative background necessary for further study in Earth sciences. Topics include applications of multivariate analysis and spectral analysis techniques. Prerequisites: ESCI 171; ESCI 172 or AQUA 100; MATH 111, 112; or permission of the instructor. Three credits and lab.

#### 271 Environmental Earth Science

This course will focus on the relationships between Earth surface processes and human activities. Topics include atmospheric processes and contamination; soil formation, degradation and erosion; an introduction to surface water and groundwater resources and pollutant transport in aquatic environments, as well as a critical examination of pollution and waste issues. Cross-listed as ENGR 216. Prerequisite: ESCI 171; ESCI 172 or AQUA 100. Three credits and lab.

#### 272 Global Change and the Climate System

This course will examine the global climate system. Processes that contribute to climate change will be examined in the context of both its natural variability and anthropogenic impact. Paleoclimates, greenhouse warming, ice ages and ocean-atmosphere interaction will be discussed. Prerequisite: ESCI 171; ESCI 172 or AQUA 100. Three credits and lab.

#### 273 Health and the Environment

Understanding the relationship between environment and health is a significant challenge for current and future generations. Environmental agents play key roles in the development of many common illnesses and conditions. Most of these environmental agents are the result of human interference in the natural processes and fluxes of elements in the planetary system. This course will explore many aspects of this feedback-loop between human and planetary health. Closed to students majoring in earth sciences or environmental sciences. Three credits.

#### 274 Health Impacts of Global Environmental Change

Many environmental issues with planetary-scale implications are changing the way the earth system works. This course will explore some of these issues, including the causes, effects, and health implications of global environmental change caused by global warming, loss of the ozone layer, aerosols, toxic greenhouse gases, overpopulation, genetics-environment interactions, changes to the hydrological cycle, and the use of chemicals to improve food production. Closed to students majoring in earth sciences or environmental sciences. Three credits.

#### 278 Introduction to Atmospheric Physics

Cross-listed as PHYS 278; see PHYS 278. Three credits.

#### 285 Paleontology: The History of Life

Covers the principles of paleontology including methods of analysis of fossil individuals, populations and species; biostratigraphy; paleoecology; biogeography; evolution and extinction; the origin and major events in the history of life from an evolutionary and ecological perspective. Laboratory study of selected fossil groups, field and laboratory techniques. Prerequisite: ESCI 171, 172 or BIOL 111, 112 or permission of the instructor. Cross-listed as BIOL 285. Three credits and lab.

#### 301 Genesis of Igneous Rocks

An advanced treatment of the rheological properties of magma, fluid dynamics, crystal growth, crystal-melt-fluid equilibria, igneous rock suites and their genesis, petrogenetic modeling. Applications of thermodynamic principles and phase equilibria to the genesis of igneous rocks and application of microscopic techniques. Prerequisites: ESCI 201, 202. Three credits and lab. Not offered 2012-2013.

#### 302 Genesis of Metamorphic Rocks

Topics include determination of pressure; temperature and fluid conditions of metamorphism; applications of chemical equilibria and thermodynamic principles; Schreinemakers' methods of phase diagram construction; equilibrium and disequilibrium metamorphic textures; kinetics of crystal growth; determination and rates of metamorphic reactions; variations of metamorphism through geological time; pressure-temperature-time relationships. Prerequisites: ESCI 201, 202. Three credits and lab.

#### 305 Geochemistry of Natural Waters

Covers geochemistry of natural waters and the interaction of elements in natural materials, aqueous and atmospheric geochemistry, global cycles, weathering processes, and natural redox reactions and stable isotope geochemistry. Application of thermodynamic principles to geochemistry. Prerequisites: CHEM 100 or 120; ESCI 171; ESCI 172 or AQUA 100. Three credits and lab.

**365 Geomorphology and Quaternary Geology**

Covers landform processes and development; glaciation and glacial deposits; slopes and mass movements; drainage basin form and process; quaternary stratigraphy, paleoclimatology, and paleoecology. Prerequisite: ESCI 171; ESCI 172 or AQUA 100. Three credits and lab.

**366 Hydrology**

A study of natural freshwater cycling in watersheds, this course covers the processes controlling soil water, stream flow, lake circulation, groundwater flow, and the exchange of water between natural reservoirs and the atmosphere; applications of chemical tracers to hydrology; aspects of human interaction with these systems, including flood hazards, water resource usage, and contamination. Prerequisites: ESCI 171; ESCI 172 or AQUA 100. Three credits and lab.

**375 Geological Field Methods**

An introduction to field techniques; geological mapping on small and large scales; stratigraphic and structural interpretations. Topics include aerial photographs, topographic, and geophysical maps; elementary surveying techniques; systematics of rock and mineral identification. Includes a 10-day introductory field camp, normally at the end of the second year, held in collaboration with Acadia University. Prerequisites: ESCI 202, 215, 216. Three credits.

**376 Environmental Earth Science Field Course**

A field and lab course which introduces field techniques in environmental earth sciences, including sampling, collection, analysis, and interpretation of climatological, geo-chemical, biogeo-chemical, hydrological, geo-physical, and surficial geological data. Topics include spatial variability in natural physical and chemical processes; field sampling techniques and tools; lab and computer-aided analysis of data. A 10-day course held in May. Prerequisites: ESCI 271, 272, 305 or permission of the instructor. Three credits.

**386 Oceanography**

This course provides an introduction to physical oceanography and its processes governing the ocean and its interaction with the atmosphere. Prerequisites: ESCI 172 or AQUA 100 or permission of the instructor. Three credits and lab.

**387 Coastal Oceanography**

Topics include major features and processes of coastal and near-shore environments, including methods of study; sediments, waves, beaches, tides, mudflats, marshes, estuaries, deltas, barrier islands; erosion, sedimentation; limestone coasts and reefs; environmental aspects of coastal development; sea-level changes, coastal erosion, sedimentation and pollution. Prerequisites: ESCI 171; ESCI 172 or AQUA 100; or permission of the instructor. Three credits and lab.

**406 Advanced Environmental Geochemistry**

An advanced examination of selected topics in environment geochemistry and biogeochemistry including chemical cycling and contamination in atmospheric, soil and aquatic environmental from an Earth systems science perspective. Topics may include stable isotopes, redox processes, sulfur, carbon and nitrogen cycling. Prerequisites: ESCI 271, 305 or permission of the instructor. Three credits and lab.

**415 Special Topics in Earth Sciences**

This course will cover selected current topics in Earth sciences. Prerequisite: permission of the instructor. Three credits.

**426 Ore Deposits**

Covers classification, petrology, ore mineralogy, and mode of occurrence of mineral deposits. Laboratory stresses familiarity with the large and small-scale characteristics of mineral deposits and interpretation of the controls of ore formation. Prerequisites: ESCI 215, 301, 245; ESCI 302, concurrent if necessary. Three credits and lab.

**435 Advanced Structure and Tectonics**

Topics include regional structures; mechanics of deformation; geometric analysis; tectonics and metamorphism; interpretation of single and polyphase deformation; structural interpretations of ore zones; overview of tectonic processes; tectonic principles and dynamics; tectonic elements, zones, and terranes; the origin and development of orogenic belts; Phanerozoic, Proterozoic, and Archean tectonics. Prerequisite: ESCI 245. Three credits and lab.

**442 Fluids**

From the majesty of the Great Red Spot on Jupiter to the common-place phenomena of ocean waves, of cream mixing in coffee and smoke rings, the motion of fluids is of aesthetic, practical and fundamental interest. Continuum descriptions of ideal and viscous fluid flows, both with and without compressibility, will be presented. Common flow geometries, wave and surface phenomena, solutions, convective instabilities and turbulent flow will be discussed. Prerequisites: PHYS 242, concurrently with

PHYS 344 and MATH 361, or permission of instructor. Cross-listed as PHYS 442. Three credits.

**446 Advanced Sedimentology and Basin Analysis**

Covers the origin, geo-chemistry, and diagenesis of sedimentary rocks, including siliciclastics, carbonates, and organic matter in sediments. Applies stratigraphic correlation, facies analysis methods, and geophysical techniques to basin mapping; depositional systems and sequence stratigraphy; basin subsidence and fill; regional and global stratigraphic cycles; and basin models in plate tectonics. Prerequisites: ESCI 202, 215, 245. Three credits and a lab. Not offered 2012-2013.

**465 Hydrogeology**

Covers the principles and applications of groundwater and groundwater flow, including: Darcy's Law; steady-state and transient flow conditions; flow nets, aquifer testing, and groundwater resource evaluation; the role of groundwater in the hydrologic cycle; and the physical processes controlling groundwater pollution. Prerequisites: ESCI 305; ESCI 366 or permission of the instructor; MATH 111, 112. Three credits and lab.

**471 Geographic Information Systems**

Students will learn how GIS tools can be used to analyze, represent and model geographic data derived from censuses, surveys, maps, aerial photographs, and satellite imagery. Topics include cartography and map projections; spatial and attribute data; data capture techniques; vector and raster structure; GIS analysis; data visualization; GIS modelling. Prerequisite: permission of the instructor. Cross-listed as INFO 374. Three credits and lab. Not offered 2012-2013.

**472 Ocean-Atmosphere Interactions**

This course introduces students to a unified treatment of ocean and atmospheric processes. The mathematical treatment of the phenomena will be central to this course and students will gain an in-depth understanding of the fundamental physical behaviour of large-scale ocean-atmosphere interactions. Prerequisites: ESCI 246, 271, 272; PHYS 100 or 120; MATH 111, 112. Three credits and lab.

**475 Geophysics**

This course introduces the use of physical measurements to determine the internal and external structure and composition of the Earth system. Topics include (but are not limited to) an introduction to earthquake seismology, gravity and magnetic fields, isostasy, seismic reflection, heat flow applications, and elementary concepts in geodynamics. This course summarizes current knowledge of Earth system science as determined by modern geophysical techniques. Some computing techniques are presented in lab. Prerequisites: MATH 111, 112; PHYS 100 or 120 recommended. Three credits and lab.

**476 Advanced Geological Field Methods**

A seven-day field camp in an important geological area held in late summer in collaboration with Acadia University, followed by structural and petrographic analysis, seminars and report writing during the fall term. Prerequisites: ESCI 245, 375. Three credits and lab.

**485 Advanced Paleontology**

Covers advanced topics in evolution and extinction, paleoecology, biostratigraphy and/or micropaleontology. Large seminar, field and laboratory component. Prerequisite: ESCI 285. Three credits and lab. Not offered 2012-2013.

**491 Senior Seminar**

This course will foster discussion and analysis of current topics in Earth sciences with emphasis on student initiative. Each student will select a major problem to work on during the year. No credit.

**493 Senior Dissertation**

Restricted to honours students. Three credits.

**499 Directed Study**

Designed for advanced students interested in fields of study not normally covered in courses or thesis presentations. The research may be field-, laboratory- or library-based. Under the supervision of a faculty member, students will plan and conduct research, present the results of their research at a department seminar, and produce a research paper. Prerequisite: permission of the department chair. Three credits. See section 3.5.

**GRADUATE COURSES**

501	Special Topics in Petrogenesis of Igneous Rocks
502	Special Topics in Petrogenesis of Metamorphic Rocks
506	Special Topics in Geochemistry
526	Special Topics in Ore Deposits
535	Special Topics in Tectonics
545	Special Topics in Structural Geology

546	Special Topics in Sedimentology and Basin Analysis
565	Special Topics in Hydrogeology
569	Advanced Quantitative Methods in Earth Sciences
571	Special Topics in Earth Systems Science I
572	Special Topics in Earth Systems Science II
575	Special Topics in Geophysics
576	Field Research Methods in the Earth Sciences
585	Special Topics in Paleontology
586	Special Topics in Climatology
591	Research Methods in the Earth Sciences
598	Research
599	Thesis

Additional courses are available depending on the requirements and interests of the student and the availability of faculty.

## 9.16 ECONOMICS

J. Amoako-Tuffour, Ph.D.  
S. Dodaro, Ph.D.  
S. El-Sheikh, Ph.D.  
M. Gerriets, Ph.D. (on leave)  
T. W. Leo, Ph.D.  
J. Rosborough, Ph.D.  
G. Tkacz, Ph.D.

### Department Requirements

Students can earn a BA, a B.Sc. or a BBA with a concentration in economics; an honours degree in economics with a subsidiary subject; or an honours degree in another program with economics as a subsidiary subject. Economics students can complete a minor in business administration. Programs of study must be approved by the department chair.

### BA Minor Program

- ECON 101, 102, 201, 202;
- 12 credits ECON

Students who take a minor in economics typically combine the minor with major in English, history, philosophy, political science, or sociology, or with the BBA degree.

### BA Major Program

See chapter 4 for information on the degree pattern, declarations of major, advanced major and honours, advancement and graduation requirements.

- ECON 101, 102, 201, 202;
- 24 credits ECON with 12 at the 300 or 400 level;
- 3 credits MATH or STAT;

Other subjects and electives should be chosen in consultation with the department chair.

### BA Advanced Major Program

- ECON 101, 102, 201, 202, 301, 302, 493;
- 6 credits of MATH or STAT; 3 credits must be calculus;
- 15 credits ECON with 6 at the 300 or 400 level.
- Registration in at least one 300- or 400-level ECON course in the winter term of the final year. A senior paper must be written in this course. At least 25% of the grade calculated for the winter term of the course must derive from this paper.

Other subjects and electives should be chosen in consultation with the department chair. Students interested in graduate work in economics are advised to apply for the honours program or take equivalent courses in the mathematical or quantitative area.

### BA Major or Advanced Major in Economics with Minor in Business Administration

Candidates for a major or advanced major in economics may take a minor in business administration by fulfilling the normal requirements for the major or the advanced major degree and completing 24 credits in BSAD. The student will normally complete BSAD 101, 102, 221, 223, 231, 261, and six credits of BSAD electives.

### BA Honours Program

- ECON 101, 102, 201, 202, 301, 302, 371, 372, 493, 494; 30 credits ECON electives with at least 18 credits at the 300 or 400 level;
- a thesis supervised by a department member;
- 6 credits of calculus.

Students planning to pursue graduate work in economics are encouraged to take additional MATH courses.

### BA Honours with a Subsidiary Subject

An honours degree in economics may be completed with a subsidiary subject. Candidates must follow the degree regulations established by the university and the requirements established by both departments; see *section 4.1 and the relevant department chairs*. Honours degrees with a subsidiary subject are offered in a wide range of disciplines.

The Department of Economics offers the following programs:

- BA Honours in Economics and Aquatic Resources
- BA Honours in Economics and Political Science
- BA Honours in Economics and History
- BA Honours in Economics and Mathematics, Statistics & Computer Science

When economics is the primary subject, **not** the subsidiary subject, students are required to complete:

- ECON 101, 102, 201, 202, 301, 302, 371, 372, 493, 494;
- 18 credits of ECON electives with at least 12 credits at the 300 or 400 level;
- a thesis supervised by a department member;
- 6 credits of calculus.

When economics is the subsidiary subject, students are required to complete:

- ECON 101, 102, 201, 202, 301, 302;
- normally 18 credits ECON electives with at least 6 credits at the 300 or 400 level;
- ECON electives may include ECON 493 with approval of the department chair;
- A course in quantitative methods (ECON 371; 372; STAT 201, 224, 231) is strongly recommended.

### Honours in Economics with a subsidiary in History or in History with a Subsidiary in Economics

Normally the student will enroll in at least 9 credits from ECON 310, 342, 351, 352.

### Honours in Economics with a subsidiary in Mathematics and Computer Science

Students must include ECON 401, 402, 471 as ECON electives.

### Honours in Mathematics and Computer Science with a subsidiary in Economics

ECON 401, 402, 471 are recommended as ECON electives. Depending on the nature of the individual thesis, joint supervision by an economist and a mathematician may be appropriate.

### BBA Joint Honours

In conjunction with the Department of Business Administration, the Department of Economics offers a joint honours program in business and economics. See section 5.1 for degree regulations.

### B.Sc. Advanced Major in Economics

See degree regulations in chapter 7. Degree requirements are:

- ECON 101, 102, 201, 202, 301, 302, 371, 372, 493;
- 15 credits ECON electives, including 6 at the 300 or 400 level;
- a minimum of 12 credits in MATH including 6 credits of calculus.
- 18 credits of approved electives are normally taken in science subjects (12 credits must be beyond the 100 level);
- PHIL 210 is recommended.

### B.Sc. Honours in Economics

See degree regulations in chapter 7. Degree requirements are:

- ECON 101, 102, 201, 202, 301, 302, 371, 372, 401, 402, 471, 493, 494 and 21 credits ECON electives with at least 9 credits at the 300 or 400 level;
- a thesis supervised by a department member;
- a minimum of 12 credits in MATH, including six credits of calculus.
- The 18 credits of approved electives are normally taken in science subjects (12 credits must be beyond the 100 level).
- PHIL 210 is recommended.

Note: ECON 101 and 102 are prerequisites for all other courses unless otherwise stated. Students lacking other prerequisites may request department approval to enroll in a course.

### 101 Introductory Microeconomics

This course provides an introduction to microeconomic concepts and methodology. Students will learn about basic concepts such as scarcity and opportunity cost, and economic efficiency. The other central themes of the course include theories of supply and demand; the theory of production and costs, the functioning and the performance of competitive markets versus monopolies and oligopolies; labour markets and the markets for public goods. Three credits.

### 102 Introductory Macroeconomics

The second half of introductory economics, provides an introduction to



macroeconomic concepts. The course examines pressing problems and issues in the Canadian economy and the world. Students will learn about alternate economic systems, national income accounting and the components of the national economy; the role of money in the economy; inflation; unemployment; international trade and trade policy; and the role of government in managing the economy. Prerequisite: ECON 101 recommended. Three credits.

### **201 Intermediate Microeconomic Theory I**

An introduction to the basic concepts of microeconomic theory, this course examines the demand-supply model, consumer theory, production theory, and the purely competitive model, using numerical examples and graphs as aids. Three credits.

### **202 Intermediate Macroeconomics I**

This is the first of two half-courses on intermediate macroeconomics. Students will examine the structure of, and behaviour underlying, contemporary national economies with emphasis on the policies developed to gear them towards the public interest. This course focuses on the Keynesian and classical models of the closed economy for explaining what determines national income, employment, unemployment, prices, inflation, and the interest rate. Three credits.

### **211 Local and Community Development Economics**

Beginning with theories of local and community economic development and welfare, this course provides an economic analysis of community needs and resources (human resources, capital and natural resources, infrastructure). Students will examine interactions within the community and between the community and the outside world, exploring approaches to local and community economic development and planning. Cross-listed as DEVS 211. Three credits.

### **232 History of the Canadian Economy up to 1867**

This course begins with the era of first contact between Europeans and Native peoples within the context of the Atlantic economy. The emergence of early staples in response to a complex set of international forces is examined in detail. Attention to the political economy leading to Confederation and the creation of a transcontinental economy is also given special attention. A historical perspective and multi-disciplinary approach will be applied throughout the course. Three credits. Subject to Senate approval.

### **241 Canadian Economic Prospects and Challenges**

Covers policy issues and problems in the Canadian economy. Topics include employment and unemployment; poverty and income distribution; productivity, education and the 'brain drain'; health care and the social welfare safety net; trade and globalization; the environment and sustainable development; the primary sectors, regional disparity; and the new economy. Topics that reflect strong student interest and/or new issues may be added. Three credits.

### **271 Quantitative Methods in Economics**

Three credits and lab.

### **281 Environmental Economics**

As an introduction to the relationship between human economic activity and the environment, this course explores the economic concepts used to analyze the causes, consequences, and possible solutions to local and global environmental issues. Topics include market failure; property rights; externalities; public goods; environmental valuation; environmental policies dealing with pollution and global issues such as global warming, ozone depletion, biodiversity, and sustainability. Prerequisite: ECON 101. Three credits.

### **291 Economics of Leisure, Recreation & Sports**

This course includes topics related to choices about the time individuals do not spend working. It deals with aspects of the economics of leisure and labour supply; the valuation of time; outdoor recreation; the economics of sports; the economics of dating and marriage; the economics of crime and the consumption of addictive goods; the economics of gambling and other addictive behaviour associated with the consumption of leisure, and the economics of the entertainment industry. Prerequisite: ECON 101. Three credits.

### **301 Intermediate Microeconomic Theory II**

An extension of ECON 201, this course covers price determination in monopoly, monopolistic competition, and oligopoly models. Uncertainty and risk, factor pricing, capital investment over time, externalities, and public goods are discussed. The use of micro-economics as a tool in decision-making is illustrated. Prerequisite: ECON 201. Three credits.

### **302 Intermediate Macroeconomics II**

This sequel to ECON 202 explores the new Keynesian and new classical perspectives on the macro economy. Attention is directed to the determinants of investment, consumption, money demand and supply as well as the role of expectations in macro behaviour. Questions of unemployment, inflation, interest

rates, the government budget, economic growth and macroeconomic policies are examined in their international setting. Prerequisite: ECON 202. Three credits.

### **305 Economic Development I**

Starting with an overview of the present state of the world, this course explores economic development strategies and prospects for the Third World. Topics include the meaning of economic development: past and present theories of growth; alternate approaches to economic development (including the grassroots approach and sustainable development); the role of agriculture and industrialization; and issues pertaining to development planning, markets and the role of governments. Cross-listed as DEVS 305. Three credits.

### **306 Economic Development II**

This course covers economic development prospects and experience in the Third World. Topics include income distribution; population and human resources (including education and health); urbanization, rural-urban migration and the informal economy; labour markets and unemployment; gender and development; savings, taxation and investment; foreign aid and MNCs; the debt problem and structural adjustment; trade and globalization; and the international economic order. Cross-listed as DEVS 306. Prerequisite: ECON 305. Three credits.

### **312 Industrial Organization**

This course deals with the behaviour of firms in imperfectly competitive markets and with the role of competition policies. Business practices such as price discrimination, product differentiation, advertising, and investment in research and development will be explained using both traditional models of industrial organization and more recent ones, which emphasize issues of strategic interaction. Prerequisite: ECON 201. Three credits.

### **332 History of the Canadian Economy after 1867**

This course examines the evolution of Canada within the context of the global economy beginning in the mid-1800's and again after the Second World War. Students will gain a deeper understanding of Canada's endowment of natural resources, its vast geography, and various stages of economic development. Special attention is placed on the patterns of economic growth for a resource exporting economy in the age of British and American hegemony. Prerequisite: ECON 201. Three credits. Subject to Senate approval.

### **335 Money Banking & Financial Markets I**

The course uses basic economic principles to organize students' understanding of and thinking about money, the functions and structure of financial markets and financial institutions. Topics covered include: the necessity, the nature, and the future of money; the determinants of interest rates; the term structure of interest rates, the pricing of government securities; what banks do and how their operations affect the economy. Credit will be granted for only one of ECON 335 and ECON 330. Three credits.

### **336 Money Banking & Financial Markets II**

The course introduces students to the role of imperfect information in financial markets. Topics covered include: asymmetric information and its consequences; the necessity of regulations of financial institutions and the role of domestic regulators and policy makers; comparative analysis of financial system regulations; financial market instabilities and the elements for the conduct of monetary policy. The course helps students understand the causes of financial instability and crises, and what policy makers can do to alleviate or avoid them. Prerequisites: ECON 335, ECON 202 is recommended. Credit will be granted for only one of ECON 336 and ECON 330. Three credits.

### **341 Regional Economics**

Three credits.

### **342 Maritime Economy**

An overview of the historical and contemporary dimensions of the Maritime economy. The course first traces the development of the Maritime economy with emphasis on the evolution of regional disparities. It then examines the current economy and the economic and political forces that are now generating change. Three credits.

### **351 Schools of Political Economy up to 1870**

The course begins with an overview of the economic writings from Ancient Greece to the French Physiocrats in the 1760. The study of British political economy begins with Adam Smith's *Wealth of Nations* in the 1770s. It then examines the doctrines of Classical economists such as Ricardo, Malthus, Stuart Mill, and Marx. Credit will be granted for only one of ECON 351 and ECON 350. Prerequisites: ECON 201, ECON 202. Three credits.

### **352 Schools of Political Economy after 1870**

This course offers a survey of the complete range of economic ideas from 'marginal revolution' of the 1870 to the 'new classical' revolution of the 1980s. The topics illustrate the evolution of economic theory and the emergence of competing schools

of economic thought. Students will acquire a sense of perspective and appreciation for the rich heritage that contemporary economists can draw from. Credit will be granted for only one of ECON 352 and ECON 350. Prerequisites: ECON 201, 202. Three credits.

### **361 Human Resources and Labor Economics**

The course analyzes the essential elements of the labour market: labour demand and labour supply, and their interaction to determine wages, employment and unemployment. Topics include fertility, education, regional wage disparities, income maintenance schemes, wage discrimination, the unemployment insurance program, unions and collective bargaining, and the distribution of wealth. Prerequisite: ECON 201. Three credits.

### **364 Health Economics**

The course introduces students to the role of economics in health, health care, and health policy. The course focuses on individual's choice pertaining to health, and economic evaluation of various methods of health care delivery. Students will learn how the market for health care differs from other markets, especially with regards to uncertainty and asymmetric information, and understand health insurance markets and their interrelationship with the market for health care services, as well as the role of the government. Prerequisite: ECON 201. Three credits.

### **365 International Trade**

Covers the theory of international trade and its policy implications, including: comparative advantage; gains from trade; terms of trade; trade and growth; trade and economic development; commercial policy (tariff and non-tariff barriers, effective protection, trade liberalization); economic integration (with emphasis on NAFTA and the EC); migration and trade in service; and intellectual property rights. Prerequisite: ECON 201. Three credits.

### **366 International Payments and Finance**

Covers the theory and policy implications of international payments and finance. Topics include the exchange rate and the foreign exchange market; balance of payments problems and policies; fixed versus flexible exchange rate regimes and common currency areas; the Eurocurrency market; open economy macro-economics; international finance, financial liberalization and globalization; capital flows and multinational corporations; and the international monetary system. Prerequisites: ECON 201, 202. Three credits.

### **371 Econometrics I**

This course develops the simple and multiple classical regression models, interval estimation and hypothesis testing. The problems of estimation, inference, mis-specified structures, multicollinearity, heteroskedasticity, and serial correlation are presented. Students will be exposed to STATA or other relevant econometric software. The course requires some proficiency in calculus and basis statistics. Prerequisites: MATH 111, 112 or permission of the instructor; STAT 231 recommended. Three credits.

### **372 Econometrics II**

This course is a continuation of ECON 371 and deals with various estimation methods, including least squares and maximum likelihood, specification tests, dynamic models and simultaneous equation models as well as limited and qualitative dependent variables. Students will be exposed to MATLAB or other matrix-based analytical software. Prerequisite: ECON 371. Three credits.

### **381 Natural Resource Economics**

Examines the role of natural resource industries in the Canadian and world economies, including minerals, oil and gas, forest resources, fisheries and endangered species, and water resources. The course introduces students to the use of economic tools in analyzing problems of renewable and non-renewable resource management. Topics include welfare and inter-temporal analysis of resource exploitation; ownership and property rights issues in resource use and management; the nature of resource markets; resource taxation; biodiversity conservation; and sustainability. Prerequisites: ECON 201; MATH 111. Three credits.

### **391 Public Finance I: Expenditures**

An analysis of the role of government in the economy, focusing on expenditure and with emphasis on the Canadian situation. Starting with an introduction to the public sector, the course covers: the rationale for government participation in the economy; the growth of the public sector over time; the theory of collective decision-making; cost-benefit analysis; fiscal federalism; specific spending programs. Prerequisite: ECON 201. Three credits.

### **392 Public Finance II: Taxation**

An analysis of the role of government in the economy, focusing on revenue and with emphasis on the Canadian situation. Starting with an introduction to taxation and tax policy, the course covers: individual income taxes; corporation taxes;

consumption; value-added and sales taxes; property and other taxes; tax reform; the revenue side of fiscal federalism; and the international dimensions of taxation and taxation policies. Prerequisite: ECON 201. Three credits.

### **401 Advanced Microeconomics**

An advanced treatment of micro-economic concepts and topics, such as consumer choice and demand analysis, production technology and cost, market structure and pricing, factor markets and shares, general equilibrium and economic welfare. Prerequisites: ECON 301; MATH 111, 112; ECON 471. Credit will be granted for only one of ECON 401 and ECON 412. Three credits.

### **402 Advanced Macroeconomics**

An advanced treatment of macroeconomic theory and how macroeconomic policy is conducted. The course offers deeper insights into economic growth processes, business cycles, international macroeconomics stabilization policies, and alternative approaches to building macroeconomic models. Students are introduced to the use of two-period models. Prerequisites: ECON 302; MATH 111, 112; ECON 471. Credit will be granted for only one of ECON 402 and ECON 411. Three credits.

### **471 Mathematical Economics**

An introduction to mathematical reasoning in economics and business, this course covers: the methodology of operations research; profit and cost analysis; resource use and production decisions; input-output and macro-analysis; pricing and inventory decisions; capitalization of cash flows and growth; portfolio selection and investment. Prerequisites: MATH 111, 112. Three credits.

### **491 Selected Topics I**

Course content changes from year to year and may reflect faculty involvement in a specific area of research. Three credits.

### **492 Selected Topics II**

The specific content of the course will change from year to year and may reflect faculty involvement in a specific area of research. Three credits.

### **493 Seminar**

A capstone course intended to provide students with an overview of the discipline of economics. The approach taken may depend on the area of expertise of the instructor, and topics are determined to some extent by the interests of students. The course normally surveys the history of economic thought so that students gain an understanding of the evolution of the discipline, its methodology, and its relationship to economic policy. Other course content that achieves similar goals may be substituted. Three credits.

### **494 Thesis**

Each student works under the supervision of a professor who guides the selection of a thesis topic, the use of resources, the methodological component, and the quality of analysis. Restricted to honours students. Three credits over full year.

### **499 Directed Study**

A directed study course in advanced topics in economics. See section 3.5. Students wishing to take this course must consult the department chair. Three credits.

## 9.17 FACULTY OF EDUCATION

I. Bernard, Ph.D.  
 A. Foran, Ph.D.  
 D. Graham, Ph.D.  
 L. Kearns, Ph.D.  
 L. Lunney Borden, Ph.D.  
 L. MacDonald, Ph.D.  
 K. MacLeod, M.Sc.  
 M. Meyer, Ph.D.  
 E. Munroe, Ph.D.  
 A. Murray Orr, Ph.D.  
 B. Mwebi, Ph.D.  
 J. Orr, Ph.D.  
 D. Robinson, Ph.D.  
 J. Tompkins, Ph.D.  
 R. White, Ph.D.  
 D. Young, Ph.D.

### Part Time

G. Barker, M.Ed.  
 S. Barker, M.Ed.  
 Z. Crouse, M.Ed.  
 P. De Amicis, M.Ed.  
 D. Demers, M.Ed.  
 R. Dorion, B.Ed.  
 L. Duggan, B.Ed.  
 W. Duggan, M.Ed.

R. Ferguson, M.Ed.  
 J. Fulton, M.Ed.  
 W. Goyetche, B.Ed.  
 M. Hinchey, M.Ed.  
 W. Kraglund-Gauthier,  
 M.A.Ed.  
 M. Landry, M.Ed.  
 W. MacAskill, Ph.D.  
 B. MacDonald, M.Ed.  
 K. MacDonald, MA  
 N. MacDougall, M.Ed.  
 A. MacInnis, B.Ed.  
 B. MacIsaac, M.Ed.  
 B. MacKinnon, M.Ed.  
 R. MacLean, M.Ed.  
 J. Mitton, Ph.D.  
 M. Olson, Ph.D.  
 G. Patterson, M.Ed.  
 R. Ryan, M.Ed.  
 J. Sangster, M.Ed.  
 B. Timmons, M.Ed.  
 J. Tinkham, M.Ed.  
 N. Turniawan, M.Ed.  
 L. Williams, B.Ed.  
 J. Withrow, Ph.D.  
 R. Wolf, M.Ed.

See chapter 6 for B.Ed. regulations and chapter 8 for M.Ed. regulations. Candidates are required to complete all of the courses shown below for the elementary or secondary division.

### 9.17.1 Education

#### Program Dates 2012-2013

Friday, September 7	B.Ed. orientation and registration
Monday, September 10	First day of classes for B.Ed.
Wednesday, November 7	Last day of classes for B.Ed.; first term
Friday, November 16	First day of B.Ed. practicum
Thursday, December 20	Last day of B.Ed. practicum
Monday, January 7	First day of classes for B.Ed., second term
Thursday, March 7	Last day of classes for B.Ed.
March 11-15	B.Ed. mid-term recess
Monday, March 18	First day of B.Ed. practicum
Friday, April 26	Last day of B.Ed. practicum

#### Elementary Program

Year 1 (E1) EDUC 411, 412, 413, 416, 433, 435, 439, 471, 472;  
 Year 2 (E2) EDUC 414, 434, 436, 463, 468, 481, 482; 9 credits EDUC  
 electives with at least 3 from EDUC 442, 456, 457 and 458.

#### Secondary Program

Year 1 (S1) EDUC 432, 433, 435, 471, 472; a first curriculum and instruction  
 course taken from EDUC 421 to 429; 6 credits EDUC electives  
 Year 2 (S2) EDUC 434, 436, 438, 440, 481, 482; a second curriculum and  
 instruction course taken from EDUC 421 to 429; 6 credits EDUC  
 electives.

#### Mi'kmaq Language Focus

A student in either the elementary or secondary program can achieve a focus on  
 Mi'kmaq language by earning credit for EDUC 454 and 455.

#### French Language Specialization

A student in either the elementary or secondary program may specialize in teaching  
 French. Students who complete EDUC 459 and 460 may achieve a core French  
 specialization. Students with demonstrated French fluency can, after successfully  
 completing 459 and 460, take EDUC 428 in their second year to qualify to teach  
 in French immersion.

#### Physical Education Specialization

A student in either the elementary or the secondary program may specialize in  
 teaching physical education by earning credits for EDUC 457, 425A and B, and  
 444. These courses prepare the teacher for a K-12 physical education where the  
 emphasis is on the development of a physically active lifestyle, and includes such  
 topics as movement education, fitness and dance, outdoor education, health  
 education, personal development. Students pursuing this specialization would  
 take EDUC 425A in the fall of year one, EDUC 547 in winter year one; EDUC 444  
 in the fall of year two, and EDUC 425B in the winter of year two.

## Core Courses for Elementary and Secondary Programs

### Year One

#### 433 Sociology of Education

This course will examine the social-political context of education in Canada,  
 particularly contemporary structures. Students will explore the relationship between  
 educational opportunity and conditions of inequality. Three credits.

#### 435 Inclusive Practices I

This course discusses educational, practices and procedures, past and present,  
 affecting pupils who have been marginalized socially and/or physically. These  
 policies have evolved from an ideology of exclusion to inclusion. Preservice  
 teachers will learn curriculum and instructional approaches to assist in meeting  
 the academic and socio-emotional needs of students with diverse learning needs.  
 Three credits.

#### 471 Internship I

Students are placed in schools for five weeks of supervised practicum. Three  
 credits.

#### 472 Internship II

Students are placed in schools for five weeks of supervised practicum. Three  
 credits.

### Year Two

#### 434 Contemporary Issues in Public Education

This course examines the historical, legal, and philosophical underpinnings of  
 contemporary issues facing public schooling. Goals, purposes, and dilemmas that  
 have affected such facets of education as the structure of Canadian schooling,  
 political and policy making processes, educational law, the work of teachers'  
 organizations, and educational standards are explored. Three credits.

#### 436 Inclusive Practices II (E2 & S2)

This course provides preservice teachers with an understanding of the learning  
 strengths and challenges of students with exceptionalities. Emphasis will be placed  
 on collaborative team planning, professional supports provided for students with  
 diverse learning needs, the assessment and education referral process, and the  
 development of individualized educational plans. Three credits.

#### 481 Internship III

Students are placed in schools for five weeks of supervised practicum. Three  
 credits.

#### 482 Internship IV

Students are placed in schools for five weeks of supervised practicum. Three  
 credits.

### Required Elementary Courses

#### 411 Curriculum and Instruction in Language and Literacy I (E1)

This course is designed to prepare prospective elementary teachers to teach the  
 language arts: reading, writing, speaking, listening, and viewing. Also included is  
 comprehensive literacy programming, children's literature, authentic assessment,  
 and organizing the classroom for language instruction across the curriculum.  
 Throughout this course, the practical influence of various language arts theories  
 is emphasized with a particular focus upon early literacy in the lower elementary  
 grades. Three credits.

#### 412 Curriculum and Instruction in Mathematics (E1)

This course includes an examination of the elementary school mathematics  
 program, and of various approaches to teaching mathematics to children, with  
 emphasis on exploring strategies for the development of conceptual understanding  
 through multiple representation. Three credits.

#### 413 Curriculum and Instruction in Science (E1)

The focus of this course is an emphasis on the process approach to teaching  
 science, on the inquiry method, and on special techniques in the teaching of scientific  
 concepts. The elementary science curriculum is examined. Three credits.

#### 414 Curriculum and Instruction in Language and Literacy II (E2)

This course is a continuation of Language Arts I with emphasis on the upper  
 elementary years. Three credits.

#### 416 Curriculum and Instruction in Social Studies (E1)

A review of the social studies programs used in elementary school, with emphasis  
 on the development of skills, methods and approaches involved in teaching these  
 programs. Three credits.



**439 Principles and Practices of Elementary Education (E1)**

This course emphasizes the foundations of becoming an elementary school teacher. Topics include the professional and ethical role of the teacher, educational planning, the professional development process, reflective practice, teaching strategies, learning processes, classroom environment and management. Six credits.

**463 Elementary Assessment for and of Learning**

This course examines current research and practices in classroom assessment, evaluation, record keeping and communication of student achievement. Three credits.

**468 Teaching Mathematics in Middle Schools**

Students will learn the process, content, and assessment of middle school mathematics. They will make connections, communicate, reason mathematically, and complete problems. Students will explore strategies for the development of conceptual understanding through multiple representations. Three credits.

**Required Secondary Courses****420 to 429 Curriculum and Instruction in Secondary Education (S1 and S2)**

Curricular and instructional concepts will be described, demonstrated, evaluated, and applied in relation to the following subject fields of the school curriculum:

- 420 A & B Gaelic
- 421 A & B English
- 422 A & B Social Studies
- 423 A & B Mathematics
- 424 A & B Diverse Cultures (First Nations and African-Canadian Studies)
- 425 A & B Physical Education
- 426 A & B Music
- 427 A & B Science
- 428 A & B French
- 429 A & B Fine Arts

Students normally register for one of these eight courses in year one, and a second in year two. The choice is determined by each student's two subject fields of study. For students pursuing a French or physical education specialization, please consult that section of the Calendar for more details of course sequence. Students with more than two teachable subjects may take additional courses from this list as electives. Six credits per pair.

**432A & B Principles and Practices of Secondary Education (S1)**

This course emphasizes the foundations of becoming a secondary school teacher. Topics include the professional and ethical role of the teacher, educational planning, the professional development process, reflective practice, teaching strategies, learning processes, classroom environment and management and pedagogy. Three credits each.

**438 Assessment for and of Learning (S2)**

This course explores issues surrounding the assessment for and of learning from a variety of perspectives. Basic principles of learning theory will be emphasized in the context of curricular examples from different teachable subject areas. Students will gain the skills necessary to critically evaluate and develop effective assessment approaches. Three credits.

**440 Literacy in the Content Areas (S2)**

This course explores and models teaching strategies that are consistent with the philosophy and background theory of content literacy. Students use the associated theories of literacy and the five recognized tools (reading, writing, speaking, listening, viewing) to develop their knowledge of, and skill in applying, these concepts. Three credits.

**Electives****205 French/Education (Thematic Oral Communication)**

Available exclusively to education students, this course enhances French communication skills, leading to the necessary proficiency to teach core French at the elementary level. The course is designed for students who have studied French as a second language at the secondary level, or who have had some exposure to French at the university level. Three credits.

**417 Curriculum and Instruction for Diversity**

This course provides preservice teachers with an overview of curricular approaches and content for representing the cultural diversity of Canadian society in the elementary curriculum. Multicultural, anti-racist, feminist and Aboriginal approaches

to curriculum content, teaching, assessment, classroom management and learning are emphasized. Three credits. Not offered 2012-2013.

**419 Curriculum and Instruction in Middle School Science**

This course examines curriculum and instructional strategies appropriate in middle years' science classrooms, including an emphasis on the process approach to teaching science, the inquiry method, and special techniques in the teaching of scientific concepts. The grade six to grade nine science curriculum is examined. Three credits.

**437 Guidance (S2)**

This course focuses on the development and knowledge of interpersonal relationships and interpersonal skills required by the classroom teacher in providing guidance for his/her students. It addresses specific strategies and frameworks for meeting the needs of at-risk students and those with other special needs in a variety of contexts. The basic principles and practices of guidance will be emphasized. Three credits.

**442 Learning through Drama**

This course provides pre-service, K-12 teachers with concepts and ideas for drama lesson plans; approaches to drama; basic drama and drama education theory; a working knowledge of theatre production; an introduction to the Nova Scotia curricular guidelines; and play selection guidelines for elementary and secondary student productions. Three credits.

**444 Outdoor Experiential Education**

Students will explore strategies to encourage their pupils to achieve, appreciate, and maintain a physically active lifestyle in the outdoors. They will learn to develop physical education programs that foster a life-long commitment to outdoor education that is enjoyable, challenging, and safe. They will experience a range of outdoor pursuits and selected topics: flatwater paddling, navigation, Geocaching, core camping, snowshoeing, archery, wilderness and remote first aid, risk management and emergency procedures, and other activities that allows for self-expression and positive social interaction. Three credits.

**445 Curriculum & Instruction in Comprehensive School Health**

This course provides students with an interest in health and wellness an opportunity to acquire the knowledge, skills and attitudes needed for teaching a comprehensive school health education curriculum in the public school system. An overview of the main components of a comprehensive school health curriculum and associated pedagogical approaches will be explored. Three credits.

**453 English as a Second Language Methods**

Provides student teachers with a thorough understanding of the theoretical and methodological aspects of learning and teaching a second language, focusing on the learning/teaching of English (ESL). Students will become familiar with relevant research and will examine the prevalent theories in different ESL areas. Three credits.

**454 Mi'kmaq Language Arts I**

This course will focus on language acquisition theories and the methodologies that support these theories. Students will examine current approaches to bilingual language learning, especially reclaiming and revitalizing aboriginal languages. Topics include early literacy strategies linked to oral tradition; immersion strategies; promoting oral and written language; different writing systems used by Mi'kmaq over time, including the Smith-Francis orthography. Three credits.

**455 Mi'kmaq Language Arts II**

This course combines theories of language acquisition with their practical application in first- and second-language classrooms. Topics include materials and lesson development; using community resources; bringing elders into the classroom; making links with parents and other community members for language revitalization; connecting language communities using technology. Students will continue to perfect their ability to use the Smith-Francis orthography. Three credits.

**456 Curriculum and Instruction in Music**

This course provides an examination of music methods, materials, and curricula, using the Kodaly and other systems currently in use in the elementary school system. Three credits.

**457 Curriculum and Instruction in Elementary Physical Education**

This course is designed to introduce beginning pre-service teachers to the theoretical knowledge, practical experiences, and professional responsibilities of a successful elementary school physical education teacher. This course focuses on establishing structure for elementary physical education, writing unit plans, applying

a teaching model based on skill themes and movement concepts, understanding developmentally appropriate instructional approaches, and implementing interdisciplinary practices. Three credits.

#### 458 Curriculum and Instruction in Visual Arts

The aim of this course is to introduce the student to the visual and creative arts, and to discover ways to integrate these with the other subjects of the elementary school curriculum. Three credits.

#### 459 French Education I

This course surveys several theories of language learning and the methodologies that reflect these theories. Students will learn how the National Core French Study (NCFS) brought about a change in French curriculum throughout Canada, and how the four syllabi of the NCFS are incorporated into all aspects of French second-language teaching and learning. Three credits.

#### 460 French Education II

This course combines theories of language acquisition with their practical application in the second-language classroom. Topics will include: unit planning and implementation; materials and lesson plan development in the four skill areas; co-operative grouping strategies; graphic organizers as learning strategies; learning centres and authentic evaluation techniques. Three credits.

#### 462 Teaching Religious Education in a Catholic School

Students will learn about the Canadian Catholic catechism and its setting within the doctrinal foundations of the Catholic faith. Related topics of religious philosophy and spirituality and their roles in people's lives will be explored. Three credits. and in alternate years.

#### 464 Environmental Education

Beginning with the assumption that solutions to environmental problems require well-designed environmental education programs, students will develop a conceptual framework and practical strategies for creating an environmental education curriculum for grades K-12. Three credits.

#### 467 Technological Innovations

This course provides participants with the opportunity to explore several contemporary educational applications in detail. Students will utilize iMac software and applications to develop a number of teaching and learning resources. Particular attention will be given to the growing area of "online learning". Students will have the opportunity to work with two online platforms, Moodle and Elluminate, to design curriculum, teaching and learning materials and activities suitable for classroom use. Three credits.

#### 469 Selected Topics in Education

Topics for 2012-2013 will include Adolescent Mental Health, and Curriculum and Instruction in Family Studies II. Three credits.

#### 491 Advanced French Grammar

Available exclusively to education students and educators, this course will lead participants to a critical and analytical review of functional grammar as applied to the field of education. Special focus will be placed on French linguistic structures related to material development, correspondence with parents, teachers and other professionals in the field and the development of additional curriculum resources. A major objective of the course will be to encourage and enable participants to learn to self-correct written and oral communication. Restricted to Year 2 French students only. Three credits.

#### 493 Directed Study

In consultation with the department and with permission of the chair, students may undertake a directed study in an approved area of interest not available through other course offerings. See section 3.5. Three credits.

### 9.17.2 Department of Curriculum and Leadership Master of Education

Graduate courses in education are offered in the fall, winter, and spring terms in locations around the province and in summer school in July in Antigonish. Because the majority of M.Ed. candidates study part time, the fall, winter, and spring courses are offered in evenings and on weekends.

Candidates for the M.Ed. program are normally required to take EDUC 505 and EDUC 534 as their first two courses in Antigonish during the summer session after acceptance into the program. EDUC 505 is a prerequisite for EDUC 506, 507, 508. Normally EDUC 506, 507, 508 are taken after the core courses are completed. EDUC 506 or 507 is required in the thesis and project routes.

Educational Administration and Policy Stream  
505 Introduction to Educational Research

Credits  
3

506	Quantitative Research Methods in Education or	3
507	Qualitative Research Methods in Education or	3
508	Critical Research Literacy in Education	3
533	Dynamics of Change	3
534	Introduction to the Foundations of Education	3
561	Leadership and Administrative Theories	3
573	Professional Development and Supervision	3
599	Thesis 12	
Electives:	in the thesis option	6
	in the course-based option	18

Electives are to be selected from the graduate courses offered in education and should reflect the focus of study chosen by the student.

Curriculum and Instruction Stream	Credits	
505 Introduction to Educational Research	3	
506 Quantitative Research Methods in Education or	3	
507 Qualitative Research Methods in Education or	3	
508 Critical Research Literacy in Education	3	
527 Principles of Learning	3	
532 Curriculum Theory	3	
534 Introduction to the Foundations of Education	3	
536 Program Development	3	
599 Thesis	12	
Electives:	in the thesis option	6
	in the course-based option	18

Electives are to be selected from the graduate courses offered in education and should reflect the focus of study chosen by the student. No substitution or transfer of credit will normally be allowed in the core courses.

#### 501 Program Evaluation and School Data Management

This course will explore the purposes, procedures, and strategies inherent in the design and implementation of effective program evaluations. Three credits.

#### 505 Introduction to Educational Research

This introductory course covers reading and understanding educational research. Students will explore research issues and critically interpret the main types of research, including descriptive research, qualitative research, case studies, and empirical studies. Three credits.

#### 506 Quantitative Research Methods in Education

An introduction to fundamental statistical concepts and methods, together with practical advice on their effective application to real-world problems. Students will explore the basic components of a research proposal. Prerequisite: EDUC 505. Three credits.

#### 507 Qualitative Research Methods in Education

This course explores current qualitative methodologies used in educational contexts. Students will explore the components of a research proposal, and develop an understanding of methodologies such as phenomenology, ethnography, critical theory, narrative, and action research. Prerequisite: EDUC 505. Three credits.

#### 508 Critical Research Literacy in Education

This course examines educational research issues and trends from the perspective of professional practice. Students will explore a variety of educational research publications in relation to their own educational context. Prerequisite: EDUC 505. Three credits.

#### 513 Problems and Issues in Special Education

Covers current theories of, and practices in, the education of children with special needs from pre-school through adolescence. Research relevant to assessment, instruction, counselling, and vocational programming practices will be examined. Proposals to modify program models will be included. Three credits.

#### 514 Teaching Children with Learning Difficulties I

This course presents an overview of the historical and philosophical approaches to teaching children with learning difficulties. Students will examine the learning difficulties children can bring to the classroom. Three credits.

#### 517 Teaching Children with Learning Difficulties II

This course focuses on the development of individualized instruction for children with learning difficulties who are in the regular classroom. Students will analyze the effectiveness of various approaches. Three credits.

**520 Current Research in Curriculum**

A critical exploration of recent theories and research related to current issues in curriculum with a concentration in one of:

- 520A English Language Arts
  - 520B French
  - 520C Mathematics
  - 520D Diverse Cultures
  - 520E Science
  - 520F Social Studies
  - 520G Physical Education
  - 520H Arts
  - 520I Health
  - 520J Outdoor/Experiential
  - 520K Second Language
  - 520L Drama
  - 520M Music
  - 520N Visual Arts
- Three credits each.

**521 Current Research in Instruction**

A critical exploration of recent theories and research related to current issues in instruction with a concentration in one of:

- 521A English Language Arts
  - 521B French
  - 521C Mathematics
  - 521D Diverse Cultures
  - 521E Science
  - 521F Social Studies
  - 521G Physical Education
  - 521H Arts
  - 521I Health
  - 521J Outdoor/Experiential
  - 521K Second Language
  - 521L Drama
  - 521M Music
  - 521N Visual Arts
- Three credits each.

**527 Principles of Learning**

This course examines theories of learning and development and their implications for instruction. In addition to the general cognitive and behaviourist theories, the course will focus on the aspects of cognitive learning that are relevant to understanding the diversity of learners. Three credits.

**529 School and Teaching Effectiveness**

An examination of research on school and teaching effectiveness and the implications of this research for school improvement. Three credits.

**532 Curriculum Theory**

In this course the ideas of major curriculum theorists will be examined and the implications of each position for program development for schooling will be explored. Three credits.

**533 Dynamics of Change**

This course examines major concepts in the successful implementation of change. Students will learn to recognize and understand the ways in which change can have an impact on education. Three credits.

**534 Introduction to the Foundations of Education**

Students are asked to critically examine their own practice and its context. Issues of power and privilege as they operate in the field of education are central unifying themes of the course. The investigative approach includes ethical reasoning, autobiographical reflection, arts and esthetics, deconstruction and sociological analysis. Three credits.

**536 Program Development**

Program development is investigated from the practitioner's perspective using narrative inquiry to explore relationships among the four curriculum commonplaces of students, teacher, curriculum, and milieu. Three credits.

**537 Philosophical Foundation of Curriculum**

This course examines the philosophical foundations, criteria, and principles underlying the choice of subjects and curricula in educational institutions. Three credits.

**538 Nature of the Reading Process**

This course will examine models related to our understanding of the reading process and will explore the contributions of current literary theories to the development of contemporary literacy theories and practices. Three credits.

**540 Educational Finance**

While providing students with the opportunity to explore public and private funding of education, this course will also examine the moral, political, and economic bases for decisions in educational finance in the context of current educational and societal trends. Three credits.

**541 Administration of First Nations Education**

An introduction to the historical, legal, and philosophical bases of First Nations education. The course will explore issues related to the roles, responsibilities, and duties of administrators in band-controlled schools. Three credits.

**543 Internship**

Under faculty supervision, student interns will develop their practical and theoretical knowledge and competence in a particular area of education. Three credits.

**544 Cross-Cultural Issues in Education**

Students will examine various issues and theories related to cultural and race relations policies and practices in the education system. Three credits.

**545 English as a Second Language**

The course will cover theoretical and methodological aspects of learning and teaching a second language, focusing on the learning and teaching of English. Students will become familiar with the relevant research and examine the prevalent theories in different ESL areas. Three credits.

**553 Assessment for Teaching Students with Learning Challenges I**

This course will review trends and practices in assessment. Students will appraise various types of assessment, both standardized and informal, paying attention to characteristics, areas of usefulness, and limitations. Three credits.

**554 Assessment for Teaching Students with Learning Challenges II**

Students will develop the ability to choose formal and informal measures for assessing individual student achievement. They will learn how to administer, interpret, and communicate the results of these assessments. Relating the results of the assessment to the provincial outcomes suitable for the students will be a critical component of the course. Prerequisite: EDUC 553. Three credits.

**561 Leadership and Administrative Theories**

This course is an introduction to theory, research and practice in educational administration. Emphasis is placed on the evolutionary nature of administrative theory and its role in the operation of public education systems. Three credits.

**562 Contemporary Issues in Educational Administration Theory**

This course further explores contemporary issues in the theory, research, and practice of educational administration. Building upon EDUC 561, students will discuss topics such as post-modernism, feminist theory, chaos theory, and critical theory. Prerequisite: EDUC 561. Three credits.

**564 Administration of Inclusive Schools**

Many Canadian educational systems have inclusive schooling as a priority. This course will provide an overview of the movement towards inclusive schools and will explore proven practices in the administration of these schools. Three credits.

**567 School Law**

An examination of legal principles and procedures pertaining to school boards, administrators, and teachers. Consideration will be given to legislation and court decisions relative to the organization, policy, and administration of school districts in Nova Scotia. Three credits.

**569 Selected Topics in Education**

Students will explore in detail the theoretical underpinnings and practical implications of various topics and issues in education. Course content will vary from year to year. Three credits.

**571 Specific Issues in School Administration**

This course examines recurring and emerging issues in educational administration from the perspective of their theoretical roots. Students will address problems identified in the literature and in their own practice, develop an understanding of the issues involved, examine the theoretical assumptions influencing these problems, and create alternative solution strategies. Three credits.

**573 Professional Development and Supervision**

This course addresses the role of supervision in an instructional program, focusing on human resources and the professional development process for instructional and support staff. Three credits.



**576 Specific Issues in Curriculum Development**

This course will examine selected contemporary educational controversies and explore their implications for curriculum decision-making. Students will examine current issues and problems. Three credits.

**577 Computers in Humanities Education**

This online course provides an overview of the role of computers in elementary and secondary education. By reading articles and books on selected topics, students will have a starting point for online discussions about the issues associated with computer technology in the classroom. Students also study a variety of software packages and Internet websites and create web lessons. Some prior knowledge of computers and basic keyboarding skills is required. This course will be of interest to K-12 teachers who are interested in using computers in language arts, social studies and the arts. Three credits.

**578 Computers in Science Education**

This online course provides an overview of the role of computers in elementary and secondary education. By reading articles and books on selected topics, students will have a starting point for online discussions about the issues associated with computer technology in the classroom. Students also study a variety of software packages and Internet websites and create web lessons. Some prior knowledge of computers and basic keyboarding skills is required. This course will be of interest to K-12 teachers who are interested in using computers in the sciences. Three credits.

**581 The Role of the Principal**

An examination of perspectives on educational leadership, delegation of functionally categorized responsibilities, administration of instructional programs, effective enhancement of staff, and the development of productive and satisfying learning environments for students. Three credits.

**583 Education Planning and Policy**

An examination of political theory as a basis for constructing policy and planning for the implementation of policy. Three credits.

**590 Research Project**

This course involves individual research, under the supervision of a faculty member, which develops both practical and theoretical understanding and competence in a particular area of education. Six credits.

**593 Directed Study**

In consultation with the department chair, students may undertake a directed study program in an approved area of interest that is not available through other course offerings. See section 3.5. Three credits.

**595 Seminar**

Students work under the supervision of a professor who will guide them in the selection of thesis topics and the preparation of thesis proposals. Students will have the opportunity to discuss their work with others as the research proposal is prepared. No credit.

**599 Thesis**

Twelve credits.

**9.17.3 Ph.D. in Educational Studies**

The Ph.D. in Educational Studies is offered in partnership by St. Francis Xavier University, Mount Saint Vincent University, and Acadia University. This research-oriented doctoral program is jointly administered by the Inter-University Doctoral Administrative Committee (IDAC). Applicants are admitted to one university and graduate from that home institution of record.

Doctoral students can focus their studies on one or more of six interrelated themes: curriculum studies, educational foundations and leadership, inclusive education, lifelong learning, literacies, and the psychological aspects of education. Applicants are encouraged to review the research interests of education faculty members at all three participating universities, available at their respective websites. An average of 14 students will be admitted each year: six at MSVU, four at St FX and four at Acadia. The IDAC may consider applicants on a case-by-case basis and waive the fixed application date, if deemed warranted and if space is available in the program for that year.

Students enroll in GEDU 9001 and 9002 on site in July at one of the three universities. The site for these two courses will rotate amongst the three universities from year-to-year. Students complete GEDU 9010 and 9100 with their dissertation advisor and their committee at their home institution of record. The remaining courses are delivered using an e-learning platform. In some instances, doctoral students may arrange to enroll in an existing topic-related Master level course, augmented with doctoral level analysis and applications. Doctoral students have

the right to take courses and seminars and use the academic facilities of any of the three participating universities in accordance with their approved plan of study.

**9001 Foundations of Educational Inquiry**

This course examines the purpose, process, nature and ideals of education. Students will engage with enduring educational philosophical and theoretical traditions and perspectives, the history of educational thought and the philosophy of education, in particular. A variety of foundational perspectives provides deeper understandings of the theoretical and methodological underpinnings of education. Co-requisite: GEDU 9002. Three credits.

**9002 Methodological Perspectives on Educational Research**

This course examines of the importance of methodological paradigms in educational research (building on the foundations of educational inquiry). Students investigate ontological assumptions; epistemological views; the role of logic, sound evidence and justified beliefs; axiology (values and biases); and rhetorical (research reporting structures) components of educational inquiry. Co-requisite: GEDU 9001. Three credits.

**9003 Doctoral Seminar: Contemporary Educational Theory**

This course explores how educational philosophy, research paradigms and theories are manifested in contemporary educational research debates and dialogues. Through an intensive examination of a range of theories that inform studies in education, students gain an advanced and comprehensive understanding of contemporary educational theory within the Canadian and international contexts. Prerequisites: GEDU 9001, 9002. Co-requisite: GEDU 9004. Three credits.

**9004 Focused Educational Studies**

This course will provide for focused exploration of research topics that reflect the research interests of the current roster of doctoral students. In a seminar setting, individual students will study the research and theoretical literature in the educational area(s) that inform their research interests. Prerequisites: GEDU 9001, 9002. Co-requisite: GEDU 9003. Three credits.

**9005 Advanced Research Seminar: Focus on Methods**

Students will gain detailed knowledge and technical expertise related to methods appropriate for their particular research question(s), aligned with their chosen philosophical and methodological orientations. Issues related to particular research design processes will be addressed. Prerequisites: GEDU 9001, 9002. Three credits.

**9006 Special Topics Educational Studies**

Three credits.

**9007 Special Topics Educational Studies**

This course provides students with an opportunity to explore selected topics in educational studies related to the literature associated with their research area. Prerequisites: GEDU 9001, 9002. Three credits.

**9008 Independent Study**

Three credits.

**9009 Independent Study**

The curriculum for this course will be determined by the supervisor of the course in consultation with the student and other faculty members, as necessary. Prerequisites: GEDU 9001, 9002. Three credits.

**9010 Comprehensive Examination: Research/Scholarly Portfolio**

Students will develop and orally defend an extensive scholarly portfolio demonstrating sufficient breadth, depth, creativity and engagement to undertake substantive research in their field. The portfolio will demonstrate students' knowledge and competence in each of five areas: general knowledge of educational theoretical traditions and trends, in-depth knowledge of their specific focal area, research and methodological knowledge and competence, professional competency in their focal area, and teaching competency in their professional area. Pass/Fail. The portfolio is created concurrently with GEDU 9001, 9002, 9003, 9004, 9005 and any GEDU 9006, 9007 and/or GEDU 9008. Nine credits.

**9100 Dissertation**

The dissertation must constitute a substantial and original contribution to the study of education. Students must prepare a research proposal for approval by an appropriate faculty dissertation committee, complete the proposed study, and defend the completed thesis in a final oral examination. Pass/Fail. Prerequisite: GEDU 9010. Eighteen credits.

**9.18 ENGINEERING**

F. Comeau, Ph.D., P.Eng.  
 E.C. Oguejiofor, Ph.D., P.Eng.  
 W.R. Quinn, Ph.D., P.Eng.

*Part Time*

P. Doiron, P.Eng.  
 H. Dunnewold, P.Eng.  
 M.S.G. Razul, Ph.D.

Program requirements are found in chapter 7. Year 1 is common to all programs. For year 2, students must follow the requirement for the program to which they hold conditional admission, as outlined below:

Year 1	36 credits of CHEM 120; ENGR 121, 122, 123, 126, 131, 132, 136, 144; PHYS 120
Year 2	36 credits consisting of 21 credits of ENGR 211, 221, 222, 224, 232, 235, 237, 6 credits of a writing course, normally taken from ANTH, ART (history), CELT (literature or culture), ENGL, HIST, PHIL, PSCI, RELS, or SOC; in addition to 9 credits of the program specific courses listed below

Program-specific courses are as follows:

Chemical	ENGR 226, 227; CHEM 225
Civil	ENGR 212, 216, 231
Electrical	ENGR 238, 242; 246
Environmental	ENGR 226, 227; CHEM 225
Industrial	ENGR 242, any one of ENGR 212, 216, 226, 227 or 246, any one of ENGR 231, 238, or CHEM 225
Materials	ENGR 226, 227; CHEM 225
Mechanical	ENGR 212, 231, 242
Mineral Resources	ENGR 216, 242, any one of ENGR 231, 238 or CHEM 225

For up to date information, please visit the department website: [www.mystfx.ca/academic/engineering/](http://www.mystfx.ca/academic/engineering/)

**121 Calculus I for Engineers**

This course examines the main idea of calculus of a single variable. It covers functions; limits; continuity; differentiation and integration of polynomial, exponential, logarithmic and trigonometric functions; product, quotient and chain rules; applications of differentiation to graphing; maximum-minimum problems and related rate problems; definite and indefinite integrals and the fundamental theorem of calculus. Cross-listed as MATH 121. Three credits and one-hour lab and one-hour problem session.

**122 Calculus II for Engineers**

A continuation of ENGR 121, this course covers applications of integration including areas, volumes, moments, pressure and work; techniques of integration; numerical integration; length of curves; surfaces of revolution; parametric equations; polar co-ordinates; sequences and series and Taylor series. Cross-listed as MATH 122. Prerequisite: ENGR 121. Three credits and one-hour lab and one-hour problem session.

**123 Linear Algebra for Engineers**

Covers geometric vectors in three dimensions; dot product; cross product; lines and planes; complex numbers; systems of linear equations; matrix algebra; matrix inverse; determinants; Cramer's rule; introduction to vector spaces; linear independence and bases; rank; linear transformations; orthogonality and applications; Gram-Schmidt algorithm; eigenvalues and eigenvectors. Cross-listed as MATH 223. Three credits and two-hour lab.

**126 Biology with Engineering Applications**

This course provides an introduction to cell structure and function, and ecology. The course focuses on the interrelationship between living systems and man-made environment. Relevance of biology to industrial and engineering applications is emphasized. Three credits and three-hour lab.

**131 Engineering Graphics and Fundamentals**

This course introduces students to the engineering profession, history and the graphics language. The engineering graphics language is presented through free hand sketches, instrument and computer-aided drawings. Students develop and enhance 3-D visualization skills as well as the ability to produce and interpret simple drawings. Three credits and three-hour lab.

**132 Engineering Design and Communications I**

The main objective of this course is to provide students with conceptual design experience and technical communication skills. Working as part of a team, students will carry out a design project from the problem definition phase to the

implementation phase. Design outcome will be presented orally and in written reports utilizing engineering graphics concepts. Methods of producing engineering documents, reports and presentations will be covered. Students will learn skills related to finding, using and documenting engineering information sources. Three credits and three-hour lab.

**136 Statics**

Covers statics of particles and rigid bodies. Designed to teach the principles and application of mechanics, and to develop an analytical approach to solving problems. Vector analysis is used extensively. Three credits and three-hour lab.

**144 Computer Programming for Engineers**

Using C/C++ language, this course introduces the fundamental principles of computer programming for solving engineering problems. Topics include flow control, modularity, structured programming, algorithms for searching and sorting, and the conversion of these algorithms to C/C++ programs, with the necessary testing and debugging. Credit will be granted for only one of ENGR 144 and CSCI 161. Cross-listed as CSCI 125. Three credits and two-hour lab.

**211 Thermo-Fluids I**

This is the first of two courses in which the content of the traditional introductory thermodynamics and fluid mechanics courses is presented in a unified manner. Fluid properties; fluid statics; conservation of mass for both steady and unsteady flow systems; the first and second laws of thermodynamics and the application of these laws to closed systems and to steady and unsteady open systems; Bernoulli's equation; vapor and gas cycles will be covered. Three credits and three-hour lab.

**212 Thermo-Fluids II**

The second of two courses on thermo-fluids engineering will present availability; irreversibility; the control volume form of the continuity, momentum and energy equations; Euler's equation of motion; fluid kinematics; dimensional analysis and similitude; viscous flow in pipes and ducts. Three credits and three-hour lab.

**216 Geology for Engineers**

This course covers minerals, igneous rocks, weathering, sedimentary rocks, metamorphic rocks, geologic time, mass wasting, running water, groundwater, glaciations, shorelines, ocean floors, deformation and mountain building, earth's interior, earthquakes. Cross-listed as ESCI 216. Three credits and two-hour lab.

**221 Differential Equations for Engineers**

Covers first order linear and non-linear ordinary differential equations; ordinary differential equations of higher order with constant coefficients; applications to engineering problems; power series solutions; Laplace transforms; periodic functions; applications of Laplace transforms to linear systems; Fourier series. Cross-listed as MATH 221. Prerequisites: ENGR 121, 122 or MATH 121, 122. Three credits and two-hour problem session.

**222 Calculus III for Engineers**

Extends the ideas introduced in ENGR 121 to the calculus of several variables, and covers space curves, arclength, curvature; partial derivatives; implicit functions; constrained and unconstrained extrema; multiple integrals; line, surface, and volume integrals; change of variables in multiple integrals; scalar and vectors fields; gradient, divergence, and curl; Stokes theorem. Cross-listed as MATH 222. Prerequisites: ENGR 121, 122 or MATH 121, 122. Three credits and two-hour problem session.

**224 Probability and Statistics for Engineers**

This course covers probability laws and the interpretation of numerical data, probability distributions and probability densities, functions of random variables, joint distributions, characteristic functions, inferences concerning mean and variance, tests of hypotheses, linear regression, and time series analysis. Engineering applications are emphasized and statistical computer packages are used extensively. Cross-listed as STAT 224. Prerequisite: ENGR 122. Three credits and two-hour problem session.

**226 Fundamentals of Environmental Engineering**

This course focuses on sources of environmental pollutants, the effects of pollutants on living and non-living systems, processes by which pollutants are generated or by which their effects can be minimized or remediated. Lectures are supplemented by guest speakers, case studies and field trips. Prerequisite: CHEM 120. Three credits.

**227 Fundamentals of Process Engineering**

Covers mass and energy balances for reacting and non-reacting chemical processes. Topics include the system of units; processes and process variables; mass balances for single-phase and multi-phase systems; Gibbs phase rule;

Raoult's law; Henry's law; colligative properties; energy balances; combined mass and energy balances on reactive and non-reactive processes and on transient processes. Prerequisite: CHEM 120. Three credits and two-hour lab.

### 231 Dynamics

This second course in the study of engineering mechanics covers dynamics of particles and rigid bodies. Topics include kinematics; kinetics of particles and rigid bodies in plane motion using Newton's second law; the principle of work and energy; and the principle of impulse and momentum. Vector analysis is used extensively and there will be computer applications. Prerequisite: ENGR 136. Three credits and three-hour lab.

### 232 Engineering Design and Communications II

This is a project-based course that offers students the opportunity to integrate and apply the skills and knowledge learned in all courses taken in terms I to 3 to a constrained engineering design project. Students work individually and as part of a design team. Project design outcomes are presented orally and in formal written reports, as well as electronically on the internet. Elementary project management concepts are introduced. Ethical and legal issues that impact the practice of engineering are discussed. Prerequisites: ENGR 131, 132, 136, 144, 235, 237. Three credits and three-hour lab.

### 235 Strength of Materials

An introduction to basic principles of stress, strain, and stability. Topics include plane stress and strain; relationships between stress and strain; mechanical properties of materials; shear force; bending moment; axial force; torsion; stresses and deformations due to foregoing force effects; elastic and inelastic buckling. Prerequisite: ENGR 136. Three credits and three-hour lab.

### 237 Basic Electric Circuits Theory

Topics include introductory concepts; resistive networks; response to linear circuits with energy storage; exponential excitation functions; steady-state AC circuits; analysis; network analysis; systems. Cross-listed as PHYS 221. Prerequisite: ENGR 221 concurrent; PHYS 120. Three credits and three-hour lab.

### 238 Digital Logic

This hands-on, practical course introduces digital electronics with applications to computer hardware and micro-computer peripherals. Topics include the families of digital electronic technology; combinational and sequential logic; digital device characteristics; micro-computer interfacing; data acquisition; instrument control; data transmission. Labs provide an opportunity to design and test practical digital devices. Cross-listed as PHYS 223. Prerequisite: PHYS 120. Three credits and three-hour lab.

### 242 Engineering Economics

This course provides an introduction to the economic aspects of decision-making in engineering. Topics include fundamental concepts; cash flow diagrams; interest factors; discounted cash flow techniques; rate of return; inflation; accounting; tax; project financing; sensitivity and risk analysis; replacement analysis; public sector analysis. Three credits and two-hour lab.

### 246 Circuit Analysis

Covers advanced circuit analysis techniques, starting with sinusoidal excitation. Topics include grounding and harmonics; symmetrical components and dealing with unbalanced networks; real and reactive power flow; balanced three-phase circuits for power distribution; phasors and complex impedance. Mutual inductance and magnetically coupled coils are used to introduce transformer behaviour and performance. Prerequisites: ENGR 144, 237. Three credits and three-hour lab.

## 9.19 ENGLISH

M. D'Arcy, Ph.D.	C. Rushton, Ph.D.
J. Khoury, Ph.D.	D. Smith, Ph.D.
P.A. Marquis, Ph.D.	E. Wilputte, Ph.D.
M.B. McGillivray, Ph.D.	<i>Part Time</i>
M.A. Moynagh, Ph.D.	P. Milner, Ph.D.
R.A. Nemesvari, Ph.D.	A. Simpson, MA
M. Nilges, Ph.D.	J. Strickler, MA
J. Potts, Ph.D.	

English courses are organized into nine categories.

### Medieval Literature

206	World Masterpieces I: Classical Antiquity
207	World Masterpieces II: Medieval and Renaissance
304	The Early Tudor and Elizabethan Renaissance
388	Heroic Literature of the Middle Ages "The Knight at War"

389	The Ricardian Age: Chaucer's Contemporaries
390	Chaucer

### Renaissance Literature

305	The Later Elizabethan Renaissance
312	17th-Century Literature
340	Shakespeare

### 18th-Century Literature

253	Coffeehouse Culture of 18th-Century England
254	Topics in 18th-Century Literature
355	Restoration and 18th-Century Drama and Prose
356	18th-Century Novel and Poetry
491	Selected Topics I

### 19th-Century Literature

242	American Literature: Origins to the Civil War
243	American Literature: Civil War to the Great Depression
270	The Romantic Gothic: 19th-Century Poetry and Short Fiction
271	Gothic Fiction: The 18th- and 19th-Century Gothic Novel
325	The American Novel, 1850-1940
330	Studies in Women Writers: Genres, Cultures, and Contexts
343	19th-Century American Poetry
370	English Romantic Literature
371	Victorian Literature, 1832-1867
372	Victorian Literature, 1867-1901
377	19th-Century Fiction

### 20th- and 21st-Century Literature

201	Science Fiction and Fantasy - The Meta-human
209	Introduction to Fiction and Film
229	Women in English Literature
233	Children's Literature: 1865 to the Present
250	Survey of 20th-Century Literature in English
297	Selected Topics: Forms of Narrative Cinema
320	Modern Poetry
329	Studies in Women Writers: Feminisms and Their Literatures
350	Modern British Fiction
376	Modern American Fiction
378	Themes in Contemporary American Prose
379	Movements in Contemporary American Prose
492	Selected Topics II: Confessional Poetry and Its Modes

### Canadian Literature

263	Canadian Literature I: 18th and 19th Centuries
264	Canadian Literature II: The 20th Century and After
298	Selected Topics: Indigenous Canadian Literature
347	African-Canadian Literature
365	Canadian Prose Genres
366	Selected Topics in Canadian Literature I
367	The Canadian Novel
368	Canadian Poetry

### Postcolonial Literature

240	Literature of the Middle East
247	Postcolonial Literature
347	African-Canadian Literature

### Creative Writing

222	Creative Non-fiction/Memoir
231	Introduction to Creative Writing
322	Intermediate Creative Writing
422	Advanced Creative Writing

### Literary Criticism and Cultural Theory

215	Principles & Practices of Literary Criticism
318	Cultural Theory through Popular Culture
349	The History of Literary Theory and Criticism
445	Seminar: Contemporary Critical Theory

### Department Requirements

ENGL 100, 110 or equivalent is required for entrance to all other ENGL courses. A student should have ENGL 100 or 110 plus at least six credits at the 200 level before taking a course at the 300 level. Some exceptions apply; see course descriptions. A student must have at least 18 credits of ENGL for admission to a 400-level course.



All students seeking admission to honours and advanced major programs must consult the department chair by March 31 of the second year to obtain approval for proposed course patterns, and again in March of the junior year for advice on thesis and senior seminar requirements. All such consultations will normally be completed by March 31.

### Major Program

Students majoring in English must take the following courses: ENGL 100 or 110; six credits Medieval or Renaissance; six credits 18th or 19th century; six credits 20th- and 21st-century or Canadian or Postcolonial; and 12 credits ENGL electives. Major students will normally complete at least 12 credits of 200-level courses before enrolling in a 300- or 400-level course. All prospective majors should attend an advising session normally held in March.

### Advanced Major Program

Advanced majors in English will take the following courses: ENGL 100, 110 or equivalent; 24 credits of English electives from four of the five following historical periods, including: Medieval; Renaissance; Restoration and 18th-century; 19th-century; and 20th- and 21st-century literature; and six credits of senior seminars, one 3-credit senior seminar in the fall term, and another 3-credit senior seminar in the winter term. Students must also write an advanced major thesis in their final year in one of the senior seminars. See section 4.1 for degree regulations.

### Honours Program

Students take ENGL 100 or 110, and 24 credits of English electives from four of the five following historical periods of literature: Medieval; Renaissance; Restoration and 18th century; 19th century; 20- and 21st-century literature. Students also take 18 credits of English electives from three of the following four categories: Postcolonial literature; literary criticism and cultural theory; Canadian literature; and creative writing. An honours thesis is also required (6 credits), as well as 6 credits of senior seminars. See section 4.1 for degree regulations.

### Honours with a Subsidiary Subject

A subsidiary subject in English requires 36 credits in the same pattern as the major program.

### Senior Seminar

Each year certain advanced courses will be designated senior seminars. All honours and advanced major students must be enrolled in two of these during their senior year, one in the Fall term and the other in the Winter term. Only senior advanced major and honours students may enroll in senior seminars.

Note: Not all 400-level seminars are senior seminars.

### 100 Introductory Survey of Literature in English

This course will introduce students to literature from a range of historical and cultural contexts. Students will study texts from the earliest writings in English to 20th-century works. Possible authors to be studied include the *Beowulf* poet, Geoffrey Chaucer, William Shakespeare, John Donne, John Milton, Eliza Haywood, Emily Dickinson, Charlotte Brontë, W.B. Yeats, and Margaret Atwood. Credit will be granted for only one of ENGL 100 and ENGL 110. Six credits.

### 110 Literature in English: Genres, Media and Forms

This course will introduce students to an analysis of cultural and literary texts through the examination of a variety of genres (e.g. the novel, short story, epic) and forms (e.g. the gothic novel, confessional poetry). The course may also include the study of media such as the graphic novel, film, and television. Credit will be granted for only one of ENGL 110 and ENGL 100. Six credits.

Note: ENGL 100, 110 or equivalent is required for entrance to all other ENGL courses.

### 201 Science Fiction and Fantasy - The Meta-human

This course will look at the meta- or superhuman, particularly in film and the graphic novel, from the modern origin of the genre (Superman) to late 20th- and 21st-century parody and deconstruction (*Watchmen*, *Wanted*). Issues will include the gendered meta-human, whether the genre is properly science fiction or fantasy, and the problem of vigilante justice. Three credits.

### 206 World Masterpieces I: Classical Antiquity

An introduction to masterpieces in Western literature, in translation, focused on ancient Greece and Rome, especially the epics of Homer and Virgil, Greek tragedy, and selections from Catullus, Horace and Ovid. Three credits. Not offered 2012-2013.

### 207 World Masterpieces II: Medieval and Renaissance

An introduction to masterpieces in Western literature, in translation, focused on medieval and Renaissance/early modern Europe. It will begin with the New Testament Bible and then explore authors and great works of Christian Europe,

including *The Song of Roland*, *The Romance of the Rose*, Dante Alighieri, Ludovico Ariosto, and Miguel de Cervantes. Three credits. Not offered 2012-2013.

### 209 Introduction to Film

An introduction to the study of film, this course will focus on formal distinctions and concepts that have evolved in the history of cinema, as well as major cinematic movements and genres. Students will be introduced to the vocabulary of film studies, techniques of analysis, and ways of writing about film. Lectures and discussions will proceed on the basis of critical readings and screenings of cinematic works. Credit will be granted for one of ENGL 209 and 297 "Analyzing Film". Six credits. Not offered 2012-2013.

### 215 Principles and Practices of Literary Criticism

This course builds on the skills students acquire in ENGL 100. Its aim is twofold. On the one hand, it will concern itself with philosophical questions regarding literariness, form and genre, and schools of critical approach (e.g. rhetorical, historical, sex and gender, sociological, political, psychological, neo-formal). On the other, it will develop practical skills by: expanding critical vocabulary; developing abilities to write argumentatively; and increasing proficiency with sources and databases. Three credits.

### 229 Women in English Literature

A survey of women writers in their historical contexts. The course will involve study and discussion of poems, stories, novels, plays, and other literary forms by or about women. Cross-listed as WMGS 229. Six credits. Not offered 2012-2013.

### 233 Children's Literature: 1865 to the Present

Using the landmark publication of Lewis Carroll's *Alice's Adventures in Wonderland* as a starting point, this course provides a critical survey of children's literature in Britain, America, and Canada. Authors to be studied include Carroll, L.M. Montgomery, E.B. White, Roald Dahl, Maurice Sendak, Judy Blume, Kevin Major, Dennis Lee, and Sheree Fitch. Credit will be granted for only one of ENGL 233 and ENGL 234. Three credits. Not offered 2012-2013.

## CREATIVE WRITING COURSES

Students wishing to enroll in any creative writing course are required to submit a portfolio to the English Department. The portfolio must be submitted electronically to english@stfx.ca as an attachment by June 1. For ENGL 231, 322 and 422, the portfolio should consist of 10-15 pages of prose fiction, poetry, drama, or any combination thereof. If in any calendar year a course is restricted to a particular genre, the portfolio should consist solely of work in that genre. A portfolio is not required for ENGL 222. Students must indicate the creative writing course for which they wish to be considered and provide a complete list of English courses previously taken.

### 222 Creative Non-Fiction/Memoir

This course will help students acquire the techniques and tools necessary to write creative non-fiction. This involves techniques of dialogue, character development, narration, and style similar to those employed by writers of fiction, though the result is non-fiction. Prerequisite: ENGL 100, 110 or equivalent. Three credits. Not offered 2012-2013.

### 231 Introduction to Creative Writing

This course teaches students how to write creatively in two genres -- poetry and fiction -- in a workshop setting. Students will explore those elements of composition (imagery, dialogue, point of view, characterization, etc.) that make for interesting and challenging writing. Prerequisite: ENGL 100, 110 or equivalent. Six credits.

### 322 Intermediate Creative Writing

Students will be expected to choose one genre through which they will continue to explore and develop the basic elements of composition learned in English 231. Prerequisite: ENGL 100, 110 or equivalent; three credits creative writing. Three credits.

### 422 Advanced Creative Writing

Explores the techniques of writing prose narrative, poetry, and drama to help students develop their powers of creative expression. Techniques include regular exercises, set assignments, free submissions, parodies, and imitations. Occasional guest writers. Prerequisite: ENGL 100, 110 or equivalent; six credits creative writing. Three credits. Not offered 2012-2013.

### 240 Literature of the Middle East

This course will introduce students to the rich literary heritage of various countries in the Middle East. Students will read traditional poetry and folk tales, with the main focus on the novel and the short story of the 20th century. Writers to be studied may include Najib Mahfuz, Elias Khoury, Hanan al-Shaykh, Ghassan Kanafani, Tayeb Salih, Muhammad Shukri. Three credits.

**242 American Literature: Origins to the Civil War**

What is an American literature? What does it mean to be American? In this course topics we will consider: the Puritan legacy; the American dream; the status of indigenous peoples; captivity narratives; the role of sympathy; the representation of wounds; nature; individualism; disobedience; solitude; sin; silence; slants of light; sex; slavery; and houses divided. Authors studied will include Rowlandson, Rowson, Douglass, Emerson, Hawthorne, Melville, Dickinson and Whitman. Credit will be granted for only one of ENGL 242 and ENGL 344. Three credits. Not offered 2012-2013.

**243 American Literature: From the Civil War to the Great Depression**

A prominent literary critic claimed recently that America is defined by its commitments to cultural democracy, political rights, community responsibility, social justice, an equality of opportunity, and individual freedom. In this survey, we are going to examine how the literature of America written during this period of national reconciliation grapples with turning these ideals into reality. Credit will be granted for only one of ENGL 243 and ENGL 344. Three credits.

**247 Postcolonial Literature**

An introduction to post-colonial literature. The course may include literature from Africa, the Americas, Australia, the Caribbean, India, and the Pacific. Six credits. Not offered 2012-2013.

**250 Survey of 20th-Century Literature in English**

A study of the poetry and fiction of major American, Canadian, British, and European writers. Six credits.

**253 Coffeehouse Culture of 18th-Century England**

A course exploring a variety of works through the lens of the 18th-century coffeehouse. Focusing primarily on the periodical literature of the time—*The Tatler*, *The Spectator*, *The Plain Dealer* and *The Female Spectator*—and novels and poetry, the course will consider themes like conversation, urban space, taste and culture, consumerism, gender fashioning, and the private subject made public. Three credits.

**254 Topics in 18th-Century Literature**

The focus of this course will vary from year to year with changing emphasis on particular themes, genres or authors of the long eighteenth century. Three credits. Not offered 2012-2013.

**263 Canadian Literature I: 18th and 19th Centuries**

This course will survey Canadian poetry and prose in the historical contexts of exploration, settlement, and Confederation. Students will examine early Canadian authors' engagements with the Romantics and Victorians, and will consider the emergence of a national literature. Selected authors may include Frances Brooke, Samuel Hearne, John Richardson, Thomas Chandler Haliburton, Susanna Moodie, James de Mille, Isabella Valancy Crawford, and Sir Charles G. D. Roberts. Credit will be granted for only one of ENGL 263 and ENGL 265. Three credits.

**264 Canadian Literature II: The 20th Century and After**

This course examines the major genres of Canadian writing during the 20th and 21st centuries, including fiction, poetry, and non-fiction. The course will emphasize key aesthetic developments within the contexts of modernism, feminism, postcolonialism, regionalism, postmodernism, environmentalism, culture and race. Credit will be granted for only one of ENGL 264 and ENGL 265. Three credits.

**270 The Romantic Gothic: 19th-Century Poetry and Short Fiction**

A study of gothic literature in its historical and philosophical context, this course will explore 19th-century short fiction and poetry as well as a play, some longer fiction, and influential 18th-century literary sources. Authors may include: Jane Austen, Anne Radcliffe, William Wordsworth, Charlotte Smith, Mary Robinson, James Hogg, Walter Scott, Samuel Taylor Coleridge, John Keats, Lord Byron, and Joanna Baillie. Three credits.

**271 Gothic Fiction: The 18th- and 19th-Century Gothic Novel**

An examination of the gothic novel and the cultural forces that produced it. The course will explore supernatural tales from the classical and medieval periods which acted as forerunners to the genre. Authors may include: Horace Walpole, Ann Radcliffe, Matthew "Monk" Lewis, and Jane Austen; students may also read *Frankenstein* and *Dracula*. Three credits.

**297 Selected Topics**

The topic for 2012-2013 is Forms of Narrative Cinema. This course introduces students to the analysis of film through a consideration of the evolution of feature-

length narrative film. Focusing on developments in narrative film since 1960, a date that has been taken to mark the end of the classical period of Hollywood cinema. Students will be required to attend evening film screenings in addition to the regularly scheduled course lectures. Credit will be granted for only one of ENGL 297 and ENGL 209. Three credits.

**298 Selected Topics**

Three credits.

**304 The Early Tudor and Elizabethan Renaissance**

A study of literature created between the inception of the Tudor Dynasty in 1485 to the reign of Elizabeth I, in the context of early modern ideas and ideologies. The class will begin with Thomas Malory's *Morte Darthur* and *Everyman*, and will include texts by Spenser, Shakespeare, Elizabeth, Heywood, Norton and Sackville. Prerequisite: ENGL 100, 110 or equivalent. Three credits.

**305 The Later Elizabethan Renaissance**

This course will introduce students to some of the most influential works of later Elizabethan England, outside Shakespeare. These may include Thomas Kyd's *The Spanish Tragedy*, plays by Christopher Marlowe, and selections from Edmund Spenser's *The Faerie Queene*. Other writers may also be included. We will study these works in their social, historical, and literary contexts. Recommended prerequisite: ENGL 304. Three credits. Not offered 2012-2013.

**312 17th-Century Literature**

A study of the Metaphysical poets, the Cavalier poets, John Milton's *Paradise Lost*, and the prose of Francis Bacon, John Donne, Robert Burton, Sir Thomas Browne, and Samuel Pepys. Several Jacobean plays will also be read. Prerequisite: 12 credits ENGL. Six credits. Not offered 2012-2013.

**318 Cultural Theory through Popular Culture**

An introduction to the study of culture as a system of constructing values and identities, primarily through textual production. The course will combine case studies of genre fiction, film, and television with analyses by practicing cultural scholars. Prerequisite: 12 credits ENGL. Six credits. Not offered 2012-2013.

**320 Modern Poetry**

A survey of the major modern poets, including W.B. Yeats, T.S. Eliot, Gertrude Stein, Ezra Pound, Robert Frost, Wallace Stevens, Marianne Moore. Prerequisite: 12 credits ENGL. Six credits.

**325 The American Novel 1850-1940**

After considering current debates on the genre, this course will track the development of the American novel from the American Renaissance to the end of the Great Depression. Students will read primary texts in combination with recent criticism that reconsiders the novel's production of the individual; the construction of character; the formation of the social; the illogic of race; and the importance of place. Prerequisite: 12 credits ENGL. Three credits.

**329 Studies in Women Writers: Feminisms and Their Literatures**

An introduction to feminist theories within historical, cultural, and philosophical contexts, this course explores the relationship between feminist theories and literary texts that exemplify or extend them. Cross-listed as WMGS 329. Prerequisite: 12 credits ENGL. Three credits. Not offered 2012-2013.

**330 Studies in Women Writers: Genres, Cultures, and Contexts**

This course will explore the works of five nineteenth-century women novelists and their engagement with gothic devices and themes. The following texts will be discussed: Jane Austen, *Northanger Abbey*; Charlotte Brontë, *Jane Eyre*; Emily Brontë, *Wuthering Heights*; George Eliot, *The Lifted Veil*; Mary Elizabeth Braddon, *Lady Audley's Secret*. Students should be prepared for a significant reading load in this class. Cross-listed as WMGS 330. Prerequisite: 12 credits ENGL. Three credits.

**340 Shakespeare**

An introduction to the work of William Shakespeare: poems, comedies, histories, problem plays, tragedies, Roman plays, and late romances in their social, historical, and literary contexts. Prerequisite: ENGL 100, 110 or equivalent. Credit will be granted for only one of ENGL 340 and ENGL 341. Six credits.

**343 19th-Century American Poetry**

This course will examine the poetry of Anne Bradstreet, Edgar Allan Poe, Walt Whitman, and Emily Dickinson. Prerequisite: 12 credits ENGL. Three credits. Not offered 2012-2013.

**347 African-Canadian Literature**

A study of African-Canadian prose, poetry, and drama in the context of contemporary

literary-critical debates about canons, national literatures, voice, and cross-cultural influences. Attention will be given to African-Nova Scotian contributions. Prerequisite: 12 credits ENGL. Three credits. Not offered 2012-2013.

### 349 History of Literary Theory and Criticism

A study of central theoretical statements about literature and its analysis from the classical period to the 20th century. The first two-thirds of the course includes the theory and criticism of Plato, Aristotle, Longinus, Sir Philip Sidney, Samuel Johnson, Samuel Taylor Coleridge, William Wordsworth, John Keats, Friedrich Nietzsche, Matthew Arnold, T.S. Eliot, and Karl Marx, while the final third of the course focuses on movements in the twentieth century such as new criticism, formalism, feminism, myth criticism, structuralism and post-structuralism. Prerequisite: ENGL 100, 110 or equivalent. Credit will be granted for only one of ENGL 349 and ENGL 345 or 346. Six credits. Not offered 2012-2013.

### 350 Modern British Fiction

Examines major British novelists of the modern and post-modern periods with emphasis on Joseph Conrad, E.M. Forster, Virginia Woolf, and Samuel Beckett. Prerequisite: 12 credits ENGL. Credit will be granted for only one of ENGL 350 and ENGL 351 and 352. Six credits.

### 355 Restoration and 18th-Century Drama and Prose

A study of several major plays and selected prose works from 1660 to the mid-18th century. Prerequisite: 12 credits ENGL. Three credits. Not offered 2012-2013.

### 356 18th-Century Novel and Poetry

A study of selected novels and poetry from the major writers of the 'long' 18th century. Prerequisite: 12 credits ENGL. Three credits.

### 365 Canadian Prose Genres

Highlighting a specific prose genre like the novel, the short story, autobiography, or metafiction, this course will examine the development of this literary form in a Canadian context. Studied works may include fiction and non-fiction, and the selected genre will vary from year to year. Attention will be concentrated on writings by Canadian authors within the last fifty years. Prerequisite: 12 credits ENGL. Credit will be granted for only one of ENGL 365 and ENGL 367. Three credits.

### 366 Special Topics in Canadian Literature I

Students will explore intersections of nationality, race, and sexuality in Canadian drama. Plays such as Ryga's *The Ecstasy of Rita Joe* resulted in a reconsideration of Native culture and its relationship to our national identity. We will look at the very values that are implied when historicizing "Canadian" drama. Examining scholarship on theatre historiography, identity construction, and audience reception, we ask: how do we define Canadian theatre; who is included/excluded? We will explore the formal theatre techniques - including blackface, redface, mime, parody - that challenge prescribed identities. Prerequisite: 12 credits ENGL. Three credits.

### 367 The Canadian Novel

Students will read novels and short stories in English to develop a sense of the thematic patterns, style, and changing narrative strategies in Canadian fiction, especially in works since 1930. Prerequisite: 12 credits ENGL. Students who have received credit for ENGL 365 may not enroll in this course. Six credits.

### 368 Canadian Poetry

A study of Canadian verse in English with selected examples of French verse in translation, since colonial days, with emphasis on the period since 1920. Prerequisite: 12 credits ENGL. Six credits.

### 370 English Romantic Literature

A detailed survey of the literature of the major Romantic poets, this course emphasizes close readings of poetry and prose and the historical and philosophical contexts of the Romantic Movement. Prerequisite: 12 credits ENGL. Six credits.

### 371 Victorian Literature, 1832-1867

A study of early to mid-Victorian literature encompassing the poetry of Emily Brontë, Alfred Lord Tennyson, Elizabeth Barrett Browning, Robert Browning, and Matthew Arnold; the prose of Thomas Carlyle, Charles Darwin, and John Stuart Mill; and novels by Charles Dickens and Charlotte Brontë. Prerequisite: 12 credits ENGL. Credit will be granted for only one of ENGL 371 and ENGL 375. Three credits.

### 372 Victorian Literature, 1867-1901

A study of mid- to late Victorian literature encompassing the prose of Walter Pater; the poetry of Gerard Manley Hopkins, William Morris, Christina Rossetti, Dante Gabriel Rossetti, Algernon Swinburne, and Oscar Wilde; plays by Wilde and George Bernard Shaw; short stories by Vernon Lee and Rudyard Kipling; and novels by George Eliot and Jerome K. Jerome. Prerequisite: 12 credits ENGL. Credit will be granted for only one of ENGL 372 and ENGL 375. Three credits.

### 376 Modern American Fiction

Examines prose writings in the American tradition since 1900 and the major literary and cultural movements in which selected texts participate. Emphasis will be placed on historical development and the shifting definition of the American canon. The 2011-2012 offering will trace the development from Modernist to Postmodern to post-Fordist literature. Prerequisite: 12 credits ENGL. Six credits. Not offered 2012-2013.

### 377 19th-Century Fiction

A study of 19th-century novels beginning with Jane Austen and working through the Victorian Age by exploring the fiction of such writers as Charlotte Brontë, Emily Brontë, Charles Dickens, and George Eliot, and concluding with authors such as Thomas Hardy and Bram Stoker. Prerequisite: 12 credits ENGL. Six credits.

### 378 Themes in Contemporary American Prose

The course will examine American prose from the 20th and 21st centuries, focused around a particular theme or the presentation of a particular aspect of American culture. The focus will vary from year to year, but may include gender, race, the American Dream, war, or the immigrant experience. Prerequisite: 12 credits ENGL. Three credits. Not offered 2012-2013.

### 379 Movements in Contemporary American Prose

This course will examine 20th- and 21st-century American prose, focused around a particular literary school or movement. The course may be organized around a school of representation such as modernism or metafiction, around literature produced by a particular region such as southern American literature or western America literature, or may be focused on an ethnic traction such as Hispanic, Asian, African American or Native literatures. Prerequisite: 12 credits ENGL. Three credits. Not offered 2012-2013.

### 388 Heroic Literature of the Middle Ages

Three credits. Not offered 2012-2013.

### 389 Chaucer's Contemporaries

Chaucer's Contemporaries: "'Thebes and Troy.' Chaucer and other English authors made use of the legends of these two cities as meditations on human history, the differences between pagan and Christian societies, and the nature of cities themselves. Authors and texts will include Chaucer, Gower, Lydgate, and anonymous romances, as well as Greek and Roman background texts. Prerequisite: 12 credits ENGL. Credit will be granted for only one of ENGL 389, ENGL 392 or CELT 392. Three credits. Not offered 2012-2013.

### 390 Chaucer

This course explores the major poetry and prose of this seminal figure in English literature. Prerequisite: ENGL 100, 110 or equivalent. Six credits. Not offered 2012-2013.

### 397 Selected Topics in Literature I

Prerequisite: 12 credits ENGL. Three credits. Not offered 2012-2013.

### 398 Selected Topics in Literature II

Prerequisite: 12 credits ENGL. Three credits. Not offered 2012-2013.

Notes: A student must have at least 18 credits of ENGL for admission to a 400-level course. The senior seminars are offered exclusively to senior advanced major and honours students on a rotating basis over a period of years.

### 400 Honours Thesis

Honours students write a thesis under the supervision of a faculty thesis director. Students must meet the thesis director in March of the junior year to prepare a topic. Honours students must register for the thesis as a six-credit course in their senior year. The thesis must be submitted no later than March 31 of the senior year. See chapter 4. Six credits.

### 445 Seminar in Contemporary Critical Theory

A survey of the background to contemporary theory, focusing in part on earlier critics, and examining the origins of the canon. An exploration of current theories, including semiotics, structuralism, deconstruction, new historicism, modern narratology, feminist theory, and Marxist theory. Six credits.

## SENIOR SEMINARS

### 491 Selected Topics I

The topic for 2012-2013 is based on 18th-century literature. Richardson's *Clarissa* is by common consent the greatest (and longest) 18th-century novel. Using the Broadview abridged edition of *Clarissa*, alongside contemporaneous works, we will explore legal matters of property, family and marriage; socio-historical concerns about filial obedience, dueling, elopement, rape, and death; epistolary writing and



other rhetorical issues relevant to the scope of fiction writing; and the concept of 18th-century "self" and psychology. We will trace how Richardson attempted to control how his novel was read. Three credits.

#### 492 Selected Topics II

The topic for 2012-2013 is Confessional Poetry and Its Modes. An examination of some of the major American poets of the second half of the 20th century writing in the confessional mode, including Theodore Roethke, Allen Ginsberg, Robert Lowell, W.D. Snodgrass, John Berryman, Sylvia Plath, Adrienne Rich, Anne Sexton, Sharon Olds. Three credits.

#### 497 Advanced Major Thesis

Advanced major students write a thesis as part of the senior seminar. See chapter 4. No credit.

#### 499 Directed Study

In consultation with the department and with approval of the chair, students may undertake a directed study program in an approved area of interest, which is not available through other course offerings. See section 3.5. Three or six credits.

## 9.20 ENVIRONMENTAL SCIENCES

L. Kellman, Ph.D., Co-ordinator

#### Advising Faculty

J. Cormier, Ph.D.  
J. Williams, Ph.D.

#### Department

Chemistry  
Biology

Environmental sciences is a four-year advanced major or honours program leading to a B.Sc. in one of four different concentrations. Each concentration offers an integrated approach to understanding the interaction of biological, chemical and physical systems and processes in the environment and their sensitivities to human activities.

The B.Sc. in Environmental Sciences is designed to prepare students to become researchers or practitioners in environmental sciences. Students following this degree stream will be well prepared to continue to graduate programs in a variety of fields, and for careers in the government and private sector. The program requires a strong interdisciplinary, science-based education as this approach to solving current environmental problems is increasingly required in academia, government and the private sector.

Year one in the ENSC program is common for all students. Students apply for specific program in year two. Typical course patterns are listed below. Other course options may be available. Further information can be obtained from the department chairs of biology, chemistry, earth sciences, mathematics and physics.

#### B.Sc. Advanced Major in Environmental Sciences Biology

Year 1 BIOL 111, 112; CHEM 100; ESCI 171, 172; MATH 111, 112;  
6 credits arts electives  
Year 2 BIOL 201, 203, 222; CHEM 225, 255; ESCI 271;  
MATH 287; STAT 231, 6 credits arts electives  
Year 3 BIOL 202, 315, 345; CHEM 265; ESCI 272, 305;  
PHYS 100; 6 credits arts electives  
Year 4 24 credits from BIOL 311, 312, 321, 384, 407, 470, 472, 474 or  
CHEM 361; ENSC 491(non-credit); ESCI 366, 3 credits open  
electives.

#### B.Sc. Honours in Environmental Sciences Biology

Year 1 BIOL 111, 112; CHEM 100; ESCI 171, 172; MATH 111, 112;  
6 credits arts electives  
Year 2 BIOL 201, 203, 222; CHEM 225, 255; ESCI 271;  
MATH 287; STAT 231, 6 credits arts electives  
Year 3 BIOL 202, 315, 345; CHEM 265; ESCI 272, 305;  
PHYS 100; 6 credits arts electives  
Year 4 21 credits from BIOL 311, 312, 321, 384, 407, 470, 472, 474, or  
CHEM 361; ENSC 491 (non-credit), 493; ESCI 366; 3 credits  
open electives

#### B.Sc. Advanced Major in Environmental Sciences Chemistry

Year 1 BIOL 111, 112; CHEM 100 or 120; ESCI 171, 172;  
MATH 111, 112; 6 credits arts electives  
Year 2 BIOL 203; CHEM 265, 245, 220; PHYS 120; STAT 231;  
6 credits arts electives  
Year 3 CHEM 231, 232, 325, 361, 362, 391(non credit); ESCI 272, 305,  
366; 6 credits of MATH 253, 254, 267, 367

Year 4 BIOL 202 and 6 credits from BIOL 201, 373, 470; 472; CHEM  
255, 341, 342; ENSC 491 (non-credit); 3 credits from ESCI 406,  
471, 465, 472; 6 credits arts electives

#### B.Sc. Honours in Environmental Sciences Chemistry

Year 1 BIOL 111, 112; CHEM 100 or 120; ESCI 171, 172;  
MATH 111, 112; 6 credits arts electives  
Year 2 BIOL 203; CHEM 220, 265, 245; ESCI 272; PHYS 120;  
6 credits arts electives  
Year 3 BIOL 202; CHEM 231, 232, 325, 361, 362, 391 (non credit);  
ESCI 305, 366; 3 credits of MATH 253, 254, 267, 367;  
STAT 231  
Year 4 CHEM 255, 331, 332, 341, 342, 420; ENSC 491 (non-credit),  
493; 6 credits arts electives

#### B.Sc. Advanced Major in Environmental Sciences Biogeochemistry

Year 1 CHEM 100 or 120; ESCI 171, 172; MATH 111, 112;  
PHYS 100 or 120; 6 credits arts electives  
Year 2 BIOL 111, 112; CHEM 225 or 245, 265; ESCI 246, 271, 272,  
3 approved ESCI credits; STAT 231; 3 credits open electives  
Year 3 BIOL 203, 384; CHEM 361, 362; ESCI 305, 366, 386,  
3 approved ESCI credits; 6 credits arts elective;  
Year 4 BIOL 472 or 474; ENSC 491 (non-credit); ESCI 406, 465, 472,  
3 approved ESCI credits; 6 credits arts electives;  
9 credits open electives

#### B.Sc. Honours in Environmental Sciences Biogeochemistry

Year 1 CHEM 100 or 120; ESCI 171, 172; MATH 111, 112;  
PHYS 100 or 120; 6 credits arts electives  
Year 2 BIOL 111, 112; CHEM 225 or 245, 265; ESCI 246, 271, 272,  
3 additional ESCI credits; STAT 231; 3 credits open electives  
Year 3 BIOL 203, 384; CHEM 361, 362; ESCI 305, 366, 386,  
3 additional ESCI credits; 6 credits arts electives  
Year 4 BIOL 472 or 474; ENSC 491 (non-credit), 493; ESCI 406, 465,  
472, 499, 3 additional ESCI credits; 6 credits arts electives;  
3 credits open electives

#### B.Sc. Advanced Major in Environmental Sciences Climate and Water

Year 1 CHEM 100 or 120; ESCI 171, 172; MATH 111, 112;  
PHYS 120; 6 credits arts electives  
Year 2 BIOL 111, 112; ESCI 246, 271, 272; MATH 267;  
STAT 231; 3 credits approved science electives;  
6 credits arts electives  
Year 3 CHEM 265; ESCI 305, 366, 386, 475; MATH 253; 6 credits  
approved science electives; 6 credits arts electives  
Year 4 BIOL 203; ENSC 491 (non-credit); ESCI 406, 465, 472; 9 credits  
approved science electives; 9 credits open electives

#### B.Sc. Honours in Environmental Sciences Climate and Water

Year 1 CHEM 100 or 120; ESCI 171, 172; MATH 111, 112;  
PHYS 120; 6 credits arts electives  
Year 2 BIOL 111, 112; ESCI 246, 271, 272; MATH 267; STAT 231;  
3 credits approved science electives; 6 credits arts electives  
Year 3 CHEM 265; ESCI 305, 366, 386, 475; MATH 253; 6 credits  
approved science electives; 6 credits arts electives  
Year 4 BIOL 203; ENSC 491 (non-credit), 493; ESCI 406, 465, 472,  
499; 9 credits approved science electives; 3 credits open  
electives

#### 491 Senior Seminar in Environmental Sciences

Seminars on topics of interest in the Environmental Sciences are presented during the year by visiting scientists and faculty. Required for all environmental sciences students in their final year of study. No credit.

#### 493 Honours Thesis

Required for honours students. Three credits.

►► **FRENCH** see 9.27 Modern Languages

►► **GERMAN** see 9.27 Modern Languages

**9.21 HISTORY**

J. Cameron, Ph.D.	R. Semple, Ph.D.
N. Forestell, Ph.D.	L. Stanley-Blackwell, Ph.D.
C. Frazer, Ph.D.	D. Trembinski, Ph.D.
S. Kalman, Ph.D.	R. Zecker, Ph.D.
G. Lalonde, Ph.D.	Senior Research Professor
P. McInnis, Ph.D.	P. Phillips, Ph.D.

**The Discipline of History**

Curiosity inspires every generation to study the lives and societies of people who lived before them. The discipline of history has been developed to help us do this in a systematic, rigorous and critical way. The history program offers a wide-range of fascinating courses, from global history and the history of western civilization to more focused courses about nations, social groups and special topics. As well, its program equips students to develop the critical tools necessary to investigate the past effectively and to express their findings with clarity, vigour and intelligence. Students can take history courses as electives or pairs, or to complete a minor, major, joint major, advanced major, joint advanced major, honours or honours with subsidiary program

**Department Requirements**

Students must follow the degree regulations found in chapter 4 and must consult with the department chair to plan their specific program and have it approved. The fundamental requirements of each program are outlined below. Departures from these regulations require the permission of the department chair and/or the Dean of Arts. Students following the major degree programs strive to balance specialization with breadth in their selection of courses. They must have some degree of specialization in one of the three designated areas of concentration: (1) Canadian, (2) European, or, (3) American/Latin American/Asian history.

Transfer credit limitations: Of the 36 credits required for a history major or advanced major, normally at least 24 must be obtained from StFX; of the 60 credits required for a history honours, normally at least 42 must be obtained from StFX; of the 48 credits required for a history honours with subsidiary, normally at least 36 must be obtained from StFX. The senior seminar and thesis requirements must be completed through StFX.

Note: HIST 100 or HIST 110 is required as a foundation course for all first- and second-year students taking further history courses but this requirement is normally waived for third- and fourth-year students seeking a first course in history.

**Minor or Subsidiary in History**

- HIST 100 or 110 (6 credits)
- 18 additional credits above the 100 level
- Total: 24 history credits with at least 6 credits at the 300/400 level

**Major Program**

- HIST 100 or 110 (6 credits)
- HIST 213 and 215\*
- Total of 18 credits in a chosen concentration
- Total of 12 credits from areas outside the chosen concentration
- Total: 36 history credits with at least 15 credits at the 300/400 level

**Joint Major Program**

Same history requirements as major above.

**Advanced Major Program**

- HIST 100 or 110 (6 credits)
- HIST 213 and 215\*
- HIST 445 (counts outside the chosen concentration)
- A senior seminar (counts in the chosen concentration; requires senior advanced major essay)
- Total of 18 credits in a chosen concentration
- Total of 12 credits from areas outside the chosen concentration
- Total: 36 history credits with at least 15 credits at the 300/400 level.

**Joint Advanced Major Program**

Same history requirements as advanced major above. However, students are not required to do a senior advanced major essay if they choose history as their major subject B.

**Honours Program**

- HIST 100 or 110 (6 credits)
- HIST 213 and 215\*
- HIST 445 (counts outside the chosen concentration)
- A senior seminar (counts in the chosen concentration)

- Total of 33 credits in a chosen concentration (includes HIST 490)
- Total of 21 credits from areas outside the chosen concentration
- HIST 490 (Thesis, 6 credits) with a faculty member
- Total: 60 history credits with at least 24 credits at the 300/400 level.

**Honours with a Subsidiary Subject**

- HIST 100 or 110 (6 credits)
- HIST 213 and 215\*
- HIST 445 (counts outside the chosen concentration)
- A senior seminar (counts in the chosen concentration)
- Total of 27 credits in a chosen concentration (includes HIST 490)
- Total of 15 credits from areas outside the concentration
- HIST 490 (Thesis, 6 credits) with a faculty member
- Total: 48 history credits with at least 18 credits at the 300/400 level.

\*These required courses count in the Canadian concentration. For any other concentration, they count outside of it.

**Recognized Courses**

Subject to the restrictions stated below, students may count the following courses for credit in the Department of History: Celtic Studies - CELT 131/132 and 331/332; Religious Studies - RELS 383 (RELS 100, 110 or 120 prerequisite); Art- ART 251, 252, 371, 372 and 373 (HIST 100 or 110 prerequisite) and ART 435 (ART 371, 372 and 373 or permission of instructor prerequisite) and Economics- ECON 232 and 332 (ECON 101/102 prerequisite). Students completing a minor, major, advanced major, joint advanced major or honours in history are permitted to count no more than twelve credits of the aforementioned courses as history courses; similarly, no more than six credits of these courses may be taken from any one department. For a history pair, students are permitted no more than six credits of these recognized courses.

**100 Western Civilization**

Traces the development of Western ideas and institutions. Covers classical Greek civilization; Roman political behaviour; the medieval centuries and the nation-state; early modern Europe and its Renaissance, Reformation, and Enlightenment; the French, Industrial, and liberal revolutions; the growth of nationalism, communism, and fascism, and the world wars. Normally restricted to 1st and 2nd year students; it is not normally required for 3rd and 4th year students seeking a first history course. Students are advised not to take both HIST 100 and 110 since only one will count towards a major or minor and the other will qualify as an elective. Six credits.

**110 Global History Since 1300**

Explores selected topics in global history from 1300 to now, including Mongol expansion, the Black Death, the age of exploration, the rise of capitalism and class society, struggles between Europeans and colonized peoples, slavery, political revolutions, and nationalisms. Political, social, intellectual, and cultural history are combined to provide a broad examination of the key non-Western and Western civilizations and their interactions. Normally restricted to 1st and 2nd year students; it is not required for 3rd and 4th year students seeking a first history course. Students are advised not to take both HIST 100 and 110 since only one will count towards a major or minor and the other will qualify as an elective. Six credits.

**202 Western Canada: The Prairies**

This survey examines the history of the Canadian prairies from pre-European contact to the present, including native peoples and European-native contact, the fur trade, exploration, colonization, Riel and the Metis, immigration, urbanization, social reform, war, the Great Depression, wheat and oil, and intellectual, social, and religious developments. Three credits.

**204 Western Canada: British Columbia**

This survey examines historical developments in British Columbia from pre-European contact to the present, including native peoples and European-native contact, exploration, colonization, immigration, ethnic diversification, anti-Asian sentiment, the development of resource industries, the organization of labour, social reform, and war, as well as intellectual, social, and religious developments. Three credits.

**207 History of Quebec**

This course traces the political, economic, social, and cultural development of Quebec from the 16th century to the 1980s, focusing on the debates that have shaped historians' interpretations of Quebec's past. Credit will be granted for only one of HIST 207 and HIST 307. Six credits. Not offered 2012-2013.

**209 The Maritime Provinces, 1500-1950**

This survey examines the major political, social, cultural and economic developments in Maritime Canada. It will explore such topics as relations between Europeans and First Nations; the clash of empires; the Acadian expulsion; the impact of immigrant

cultures; the Age of Sail; federation with Canada; industrialization; labour unrest; the historical experiences of African-Nova Scotians, Mi'kmaq, and Maritime women; out-migration; and political marginalization. Six credits.

### **213 A History of Canada: Pre-Confederation**

This survey explores the main political, economic, and social themes in pre-confederation Canadian history. Required for all history majors, joint majors, advanced majors, and honours students; optional for minors and students seeking a pair in history. It is not required for students who plan to enter education; other history courses can be used to satisfy the education program requirements. Normally, students should take both HIST 213 and 215 in the same academic year. Credit will be granted for only one of HIST 213 and HIST 200. Three credits.

### **215 A History of Canada: Post-Confederation**

This survey explores the main political, economic, and social themes in post-confederation Canadian history. Required for all history majors, joint majors, advanced majors, and honours students; optional for minors and students seeking a pair in history. It is not required for students who plan to enter education; other history courses can be used to satisfy the education program requirements. Normally, students should take both HIST 213 and 215 in the same academic year. Credit will be granted for only one of HIST 215 and HIST 200. Three credits.

### **216 Modern France, 1789 to the Present**

Explores French history from the end of the old regime to the present. Topics include the 1789 revolution and its aftermath, Napoleon, the July Monarchy, the Second Empire, class and gender in 19th Century France, the Third Republic, the Dreyfus Affair, the "Hollow Years" of the interwar era, the defeat of 1940 and the authoritarian Vichy Regime, decolonization and the rise of De Gaulle, and the role of feminism/memory/multiculturalism in postwar France with concentration on social, intellectual, cultural trends, and politics. Prerequisite: HIST 100 or 110 or permission of the instructor. Three credits. Not offered 2012-2013.

### **221 Medieval Russia**

Topics include the origins of the Slavs; their adoption of Christianity; the establishment and development of the Kievan state; the coming of the Mongols and the Mongol "yoke"; the slow emergence of Muscovy; Ivan the Terrible and the Time of Troubles. Three credits. Not offered 2012-2013.

### **222 Imperial Russia**

Topics include 17th-century Muscovy: the Romanovs, serfdom, schism, and territorial expansion; the 18th century: Peter the Great, Catherine II, and Westernization; and the 19th century: autocracy, culture, the abolition of serfdom, industrialization, the revolutionary movement, foreign policy, World War I and the collapse of tsarism; the revolution of 1917. Three credits. Not offered 2012-2013.

### **231 Europe's Early Middle Ages**

Concentrating on the years between 300 and 1050, this course traces the political, social, religious and cultural changes within Europe in the period traditionally, and wrongly, called the Dark Ages. Topics include the spread of Christianity, the end of Roman dominance, Germanic migrations, the spread of Islam, Norse explorations and conquests and the Carolingian Empire. Weekly discussions of primary and secondary sources situate more focused studies of individuals or societies within broad political and social landscapes. Credit will be granted for only one of HIST 231 and HIST 230. Three credits.

### **232 Europe's High and Late Middle Ages**

Concentrating on the years between 1000 and 1521, this course explores the political, social, religious and cultural experiences of medieval peoples and societies in the High and Late Middle Ages. Topics include the 11th century agricultural revolution, re-urbanization, the "second conversion" and its consequences, Christian, Muslim and Jewish interactions in Europe and the Levant, the Black Death and its aftermath, heresy and the early Reformation. Weekly discussions of primary and secondary sources situate more focused studies of individuals and societies within broad political and social landscapes. Credit will be granted for only one of HIST 232 and HIST 230. Three credits. Not offered 2012-2013.

### **233 French Imperialism**

This course examines the history of French Imperialism during the 19th and 20th centuries in the Maghreb, Africa, Asia, and the Pacific. It explores various themes associated with colonial politics, society, economy, and culture, including the historiography of French imperialism, the construction and maintenance of the colonial governing system, the gendered nature of colonial discourse and practice, the social impact of religious customs in various locations within the empire, racial hierarchies and concomitant administrative repression, colonial representations in metropolitan French culture, and nationalist movements and revolts before and during the era of decolonization. Prerequisite: HIST 100 or 110 or permission of the instructor. Three credits.

### **235 Introduction to South Asian History**

An introduction to the history of the people and states of the Indian sub-continent, beginning with the arrival of the Mughals in the sixteenth century and ending with decolonization and partition in 1947. South Asia's political, social, economic and cultural development has been described as syncretic; in this course we will examine ways in which multiple cultures have both shaped and been shaped by encounters with the subcontinent in the early modern and modern eras. Three credits

### **242 The United States Before 1865**

A survey of the US from colonial times to the Civil War. Topics include Aboriginal beginnings; Atlantic migrations; colonization; religious thought and institutions; the colonies' role in the British Empire; the War of Independence; territorial expansion and frontier experience; the birth and extension of the party system; slavery; sectionalism; the Civil War. Three credits.

### **244 The United States After 1865**

A survey of the US from the Reconstruction to the present. Topics include the Civil War and its aftermath; industrialization and urbanization; immigration and ethnicity; the two world wars and the US rise to world power; the Great Depression and the New Deal; 20th-century cultural and political antagonisms; the struggle for Black civil rights; the Cold War and the Vietnam War; the Watergate scandal. Three credits.

### **250 A Survey of German History from 1648 to the Present**

This survey of German history emphasizes the 19th and 20th centuries. It includes topics such as the rise of Brandenburg-Prussia; German nationalism; Bismarck and the unification of Germany; the industrial revolution and organized labour; the coming of the war in 1914; the revolution of 1918; the trials of democracy in the Weimar Republic; Hitler and Nazism; and Germany in a divided world. Six credits.

### **255 History of Colonial Latin America**

Surveys Spanish and Portuguese America, 15th to the 19th centuries. Themes include the indigenous, African and Iberian heritages of Latin America; the clash of civilizations and conquest in the Americas; the interaction of diverse cultures and the creation of new societies; the social, economic and cultural evolution of colonial Latin America; the age of piracy and challenges to the Spanish and Portuguese empires; the rise of hierarchies and inequalities based on gender, sexuality, ethnicity and class; and the struggle for independence. Three credits.

### **256 History of Modern Latin America**

Introduces the political, social, economic and cultural history of Latin America from independence to the present. Themes include the struggles for independence; the creation of new nations and cultures in the 19th-century; the abolition of slavery; the struggles of indigenous peoples to preserve their culture; modernization in the late 19th century; the evolution of social classes and ideas about ethnicity, gender, and sexuality; economic dependency and neocolonialism; nationalism and revolution; foreign intervention in Latin America; and the contemporary impact of democratization and globalization. Three credits. Not offered 2012-2013.

### **261 Europe in the 19th Century**

A survey of European history from the French Revolution to the end of the 19th century, covering the political, economic, social, intellectual, and cultural affairs of major European states. Credit will be granted for only one of HIST 261 and HIST 260. Three credits.

### **262 Europe in the 20th Century**

A survey of European history from the early 20th century, covering the political, social, intellectual, and cultural affairs of major European states. Credit will be granted for only one of HIST 262 and HIST 260. Three credits. Not offered 2012-2013.

### **275 Modern Japan**

Explores the motivations, policies, obstacles, and achievements of Japan's economic, social, political, and cultural modernization in the 19th and 20th centuries. Topics include the impact of the West; the fall of the Shogunate; the restoration of the Meiji emperor; imperialism; the 1930s economic depression; fascism and the road to World War II; World War II in the Pacific; the post-war economic miracle; Japan's role in international politics after 1945. Six credits. Not offered 2012-2013.

### **282 British History Since 1707**

The aim of this survey is to introduce students to the political, social and economic history of Great Britain from the Acts of Union until the present post-Blair era. Three credits.

### **283 The British Empire**

Britain was the world's first modern superpower. It dominated the world politically, economically, militarily and culturally. This course will examine both the measurables



of imperial economic and political domination, but also the intangibles; Britons themselves came to believe that they exemplified national characteristics that denoted imperial rulers. What all led to that mindset, and how was that viewed by subject populations? Regional studies will enable us to understand the relationship between metropole and settlers and administrators and colonial populations. Three credits. Not offered 2012-2013.

### **298 Selected Topics**

The topic for 2012-2013 is Crusades and Their Cultures. This class explores history of the medieval religious wars that are now known as the crusades. Although often treated collectively, these wars differed greatly in character, from penitential crusades to the holy land to disciplinary crusades against the Cathars and Hussites, to the economic war of aggression that was the Fourth Crusade. Organized as a brief chronological survey of the crusades from 1096 to 1430, the course will also examine various themes in recent crusade historiography. Three credits.

### **300 A Cultural and Intellectual History of Canada**

This course is an historical analysis of Canadian literature, art, and architecture, and the intellectual forces that have shaped Canadian society. Cross-listed as ART 300. Six credits.

### **303 The Working Class in Early Canadian Society**

This course considers the emergence and reconstitution of a working class in Canada between 1800-1910. The course examines three spheres of working-class life: the conditions that gave rise to permanent wage-labour in industry; the changing nature of the working-class household, and; the social and cultural dimensions of working-class communities and the challenges posed by moral reformers and mass commercial culture. The course attempts to determine the extent of working-class identity that has emerged in Canada and how it has changed. Credit will be granted for only one of HIST 303 and HIST 309. Three credits.

### **304 The Working Class in Modern Canada**

A continuation of HIST 303, this course considers the emergence and reconstitution of a working class in Canada between 1910-2010. The course attempts to determine the extent of working-class identity that has emerged in Canada and how it has changed into the contemporary era of the twenty-first century. Credit will be granted for only one of HIST 304 and HIST 309. Three credits. Not offered 2012-2013.

### **310 Canadian Immigration and Ethnic History**

Through an examination of immigration, ethnic group experience, and multicultural issues, this course explores the making of the Canadian multicultural mosaic in the 19th and 20th centuries. Topics include the contribution of immigrants to the formation of Canada; debates about immigration and refugee policy; minority rights, equality of opportunity, racism; citizenship and official multiculturalism. Six credits. Not offered 2012-2013.

### **314 Canada and the Cold War Era**

Examines Canada's response to the atomic/nuclear age and divisions between the two superpowers from 1945-1991. Students will learn how the Cold War affected Canada and the West through a study of selected themes: political and cultural dimensions of the Red Scare; Canadian diplomacy during the Cold War; Canada's role in the Vietnam War, and participation in NATO and NORAD; the influence of the Cold War on gender, business, labour, and popular culture. Three credits. Not offered 2012-2013.

### **317 Canadian Women's and Gender History: From Colony to Nation**

This course introduces students to major themes in the field of Canadian women's and gender history. Covering the period from the late 16th century to the late 19th century, the course examines the historical development of women's roles, experiences, identities and gender relations. Particular attention is given in this course to the impact of colonialism, and the intersection of gender, race, economic/class status, and Indigenous/non-Indigenous status in shaping women's work, family roles, sexuality, political engagement and activism. Cross-listed as WMGS 317. Credit will be granted for only one of HIST 317 and HIST 308. Three credits.

### **318 Canadian Women's and Gender History: Modernity**

This course introduces students to major themes in the field of Canadian women's and gender history. Covering the period from the late 19th century to the late 20th century, the course examines the historical development of women's roles, experiences, identities and gender relations. Particular attention is given to the intersection of gender, race, economic/class status, and Indigenous/non-Indigenous status in shaping women's work, family roles, sexuality, political engagement and activism. Credit will be granted for only one of HIST 318 and HIST 308. Cross-listed as WMGS 318. Three credits.

### **320 The USSR, 1917-1991**

Examines the fall of the tsarist regime; the ideological roots of the Bolshevik Revolution; the economic, social, cultural, and political developments of the Soviet Union, from Lenin to Gorbachev; the failure of Soviet communism. Six credits. Not offered 2012-2013.

### **325 Eastern Europe, 1848-1989**

Covers the Ottoman, Austro-Hungarian, Russian, and German empires; modernization and nationalism; World War I and the emergence of new states; World War II; the people's democracies and the coming to power of the communists; the imposition of a Stalinist model of economic, cultural, political, and social development; the resistance to sovietization in Yugoslavia, Hungary, Czechoslovakia, and Poland; the revolutions of 1989; the dismantlement of Yugoslavia and Czechoslovakia. Six credits. Not offered 2012-2013.

### **326 History of Cuba from Independence to the Revolution**

This course examines Cuban history from the early 19th century to the present. This includes the late stage of Spanish colonialism and the slave economy based on sugar, coffee and tobacco; the struggle for abolition and national independence; the Spanish-American War of 1898 and U.S. domination in the 20th century; the 1933 revolution and armed struggle against the Batista dictatorship; Fidel Castro, Che Guevara and the socialist experiment; the Cold War and Cuba's role in Latin America; and Cuban society in a post-Soviet world. The course will also address Afro-Cuban culture, gender and sexuality, and human rights. Prerequisite: HIST 255 or 256 recommended. Three credits. Not offered 2012-2013.

### **332 The Medieval Body**

This class explores late medieval conceptions of the physical body, which were always essential to identity in the Middle Ages. Medieval discussions of the practice of reading, clothing and fashion and even spiritual union with God, often involved debates and metaphors based upon the physical body. Through an exploration of primary and secondary texts along with seminar discussions, the class will explore the interconnectedness of late medieval ideas of corporeality, identity, spirituality and sexuality. Cross-listed as WMGS 333. Three credits. Not offered 2012-2013.

### **333 The Individual in Medieval Society**

Common scholarly discourse posits that individualism developed in the wake of the "civilizing process" of the early modern period and the 18th century Enlightenment. Yet many medieval scholars decry this chronology, citing examples of medieval people who seem to satisfy the requirements for modern individualism and exploring medieval theories of identity that permit the development of something like modern individualism. This course will explore and take part in this intense debate both by reading the scholarly literature on the subject and by reading primary sources that describe the experiences of medieval people. Prerequisite: HIST 231 or 232 recommended. Credit will be granted for only one of HIST 333 and HIST 330. Three credits. Not offered 2012-2013.

### **334 Society and Ritual in the High Middle Ages**

Like people living in the modern West, medieval individuals marked significant rites of passage such as birth, marriage and death with rituals. In the medieval West, these rituals usually revolved around the Catholic Church. This class will explore the major rites of passage through which medieval peasants, townspeople and nobles alike marked their lives, exploring not only the meaning and purpose of the rituals, but the rich social lives of those individuals participating in them. Prerequisite: HIST 231 or 232 recommended. Credit will be granted for only one of HIST 334 and HIST 330. Three credits. Not offered 2012-2013.

### **337 History of Modern Mexico**

This course examines the history of modern Mexico from independence to the present. This includes the independence war of 1810-1821; civil war, rebellion, and banditry in the 19th century; indigenous peoples' struggles to preserve their culture in the 19th and 20th centuries; foreign intervention and Mexican relations with North America and Europe. Special attention is paid to the Mexican Revolution of 1910. The course follows developments in the post-revolutionary era to explore popular culture, gender and sexuality, modernization, democracy and social justice. Prerequisite: HIST 255 or 256 recommended. Three credits.

### **341 A History of Canadian-American Relations**

A study of Canadian-American relations from the American Revolution to the modern era. Topics include the founding of separate American and provincial societies; the tensions of continental and nationalist identities; the evolution of a North American economy and culture; policy making and bilateral relations in NATO and the UN; post-9/11 security arrangements; complementary and conflicting national interests in political, military, economic, social, and cultural issues. Three credits. Not offered 2012-2013.

**343 The Place of Race in the United States**

Explores the enduring importance of race in America, including identity formation; 'identity politics'; white-black and white-native interaction; slavery; abolition; Manifest Destiny; the Indian Wars; Reconstruction; Jim Crow segregation; xenophobia toward Asian immigrants; the migration of blacks to cities; the ghetto and de facto segregation; the Civil Rights Movement, Chicano rights movement, and American Indian Movement; the anti-affirmative action backlash. Prerequisite: HIST 242 and 244 recommended. Three credits. Not offered 2012-2013.

**346 American Social Movements, 1865-1945**

Examines the triumphs and failures of social movements from the post-Civil War era to the New Deal, including grassroots organizations that nudged the US in a crucial new direction. Students will explore the nature of protest; disobedience and its effectiveness in the late 19th and 20th centuries; populism; women's suffrage; radical pacifism; crafts-based and industrial unionism; and the unemployed peoples' councils of the Great Depression. Prerequisite: HIST 242 and 244 recommended. Three credits. Not offered 2012-2013.

**347 American Social Movements, 1945-Present**

Examines the triumphs and failures of social movements from the New Deal era to the present, including grassroots organizations that nudged the US in a crucial new direction. Students will explore the nature of protest; disobedience and its effectiveness in the mid to late 20th century; counter-movements against progressive actors; unionism; McCarthyism; civil rights; Black power; anti-nuclear activism; the anti-globalization movement. Prerequisite: HIST 242 and 244 recommended. Three credits. Not offered 2012-2013.

**351 US Immigration and Ethnicity**

Explores the history of immigration to the US and the role of ethnicity in American political, social, and cultural life. Topics will include immigrant conceptions of status and success; the effects of diasporic communities, migration, and return migration on the Old World; American acculturation, binationalism, and the persistence of ethnic identities, and agendas; stay-at-home mothers versus working women; the construction of immigrants' 'whiteness.' Prerequisite: HIST 242 and 244 recommended. Three credits. Not offered 2012-2013.

**353 Explorers and Exploration**

Though tradition credits Christopher Columbus with beginning an age of exploration, Columbus himself knew that he drew from a long tradition of explorers who came before him including peoples as diverse as Islamic scholars, Venetian merchants, Basque fishermen and Viking sailors. He knew about the multicultural cities of Jerusalem and Karakorum where individuals from all over Eurasia traded knowledge and goods. This course will examine the science, technology, literature and history of exploration that so inspired Columbus and the extent to which the different cultures of the premodern world were interconnected by trade, pilgrimage and exploration. Prerequisites: HIST 231 and 232 recommended. Three credits. Not offered 2012-2013.

**355 The Sixties: A Social History**

Examines the tumultuous 1960s and situates the Canadian experience within the international context - primarily the USA and Western Europe. Connections will be made between civil rights movements, anti-colonialism, environmentalism; "second-wave" feminism, Québécois nationalism, the New Left, student activism, and the importance of the counter-culture. The course will retain a historical perspective but draw upon interdisciplinary scholarship. The decade's lasting significance and its current invocation as a cultural and political artefact will be debated. Three credits. Not offered 2012-2013.

**360 European Women's History**

This course examines major issues in the history of women in Europe from the pre-industrial era to the present. Themes to be covered include gender as a tool for historical analysis; the changing participation of women in the work force and in revolutionary and in reform movements; transformations in the domestic sphere; widening educational opportunities; and women in imperialism and global movements. Gender roles are dynamic and are the outcome of particular historical processes; students in this course will learn how historians untangle implications about a myriad and gendered identities based on the evidence of historical records. Cross-listed as WMGS 370. Three credits. Not offered 2012-2013.

**362 European Fascism**

This course will explore the history of fascism from its late 19th century origins to the present day. Topics include the political and doctrinal origins of fascism and its crystallization during the Great War; the fascistization of politics, economy and society in Mussolini's Italy and Hitler's Germany; anti-Semitism; the appeal of fascism in interwar Europe; and its subsequent apogee during World War II and the Holocaust. Prerequisite: HIST 100 or 110 or permission of the instructor. Three credits. Not offered 2012-2013.

**363 Reformation Europe**

Topics include the Catholic Church on the eve of the Reformation, Renaissance humanism, Martin Luther and Lutheranism, John Calvin and Calvinism, Henry VIII and Anglicanism, radical reformers, women and witchcraft, the Jesuits and the Council of Trent, the wars of religion within the Holy Roman German Empire and in France, Philip II and his Grand Project, the rivalry between Spain and England, the Thirty Years' War (1618-48), and the historiography of the Reformation. Three credits. Not offered 2012-2013.

**364 The Holocaust**

Explores the history and legacy of the destruction of the Jews in Europe during World War II. Topics include historical anti-Semitism; the rise of the Nazis; euthanasia; the ghettos; the death camps; the actions of collaborationist regimes; Jewish and non-Jewish resistance; the role of ordinary Germans; the establishment of Israel; and post-war trials and controversies. Three credits. Not offered 2012-2013.

**372 Imperial China**

Topics include: Confucianism; the dynastic cycles; the fall of the Ming dynasty; the Manchus; the intrusion of the West: the missionaries, the Canton System, the opium wars and the unequal treaties; the Taiping Rebellion; the failed attempts at modernization; the Boxer uprising; the revolution of 1911. Credit will be granted for only one of HIST 370 and/or HIST 372 and 374. Three credits.

**374 20th-Century China**

Covers the revolution of 1911; warlordism; World War I and the May Fourth Movement; Sun Yatsen, Chiang Kaishek and the Guomindang; Mao Zedong and the Chinese Communist Party; World War II (1937-45); the civil war (1945-49); the profound economic, social, cultural and political transformations of Communist China under Mao Zedong and Deng Xiaoping. Three credits.

**383 Victorian Britain**

During the 19th century Britain simultaneously became the first fully industrialized, urbanized nation and experienced the transition to democracy. This course deals with the adjustments to these momentous changes during Britain's greatest period of power. Three credits.

**384 Britain in the 20th Century**

Britain began the 20th century as a leading world power. By the end of the century this was much less the case, but the country had become one of the foremost welfare states. During this transformation, Britain faced important challenges in the two world wars, the ending of empire, and the Irish Question. This course deals with these and other challenges and the responses to them. Three credits. Not offered 2012-2013.

**386 Tudor England**

Beginning with the foundation of Tudor rule in 1485, the course will explore the Reformation under Henry VIII and the statecraft of Elizabeth I. Students will explore the social, economic, political, religious, and diplomatic developments during this period. Three credits.

**387 Stuart Britain**

Beginning with the reign of James I in 1603 and ending with the death of Queen Anne in 1714, this course will examine one of the most turbulent periods in British history. Students will explore the causes and consequences of the English Civil War and the revolutions of the 17th century. Three credits.

**390 World War I**

This course is an in-depth study of the major aspects-social, cultural, economic, political, and military-of the Great War. Six credits.

**398 Themes in the History of Sexuality**

A comparative study of the history of sexuality during the modern period from the eighteenth through the twentieth centuries. Following a broadly chronological and thematic approach to a diverse history of sexualities, the course will explore in particular the changing meanings of and interconnections between sexuality, race, class and gender. Topics will include: indigenous sexual cultures; sexuality and colonialism; inter-racial sexual relationships; the 'invention of heterosexuality'; moral panics, prostitution, the regulation of sexual desire; and sexual subcultures. Cross-listed as WMGS 398. Three credits.

**399 Selected Topics**

Three credits.

**445 Historiography**

This is a seminar in theories and methods in the discipline of history, with corresponding readings in the related historiography. Combining a survey of historiography across time with writing and research projects, the seminar will introduce students to key concepts, methods, and interpretations of history. The

subject matter will emphasize 20th century historiography, including the impact that diverse approaches have had on the discipline today. This course is mandatory for all advanced major and honours students. Majors may take this course with the permission of the instructor. Three credits.

Senior Seminar Notes:

- Seminars are open to advanced major and honours students. Majors may take a seminar with the permission of the instructor. Advanced majors complete a senior research paper in the context of a senior seminar.
- Seminars will be offered on a rotating basis depending on faculty resources and student demand, normally three per year; the department will make every effort to ensure that honours students will have the opportunity to study their chosen field of history at an advanced level.

#### 401 Senior Seminar in Canadian History

This course examines important themes and interpretations in Canadian history. The specific focus of the seminar will reflect the interests of the professor and the students. Three credits.

#### 455 Senior Seminar in Medieval European History

This course examines important themes and interpretations in Medieval European history. The specific focus of the seminar will reflect the interests of the professor and the students. Three credits.

#### 457 Senior Seminar in American History

This course examines important themes and interpretations in American history. The specific focus of the seminar will reflect the interests of the professor and the students. Three credits.

#### 461 Senior Seminar in Modern European History

Explores major developments in 19th- and 20th-century European history. The specific focus of the seminar will reflect the interests of the professor and the students. Three credits.

#### 462 Senior Seminar in Latin American History

This course examines important themes and interpretations in Latin American history. The specific focus of the seminar will reflect the interests of the professor and the students. Three credits.

#### 490 Thesis

Each student works under the supervision of a chosen professor who guides the selection of a thesis topic, use of resources, methodological component, quality of analysis and execution, and literary calibre of the final version. Required for all honours students. Six credits.

#### 499 Directed Study

Under the direction of a faculty member, students may pursue an individual program of study in an area of history not available in the course offerings. For eligibility, see section 3.5. Three or six credits.

## 9.22 HUMAN KINETICS

L. Bilek, Pae.D.	S. MacKenzie, Ph.D.
J. Boucher, Ph.D.	R. Rasmussen, Ph.D.
A. Casey, Ph.D.	A. Thompson, Ph.D.
M. Gallant, M.Sc.	D. Vossen, Ph.D.
D. Kane, Ph.D.	C. Weaving, Ph.D.

The Department of Human Kinetics offers a four-year arts or science degree program in the study of human movement from a humanities, social sciences or scientific perspective. Both the BA and the B.Sc. in Human Kinetics offer the student further specialization with the option to major in either a kinesiology program or a pre-education program, both of which are nationally accredited.

Selection of the major comes at the end of the second year of study and is dependent upon the student's interests and desired educational outcome. Each of the two majors consists of required and elective HKIN courses, arts/science electives, an approved and open elective, and selected activity courses.

Depending on course selection, the major in kinesiology prepares students for a variety of professional and educational options, including: professional programs such as medicine, dentistry, physiotherapy, athletic therapy, occupational therapy; and massage therapy; direct employment in the health and fitness sector; or graduate programs in sport psychology, sociology, philosophy, history, exercise physiology, biomechanics, child growth and development, health promotion and adapted physical activity/adapted physical education. Students interested in teaching in the school system should select the pre-education major. The students in pre-education major should select at least one activity from areas: formalized games and sports; basic movement (e.g. track and field, gymnastics); dance;

recreation and leisure pursuits; exercise and health related fitness. Students who plan careers in other teaching-related professions should also choose the major in pre-education. Students may consult the department chair or designated faculty advisor to ensure course selection for acceptance to B.Ed. programs. See chapter 6 for admission requirements to the StFX B.Ed. program.

Candidates must follow the degree regulations in chapters 4 and 7. For entrance requirements, see chapter 1.

The normal sequence for the six human kinetics degrees and majors are as follows: Subject A and Science A are minors in the respective programs below.

#### BA in Human Kinetics with Major in Kinesiology

Year 1	HKIN 105, 115; 6 credits each of arts subjects A and B; 12 credits arts/science electives
Year 2	HKIN 105 or 205, 215, 236; 3 credits HKIN elective; BIOL 251, 252; 6 credits each of arts subjects A and B
Year 3	HKIN 301, 365, 376, 396 or 397; 6 credits HKIN electives; 12 credits arts subject A
Year 4	6 credits from HKIN 331, 332, 352, 353, 354, 443, 455; 12 credits HKIN electives; 6 credits each approved electives and open electives

#### BA in Human Kinetics with Major in Pre-Education

Year 1	HKIN 105, 115; 6 credits each of arts subjects A and B; 12 credits arts/science electives
Year 2	HKIN 105 or 205, 215, 236; 3 credits HKIN elective; BIOL 251, 252; 6 credits each of arts subjects A and B
Year 3	HKIN 365, 376, 385, and 3 activities; 6 credits HKIN electives; 12 credits arts subject A
Year 4	HKIN 425, 426, and 3 activities; 6 credits from HKIN 331, 332, 352, 353, 354, 443, 455; 3 credits HKIN elective; 6 credits each approved elective and open elective

Candidates must follow the degree regulations in section 4.1.

#### B.Sc. in Human Kinetics with Major in Kinesiology

Year 1	HKIN 105, 115; 6 credits each of science subjects A and B; 6 credits each of arts subject X and Y
Year 2	HKIN 105 or 205, 215, 236; 3 credits HKIN elective; BIOL 251, 252; 6 credits science A; 6 credits Arts X
Year 3	HKIN 301, 365, 376, 396 or 397; 6 credits HKIN electives; 12 credits science A*
Year 4	6 credits from HKIN 331, 332, 352, 353, 354, 443, 455; 12 credits HKIN electives; 6 credits each approved electives and open electives

\*If science A is biology then 6 credits of biology must be BIOL 201 and 204 and science B is normally chemistry.

#### B.Sc. in Human Kinetics with Major in Pre-Education

Year 1	HKIN 105, 115; 6 credits each of science subjects A and B; 6 credits each of arts subject X and Y
Year 2	HKIN 105 or 205, 215, 236; 3 credits HKIN elective; BIOL 251, 252; 6 credits science A; 6 credits Arts X
Year 3	HKIN 365, 376, 385, and 3 activities; 6 credits HKIN electives; 12 credits science A*
Year 4	HKIN 425, 426, and 3 activities; 6 credits from HKIN 331, 332, 352, 353, 354, 443, 455; 3 credits HKIN elective; 6 credits each approved elective and open elective

\*If science A is biology then 24 credits of biology must be BIOL 111, 112, 201, 202, 203, 204, 251, and 252. If science A is biology then science B is normally chemistry.

#### B.Sc. in Human Kinetics with Major in Kinesiology and Minor in Health Sciences

Year 1	HKIN 105, 115; CHEM 100; BIOL 111, 112; ENGL 100; 6 credits of Arts X or Arts Y; PSYC 100 or SOCI 100
Year 2	HKIN 105 or 205, 215, 236; 3 credits HKIN elective; BIOL 251, 252; CHEM 220; 6 credits Arts X (ENGL, PSYC, or SOCI)
Year 3	HKIN 301, 365, 376, 396 or 397; 9 credits HKIN electives; CHEM 255; PHYS 100
Year 4	6 credits from HKIN 331, 332, 352, 353, 354, 443, 455; 9 credits HKIN electives; one of BIOL 201, 204 or 315; 6 credits each approved elective and open elective

#### B.Sc. in Human Kinetics with Major in Kinesiology and Minor in Nutrition

Year 1	HKIN 105, 115; BIOL 111, 112; CHEM 100; 6 credits each of Arts subject X and Y
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Year 2	HKIN 105 or 205, 215, 236; 3 credits HKIN elective; BIOL 251, 252; 6 credits Arts X; 6 credits approved elective
Year 3	HKIN 301, 365, 376, 396 or 397; 3 credits HKIN elective; CHEM 225, 255; HNU 145, 261, 262
Year 4	6 credits from HKIN 331, 332, 352, 353, 354, 443, 455; BIOL 215; HNU 363; 12 credits from HNU 146, 161, 235, 351, 365, 366, 405, 425, 467 and 475; 6 credits open elective

For completion of B.Sc. in HNU in 5th year, see required course pattern below.

### **B.Sc. in Human Nutrition degree in 5th year for B.Sc. Human Kinetics students with minor in Human Nutrition**

B.Sc. Human Kinetics students majoring in Kinesiology and minoring in Human Nutrition who wish to pursue a degree in Human Nutrition in 5th year should follow the course pattern below. The required six credits of open electives in the HKIN degree must be BSAD 261 and HNU 146. In third year, students must take HNU 146, moving the 3 credit HKIN elective to fourth year. In fourth year, students must take HNU 161, 235, 351 and 365 as their required 12 credits of HNU electives. HKIN 396 or 397 fulfills the requirement of HNU 385 in the HNU degree program.

Recommended Course Pattern

Years 1-4	HNU 145, 146, 161, 235, 261, 262, 351, 363, 365; BSAD 261
Year 5	HNU 352, 353, 405, 475, 15 credits HNU electives; 3 credits open electives

### **BA & B.Sc. in Human Kinetics with Advanced Major or Honours**

See chapters 4 and 7 for requirements. Additionally, students in the kinesiology program must complete HKIN 491 and 493(thesis). Students in the pre-education program must complete the major requirements, HKIN 301, 396 or 397, and 491 and 493(thesis).

A student who fails to satisfy one or more requirements for the honours degree may be eligible for the advanced major degree.

A student who fails to satisfy one or more requirements for the advanced major degree may be eligible for the B.Sc. in Human Kinetics.

### **B.Sc. Joint Advanced Major in Human Kinetics & Biology**

See chapter 5 for requirements.

Note: HKIN 105, 115, and 205 are restricted to human kinetics students. Other HKIN courses are open to non-human kinetics students with permission of the professor and the department chair.

### **105 & 205 Activities I and II**

Each activity is one credit. Students must take six activities over two years, normally three per year, one in each of the three blocks (Fall, Winter, Spring) in which the activity is offered. Level I activities are prerequisites for Level II activities. An activity may be taken only once.

Students enrolled in the pre-education major must choose six additional activities, three activities in each of the third and fourth years:

Fall	Adapted physical activities, basketball I, contemporary dance, fitness, football I, golf, low organized games, rugby I, rugby II, soccer, squash, track and field, and weight training
Winter	Badminton I, basketball I, basketball II, fitness, folk dance, hockey I, gymnastics, handball, indoor soccer, low organized games, movement education, racquetball, soccer II, social dance, squash, volleyball I, and volleyball II
Spring	Badminton I, fitness, folk dance, football II, golf, gymnastics I, hockey II, indoor soccer, racquetball, squash, volleyball, and weight training
TBA	Fall (Sep 21-23; Oct 19-21) and winter outdoor education camp (additional fees will be applied), gymnastics II

### **115 Principles of Human Movement**

This course provides an introduction to human kinetics. The functional and psychosocial aspects of human movement form the core components of this course. Topics include physical activity, physical fitness, healthy eating, stress, heart health, obesity, cancer, weight management, and behaviour change. Three credits and lab.

### **215 Introduction to Motor Learning and Control**

An introductory analysis of motor behaviour and motor control, with emphasis on theories underlying the acquisition and performance of motor skills. Three credits and lab.

### **222 Care and Prevention of Athletic Injuries**

A study of the injuries that occur in popular physical activities, including the nature, course, prevention, and non-medical management of these injuries. Prerequisite: BIOL 251. Three credits and lab.

### **226 Focus on Personal Health**

This multidisciplinary course addresses personal health and lifestyle choices of university students. Topics include psychological health, nutrition, physical activity, the environment and sexuality. Three credits.

### **236 Foundations of Sport and Exercise Psychology**

This course provides an understanding of the basic concepts and principles of sport and exercise psychology, and how they apply to counselling, teaching, coaching, and fitness instruction. Three credits and lab.

### **241 Introduction to Sport Management**

This course provides an overview of the business of sport and fitness. Students will understand how the basic principles of business management, including marketing, sport promotion, public relations and finance are integrated into sport and fitness. Three credits.

### **262 Performance-Enhancing Substances**

The drive to succeed in sports and exercise has led to the use of nutritional, chemical, pharmacological, and physiological means of performance enhancement. The purpose of this course is to provide an overview of substances used in sports and exercise, addressing their mechanisms of action, safety and efficacy in consultation with valid scientific literature. Prerequisite: HKIN 115. Three credits.

### **271 Selected Topics**

Three credits.

### **301 Elementary Statistics**

Cross-listed as STAT 201; see STAT 201. Three credits.

### **321 Advanced Care & Prevention of Athletic Injuries**

An in-depth study of the assessment and management of athletic injuries. Students will learn proper assessment protocol, advanced assessment techniques, and specialized taping techniques. Prerequisites: BIOL 251; HKIN 222. Three credits.

### **331 The Sociology of Sport**

This course provides students with a social interpretation of sport in Canadian society. Emphasis will be given to the culture of sport and its relationship to other societal institutions such as the mass media and education. Attention will be given to the connection between sports and socialization and to the role of sports in cultural values such as fitness, entertainment, and consumerism. Three credits.

### **332 Gender in Sport and Physical Activity**

Explores the role of women and men in sport/physical activity/recreation from a historical, philosophical and social perspective. This course covers sexuality, homophobia, racism, politics of difference and identity predominately from a Canadian philosophical approach. Cross-listed as WMGS 332. Three credits.

### **334 Coach Leadership and Planning**

This is a planning course designed for entry-level coaches. Completion of this course gives an accreditation in the National Certification Coaching Program, Competition A and B. Lab experience will be offered in the varsity program. Three credits and lab.

### **352 Historical Foundations of Sport and Physical Activity in Canada**

An overview of the history of sport in Canada. Using the forces of class, ethnicity, race and gender as an interpretative foundation, the class will examine the context and social conditions under which Canadians have created, refined, participated in and interpreted sports. Three credits.

### **353 Philosophy of Sport**

Emphasizing the relationship between game-playing and lived experience, this course serves as praxis-based critical inquiry into the essential nature, meaning and significance of sport. The advancement of a philosophy of personal and professional practice represents a central feature of the curriculum. Topics include the relationship between sport, game, play and existence, the dumb jock stereotype, sport and spirituality, being in the zone, and the game of real life. Prerequisite: HKIN 354 recommended. Three credits.

### **354 Ethics and Sport**

Emphasizing the relationship between sport ethics and lived experience, this course serves as praxis-based critical inquiry into the principles of sporting conduct. The advancement of a personal philosophy of ethical practice represents a central feature of the curriculum. Topics include sporting violence, fair play, cheating, sportspersonship, and performance enhancement. Prerequisite: HKIN 353 recommended. Three credits.

### **365 Exercise Physiology**

This course involves an in-depth study of the energy delivery systems utilized during exercise, as well as, both the acute responses and chronic adaptations

to exercise by the muscular, cardiovascular and respiratory systems. Basic neurological considerations are also included. Prerequisites: BIOL 251, 252. Three credits and lab.

### **376 Biomechanics**

Students will be exposed to the concepts of kinetic analysis of motion through the application of Newton's Laws. The course will provide the mechanical information necessary to enable the student to objectively criticize any human movement which the student may one day have to teach, coach or ergonomically evaluate. Credit will be granted for only one of HKIN 376 and BIOL 303. Three credits and lab.

### **385 Adapted Physical Education**

Future educators learn about the philosophy of inclusion and various disabilities in order to understand the importance of adapting teaching methods to meet the needs of all individuals. Students learn to collaborate, devise individualized physical education plans and participate in a lab gaining experience teaching individuals with different disabilities. Credit will be granted for only one of HKIN 385 and HKIN 395. Three credits and practicum.

### **392 Exercise Metabolism**

In order for animals to exercise, chemical energy must be converted to mechanical energy in muscle. Exercise metabolism describes the effects of physical activity on the chemical reactions that occur to maintain life. The goal of this course is to develop an understanding of human exercise metabolism and to introduce methodology used to study the subject. Prerequisites: HKIN 365; BIOL 111, 251, 252; CHEM 100 is recommended. Three credits and lab.

### **395 Physical Activity and Sport for Individuals with Disabilities**

This course teaches the nature of various disabilities and specific health concerns among different populations. Students develop research-based service learning proposals that promote physical activity, recreation and sport as a means to provide physical medicine and rehabilitation for people with disabilities. Credit will be granted for only one of HKIN 395 and HKIN 385. Three credits and practical experience.

### **396 Quantitative Research Methods**

An overview of the scientific method of problem solving. The course covers problem identification, hypothesis testing, data collection, and analysis of research findings. A detailed examination of experimental design assists the student in conducting research, writing the proposal and the report, and critically analyzing published literature. Restricted to third- and fourth-year students; recommended for year three of the honours program. Three credits.

### **397 Qualitative Research Methods**

An overview of qualitative research methodologies, including the major theories, methods, and approaches. Problem identification, data collection, data analysis, and data presentation are the major focus of this course. Practical experience will be included. Restricted to third- and fourth-year students; recommended for third-year advanced major and honours students. Three credits.

### **416 Advanced Motor Learning**

An in-depth study of motor control in skill movement and research problems in areas of motor control and learning strategies leading to peak performance. Prerequisite: HKIN 215. Three credits.

### **425 Child Growth and Development**

This course covers the physical growth, maturation, and development in children and adolescents. The implications of changes in structure and function as they relate to physical education, physical activity, and physical fitness will be discussed. Prerequisites: BIOL 251, 252; HKIN 365. Three credits and lab. Service learning option.

### **426 Health Education**

This course introduces the basic concepts and topics associated with the physical, intellectual, social, emotional, spiritual, and environmental aspects of health. Emphasis will be placed upon the application of these concepts in the instruction of health in the school system. Three credits. Service learning option.

### **432 Psychology of Coaching**

Explores current issues pertinent to psychological practice in sport, with a special emphasis on the sport psychologist-coach-participant relationships. Prerequisite: HKIN 236 or PSYC 100. Three credits.

### **435 Psychology of Motivation and Performance in Sports**

An analysis of motivational factors and psychological principles with reference to sport and motor performance, and a study of motivational techniques. Three credits.

### **441 Organization and Administration of Physical Activity and Sport**

An analysis of research relating to the theory and practice of administration in physical activities and sports with emphasis on planning, organizing, staffing, directing, co-ordinating, and controlling. Three credits. Not offered 2012-2013.

### **443 Modern Olympic Games**

This advanced seminar course is designed to provide opportunities for students to critically examine the Olympic Games and the modern Olympic Movement. Students will examine the Olympic Games from a sociocultural interdisciplinary approach. Restricted to third and fourth year HKIN students. Prerequisites: HKIN 332, 352, 353, 397 and 354 are recommended. Three credits.

### **445 Instructional Strategies in Human Kinetics**

An analysis of the teaching-learning process, emphasizing the instructional strategies specific to the development of skilled performance in movement activities; concentration on the acquisition of knowledge and competence relating to human relations. Three credits.

### **446 Essentials of Personal Training**

An introduction to exercise program prescription and leadership. Students will learn techniques for prescribing, following, and leading exercise programs; participate in and analyze exercise activities and programs; design and lead group, individual, and periodic exercise programs. Students will be prepared to meet national criteria for recognition as a certified personal trainer. Prerequisites: BIOL 251, 252; HKIN 365. Three credits and lab.

### **447 Rehabilitation Techniques for Sports Medicine**

This course will provide human kinetic students with an interest in further pursuing therapy as a career, a comprehensive guide to designing, implementing and supervising rehabilitation programs for sports related injuries. Prerequisite: HKIN 321. Three credits.

### **455 Games, Life & Leadership**

Emphasizing the relationship between game-playing and lived experience in a world with others, this course serves as an advanced praxis-based critical inquiry into the nature of self as leader. Central to the curriculum is the concept of Existential Fitness with Lusory Self-Inquiry advanced as a process designed to empower existential fitness development specifically via the conceptualization of existence as an experience of game-playing with others. Prerequisite: HKIN 353 or HKIN 354 (with permission). Three credits.

### **456 Exercise and Fitness Evaluation**

This course is designed to provide the theory and practical experience in a wide range of exercise science-related laboratory techniques and exercise training principles. Components of this course are intended to provide students with the necessary background information to pursue personal trainer certification through the Canadian Society of Exercise Physiology. Prerequisite: HKIN 365; BIOL 251, 252. Three credits.

### **466 Clinical Exercise Physiology**

This course examines several chronic diseases prevalent in our society, which are positively influenced by regular exercise or physical activity, and include: obesity, osteoporosis, cardiovascular disease, diabetes, arthritis, certain cancers and depression. The nature of the disease, methods of assessment, the role of exercise in the possible prevention, treatment and/or rehabilitation of these diseases are considered. Restricted to fourth-year students. Prerequisites: BIOL 251, 252; HKIN 365. Three credits.

### **471 Selected Topics in Human Kinetics I**

This course will cover a selection of current human kinetics topics such as psychosocial issues and scientific aspects of human movement. Restricted to third- and fourth-year students. Three credits.

### **473 Selected Topics in Human Kinetics II**

This course will cover a selection of current human kinetics topics. Three credits.

### **474 Advanced Biomechanics**

This course will further the student's understanding of the qualitative approach to biomechanics, and provide the necessary skills for conducting a quantitative biomechanical analysis of human motion. Students will be introduced to several techniques used in biomechanics research. Emphasis will be placed on the collection and analysis of biomechanical data. Concepts will be illustrated with examples taken from areas of ergonomics, sport, and exercise. Prerequisites: HKIN 376; MATH 111 and PHYS 100 recommended. Three credits and lab.

### **491 Senior Seminar**

In addition to classroom sessions and round table discussions, the senior seminar

may include lectures by visitors, faculty, and staff on aspects of human movement. Required for all honours students. The theses of honours students form the basis of their presentations. No formal credit is given for the senior seminar; however, satisfactory attendance and seminar presentation is a requirement for the BA or B.Sc. in Human Kinetics with Honours. No credit.

#### 493 Honours Thesis

Honours students must submit a thesis under the direction of a faculty member. The thesis will document the student's research work. Students must meet all department deadlines and requirements, and submit an acceptable thesis to earn a BA or a B.Sc. in Human Kinetics with Honours. Prerequisites: HKIN 301, 396 or 397. Three credits.

#### 499 Directed Study

Designed for students with high academic standing who wish to pursue a directed, in-depth study in a selected topic. See section 3.5. Three credits.

### 9.23 HUMAN NUTRITION

D. Gillis, Ph.D., P.Dt.

J. Jamieson, Ph.D.

C. Johnson, M.Sc., P.Dt.

M. Naczek, Ph.D.

L.A. Wadsworth, Ph.D., P.Dt., FDC

*Part Time*

F. Haley, M.H.S.A., P.Dt., C.H.E.

P. Mazier, Ph.D.

L. Reid, M.Ed., P.Dt., C.D.E.

The B.Sc. in Human Nutrition is a professional program which integrates core requirements in foods, nutrition and related areas with studies in biology, chemistry, statistics, business, humanities and social sciences. The program combines a strong science background with a process orientation, focusing on the effective delivery of nutritional information in various institutional and community settings. Collectively, the course requirements are designed to provide graduates with the expertise needed by nutrition and dietetic professionals today. Depending upon the choice of emphasis, the Human Nutrition program prepares graduates for careers in areas such as dietetics, education, health promotion, food service management, and research and development in food and nutrition. Graduates may qualify for entrance to a Dietitians of Canada approved dietetic internship program (comprehensive practicum), or for graduate study in human nutrition, food science, and other professional programs such as pharmacy, medicine, law and business administration.

The fourth year of the program focuses on specialized knowledge in the areas of food, nutrition, food service management, and related subjects. In second year, students who meet the requisite average may apply for either the advanced major program, which has a seminar requirement; or the honours program, which has a seminar requirement, a three-credit thesis course and six required HNU credits (467 and either 461 or 486). Students' selection of seminar topics will reflect the research areas of faculty members.

With the proper selection of courses (HNU 356 and HNU 456 as HNU electives), students may meet the requirements for admission to a Dietitians of Canada approved graduate dietetic internship program or the Dietitians of Canada approved StFX Integrated Dietetic Internship Program. The StFX Integrated Dietetic Internship enables students to attain Dietitians of Canada competencies for entry-level dietetic practice and upon successful completion to be awarded the Diploma in Integrated Dietetic Internship. Students must normally declare their intent to apply for the StFX Dietetic Internship Program by the end of their second year at the normal time of application for the advanced major or honours program. This Integrated Internship consists of three 14-week practicum courses; normally the first after the third year and the last two after graduation. Each practicum includes one or more supervised placements in dietetic practice settings. At the earliest, students may commence the first practicum after completing the third-year sequence of HNU courses. Students must have an overall average of 70 in the HNU program, a minimum overall average of 75 in HNU courses, and satisfy the criteria for acceptance. Normally, formal submission of the full application must be made by January 31.

With an appropriate selection of courses, students may also meet the requirements for admission to a B.Ed. program. In order to qualify for a family studies teachable, a student must present a core of at least 18 credits of human nutrition. These courses must be augmented by a combination of courses in other subject areas which address the field of family dynamics. In general, these courses may be drawn from biology, psychology, sociology, and business administration. Students interested in pursuing this particular option should consult with the Faculty of Education. In addition, courses such as HNU 353 and HNU 461 can be used towards a biology teachable either as a minor or as a second major. (See section 6.1.4 for more details).

See chapter 7 for information on degree patterns, applications for advanced major and honours, advancement and graduation requirements.

All third- and fourth-year human nutrition students are required to attend the presentations in HNU 491. The attendance of first- and second-year students is recommended.

#### Bachelor of Science in Human Nutrition

The normal sequence for the program is shown below.

Year 1	BIOL 111; CHEM 100; HNU 145, 161, 235; 6 credits humanities electives; 6 credits social sciences electives
Year 2	BIOL 215, 251, 252; BSAD 261; CHEM 225, 255; HNU 146, 261, 262; STAT 201;
Year 3	HNU 351, 352, 365, 385; 9 credits HNU electives; 6 credits humanities or social sciences electives for a pair; 3 credits open electives
Year 4	HNU 353, 405, 475; 9 credits HNU electives; 12 credits open electives

#### B.Sc. in Human Nutrition with Advanced Major

The normal sequence for the advanced major program is identical to that of the program above, with the addition of HNU 491 in year 4.

#### B.Sc. in Human Nutrition with Honours

The normal sequence for the honours program is shown below.

Year 1	BIOL 111; CHEM 100; HNU 145, 161, 235; 6 credits humanities electives; 6 credits social science electives
Year 2	BIOL 215, 251, 252; BSAD 261; CHEM 225, 255; HNU 146, 261, 262; STAT 201
Year 3	HNU 351, 352, 365, 385; 9 credits HNU electives; 6 credits humanities or social sciences electives for a pair; 3 credits open electives
Year 4	HNU 353, 405, 475, 491, 493; 12 credits HNU electives at the 400-level; 6 credits open electives

#### Application to the StFX Integrated Dietetic Internship and the Dietitian of Canada's Graduate Internship

Students planning to apply for dietetic internship programs follow the normal course sequence for B.Sc. in Human Nutrition with the exception of years 3 and 4.

Year 3	HNU 351, 352, 356, 365, 385; 6 credits HNU electives; 6 credits humanities or social sciences for a pair; 3 credits open electives
Year 4	HNU 353, 405, 456, 475; 6 credits HNU electives; 12 credits open electives

#### Co-operative Education Program in Human Nutrition

The Co-operative Education Program offered in conjunction with the Gerald Schwartz School of Business offers another learning alternative for HNU students. These are normally five-year programs leading to degrees with co-operative education designations. The program assists students who are interested in career options that complement the human nutrition degree. A combination of professional development training and practical work experience enables students to develop the knowledge and skills they have acquired in their degree program. The co-op education graduate with a HNU degree will be prepared to work within the food industry (product development and evaluation, food safety, etc.), public relations, consumer affairs, or marketing with various employers including not-for-profits, industry or government and other related areas of practice. See section 9.13 for further information. Students enrolled in the co-op program are not eligible to apply for the StFX Integrated Dietetic Internship program, but are eligible to apply for a graduate dietetic internship program.

#### B.Sc. in Human Nutrition degree in 5th year for B.Sc.

##### Human Kinetics students with minor in Human Nutrition

B.Sc. Human Kinetics students majoring in Kinesiology and minoring in Human Nutrition who wish to pursue a degree in Human Nutrition in 5th year should follow the course pattern below. The required six credits of open electives in the HKIN degree must be BSAD 261 and HNU 146. In third year, students must take HNU 146, moving the 3 credit HKIN elective to fourth year. In fourth year, students must take HNU 161, 235, 351 and 365 as their required 12 credits of HNU electives. HKIN 396 or 397 fulfills the requirement of HNU 385 in the HNU degree program.

Recommended Course Pattern

Years 1-4	HNU 145, 146, 161, 235, 261, 262, 351, 363, 365; BSAD 261
Year 5	HNU 352, 353, 405, 475, 15 credits HNU electives; 3 credits open electives

Students who select HNU 356 and 456 as HNU electives while completing year 5 are eligible to apply for the StFX Integrated and Graduate Dietetic Internship programs.



**145 Introduction to Foods**

This course will introduce the physical and chemical properties of the major food groups, the extent to which these properties are altered by various types of processing, as well as issues of food quality and safety and their implications for human health. Three credits and lab.

**146 Introduction to Food Science**

An introduction to scientific concepts as a basis for understanding foods as a complex chemical system. A study of the properties of food components as they are affected by chemical and physical changes in foods; the foundations of various food preservation methods; and the principles of food evaluation by sensory and objective methods. Three credits and lab.

**161 Food and Nutrition for Health in Society**

This foundation course examines the evolving role of food and nutrition in society from historical and contemporary perspectives. Students will be introduced to local, national and global influences on societal food consumption trends and factors influencing individual food choice and behaviour. The impact of socioeconomic factors and culture, such as customs and worldviews, on food selection and dietary practices will be explored in depth. An introduction to the history and philosophy of the nutrition profession and emerging issues in human nutrition will be integrated throughout the course. Credit will be granted for only one of HNU 161 and HNU 185. Three credits.

**215 Nutrition for a Healthy Lifestyle**

Designed for non-science students, this course introduces nutritional science and the role that nutrition, exercise, and other lifestyle behaviours play in the promotion of health. Topics include the function of food and its role in maintaining and promoting health, vegetarianism, food safety, body weight, and healthy eating. Credit will be granted for only one of HNU 215 and HNU 261. Not acceptable for credit in the HNU, HKIN (minor in HNU) or NURS programs. Three credits.

**235 Communications**

An introduction to the principles of human communication and the development of interpersonal, group, and public communication skills. It is designed to enable students to develop an understanding of the communication process and factors which influence effective written and oral communication in a wide range of dietetic practice and health promotion settings. Prerequisite: HNU 161. Credit will be granted for only one of HNU 235 and HNU 335. Three credits and a lab.

**261 Introduction to Nutrition**

Students will learn the fundamentals of the science of nutrition with emphasis on energy nutrients, minerals and vitamins, their functions, their dietary sources, and how the body handles them from ingestion through excretion. Topics include the recommended nutrient intakes and guidelines for healthy eating. Prerequisites: CHEM 100 or 150; BIOL 111 or 105. Three credits.

**262 Principles of Nutrition in Human Metabolism**

Building on HNU 261, the course will examine the role of nutrition in promoting health and preventing disease. Topics will include: energy balance, weight control, current consumer issues, and nutritional concerns throughout the life cycle, including pregnancy and lactation, the development years, and adulthood. Prerequisites: HNU 261; BIOL 251, 252, completed or concurrent; CHEM 225, 255, completed or concurrent. Credit will be granted for only one of HNU 262 and HNU 263. Three credits.

**263 Applied Introductory Nutrition**

Expanding on the fundamentals of nutrition learned in HNU 261, this course will increase awareness of the role of nutrition in promoting health and preventing illness. Topics include the health benefits of optimal nutrition; the role of nutrition in growth and development; nutrition-related health problems and disease; assessment of nutritional status; nutrition care after surgery. Credit will be granted for only one of HNU 263 and HNU 262. Not acceptable for credit in the HNU program. Prerequisites: HNU 261; BIOL 105, 251, 252, completed or concurrent. Three credits.

**351 Nutritional Assessment**

This course addresses the principles and methods in nutritional assessment of individuals and populations with consideration for variations in health status and stages across the lifecourse. It provides the theoretical foundation for nutritional assessment in the nutritional care process and covers methods of nutritional assessment including dietary, anthropometric, biochemical and clinical evaluations for individuals. It also addresses nutritional assessment of population groups with a focus on public health applications. Prerequisites: HNU 262; CHEM 225, 255; BIOL 251, 252. Three credits and a lab.

**352 Nutrition in Chronic Disease Prevention & Management**

This course provides a solid foundation to the nutrition care process as it relates to chronic disease prevention and management including a review of medical

terminology, charting, nutrition counselling techniques, cultural competency, dietary planning/modifications, nutrition support, and ethics in nutrition practice. Application of nutrition care will be made in the context of the prevention and management of the chronic diseases of relevance in the Canadian context including, but not limited to, weight management, cardiovascular diseases, and diabetes mellitus. Credit will be granted for only one of HNU 352 and 361. Prerequisite: HNU 351, completed or concurrent. Three credits and a lab.

**353 Nutritional Management of Human Disease**

This course takes a case study approach to examining the nutritional care process for clinical conditions of the key organ systems including the gastrointestinal tract, accessory digestive organs, as well as renal and respiratory systems. Nutritional care in cancer and metabolic stress will also be covered. Focus will be placed on the role of medical nutrition therapy in the etiology, pathophysiology, and treatment of disease. Topics will be framed within the context of the nutrition care process and relevant nutritional assessment as well as medical and pharmacological therapies and their interaction with nutrition. Prerequisite: HNU 352. Credit will be granted for only one of HNU 353 and 362. Three credits.

**356 Introduction to Food Service & Quantity Food Production**

In this introduction to food service management and quantity food production, principles, policies, and practices applied to the successful management of quantity food service systems are examined. Topics include food safety (including HACCP); menu management; quantity recipe standardization and costing; procurement, production and service of quality food; marketing; staff scheduling; equipment and furnishings; and environmental management. Prerequisite: HNU 262. Three credits and a lab.

**363 Sport Nutrition**

This course involves identification of the specific nutrient needs of individuals engaged in vigorous physical activity. It includes detailed descriptions of dietary macro- and micro-nutrient metabolism and the influence of either excess or deficiency of these nutrients on exercise performance. Prerequisite: HNU 262. Three credits.

**365 Community Nutrition**

An introduction to the field of community nutrition and its role in health and health care, which assumes students' familiarity with the theories and principles of normal nutrition. Students will explore the role of the community nutritionist in determining the needs of specific population groups; factors that influence eating behaviour; processes available for planning, delivering, and evaluating community nutrition services; and necessary tools, skills and techniques for developing effective change strategies. Prerequisite: HNU 262. Three credits.

**366 Maternal and Child Nutrition**

A study of nutrition in the context of normal human development from pre-conception to adolescence. Emphasis is on nutritional concerns and recommended dietary practices during pregnancy, lactation and early childhood. The dietary management of common childhood concerns and adolescent eating disorders is also discussed. Prerequisites: BIOL 251, 252; HNU 262 or 263. Three credits.

**385 Research Methods**

An introduction to the research process for human nutrition. Students will complete a research project of their choice, encompassing the major components of research activity, including literature review, hypothesis generation, data collection and analysis, and discussion. Prerequisite: credit for all courses in the first two years of the human nutrition program sequence. Three credits and a computer lab.

**405 Food Availability**

An examination of the vital issues that surround our national and global food supply from production to consumption. The course will explore interdependency of the many factors underlying the science of food and feeding of people, including the relation of nutrition to health and social policy decisions, the food supply, and access to food, food security, food technology, and domestic and global food distribution. Open to students in all faculties. Three credits.

**425 Nutrition in Aging**

A study of nutrition related to older adults. Emphasis is on nutritional concerns and dietary recommendations for the older adult population. Topics covered include healthy aging, attitudes and demographic trends around aging in Canada. Dietary management of common concerns in older adulthood (including dementia and osteoporosis) is discussed. Prerequisites: HNU 262 or 263; BIOL 251, 252. Three credits.

**445 Advanced Food Study**

An experimental approach to the study of the physical and chemical properties of foods, and the chemistry of changes occurring during food processing, storage and handling. Emphasis is placed on research methods and procedures, and

objective and subjective methods of food evaluation in controlled laboratory experiments. Prerequisites: HNU 145, 146; CHEM 225, 255; STAT 201. Three credits and a lab.

#### 448 Advanced Experimental Foods

An independent project involving the development of a research proposal, implementation of the project following laboratory research methods and procedure, and a written report of the project. Prerequisites: HNU 385, 445. Three credits and a lab.

#### 456 Food Service System Management

Building on material introduced in HNU 356, this course focuses on managerial decision-making relevant to human resource and financial management of food service systems in a range of settings in the public and private sectors. Using a problem-based learning approach, students working in small groups on problems assigned by the professor will examine current issues in food service practice and learn to apply quality assurance mechanisms in their management. Prerequisites: HNU 356; BSAD 261. Three credits.

#### 461 Nutrition in Metabolic Disease

A study of the mechanisms by which human cells and organs control nutrient metabolism. Topics include the regulation of energy metabolism; the effect of organ failure on intermediate metabolism; abnormal metabolism; the use, transport, and metabolism of selected nutrients; the etiology and treatment of metabolic diseases through nutrition, clinical chemistry, pharmacology, and biochemistry. Prerequisite: HNU 352. Three credits.

#### 467 Advanced Nutrition

An in-depth study of energy metabolism in human beings, with emphasis on integration and regulation. The application of current research and the rationale for current dietary guidelines will be emphasized. Prerequisites: HNU 262; BIOL 251, 252; CHEM 225, 255. Three credits.

#### 471 Entrepreneurial Practices for Nutrition Professionals

This course examines the relationship of a variety of factors for entrepreneurial behaviours both in the workplace and in new venture development. Creativity and self-awareness are emphasized while basic business skills and planning processes are developed as the necessary tools for bringing goals and ideas to reality. Guest speakers from nutrition-related enterprises and business support agencies will augment the learning and creative experience in the classroom. Prerequisite: BSAD 261. Restricted to HNU students. Three credits.

#### 475 Effecting Change

This course focuses on the study of change particularly as it relates to promoting healthy eating and nutritional health among individuals and populations. Students will examine change theories and strategies from the perspective of both influencing individual behaviours and creating health enhancing social and physical environments. Prerequisite: credit for all courses in the first three years of the human nutrition program sequence. Three credits.

#### 481 Internship Practicum I

A 14-week practicum course which prepares students to meet the entrance requirements for Dietitians of Canada. Students work with mentors in institutional and community settings to develop their assessment and communication skills; learn to plan; learn the basis of nutritional care; and choose a practice-based research project. Prerequisites: HNU 145, 146, 161, 235, 351, 352, 356, 365; an overall average of 75 in the HNU program and an overall average of 70 in HNU courses; acceptance into the IDI program. Six credits. Graded as pass/fail.

#### 482 Internship Practicum II

A second 14-week (minimum) practicum course which provides opportunities to integrate theory and practice in a mentored environment, and to acquire the competencies required by Dietitians of Canada for entry-level practice. Interns will improve their skills in communicating, assessing, and implementing nutritional care, and complete a practice-based research project. Prerequisites: completion of the HNU program with an overall average of 70 and an overall average of 75 in HNU courses; HNU 481. Six credits. Graded as pass/fail.

#### 483 Internship Practicum III

The final 14-week (minimum) practice course of the IDI program provides an opportunity to integrate theory with practice in the mentored setting of the IDI program. Students will develop their communication, assessment, implementation, and evaluation skills through participation in nutrition care activities. Completion of HNU 483 is equivalent to completion of entry-level requirements for the Dietitians of Canada examination for certification for practice. Prerequisite: HNU 482. Six credits. Graded as pass/fail.

#### 486 Qualitative Research Methods

An introduction to qualitative research methodologies, highlighting the major approaches, theories and methods. Emphasis is on preparation of research questions, sampling procedures, data collection techniques, and data analysis. Limited enrolment. Prerequisite: HNU 385. Three credits.

#### 491 Advanced Major and Honours Seminar

A critical study of current research in areas related to human nutrition. No credit.

#### 493 Senior Thesis (Honours)

A full-year program of research in nutrition. An acceptable thesis based on original research must be submitted by the deadline to satisfy department requirements for a B.Sc. in Human Nutrition with Honours. Three credits.

#### 499 Directed Study

Designed for students with high academic standing who wish to explore, in depth, some aspect of human nutrition not available in other course offerings. See section 3.5. Three credits.

### 9.24 INFORMATION SYSTEMS

H. Abolghasem, Ph.D.

T. Boyle, Ph.D.

N. Foshay, Ph.D.

H. Marzi, Ph.D., P.Eng.

R. Palanisamy, Ph.D.

The Bachelor of Information Systems (BIS) degree prepares students to play an integral role on teams that imagine, specify, design, justify, build, implement, manage, and use computer information systems. Through innovative classes, students gain an understanding of the technical, management, and human issues involved in the efficient and effective development, management, and use of computer information systems in an organizational context.

Careers in the information systems area are growing rapidly due to the impact of information technology on every aspect of human activity. BIS graduates are sought after to: design usable information systems for a myriad of applications in business, health and social welfare, manufacturing, and government organizations; advise business and government organizations how to improve their efficiency and effectiveness through the application of information systems; apply their knowledge of project management and their general professional competencies in a wide variety of contexts with the aim of creating business value; and attend leading graduate schools to become the next generation of researchers and technology policy makers.

Information systems students receive hands-on exposure to the latest technologies used to manage organizations and improve business performance. Example systems include state-of-the-art database management systems such as Oracle and SQL Server; SAP, a leading multi-million dollar cross-enterprise system for large organizations; and SYSPRO, a leading cross-enterprise system for small and medium enterprises. Both SAP and SYSPRO are strategic partners in delivering our world-class information systems degree program.

The BIS program has been accredited by the Canadian Information Processing Society (CIPS) Information Systems and Technology Accreditation Council (ISTAC). The ISTAC works with academic institutions to ensure that an educational program effectively prepares students for the demands of the computing profession. Completion of an ISTAC accredited program assists graduates in pursuing the CIPS Information Systems Professional of Canada (I.S.P.) professional designation. More information about CIPS and the I.S.P. program is available from [www.cips.ca](http://www.cips.ca) or [info@cips.ca](mailto:info@cips.ca).

The Department of Information Systems offers a variety of degrees and courses to meet the needs of students interested in the study of information systems. All degrees closely follow the curriculum recommendations of the Association of Computer Machinery, the Association for Information Systems, and the Association for Information Technology Professionals. The following degree programs are offered by the Department of Information Systems:

Bachelor of Information Systems General

Bachelor of Information Systems with Major or Honours in Enterprise Systems

Bachelor of Information Systems with Major or Honours in IT Management

An enterprise system is a single, integrated enterprise computing system designed to carry out the most common business activities, including logistics, accounting, finance, and human resource management, at the operational, tactical, and strategic levels of the organization. The Department of Information Systems, by partnering with SAP and SYSPRO Canada, has established itself as a leader in enterprise system education in Canada. The department offers students the opportunity to obtain specialized knowledge in the design, implementation, and management of enterprise systems through a major or honours degree in enterprise systems.

The BIS Major or Honours in IT Management is designed to provide students with both depth and breadth regarding the management issues facing information systems in organizations.

See chapter 5 for information on the degree patterns, declarations of major, advanced major and honours, advancement and graduation requirements.

### **Bachelor of Information Systems General Degree**

The normal sequence for the general degree is shown below.

Year 1	BSAD 101, 102; ECON 101, 102; INFO 101, 102; 12 credits art/science electives
Year 2	BSAD 221, 223, 261; INFO 245, 255, 256, 275; MATH 205; STAT 201; 3 credits open electives
Year 3	BSAD 231, 381; INFO 225, 355; 6 credits INFO elective; 12 credits arts/science electives; 3 credits open electives
Year 4	INFO 415, 416, 425, 465, 482; 6 credits INFO electives at the 300/400 level; 6 credits arts/science electives; 3 credits open electives

The sequence above is the normal course pattern, and not mandatory. Years three and four offer flexibility in course selection. However, students should keep in mind that many courses have prerequisites and that most courses are not offered in both semesters. For more information, consult the department chair.

### **BIS with Major**

The BIS program offers majors in enterprise systems, and IT management.

Students who do not meet the grade and average requirements for the BIS major program after their third or fourth year qualify for a BIS General degree by completing the BIS General degree pattern outlined above.

### **BIS with Major Course Pattern**

The course patterns for the two majors are the same as for the BIS General degree, except that students make replacements for each major as follows:

Major in Enterprise Systems

Replace 12 credits INFO or open electives with INFO 346, 348, 448 and 496.

Major in IT Management

Replace 3 credits INFO elective with INFO 496.

### **BIS with Honours**

The BIS with Honours degree is designed to equip students for graduate studies and research in information systems and business administration. Students work closely with IS faculty to explore classic IS work and recent IS research, as well as research statistics and methods commonly used to report them. Students will apply their research skills and explore a topic of interest in depth through the preparation and defense of a thesis.

Students who do not meet the grade and average requirements for the BIS with Honours program after their third or fourth year may qualify for a BIS with major or the general degree by completing one of the BIS course patterns outlined above.

### **BIS with Honours Course Pattern**

The course patterns for the two honours degrees are the same as for the BIS with major degree, except that students make replacements for each as follows:

Honours in Enterprise Systems

Replace 3 credits INFO or open electives and INFO 496 with INFO 397 and 498.

Honours in IT Management

Replace 3 credits INFO or open electives and INFO 496 with INFO 397 and 498.

### **BIS for University Graduates**

Students who have completed a StFX degree can usually complete a BIS degree in one or two additional years of study. Transfer students must complete a minimum of 60 credits taken at StFX to earn a StFX degree. Students are encouraged to contact the information systems department chair for additional information regarding this program.

### **Co-operative Education Program in Information Systems**

This program is offered in conjunction with the Gerald Schwartz School of Business as part of the expanded classroom initiative. These are normally five-year programs leading to degrees with co-operative education designations. See section 9.13 for further information.

### **101 Introduction to Information Systems I**

This course covers the organizational use of information technology. Topics include IS hardware, software, data; telecommunication networks; the Internet; and information technology infrastructure. Technical segment includes word processing; spreadsheets; presentation software; database management systems software; Internet search tools; and web page publishing. Applications of these tools and

knowledge will be oriented towards business problems. Credit will be granted for only one of INFO 101, CSCI 100 and CSCI 235. Three credits.

### **102 Introduction to Information Systems II**

This course introduces the conceptual foundations of information systems, focusing on organizational use with emphasis on information management. Topics include the impact of IS upon organizations and society; decision-making in a digital age; business process integration; enterprise systems; supply chain management; e-commerce; types of information systems; information resource management; knowledge-based IS; analysis and design of information systems. Prerequisite: INFO 101. Three credits.

### **225 Information Systems Hardware and Software**

This course covers the fundamentals of computer hardware, software, and data at the system (operating system and lower) level. The material is designed for students who will be IS professionals and must understand the components of computing in order to make knowledgeable decisions about hardware and software systems. Credit will be granted for only one of INFO 225, CSCI 365. Prerequisite: INFO 256. Three credits.

### **245 Introduction to Enterprise Resource Planning**

This course introduces enterprise resource planning (ERP) and its role in achieving effective business process integration (BPI). The course will discuss ERP theory and systems, the limitations of conventional information systems, the challenges and business value of effective integration across departments along the supply chain. The SYSPRO enterprise system will be used to illustrate concepts. Prerequisite: INFO 102, BSAD 102. Three credits.

### **255 Introduction to Object-Oriented Programming**

This course introduces the principles of software engineering and procedural programming including data types, input/output, control structures, functions, arrays, pointers, strings, and stream input and output. The course elaborates on object-oriented concepts and studies data abstraction with classes, objects and operator overloading. Three credits and three-hour lab.

### **256 Data Structures with Object-Oriented Design**

This course examines object-oriented concepts including inheritance, polymorphism, and exception handling. File processing and dynamic data structures such as linked lists, queues, stacks and binary trees, and sorting and searching techniques will also be reviewed. C++ will be used to illustrate course concepts. Prerequisite: INFO 255. Three credits and three-hour lab.

### **275 Database Management Systems**

Introduces relational database management systems including the database environment, the relational model, relational languages (QBE and SQL), techniques and methodologies of database analysis and design. Current micro-computer DBMS software is reviewed and compared. Students will complete a DBMS project. Credit will be granted for only one of INFO 275 and CSCI 275. Prerequisite: INFO 102. Three credits.

### **346 ABAP Programming Language**

This course will introduce the fundamentals of the ABAP programming language including the ABAP programming workbench. The basics of the ABAP programming language will be covered and students will use ABAP to apply concepts. Elementary report and dialogue programming will be examined. Students will code their own programs in tutorials. Prerequisite: INFO 256. Three credits.

### **348 Advanced Enterprise Resource Planning Using SAP**

This is an advanced ERP course designed to provide students with a detailed knowledge of SAP and expand on the topics covered in INFO 245. Topics addressed in this course include SAP navigation, SAP's modeling ontology, ERP administration, business warehouse and customer relationship management systems. The SAP system will be used to illustrate course concepts. Prerequisite: INFO 245. Three credits.

### **355 Advanced Object-Oriented Programming Using JAVA**

Java as an object-oriented programming language will be described and used for application development. Concepts of exception handling, graphical user interface (GUI), Java applets, and multithreading will be studied. Concepts of remote communication, remote method invocation for creating a remote distributed system and implementing remote interface will be emphasized for enterprise systems, internetworking, client/server, and peer-to-peer application development. Credit will be granted for only one of INFO 355 and CSCI 483. Prerequisite: INFO 256. Three credits and three-hour lab.



**374 Geographic Information Systems**

Cross-listed as ESCI 471; see ESCI 471. Three credits.

**397 Information Systems Research Methods**

This course covers the basic concepts in conducting research: forming questions; defining conceptual and observable variables; selecting and implementing the research design; collecting and analyzing data; and reporting research. Quantitative and qualitative research methods will be discussed. Prerequisites: INFO 102; STAT 201; restricted to students in BIS honours; open to others with permission of the department chair. Three credits.

**415 Systems Analysis**

Covers systems analysis as an IT discipline and describes the role of the systems analyst in the development of computer-based information systems. The course introduces system development methodologies and key systems analysis tools and techniques, including requirements discovery methods, data and process modelling, Computer-Aided Software Engineering (CASE) tools, and feasibility analysis. Prerequisite: INFO 275. Three credits.

**416 Project Management and Practice**

This course covers the factors necessary for successful management of system development or enhancement projects. Technical and behavioural aspects of project management are discussed. Prerequisite: BSAD 261. Cross-listed as BSAD 416. Three credits.

**418 Topics in Information Systems I**

The topic for 2012-2013 is ERP Using SYSPRO. This is an intermediate ERP course designed to provide students with knowledge of professional ERP software tools used in enterprises and expand on the topics covered in INFO 245. Topics addressed in this course include ERP administration, SYSPRO Business Solution environment and navigation; SYSPRO business intelligence, manufacturing and other related modules will be discussed and practiced. SYSPRO system will be used to illustrate course concepts. Prerequisite: INFO 245. Restricted to BIS and BBA/IS major students. Cross-listed as BSAD 418. Three credits.

**419 Client/Server and Intranets**

The course will provide students with an understanding of client/server and intranet technology. It will cover client/server concepts, systems and technologies; communication networks; web-based technologies; and emerging distributed object-based systems and technologies. It will also examine state-of-the-art software tools for developing intranets. Prerequisites: INFO 256, 275. Three credits.

**420 Topics in Information Systems II**

The topic for 2012-2013 is Information Security. Information security is now one of the most important aspects in today's networked world. It has significant impact on various aspects of daily routines such as finance, healthcare, government, education, arts and entertainment. The objective of this class is to teach the basic principles of information security from the perspective of providing security awareness and its best practices for the real world. Topics include motivation for security, tools and techniques used by adversaries to gather information and launch attacks, Internet security, firewalls, basics of encryption and authentication, virus protection, secure credit card and bank transactions, wireless security, computer forensics, identity theft and protection, anti-phishing and biometric security. Prerequisite INFO 465. Three credits.

**425 Systems Design**

Building upon INFO 415, this course provides students with the background necessary to create functional and successful information systems. The course emphasizes design tools and objectives; hardware/software evaluation and selection; productivity and quality in development, implementation, maintenance and post-implementation review. Students will use a computer-aided systems engineering (CASE) tool and examine case studies. Prerequisite: INFO 415. Three credits.

**445 Web-Based Programming**

This course covers the methods and techniques of programming for the World Wide Web. Attention is given to the protocols used to make browsers and servers communicate and to the web's statelessness and its implications for programming. Emphasis is placed on dynamic page generation, database interfacing, and programming tools and environments. Prerequisites: INFO 256 or CSCI 162; INFO 275 or CSCI 275 or 475; or permission of the instructor. Three credits.

**446 Electronic Business**

Business is increasingly conducted through electronic means, often on the Internet. This presents many challenges, including technological, marketing, strategic, operations, and systems issues. This course explores the current state of electronic commerce, relevant issues, and their relative importance to the success of a

business venture. Students will read case studies and analyze existing business ventures on the Internet. Cross-listed as BSAD 415. Three credits.

**448 Implementation, Configuration, and Use of an Enterprise Resource Planning System (ERP)**

Provides a practical understanding of ERP configuration with reference to SAP. The course familiarizes students with SAP implementation methodologies and tools. Students will learn to configure the financial and materials management functionality enabling a company to do basic procurement, inventory management, and financial accounting activities. The implementation will be expanded to enable the capturing of costs (controlling) and manufacturing (production) functionality. Prerequisite: INFO 348. Three credits.

**465 Business Data Communication Systems and Networks**

Topics include communication systems; environments and components; common carrier services; network control, design, and management; distributed and local networks. Credit will be granted for only one of INFO 465 and CSCI 465. Prerequisite: INFO 225 or CSCI 365. Three credits.

**481 Senior Seminar on Business Issues**

The senior seminar affords an opportunity to discuss contemporary business topics with visiting executives. Each topic will be the focus of three seminars. Session one will cover current literature on contemporary management challenges. In session two, a senior executive will attend the seminar, offer insights on the topic, and interact with students. Session three will examine the lessons learned. Restricted to students with senior BIS or BBA standing. Three credits.

**482 Managing Information Technology**

This course provides an overview of how to effectively manage information technology (IT) resources within organizational settings. This course takes a Chief Information Officer (CIO) (top down) perspective on managing information technology. IT is a strategic resource given that most of an organization's important activities rely so heavily on technology that they cannot operate without them. Technology enables firms to offer new products, create new customer channels and dramatically improve the efficiency of their supply chains. As such, an organization's IT resources require thoughtful planning and management. Cross-listed as BSAD 419. Three credits.

**496 Research Project for Majors**

Provides students with exposure to applied research in information systems through completion of a consulting assignment or an extended, approved research project. Restricted to majors in information systems. Prerequisite: INFO 415. Three credits.

**498 Honours Thesis**

Honours students are required to prepare and submit a thesis under the direction of a faculty member. Students will develop and present draft proposals as part of INFO 397, then complete the proposal, conduct the fieldwork, present, and defend their theses as part of this course. Classroom meetings are held periodically to discuss the thesis process and make presentations. Prerequisite: INFO 397. Three credits over the full academic year.

**499 Directed Study**

This course permits students of exceptional ability and motivation to pursue, on a tutorial basis, an individualized program of study on some aspect of information systems not available in other course offerings. Restricted to senior BIS students. Three credits.

**9.25 INTERDISCIPLINARY STUDIES****Service Learning Program**

A. Bigelow, Ph.D., Co-ordinator  
M. Gaudet, M.Ad.Ed., Program Manager

Service learning is an innovative way to integrate experiential learning, academic study, and community service. It is an opportunity for students to apply what they learn in the classroom in a community setting. The goal is to blend service and learning so that the service reinforces, improves, and strengthens learning. Service learning is possible in many disciplines and in a broad range of courses and service experiences. Third and fourth year students can also enroll in the independent course, IDS 306.

**Course-Based Service Learning**

Course-based service learning is a form of experiential education where students work with community members on community problems and where academically rigorous assignments are designed to explicitly link those experiences to specific learning outcomes. Students complete a service experience in the local community, the nature and length of which will be determined by the professor. Students prepare a final report for the professor which determines the grade on this assignment. For information on courses offering a service learning component, see [www.mystfx.ca/academic/servicelearning](http://www.mystfx.ca/academic/servicelearning) and click on information for students.

**Immersion Service Learning**

Students become involved in intense service experiences in communities, including inner-city settings and international locations. Guided by faculty, students will explore community issues and dynamics in a development context. Students can participate in Immersion as a personal (non-credit) experience or may integrate an immersion experience into their chosen course of study through research for course credit with the approval of the professor or through IDS 305. Students must apply for admission. The deadline is mid-October; for more information, contact [servicelearning@stfx.ca](mailto:servicelearning@stfx.ca)

The courses listed below combine two or more academic disciplines. IDS 100 and 110 may be counted as electives only.

**100 French and European Civilizations**

Introduces the student to the constituent elements of French and European civilization, agriculture, and business. Appropriate for students in business, economics, political science, and languages, the program combines language instruction; lectures on trade, European business, and the EC; and visits to educational, historic, and religious sites. This is a four-week, six-credit course offered in Lille, France.

**110 Mexican Art and Culture**

This is a six-week, six-credit course offered by Universidad Iberoamericana in Mexico City during summer session, which provides opportunities for study in Mexico in the following areas: art, archeology, anthropology, folklore, economics, civilization, culture, and literature.

**305 Immersion Service Learning**

Designed for third- and fourth-year students who have applied and been accepted to participate in the immersion service learning program during the winter term. Under faculty supervision, students will develop their information retrieval, research, writing, and presentation skills through completion of a research project connected with the immersion service learning experience. Students must apply to the service learning office for admission to the immersion program as well as registering on-line for this course. Oral presentation component. Three credits. This course can be used as an open elective or as part of DEVS requirement in arts.

**306 Service Learning: Theory and Practice**

Intended for third- and fourth-year students in all disciplines, this seminar examines the theory and practice of service learning, and teaches the skills required for applying academic concepts outside the classroom. Students will provide 30 hours of service with a local community organization. Oral presentation component. Three credits. This course can be used as an open elective or as part of DEVS requirement in arts.

**405 Public Policy (Seminar)**

Cross-listed as PSCI 442; see PSCI 442. Three credits.

**9.26 MATHEMATICS, STATISTICS, AND COMPUTER SCIENCE**

J. Apaloo, Ph.D.	R. van den Hoogen, Ph.D.
T. Bruen, Ph.D.	P. Wang, Ph.D.
S. Finbow, Ph.D.	X. Wang, Ph.D.
I. Gondra, Ph.D.	L.T. Yang, Ph.D.
M. Lin, Ph.D.	P. Zhou, Ph.D.
R. Lukeman, Ph.D.	Professor Emeritus
W. MacCaull, Ph.D.	S. Aalto, Ph.D.,
T. Taylor, Ph.D.	
M. van Bommel, Ph.D.	

The scope of mathematics ranges from computer science to philosophy, from physics to finance, from biology to the fine arts. Mathematics emphasizes precision and logic, but also creativity, elegance and problem-solving. While mathematics is a subject with a rich history (some techniques, results and open problems go back thousands of years), it is also a subject that is very much alive, with new theories

and applications continually arising. While mathematical and statistical models and methods form the basis of scientific and engineering fields, they are also used in such diverse areas as modern communication, cryptography, animation, banking and finance, policy development and consultation, public health care, and architecture. With an undergraduate degree in mathematics and statistics, students often go on to pursue an education degree to become a teacher or a graduate degree to become a researcher. However, the career options are much broader. Students with a strong background in mathematics and statistics develop problem-solving skills, logical thinking, and creativity, which serve them well for any career path.

The Department of Mathematics, Statistics, and Computer Science offers degrees in both the Faculty of Science and the Faculty of Arts. Because of the diversity of programs offered, students are encouraged to consider their academic goals at an early stage in their studies, and to consult the chair and other members of the department regarding course selection.

**Degrees Offered**

BA with Major, Advanced Major, and Honours

BA Honours with subsidiary subject programs are available with the departments of economics and English

B.Sc. with Major, Advanced Major, and Honours

B.Sc. with Advanced Major in Mathematics with Business Administration

Joint B.Sc. programs are available with the departments of biology, chemistry, earth sciences and physics

Students interested in these programs should consult with the relevant department chairs. General requirements for these degrees are in chapters 4 and 7.

**Department Regulations**

The following pairs or groups are considered so similar that a student may not receive credit for both: MATH 111 and 121; MATH 112 and 122; STAT 201, 231 and 224; MATH 221 and 367; MATH 222 and 267; MATH 223 and 253; CSCI 125, 161, ENGR 144 and INFO 155(255); CSCI 162, and INFO 156(256); CSCI 275 and INFO 275; CSCI 465 and INFO 465; CSCI 483 and INFO 355.

MATH 100, 205 and CSCI 100, 235 may not be used to satisfy department requirements for advanced major and honours degrees.

The senior seminar, MATH 491, is required for all major, advanced major and honours candidates. In addition, MATH 493 is required for all honours students.

**COMPUTER SCIENCE**

Requirements for the BA and B.Sc. in computer science are listed in section 9.12.

**STATISTICS**

Requirements for the BA and B.Sc. in statistics are listed in section 9.36.

**MATHEMATICS**

All students who want to pursue a major, advanced major, or honours degree in mathematics must take the following core courses: MATH 111, 112, 253, 267, 277, 491; STAT 231 (201 if the degree is in the Faculty of Arts); and CSCI 161 (CSCI 162 is also recommended).

**Major in Mathematics**

Additional courses in MATH, STAT, and CSCI to meet the requirements of the Faculty.

**Advanced Major and Honours Programs**

Advanced major and honours students in mathematics may count CSCI 161 and 162 only as approved or open electives in their program. Students in mathematics may specialize in mathematics or statistics. Descriptions for each specialization may be obtained from the department chair, but the following rules apply.

**Advanced Major in Mathematics**

In addition to core courses, MATH 254 and one of 354 and 366 are required. Additional courses must include nine credits of MATH or STAT courses at the 300 or 400 level, and an additional three credits (nine for B.Sc. students), which may be chosen from MATH, STAT or CSCI; MATH 493 is optional.

**Typical Advanced Major Pattern:**

Year 1	MATH 111, 112; CSCI 161, 162
Year 2	MATH 253, 254, 267, 277; STAT 231 or 201
Year 3	MATH 354 or 366; additional MATH, STAT or CSCI courses
Year 4	MATH 491; additional MATH, STAT or CSCI courses

**B.Sc. Advanced Major in Mathematics and Business**

In addition to the requirements for an Advanced Major in Mathematics, students take CSCI 235, plus 36 credits in Business and Economics. Details of the program can be obtained from the department chair.

**Honours in Mathematics**

In addition to core courses, MATH 254, 354, 366, 367, 493, CSCI 162 and one of MATH 454, 466, or STAT 435 are required. Additional courses must include at least twelve credits in MATH or STAT credits at the 300 or 400 level, with no fewer than three credits at the 400 level, plus 12 credits which may be chosen from MATH, STAT, or CSCI.

**Typical Honours Pattern:**

Year 1	MATH 111, 112; CSCI 161, 162
Year 2	MATH 253, 254, 267, 277, STAT 231 or 201
Year 3	MATH 354, 366, 367; additional MATH, STAT, and CSCI courses
Year 4	MATH 454, 466 or STAT 435; MATH 491, 493; additional MATH, STAT, and CSCI courses

**100 Mathematical Concepts**

This course surveys interesting and useful topics from diverse areas, including geometry, number theory, mathematical systems, algebra, logic, and set theory. Students will solve problems using processes such as abstraction, pattern recognition, deduction, and generalization. Acceptable for credit only in the Faculties of Arts and Business, and the Departments of Human Kinetics, Human Nutrition and Nursing. Prerequisite: grade 12 MATH or equivalent. Six credits.

**111 Calculus I**

An introduction to differential calculus of a single variable, with applications to the physical, life, and social sciences. Topics include limits, differentiation of polynomial, exponential, logarithmic, and trigonometric functions, inverse functions and their derivatives, implicit differentiation, curve sketching, and applied max-min problems. Prerequisite: grade 12 pre-calculus or equivalent. Three credits and a one-hour lab.

**112 Calculus II**

An introduction to integral calculus for functions of one variable. Topics include definite and indefinite integrals; the fundamental theorem of calculus; methods of integration; numerical approximation of definite integrals; applications to area and volume; probability density functions and distributions; differential equations; and Taylor polynomials. Prerequisite: MATH 111. Three credits and a one-hour lab.

**121 Calculus I for Engineers**

This course examines the main idea of calculus of a single variable. It covers functions, limits, continuity; differentiation and integration of polynomial, exponential, logarithmic, and trigonometric functions; product, quotient, and chain rules; applications of differentiation to graphing; maximum-minimum problems, and related rate problems; definite and indefinite integrals, and the fundamental theorem of calculus. Prerequisite: grade 12 pre-calculus or equivalent. Cross-listed as ENGR 121. Three credits and one-hour lab and one-hour problem session.

**122 Calculus II for Engineers**

A continuation of ENGR 121, this course covers the applications of integration, including areas, volumes, moments, pressure, and work; techniques of integration; numerical integration; length of curves; surfaces of revolution; parametric equations; polar co-ordinates; sequences and series; and Taylor series. Prerequisite: MATH 121. Cross-listed as ENGR 122. Three credits and one-hour lab and one-hour problem session.

**205 Business Mathematics**

A presentation of mathematics applicable to business, including functions, modelling, linear programming, matrix algebra, interest, and annuities. Use of spreadsheets will be a fundamental part of this course. Acceptable for credit in the Faculties of Arts and Business only. Three credits.

**221 Differential Equations for Engineers**

Covers first order linear and non-linear ordinary differential equations; ordinary differential equations of higher order with constant coefficients; applications to engineering problems; power series solutions; Laplace transforms; periodic functions; applications of Laplace transforms to linear systems; Fourier series. Cross-listed as ENGR 221. Prerequisites: ENGR 121, 122 or MATH 121, 122. Credit will be granted for only one of MATH 221 and MATH 367. Three credits and two-hour problem session.

**222 Calculus III for Engineers**

Extends the ideas introduced in MATH 121 to the calculus of several variables, and covers space curves, arclength, curvature; partial derivatives; implicit functions; constrained and unconstrained extrema; multiple integrals; line, surface, and volume integrals; change of variables in multiple integrals; scalar and vectors fields; gradient, divergence, and curl; Stokes theorem. Cross-listed as ENGR 222. Prerequisite: ENGR 121, 122 or MATH 121 or 122. Credit will be granted for only one of MATH 222 and MATH 267. Three credits and two-hour problem session.

**223 Linear Algebra for Engineers**

Covers geometric vectors in three dimensions; dot product; cross product; lines and planes; complex numbers; systems of linear equations; matrix algebra; matrix inverse; determinants; Cramer's rule; introduction to vector spaces; linear independence and bases; rank; linear transformations; orthogonality and applications; Gram-Schmidt algorithm; eigenvalues and eigenvectors. Cross-listed as ENGR 123. Prerequisites: ENGR 121, 122 or MATH 121, 122. Credit will be granted for only one of MATH 223 and MATH 253. Three credits and two-hour problem session.

**253 Matrix Algebra**

An introduction to solution of linear systems, algebra of matrices, determinants, two- and three-dimensional vector spaces, and the matrix eigenvalue problem. Prerequisite: MATH 112 or 122. Credit will be granted for only one of MATH 253 and MATH 223. Three credits.

**254 Linear Algebra**

An introduction to abstract vector spaces, including discussion of bases, dimension and homomorphisms of vector spaces; linear transformations, including invariant subspaces; matrix representations and diagonalization procedures. Prerequisite: MATH 253. Three credits.

**267 Calculus III**

Topics include the Taylor polynomial theorem; indeterminate forms and l'Hôpital's rule; improper integrals; infinite and power series and tests of convergence; parametric equations; partial differentiation; and selected concepts from multivariate differential calculus, and multiple integration. Prerequisite: MATH 112 or 122. Credit will be granted for only one of MATH 267 and MATH 222. Three credits.

**277 Discrete Structures**

An introduction to sets, binary relations and operations; induction and recursion; partially ordered sets; simple combinations; truth tables; Boolean algebras and elementary group theory, with applications to logic networks, trees and languages; binary coding theory and finite-state machines. Prerequisite: MATH 112 or 122. Three credits.

**287 Natural Resource Modelling**

The course covers formulating real-world problems from renewable natural resources; using software to solve mathematical models; formulating and testing policies for managing dynamic systems; and developing communication skills through report writing. Prerequisite: MATH 112 or 122. Three credits. Not offered 2012-2013.

**347 Combinatorics**

The course covers the principle of inclusion and exclusion; generating functions; recurrence relations; rings and modular arithmetic; finite state machines; group and coding theory; Pólya's method of enumeration; finite field and combinatorial design; graph theory. Prerequisite: MATH 277. Three credits.

**354 Modern Algebra I**

This course introduces algebraic systems and the fundamental algebraic concepts. Applications to diverse areas such as coding theory, crystallography, circuits, logic, geometry, and graph theory will be considered. Prerequisites: MATH 254, 277. Three credits.

**361 Advanced Vector Calculus**

Topics include vectors; vector differentiation including gradient, divergence, and curl; vector integration including the Gauss and Stokes theorems. Prerequisites: MATH 222 or 267 and 223 or 253. Three credits.

**366 Real Analysis I**

This course considers rigorous development of the real number system; numerical sequences and series; properties of continuous functions; metric spaces; sequences and series of functions. Prerequisites: MATH 254, 267 and 277. Three credits.

**367 Differential Equations**

Topics include first- and second-order linear differential equations; systems of linear differential equations; methods of solution including Laplace transforms and series solution; introduction to non-linear differential equations and numerical methods. Prerequisite: MATH 222 or 267 and MATH 223, 253. Credit will be granted for only one of MATH 367 and MATH 221. Three credits.

**371 Modern Geometries**

A brief survey of geometries including projective, affine, similarity, equiareal, Euclidean, and non-Euclidean. Emphasis is on the invariants of transformational geometry. Prerequisite: MATH 277. Three credits.

**372 Theory of Numbers**

Topics include divisibility of integers; congruences; the Chinese remainder theorem;



quadratic residues and non-residues; Gaussian reciprocity law; number theoretic functions; and the Moebius inversion formula. Prerequisite: MATH 277. Three credits. Not offered 2012-2013.

### 384 Numerical Methods

This course covers methods used to solve mathematical problems on computer systems, including mathematical background and error analysis of solutions to non-linear equations; polynomial interpolations; integration and differentiation; quadrature methods; systems of equations and differential equations. Prerequisites: MATH 223 or 253; CSCI 161 or 125. Three credits. Not offered 2012-2013.

### 387 Mathematical Modelling

This course teaches the use of mathematical models to solve real-world problems. The modelling cycle will be practiced using problems found in the real world. Prerequisites: MATH 222 or 267, and MATH 223 or 253. Three credits.

### 391 Mathematical Logic

Symbolic logic is introduced and the concepts of tautology and proof are studied. Using formal languages, propositional and predicate logic are presented, including the completeness theorem for predicate logic. Sequent-style deductive systems and tableau methods of proof are introduced. Prerequisite: MATH 277 or permission of the instructor. Three credits.

### 454 Modern Algebra II

The topics are: polynomial rings, unique factorization, irreducible polynomials; Sylow theorems, solvability of polynomial equations; Galois theory; and the Jordan canonical form. Prerequisite: MATH 354. Three credits.

### 462 Complex Variables

Topics include complex numbers, elementary functions, series and integration, Laurent series, and residue theory. Prerequisites: MATH 221 or 367 and 222 or 361. Three credits.

### 466 Real Analysis II

Material includes: topology of Euclidean n-space; differentiation; Riemann Stieltjes integration; limits and continuity in n-dimensions; differentiation of nonlinear transformations; and the implicit function theorem. Prerequisite: MATH 366. Three credits. Not offered 2012-2013.

### 471 Topics in Mathematics

This course will cover current mathematical topics such as graph theory, multivalued logic, dynamical systems, optimization theory, point set topology or mathematical finance. Prerequisites: MATH 254, 267, 277. Three credits. See [www.stfx.ca/academic/mathcs/topics.html](http://www.stfx.ca/academic/mathcs/topics.html)

### 481 Partial Differential Equations

The study of special functions and partial differential equations, including the wave, heat, and Laplace equations in various coordinate systems. Prerequisites: MATH 254 and 221 or 367. Three credits. Not offered 2012-2013.

### 491 Senior Seminar

Cross-listed as CSCI 491 and MATH 491. The purpose of this non-credit course is to assist students in carrying out research, composition, and oral presentation. Students will present a project topic in the fall term and their project in the spring. Attendance at departmental seminars is mandatory. No credit.

### 493 Senior Thesis

Students will prepare and present a thesis based on original research conducted under the supervision of a faculty member. Required for honours students; permitted for advanced major students. Three credits.

» **MI'KMAQ** see 9.27 Modern Languages

## 9.27 MODERN LANGUAGES

M. Arpin, Ph.D.	<i>Part Time</i>
U. Fabijancic, Doc. IIIe cycle	B. Gesicka, MA
V. Kocay, Ph.D.	M. Lade, M.Ed.
E. Langille, D. ès L.	C. Rancy, Doc. IIIe cycle
R. LeBlanc, Ph.D.	
M. Paz, MA	
W. Tokarz, Ph.D.	

### Placement of Students

Students registering for a French course for the first time at StFX should note that the Department of Modern Languages offers several courses to first-time registrants in French, depending on their background. Please note:

a) First time registrants in French at StFX must complete the online placement test prior to registering. This test is to assist in registering in the appropriate

section (FREN 110, FREN 115 or FREN 215). The link to the on-line placement test is <http://moodle.stfx.ca/course/view.php?id=12855>.

- First-time registrants who have not completed high school French or its equivalent should enroll in FREN 110.
- Results on the placement test are a determining factor in the enrollment for first-time registrants.
- Students with native proficiency may register in any 200-level course.
- The department reserves the right to place students.

### Recommendations

Candidates for the major, advanced major or honours degrees in French are strongly advised to spend at least one summer (five weeks) in a French-speaking environment through an immersion program or one year in the junior year abroad program. Please see below for details.

Students hoping to pursue masters or doctoral studies in the humanities or social sciences are reminded that these programs often carry language requirements.

### Minor or Subsidiary Program

A minor or subsidiary in French requires at least 6 credits at the 300 or 400 level. The minor or subsidiary in Spanish includes required courses: SPAN 306 and 364.

### Major Program

#### Major in French

A student may take a major in French by completing 36 credits in FREN (excluding FREN 110), including FREN 215 and at least 18 credits at the 300 or 400 level. A thesis is not required.

#### Major in Spanish

The Department of Modern Languages offers a major in Spanish (language and literature) for students who have completed a year of study in a Hispanic country. Students completing the major requirement abroad will have to complete their course work at the 300 or 400 level, or equivalent, excluding courses already completed at StFX. Students who wish to apply for the major degree must seek permission from the department chair and submit relevant course descriptions of work to be done abroad to the dean's office for approval.

#### Joint Major in French and Spanish

A student may do a joint major in French and Spanish. The requirements for each subject are the same as for a major in French and a major in Spanish.

#### Advanced Major Program

A student may take an advanced major in French by completing 36 credits in FREN (excluding FREN 110), including FREN 215 and at least 24 other credits at the 300 or 400 level. Students registered in the advanced major program in French are required to do FREN 492, a three credit senior seminar comprising a thesis in French of approximately 4,000 words.

#### Honours Program

A student may take an honours degree in French by completing 60 credits in FREN (excluding FREN 110), including FREN 215 and at least 36 other credits at the 300 or 400 level. Twelve of the 60 credits may be taken in a related field with department permission. Students registered in the honours program in French are required to do FREN 492, a three credit senior seminar comprising a thesis in French of approximately 6,000 words.

#### Certificate of Proficiency in French

This certificate is awarded to students who wish to have their proficiency in French officially acknowledged by a distinction appearing on their transcript. It is not necessary to do a major in French in order to take the test, although certain requirements must be met. Students who wish to sit for the exams should make their intentions known by 15 December. The exams will take place during the last week of classes.

Requirements:

- At least 18 credits beyond the 100 level, including FREN 215, and at least 6 credits at the 300 or 400 level.
- A minimum grade of 70 is required in each FREN course.
- Written and oral examinations with a minimum of 70 on each part (exam may be repeated after one year). The structure of the exam includes:
  - An exam covering grammar and usage (2 hours), specifically on the following points: verb conjugations (all tenses and moods), relative pronouns, object pronouns, prepositions, agreement of adjectives, plural of nouns and adjectives, complex sentence structures.
  - A composition on a subject prompt provided (1 hour)
  - An oral exam: 45 minutes to read a text provided, and 15 minutes to present its content and answer questions from three professors (1 hour).

### Transfer Credit for French Immersion Courses

Students may request a maximum of six transfer credits for a successfully completed immersion course. The following guidelines apply:

- Newly admitted students may request transfer credit in French only for courses taken after completing grade 12 French. Normally, transfer credit will not be granted for courses taken five years prior to admission.
- Students must obtain written permission from the dean prior to enrolling in an immersion course if credit is sought.
- A summer immersion course in French (for example: Explore) may count as a three credit open elective only.

### Summer Language Bursary Program

Official Languages Programs

To promote the study of Canada's official languages, the Council of Ministers of Education, Canada (CMEC), in co-operation with the provinces and territories, administers Accent (formerly OLMP, part-time), Odyssey (formerly OLMP, full-time), Explore (formerly SLBP), and CMEC also co-ordinates official-language activities related to agreements between the federal and provincial/territorial governments.

For information on the summer language bursary program contact the provincial co-ordinator, French language bursaries, Department of Education, Box 578, Trade Mart Building, Halifax, NS, B3J 2S9, 902-424-5283, or visit the following websites: EXPLORE: [www.myexplore.ca](http://www.myexplore.ca)

For information on immersion courses in France during the summer contact the French Consulate, 777 rue Main Suite 800, Moncton, NB, E1C 1E9, 506-857-4191.

Program information is also available from the department chair.

### Junior Year Abroad Program

The department encourages students in a four-year program to spend their junior year in a French-speaking environment. To this end, a study abroad program has been put into place allowing students to spend their third year at the Centre International d'Etudes Françaises in Angers, France. See section 3.18. For information about this program, see the chair or designate.

### Department Requirements

A pair or a minor must be in one language. Students who complete a minor or a major in one language may also count a pair in a second language.

## FRENCH

### 110 French Language I

Designed for students who have not completed at least high school French, this class is a review of the basic structures of the French language. It deals primarily with simple sentence structure and verbs in the present tense, but also covers past tenses, such as the imparfait and the passé composé, as well as the use of subject and object pronouns. Emphasis is also on vocabulary acquisition and reading skills. Six credits and a lab.

Notes

- The department reserves the right to refuse admission to this course to students whose knowledge of French is inadequate according to the department placement test.
- FREN 110 may not be used as credit toward a major, advanced major or honours degree. It may be used toward a minor in French, as part of a pair (with FREN 115) or as an elective.
- Closed to students who have completed FREN 115 or a higher level course, as well as to students from French schools and French Immersion programs.

### 115 French Language II

Designed as a follow-up to FREN 110, this course considers more advanced grammatical and syntactical structures. It includes a review of past tenses such as the imparfait, the passé composé and the plus-que-parfait. It presents object and relative pronouns and introduces sentences in the subjunctive mood. It also introduces students to short literary texts and to the techniques of writing composition. Open to students who have passed French 110 (with a grade of at least 60) and to first time registrants in French who have completed Grade 12 Core French, French Immersion or French School. A good result on the placement test is a determining factor for admission in this course. Six credits and a lab.

- FREN 115 may be used as a credit toward a major, advanced major, or honours degree.
- Closed to students who have credit for FREN 200 level or higher.

### 215 French Language III

This course focuses on complex sentence structure and writing techniques. It covers the use of past tenses such as the passé simple and the passé antérieur, as well as use of the conditional and the subjunctive mood. Special emphasis is placed on

the techniques used for the expression of thought and sentiment as well as on the acquisition of reading skills and literary usage. Required for the major, advanced major, and honours degrees. Opened to students who have completed French 115. This course is also open to first time registrants in French who have completed French Immersion or French School, or who have obtained an exceptional result on the placement test. Six credits.

### 216 Survey of French Literature

A study in historical context and sequence of the most important works written in French from the year 1000 to the present. Strongly recommended for all majors, advanced majors, and honours students in French. Prerequisite: FREN 115, completed or concurrent. Six credits.

### 220 Language and Culture

A study of different texts and issues relating to the francophone world, including selections from literary works, newspapers and periodicals. Emphasis is on vocabulary acquisition, text comprehension, and class participation. Prerequisite: FREN 115, completed or concurrent. Six credits.

### 225 (Français des affaires I) Business French I

An introduction to the language in which the French-speaking world conducts business. Students will acquire solid communication skills, including knowledge of specialized vocabulary. Practical drill in the language lab will familiarize students with commercial correspondence and professional telephone etiquette. Prerequisite: FREN 115 or permission of the department chair. Three credits. Not offered 2012-2013.

### 235 (Français des affaires II) Business French II

A continuation of FREN 225, this course introduces the language of specialized areas of business, such as marketing, finance, management, and teaches basic legal terminology. Students will learn the protocol of a formal business presentation in French as well as meeting procedures according to the *Code Morin*. Prerequisite: FREN 115 or permission of the department chair. Three credits. Not offered 2012-2013.

### 314 Selected Topics in French Studies

Three credits. Not offered 2012-2013.

### 318 Classical French Theatre

This class offers an introduction to seventeenth century French literature with a primary focus on representative works by three major dramatists: Corneille, Molière and Racine. It explores their vision of humanity and assesses their contribution to French literature and the history of ideas. Prerequisite: one of FREN 215, 216, 220 or permission of the department chair. Credit will be granted for only one of FREN 318 and FREN 316. Three credits. Not offered 2012-2013.

### 319 Literary Works of the grand siècle (Les Moralistes)

This course studies a selection of primarily prose and poetry works from the classical period that was 17th century France. It includes a study of works by Pascal, Descartes, La Rochefoucauld, La Fontaine, Boileau, Mme de Lafayette, and La Bruyère. Prerequisite: one of FREN 215, 216, 220 or permission of the department chair. Credit will be granted for only one of FREN 319 and FREN 316. Three credits. Not offered 2012-2013.

### 321 French Cinema

A study of France's unique contribution to the seventh art, starting with the Frères Lumières' moving pictures in 1895 and covering the history of French cinema. Emphasis will be placed on such masterpieces as *La Grande Illusion* and *Les Enfants du Paradis*. Prerequisite: FREN 115 or permission of the department chair. Three credits. Not offered 2012-2013.

### 322 18th-Century French Theatre

An introduction to 18th-Century French theatre. This course focuses on the evolution of the field of theater during the Enlightenment. Presented in chronological sequence, the course gives special attention to works by Lesage, Voltaire, Marivaux, Diderot and Beaumarchais. Prerequisites: One of FREN 215, 216, 220, completed or concurrent or permission of the department chair. Credit will be granted for only one of FREN 322 and FREN 326. Three credits. Not offered 2012-2013.

### 324 18th-Century Literature: The Novel

An Introduction to the 18th century French novel, this course gives special attention to works by Lesage, Montesquieu, Prévost, Voltaire, Marivaux, Diderot, Rousseau and Bernardin de Saint-Pierre. Prerequisites: One of FREN 215, 216, 220 or permission of the department chair. Credit will be granted for only one of FREN 324 and FREN 326. Three credits. Not offered 2012-2013.

### 327 French Writing I

An introduction to the techniques of composition through the study and practice of appropriate sentence structure. This course is designed to improve students'

expression of complex thought and to familiarize them with the idiomatic use of French language in a variety of contexts. The course combines vocabulary enrichment, detailed analysis of texts and a variety of writing activities: descriptions, portraits, narrations, and correspondence. Emphasis is on describing and narrating. Prerequisite: One of FREN 215 or 216 or 220 or permission of the department chair. Three credits.

### 328 French Writing II

Building upon the introduction offered in French Writing I, students will explore the techniques of composition through the study and practice of appropriate sentence structure. The course combines vocabulary enrichment, detailed stylistic analysis of texts, and a variety of writing activities in four genres: the essay, the dissertation, the report, the literary text-analysis. Emphasis is on building plans and organizing content, expressing approval and disapproval, defending opinions, hypothesizing, analyzing and persuading. Prerequisite: FREN 327 or permission of the department chair. Three credits. Not offered 2012-2013.

### 329 Children's Literature

A critical survey of French children's literature. Authors to be studied include La Fontaine, Perrault, Ségur, Daudet, Cendrars, Aymé, Gripari, Sempé et Goscinny, PEF, Tournier. Prerequisites: One of FREN 215, 220 or permission of the department chair. Three credits. Not offered 2012-2013.

### 333 20th-Century French Literature I

A close study, from historical, ideological and aesthetic perspectives, of selected works of prose, poetry and drama of the first half of the Twentieth Century. Authors studied may include Proust, Gide, Éluard (and other Surrealists), Sartre, Camus. Prerequisite: One of FREN 215, 216, 220 or permission of the department chair. Three credits. Not offered 2012-2013.

### 334 20th-Century French Literature II

A study of the theatre of the absurd and the 'nouveau roman'. Authors may include Beckett, Ionesco, Robbe-Grillet, Sarraute, Duras and Simon. Prerequisite: One of FREN 215, 216, 220 or permission of the department chair. Three credits.

### 341 Linguistics I: Phonetics

An introduction to linguistics, this course presents the major concepts used in linguistics and outlines the phonetic structure of the French language as revealed in word formations and in sentence structures. It includes pronunciation exercises. Prerequisite: FREN 115. Credit will be granted for only one of FREN 341 and FREN 340. Three credits. Not offered 2012-2013.

### 342 Linguistics II: Morphology, Syntax & Semantics

A continuation of FREN 341, this course presents the study of morphology, syntax and semantics, the major divisions in linguistics. It will therefore deal with word forms, with word groups in a sentence structure and with the meaning of word phrases. Prerequisites: FREN 215 or 341. Credit will be granted for only one of FREN 342 and FREN 340. Three credits.

### 347 French Literature from the Romantic Period

A study of major writers from the period known as French Romanticism (early 19th Century), including Mme de Staël, B. Constant, Chateaubriand, Hugo, Lamartine, Vigny, and Musset among others. Major themes of the period will be presented in a literary context as well as in the social context of the French Revolution and the subsequent Napoleonic regime. Prerequisites: One of FREN 215, 216, 220 or permission of the department chair. Three credits. Not offered 2012-2013.

### 348 French Literature from Realism to Symbolism

A study of major French writers of the 19th Century, from the realist movement to symbolism, including Balzac, Sand, Stendhal, Flaubert, Zola, Baudelaire, Verlaine, Rimbaud, and Mallarmé among others. Major themes of the period will be presented in a literary context as well as in the social context of the period. Prerequisites: One of FREN 215, 216, 220 or permission of the department chair. Credit will be granted for only one of FREN 348 and FREN 336. Three credits.

### 351 Stylistic Comparison of French and English

This course develops theoretical and practical knowledge specific to the field of translation. Students will be initiated to the techniques and instruments of translation in order to reflect upon the notions of comparative stylistics and accordingly understand the fundamental differences between the English and French languages. Prerequisite: one of FREN 215, 216, 220 or permission of the department chair. Three credits. Not offered 2012-2013.

### 361 Acadian Literature

A critical description of the historical, socio-cultural, linguistic, and literary significance of Acadian writing. Consideration will also be given to stylistic evolution, from oral literature to poetry, novels, and short stories. Prerequisites: One of FREN 215, 216, 220 or permission of the department chair. Credit will be granted for only one of FREN 361 and FREN 376. Three credits. Not offered 2012-2013.

### 362 Acadian Language and Culture

This course will examine the current linguistic situation in the Acadian communities of the Atlantic provinces. Students will study the cultural, social and historical circumstances which have influenced and contributed to the distinct cultural identity of the Acadian people. Prerequisite: FREN 215 or 216 or 220 or permission of the department chair. Credit will be granted for only one of FREN 362 and FREN 376. Three credits.

### 363 Québécois Literature I:

#### Révolution tranquille to the Present

An introduction to the study of Québécois literature since the Quiet Revolution. Through a sampling of works representing the major literary genres, this course focuses on the role of literature in Quebec's political and social affirmation as a society. Special attention is given to the works of Marie-Claire Blais, Pierre Vallières, Michel Tremblay, Gaston Miron and Gabrielle Roy. Prerequisite: One of FREN 215, 216, 220 or permission of the department chair. Three credits.

### 364 Québécois Literature II:

#### Origins to the Révolution tranquille

A study of the major literary forms and authors of French Canada from the beginning of the colony to the Révolution tranquille (ca. 1960). Emphasis is placed on a structural and thematic approach to narrative, set against a background of cultural and ideological influences. Prerequisites: One of FREN 215, 216, 220 or permission of the department chair. Three credits. Not offered 2012-2013.

### 410 Medieval French Literature

A study of literary genres from the *chanson de geste*, courtly romance, and the novels of chivalry to early French poetry covering the five hundred year period from 1000-1500. Prerequisite: one of FREN 215, 216, 220 or permission of the department chair. Credit will be granted for only one of FREN 410 and FREN 400. Three credits.

### 415 Renaissance French Literature

A study of the Renaissance period in literature and language through the works of Marot, Rabelais, Du Bellay, Ronsard, Montaigne and the poets of the baroque. The century's concern with the French language provides a convenient introduction to the study of the development of modern French. Prerequisite: one of FREN 215, 216, 220 or permission of the department chair. Credit will be granted for only one of FREN 415 and FREN 400. Three credits. Not offered 2012-2013.

### 456 Literary Criticism (Roman et Société)

The objective of this course is to introduce the field of French literary criticism and to illustrate several analytical methods based on current schools of literary theory. After establishing a socio-historical background, the class will focus in detail on five major schools of textual analysis, springing from the concepts of structuralism and post-structuralism: *narratologie*, *sémiotique*, *psychocritique*, *thématique*, and *sociocritique*. Prerequisite: One of FREN 215, 216, 220 or permission of the department chair. Three credits. Not offered 2012-2013.

### 457 French Poetry from the Symbolist Movement to the Present

A study of major French poets beginning with the Symbolist Movement at the end of the 19th century and concluding with current trends in poetry. Authors include: Stéphane Mallarmé, Paul Valéry, Guillaume Apollinaire, Pierre Reverdy, Francis Ponge, Paul Claudel, André Breton, Henri Michaux, Francis Jammes, Blaise Cendrars, Jules Supervielle, Paul Eluard, René Char, Jacques Reda. Prerequisite: One of FREN 215, 216, 220 or permission of the department chair. Three credits.

### 492 Senior Seminar and Thesis

An in-depth study of an area of French or French-Canadian literature chosen by the student as the basis for his or her thesis. Working under the supervision of a chosen professor, students will research and write a thesis in French of approximately 4,000 words for an advanced major and 6,000 words for an honours student. Professor and student will meet once a month to review progress. Required for all advanced major and honours students in their final year of study. Three credits.

## GERMAN

### 100 German Language I

An introduction to the German language and culture, this course teaches basic reading, writing, and speech. Six credits and language lab.

### 200 German Language II

A continuation of GERM 100, this course introduces advanced grammatical patterns and structures. Emphasis is placed on the acquisition of oral and written skills. Short readings will enrich the student's vocabulary and introduce German literature. Prerequisite: GERM 100 or equivalent. Six credits and language lab.



**300 German Language III**

This course will develop proficiency in speaking and listening. Emphasis will be placed on advanced writing skills and grammatical structures. This course will also enhance knowledge of the German speaking world through insights into the cultural and literary life in German speaking countries. Prerequisite: GERM 200 or equivalent. Six credits. Not offered 2012-2013.

**315 Selected Topics**

The topic for 2012-2013 is Introduction to German literature and writing. This course is an introduction to the cultural, historical and linguistic diversity of German literature. The student will encounter basic literary terms and examples of prose fiction, poetry and drama. Readings will include works by representative authors like Klaus Kordon, Erich Kästner and Germany's literature in the 20th century, Friedrich Dürrenmatt, Heinrich Böll. Grammar exercises will accompany this course. Prerequisite: GERM 200. Three credits.

**316 Selected Topics**

The topic for 2012-2013 is Language and Culture: Berlin – Cultural Metropolis. This course will explore Berlin's rich history and culture through texts, films and songs. The course will focus on vocabulary acquisition and comprehension. Students will gain a new appreciation of German history, culture and identity by using the Berlin landscape in world politics and culture. Prerequisite: GERM 200. Three credits.

**Mi'KMAQ****105 Introduction to Mi'kmaq**

Introduces students to various aspects of the Mi'kmaq language: phonetics, morphology, semantics, syntax, and language acquisition. Comparisons will be made between French and English language structures and applied to the language acquisition of Mi'kmaq students. Three credits.

**205 Advanced Mi'kmaq**

This course is intended for students whose first language is Mi'kmaq or who are proficient speakers of the language. The aim of the course is to develop substantive knowledge of Mi'kmaq literacy. Students will be introduced to the different writing systems used by the Mi'kmaq over time. Three credits.

**SPANISH****100 Spanish Language I**

An introduction to the Spanish language. Students will develop the ability to express themselves in Spanish, while learning the culture and traditions of the Hispanic world. Oral and written work are stressed equally. Language lab. Six credits.

**200 Spanish Language II**

A continuation of SPAN 100 with more advanced literary readings and written assignments. Prerequisite: SPAN 100 or equivalent. Six credits and language lab.

**306 Advanced Spanish**

A follow-up to SPAN 200, this course is an extensive review of the conventions that govern grammar and language usage in Peninsular and Latin-American Spanish. Students will improve their overall communicative proficiency in spoken and written Spanish. Representative texts from the target culture with an aim in developing the critical reading and writing skills at the upper-intermediate level will be discussed. Required course for a minor in Spanish. Prerequisite: SPAN 200. Credit will be granted for only one of SPAN 306 and SPAN 305. Three credits.

**315 Hispanic Civilization to 1800**

Students completing this course can expect to be able to read and discuss advanced texts in Spanish. Reading and course material for this course will be drawn from texts on Hispanic civilization in the Iberian Peninsula and in the New World to 1800, with emphasis on the age of exploration and discovery. Prerequisite: SPAN 200 or permission of the department chair. Credit will be granted for only one of SPAN 315 and SPAN 300. Three credits.

**325 Hispanic Civilization, 1800 to the Present**

Students completing this course can expect to be able to read and discuss advanced texts in Spanish. Reading and course material for this course will be drawn from texts on the social and cultural development of Spanish speaking countries from 1800 onward. The decline of Spain as a major cultural power is counterbalanced by the emergence of Spanish American countries. Their quest for independence in the 19th century gives this course a natural narrative. Prerequisite: SPAN 200 or permission of the department. Credit will be granted for only one of SPAN 325 and SPAN 320. Three credits. Not offered 2012-2013.

**327 Spanish Language Cinema**

This course, for advanced students, is an introduction to Spanish language films. It studies films and their language in a cultural, historical and geographic context. Essays, readings and film analysis are the main activities for this course.

Students are advised that film screenings will be in addition to scheduled class time. Prerequisite: SPAN 200. Three credits.

**334 Spanish Composition**

An intermediate to advanced level composition course designed for students with a working knowledge of the language. In this class students will improve their overall proficiency in written Spanish, be exposed to representative texts from the target culture appropriate to developing their critical reading and writing skills, attain a deeper understanding of the significant socio-cultural aspects of the Spanish-speaking world, and learn the necessary writing skills to be able to participate in higher level academic courses in Spanish. Required course for a minor in Spanish. Three credits.

**364 Spanish Literature from the Middle Ages to the Enlightenment**

This course introduces students to the literary tradition of Spain through a survey of writings from the Middle Ages, the Renaissance, the Baroque and Neoclassical periods. It also considers the birth of the modern novel, the theatre of the Golden Age and Humanism. Writers studied include Cervantes, Góngora, Quevedo and Calderón de la Barca. Prerequisite: SPAN 200 or permission of the department. Three credits. Not offered 2012-2013.

**374 Spanish American Literature from the Conquest to Modernity**

This course introduces students to Spanish American literary currents. It includes a survey of the chronicles of explorers and conquistadores, narrations of colonization and of cultural resistance, and studies the emergence of national literatures of the Baroque, the Romantic and the Realist traditions. Texts studied include writings of explorers such as Colón and Cortes and works by writers such as Díaz del Castillo and Inés de La Cruz. Prerequisite: SPAN 200 or permission of the department. Three credits. Not offered 2012-2013.

**463 Spanish Literature from Romanticism to Postmodernism**

This course is a survey of the literature and cultural context of Spain during the 19th and 20th centuries. It includes the Realist novel, Unamuno, Lorca, Goytisolo and contemporary women's literature. It involves the reading and analysis of texts with emphasis on the application of literary theory and criticism. Prerequisite: SPAN 200 or permission of the department. Three credits. Not offered 2012-2013.

**464 Spanish American Literature from Modernism to Postmodernism**

This course is a survey of Spanish-American literary and cultural currents from modernism to the present. It considers magical realism and new realism, indigenismo and women's literature. Writers studied include Cortazar, Fuentes, García Márquez and Vargas Llosa. Classes will focus not only on specific literary texts and their authors, but will also examine the various genres and the historical and political context(s) within which the texts are situated. Prerequisite: SPAN 200 or permission of the department. Three credits. Not offered 2012-2013.

**498 Selected Topics**

Three credits. Not offered 2012-2013.

**9.28 MUSIC**

R. Billington, M.Mus.  
K. Brunkhorst, M.Mus.  
G. Carter, M.Mus.  
A. Genge, Ph.D.  
T. O'Mahoney, M.Mus.  
G. Smith, M.Mus.  
P. Tynan, M.Mus.

*Part Time*  
D. Gray, M.Mus.  
J. Hanlon, M.Mus.  
D. Sutherland, B.Mus.  
  
Professor Emeritus  
J. O'Donnell, C.M., M.Mus.

**Degrees and Diplomas in Music**

The Department of Music offers a curriculum that focuses on jazz studies and contemporary music. Degrees and diplomas are windows to graduate study and commercial applications in the field of music. In addition to academically appropriate course work, award-winning faculty stress performance and composition as part of a well-rounded program.

**General Admission Requirements**

In addition to the general admission requirements listed in chapter 1, candidates for admission to the music program are required to pass an audition on a major instrument or voice; see section 1.3 c. Re-entry students must re-audition.

Music students are initially admitted to the Bachelor of Arts in Music (Jazz Studies) or to the Diploma in Jazz Studies. Students must then apply for admission to the Bachelor of Arts in Music (Jazz Studies) with Advanced Major or Honours, or the Bachelor of Music (Jazz Studies) with Honours by March 31 of the second

year of study. Students who fail to meet the admission requirements to one of these three programs may be eligible for the BA with Major in Music.

A candidate who fails to meet the requirements for the Bachelor of Music with Honours may be eligible for the Bachelor of Arts in Music with Honours; one who fails to meet the requirements for the BA in Music with Honours may be eligible for the BA in Music with Advanced Major, and one who fails to meet the requirements for the advanced major may be eligible for the BA in Music.

Listed below are the degrees and the diploma in the Department of Music and the type of pass required in the level exams.

Degree or Diploma	Level I	Level II
Bachelor of Music (Jazz Studies)	Pass	First class honours
BA in Music (Jazz Studies), Honours or Advanced Major (see Note 1)	Pass	Honours
BA in Music (Jazz Studies) (see Note 2)	Pass	Pass with Merit
BA with Major in Music	No level required	
Diploma in Jazz Studies	Pass	Pass

BM, BA Mus, Dip Jazz require a Level I pass for students to continue as music majors.

Note 1: A pass with honours is required in the level II exam for students to qualify for private lessons in years three and four.

Note 2: A pass with merit in the level II exam is sufficient for students to continue in the BA in music but with no private lessons in years three and four. In lieu of private lessons and recital, students replace 395, 495 and 497 with 9 credits of other MUSI courses.

### Placement Auditions

It has become the practice of the department in certain instrument areas to provide instruction in the first year of study as a group format. The decision to place students in group/private lessons will be made in accordance with placement auditions held during registration/orientation week and private instructor availability.

All courses offered by the Department of Music are available to any student who satisfies the prerequisite and audition requirements. Applied performance courses are only available to non-music majors with the permission of the instructor and the department chair.

For requirements for programs with jazz concentrations, see chapter 4.

### Diploma in Jazz Studies

The Diploma in Jazz Studies is a two-year program designed for students who wish to enter the field of commercial music but do not wish to pursue the BA in Music (Jazz Studies) degree. Instruction is offered in theoretical, aural, and improvisational skills.

Students in the diploma program who subsequently wish to pursue studies towards BA in Music (Jazz Studies) with Honours or Advanced Major or Bachelor of Music (Jazz Studies) with Honours degrees must achieve the appropriate grade in the Level II exam and have no grade of less than 60 for the advanced major, or 70 for the honours, in any MUSI course.

### Major in Music

Students may complete a major in music in the BA program by completing a minimum of 36 credits from the following in consultation with the chair:

Required 101, 160; 27 credits to be selected from 103, 106 or 107, 117, 118, 195, 201, 203, 206 or 207, 265, 295, 306 or 307, 315, 316, 375.

An audition is required for admission to this degree if applied music classes are chosen as an option. See section 4.1.3 for other degree requirements. Minimum grade requirements do not apply to the major in music.

### Minor in Music

No audition is required for admission to the BA with music minor. Students may complete a minor in music in the BA or BBA program by completing 24 credits from the following courses or others in consultation with the chair: MUSI 101, 103, 106 or 107, 117, 118, 206 or 207, 315, 316, 416.

No audition is required for admission to a minor; see section 1.3 c. Minimum grade requirements in music do not apply to the minor in music.

### Pair in Music

If music is chosen as a pair, the courses must be 12 credits in music history, music theory, choral ensemble, or performance ensemble.

### Common Year 1 and 2

#### For All Degrees and for the Diploma in Jazz

Year 1	MUSI 101, 103, 106 or 107, 117, 160, 190; 6 credits arts/science electives; level I
Year 2	MUSI 118, 201, 203, 206 or 207, 235, 265, 290; 6 credits arts/science electives; level II exam

### Bachelor of Arts in Music (Jazz Studies) with Honours or Advanced Major

#### Typical Course Pattern

Year 3	MUSI 306 or 307, 315, 316, 365, 395; 15 credits arts and science electives
Year 4	MUSI 406 or 407, 416, 465, 495, 497; 15 credits arts and science electives

### Bachelor of Music (Jazz Studies) with Honours

#### Typical Course Pattern

Year 3	MUSI 304, 306 or 307, 315, 316, 325, 365, 390; 6 credits arts and science electives
Year 4	MUSI 406 or 407, 416, 420, 465, 490, 497; 6 credits arts and science electives

The minimum grade requirement of 60 applies only to students enrolled in the degrees BA Mus.(Jazz), B.Mus.(Jazz), and BA with Advanced Major in Music.

### 101 Structure of Music I

This course covers the fundamentals and basic concepts of music theory and notation. Three credits.

### 103 Jazz Theory I

The material studied in jazz theory is designed to be applied to the performance and writing of jazz. Topics include chord-scale relationships; chord construction; three-, four-, and five-part harmony; substitution and function; construction and analysis of harmonic progression. Prerequisite: MUSI 101 with a minimum grade of 60. Three credits.

### 106 Vocal Ensemble I

Participation in the StFX University Choral and Vocal Jazz Program provides students with an opportunity to develop vocal fundamentals and musicianship through the rehearsal and performance of high quality choral music from all periods and cultures. Vocal Jazz Ensembles provide a more advanced ground for ear-training and performance through the study of complex harmony in many jazz and popular styles. All ensembles are open to all university students by audition during the first week of fall classes. Two sections will be offered, section 11 is for voice majors and students participating on more than one ensemble and section 12 is for non-majors participating in one ensemble. Three credits over the full academic year.

### 107 Instrumental Ensembles I: Includes Jazz Ensemble, Combos, and Percussion Ensembles

This course explores the fundamentals of jazz performance by integrating materials discussed in jazz theory with practice within a classroom and ensemble (laboratory) format. Classes and ensembles meet in alternating weeks under instructor supervision. As well, ensembles meet every week to rehearse. The standard song and jazz repertoire will be employed. Students will be expected to prepare concert material outside of the classroom/laboratory setting. Concerts are presented at the end of term. Audition and concert attendance in the visiting artist series are required. Prerequisite: successful audition. Three credits over the full academic year.

### 117 History of Popular Music

A survey course detailing the development of popular music since 1945. Topics include jazz, songs related to the jazz experience, blues, pop, rock, and contemporary music. Three credits.

### 118 World Music

A survey course covering folkloric and ethnic musical traditions from around the world: Africa, Asia, North and South America, the Caribbean, Europe. Three credits.

### 160 Jazz History

An introductory course in improvisational style specifically pertaining to the Jazz Idiom from 1900 to present. Extensive viewing and listening will be required. Six credits.

### 190 Applied Performance I

This course provides students with instruction on a major applied instrument or voice. Functional piano skills are also covered. Restricted to music major students or may be taken with permission of the instructor. Six credits.

### 191 Secondary Instrument I

This course provides students with instruction on an instrument other than their major instrument. Prerequisite: permission of the chair or studio teacher. Three credits over the full academic year.

### 195 Applied Performance I A

This course provides students with instruction on a major applied instrument or voice. Functional piano skills are also covered. Restricted to students in the BA with Major in Music. Three credits.

**201 Structure of Music II**

A study of chromatic harmony and advanced modulation and counterpoint. Includes harmonic analysis of appropriate music. Prerequisite: MUSI 101 with a minimum grade of 60. Three credits.

**203 Jazz Theory and Arranging**

A continuation of Jazz Theory I, this course introduces many devices used in small group arranging: writing intros, endings, background figures, voicing, and rhythm section parts. Prerequisite: MUSI 103 with a minimum grade of 60. Three credits.

**206 Vocal Ensemble II**

A continuation of MUSI 106. Prerequisite: Successful audition. Three credits over the full academic year.

**207 Instrumental Ensembles II**

A continuation of MUSI 107. Prerequisite: successful audition. Three credits over the full academic year.

**235 Music Technology**

This course introduces the basic technology used to notate and edit music. Students will also be introduced to standard industry practices for the production of commercial music. Three credits.

**265 Jazz Styles and Literature: The Bebop Era**

A course in the analysis of players, particularly Thelonious Monk, Miles Davis, Charlie Parker, and Dizzy Gillespie, and their innovations which brought the music to its present maturity. Three credits.

**290 Applied Performance II**

This course provides students with instruction on a major applied instrument or voice. Functional piano skills are covered. Restricted to music major students or may be taken with permission of the instructor. Six credits.

**291 Secondary Instrument II**

This course provides students with instruction on an instrument other than their major instrument. Prerequisite: permission of the chair or studio teacher. Three credits over the full academic year.

**295 Applied Performance II A**

This course provides students with instruction on a major applied instrument or voice. Functional piano skills are also covered. Restricted to students in the BA with Major in Music. Three credits.

**304 Small Ensemble Arranging**

Combines jazz arranging and orchestration with writing assignments for small ensembles. Prerequisite: MUSI 203. Restricted to music honours students or may be taken with permission of the instructor. Three credits.

**306 Vocal Ensemble III**

A continuation of MUSI 206. Prerequisite: Successful audition. Three credits over the full academic year.

**307 Instrumental Ensembles III**

A continuation of MUSI 207. Prerequisite: successful audition. Three credits over the full academic year.

**315 History of Music I**

An overview of musical styles and forms from the Middle Ages to the 19th century. This course addresses the broad spectrum of musical contributions that allowed for the development of Western music. Three credits.

**316 History of Music II**

A survey of the techniques employed in 19th- and early 20th-century music. This includes analysis of the form and harmonic content of selected works. Special consideration will be given to works and events that lead to the transformation of musical language into 20th-century models. Prerequisite: MUSI 315 with a minimum grade of 60. Three credits.

**325 Jazz Composition**

Designed to provide a foundation in the techniques of jazz composition with an in-depth study of modal harmony and its applications. Prerequisite: MUSI 203. Restricted to bachelor of music honours students or may be taken with permission of the instructor. Three credits.

**365 Jazz Styles and Literature**

An in-depth study of the tenor saxophonist in jazz music with emphasis on John Coltrane, Sonny Rollins, and Wayne Shorter, as well as the modernists they influenced. The second term will be devoted to an analytical view of the Avant Garde Movement and the 3rd stream. Three credits.

**375 Contemporary Songwriting I**

An in-depth study of the greatest popular songwriters and their music from the mid-

1900s to the present. Artists include Bob Dylan, The Beatles, The Beach Boys, The Rolling Stones, Stevie Wonder, Joni Mitchell, Steely Dan, Paul Simon, and Sting as well as contemporary artists such as Radiohead, Coldplay, Chantal Kreviazuk and Beck. Prerequisite: general knowledge of basic music theory. Three credits.

**376 Contemporary Songwriting II**

This course puts into practice the various lyrical and musical devices of the greatest popular songwriters and their music from the mid-1900s to the present. Students are required to compose lyrics and music in the styles of certain artists and are encouraged to assimilate their techniques in writing songs. Prerequisite: general knowledge of basic music theory. Three credits.

**385 Selected Topics I**

Three credits.

**386 Selected Topics II**

Three credits.

**390 Applied Performance III**

This course provides students with instruction on a major applied instrument or voice. Students in the B.Mus. degree program will write a thesis as a component of this course. Restricted to bachelor of music honours students. Six credits.

**391 Secondary Instrument III**

This course provides students with instruction on an instrument other than their major instrument. Prerequisite: permission of the chair or studio teacher. Three credits over the full academic year.

**395 Applied Performance III A**

This course provides students with instruction on a major applied instrument or voice. Functional piano skills are also covered. Restricted to bachelor of arts in music students. Three credits over the full academic year.

**406 Vocal Ensemble IV**

A continuation of MUSI 306. Prerequisite: Successful audition. Three credits over the full academic year.

**407 Instrumental Ensembles IV**

A continuation of MUSI 307. Prerequisite: successful audition. Three credits over the full academic year.

**416 History of Music III**

A study of modern composition techniques, including analysis of selected contemporary music. Prerequisite: MUSI 316 with a minimum grade of 60. Three credits.

**420 Advanced Arranging/Orchestration**

Combines analysis of contemporary composers with orchestration for ensembles. Prerequisite: MUSI 304 with a minimum grade of 60 or permission of the instructor. Restricted to bachelor of music honours students or may be taken with permission of the instructor. Six credits.

**465 Jazz Styles and Literature**

An examination of the E.C.M. explosion of the 1960s, 70s, and 80s, and modern European influences. Three credits.

**490 Applied Performance IV**

Provides students with instruction on a major applied instrument or voice. A final recital is required. Restricted to bachelor of music honours students. Six credits.

**491 Secondary Instrument IV**

This course provides students with instruction on an instrument other than their major instrument. Prerequisite: permission of the chair or studio teacher. Three credits over the full academic year.

**495 Applied Performance IV A**

This course provides students with instruction on a major applied instrument or voice. A final recital is required. Restricted to bachelor of arts in music students. Three credits over the full academic year.

**497 Honours Recital- Thesis**

Students work under the supervision of their private studio instructor to produce a one-hour concert performance on their major instrument/voice. The thesis option is available to all honours students, in which case their supervisor would be chosen in accordance with the given topic. Prerequisite: fourth year honours BA Music or Bachelor of Music. Three credits.

**499 Directed Study**

In consultation with the department, students may undertake a directed study in an approved area of interest. See section 3.5. Six credits.



**9.29 NURSING**

M. Alex, MN, CNM, RN  
 D. Beiswanger, MN., RN  
 S. Bowman, BN., B.Soc.Sci., RN  
 C. Cameron, M.Ad.Ed., RN  
 M. Chisholm, B.Sc.P.E., B.Sc.N., RN  
 D. Connolly, MN, RN  
 J. Cormier, MN, IBCLC, RN  
 D. Delorey, B.Sc.N., RN  
 A. Dobbin, B.Sc.N., RN  
 L. Farrell, B.Sc.N., RN  
 Y. Fraser, B.Sc.N., RN  
 A. Gillis, Ph.D., RN  
 H. Graham, MN, M.Ed., RN  
 P. Hansen-Ketchum, Ph.D, RN  
 P. Hawley, Ph.D., RN  
 E. Jensen, MN, RN  
 H. Jewers, MN, RN  
 K. Kenny, B.Sc.N., RN  
 F. LeBlanc, MN, RN  
 S. Livingston, B.Sc.N., RN  
 J. Lukeman, B.Sc.N., RN  
 B. MacDonald, MS, M.Ed., RN  
 C. MacDonald, MN, RN  
 J. MacDonald, MN, RN  
 L. MacDonald, B.Sc.N., RN  
 M. MacDonald, MN, RN  
 P. MacDonald, M.Ad.Ed., RN  
 E. MacFarlane, M.Ad.Ed., RN  
 A. MacIsaac, M.Sc.N., RN  
 M. MacLellan, MN, RN  
 J. MacLellan-Peters, MN, RN  
 M. MacNeil, B.Sc.N., RN  
 C. McPherson, Ph.D., RN  
 E. McGibbon, Ph.D., RN  
 J. Moseley, B.Sc.N., M.Ad.Ed., RN  
 A. Murdock, B.Sc.N., RN  
 D. MacDougall, Ph.D., RN  
 W. Panagopoulos, B.Sc.N., RN  
 K. Saulnier, B.Sc.N., RN  
 J. Shaw, Ph.D., RN  
 B. Sproull-Seplaki, M.Sc.N., RN  
 C. Stewart, MN, RN  
 J. Whitty-Rogers, MN, RN  
 S. Wood, B.Sc.N., RN

The School of Nursing offers to qualified high school graduates, transfer students, post-degree students, and registered nurses, a program of study leading to the Bachelor of Science in Nursing.

The traditional program is four academic years in length with two intersessions for a total of 126 credits; 24-month post degree for students who have already completed a degree (not offered every year); accelerated option (not offered every year), and the part time post RN option. The program also offers a Co-op non-credit opportunity for third year students. Currently licensed LPN students (diploma received post 1998) may receive credit for NURS 126/127 and three credits elective. Applicants will be assessed on an individual basis.

Nursing is a unique health profession: both an art and a science. It is the professional practice of caring. Nursing is an essential service which provides health care to individuals, families, groups and communities.

The nursing curriculum is a blend of biological and social sciences, humanities, and professional nursing courses. The emphasis in the program is on understanding the personal, family, group, and community dimensions of health and illness. The curriculum combines academic and professional theory with nursing practice, fostering scholarly inquiry, creativity, critical thinking, moral reasoning, self-directedness and a commitment to lifelong learning. Personal growth is encouraged through reflection and introspection, positive interpersonal relationships, critical inquiry and a sensitive response to human values in a climate of academic and professional excellence.

**Professional Conduct**

In all nursing practice situations students are expected to be safe, ethical practitioners. They must perform in accordance with the legal, ethical, moral and professional standards set out in the profession's Code of Ethics (2008), the Entry-Level Competencies for Registered Nurses (CRNNS, 2009), the Standards of Nursing Practice (CRNNS, 2004), becoming a Registered Nurse in Nova Scotia: Requisite Skills & Abilities (2009) and the StFX nursing program objectives. Student nurses are expected to act in a manner comparable to the average prudent student nurse. Behaviour that endangers public health or safety may warrant nursing practice alert or failure, which may result in dismissal from the program. Prospective students are advised that the College of Registered Nurses of Nova Scotia (CRNNS), the licensure body for nurses, requires disclosure of criminal records prior to consideration for registration. Those considered a risk to others may not be considered for registration by the CRNNS. The StFX School of Nursing requires disclosure of criminal records and reserves the right to deny entry to the program based on criminal record. Failure to provide requested documentation may prevent entry to, or dismissal from, the program. The results of students' criminal records checks and child abuse registry screens are assessed on an individual basis. In the event of a problematic result, a student may not be permitted to enter or continue in the nursing program. New graduates must be registered in the same province as their educational program prior to registering elsewhere.

**Costs**

In addition to the university fees listed in section 2.1, expenses include room and board for off-campus placements during intersession and other consolidated experiences: fees for field trips, practice experiences, uniforms, nursing books, stethoscopes, first aid and HCP (CPR) certification and re-certification; the RN

examination fees; other external exam fees; and travel costs to and from practice areas while in the program.

**School Requirements**

- All first and second year courses must be successfully completed prior to progression to third year nursing courses.
- All third year courses: NURS 300 or 310, 305, 315, 345, 355, 330 or 336 must be successfully completed prior to progression to fourth year nursing courses (exception NURS 493 for post degree and approved accelerated option candidates).
- Students will participate in nursing practice rotations in sites other than their location of residence.
- Students will be expected to participate in nursing practice rotations scheduled at various times including evenings, nights, and weekends.
- Students who fail a nursing course are not permitted to progress in the program and are suspended from taking any further nursing courses. Students wishing to resume taking nursing courses must contact the Chair, School of Nursing prior by June 30.
- Students are required to make up missed nursing practice time. Extended absences for nursing practice are evaluated by the Chair, School of Nursing. Make-up time in clinical and tutorial experiences may not always be available.
- Students will not normally be permitted to withdraw from a course to avoid a nursing practice failure.
- When a student failure is due to a nursing practice failure (clinical failure) in one course only, the student will be removed from the B.Sc.Nursing program following the failure. Re-admission for the next academic year will be at the discretion of the School of Nursing Committee on Reintegration. Students re-admitted following a nursing practice failure will return with a nursing practice alert status. Re-admitted students who receive a subsequent nursing practice alert or nursing practice failure will be removed from the B.Sc.Nursing program and are ineligible for re-admission.
- Students who fail two core nursing courses (the same course twice, or two different courses including when the course failure is due to a nursing practice failure), are removed from the program and are ineligible for re-admission to the program. Core nursing courses are: NURS 105, 115, 126, 127, 205, 235, 245, 275, 251, 252, 305, 315, 345, 355, 405, 416, 455, 493 and 491.
- Current certification in standard first aid and HCP (CPR) is required for entrance into the program; see 1.3 g. Students in the nursing program are responsible for re-certification as necessary.
- Students must be screened through the child abuse registry of Nova Scotia during the fall semester of first year. Documentation is required; see 1.3 g. Students are required to disclose to the Chair, School of Nursing, any criminal record, including child abuse that has occurred subsequent to admission.
- No nursing student will be permitted to transfer to the accelerated option if they have received a course failure or a nursing practice alert.

**Bachelor of Science in Nursing**

The B.Sc. in Nursing program options vary in the time frames for completion. The four levels, from 1 to 4, correspond to the courses and course numbers at the 100 to 400 levels. Aboriginal students are encouraged to self-identify on the admissions application to be considered for the Pilot Aboriginal Nursing Student Seminar Option.

The normal sequence of courses is listed below for both the traditional four year option. See chapter 7 for program requirements.

Year 1	BIOL 105, 115; CHEM 150; NURS 105, 115, 126, 127 Clinical Intersession (May); PSYC 100; PHIL 100 or RELS 120
Year 2	BIOL 251, 252; HNU 261, 263; NURS 205, 235, 245, 251, 260, 275; NURS 252 (May-June);
Year 3	NURS 300 or 310, 305, 315, 345, 355, 330 or 336; 6 credits arts/science electives
Year 4	NURS 405, 416, 455, 491, 493; 6 credits open electives; 3 credits arts/science electives (all on campus electives must be completed first semester due to scheduling of consolidated nursing practice).

**B.Sc. Nursing with Advanced Major**

The normal sequence of courses is the same as above, except:

Year 4	NURS 405, 416, 455, 491, 493, 499; 6 credits open electives
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**B.Sc. Nursing with Honours**

The normal sequence of courses is the same as above, except:

Year 3	NURS 300/SOCI 300
Year 4	NURS 405, 416, 455, 491, 493, 496, 498; 3 credits NURS elective; 3 credits open electives

The course pattern is the same as for the general B.Sc. Nursing program except NURS 300/SOCI 300 is required in year three and that three credits of NURS electives and three credits of open electives, replace the electives in the senior year. In addition NURS 496 and 498 are required. Students in the four-year B.Sc. Nursing program are eligible for the honours program.

### **B.Sc. in Nursing for Registered Nurses**

Registered nurses who are graduates of nursing diploma programs may complete the requirements by distance education on a part-time basis. The required courses are:

DNUR	115, 135, 201, 205, 245, 300, 330, 415, 425
BIOL	105, 115, 251, 252
CHEM	100 or 150
Nursing electives	12 credits

Please note: DNUR 115 and 135 are prerequisites for all other NURS courses.

For information on this limited-enrolment program, write to Distance Nursing, Continuing and Distance Education, StFX University, Antigonish, NS, B2G 2W5 or phone 902-867-5190 or 1-800-565-4371.

### **B.Sc. in Nursing for Post-Degree Students**

\*may not be offered every year.

Students who hold an undergraduate degree earned since 2001 and have a minimum 70% grade average in their final year of study, and who have successfully completed the courses outlined in section 1.7 may be eligible to enter the 24-month post degree option. Students missing one or more of these prerequisite courses are normally required to complete them prior to entering the nursing program.

The nursing courses offered in the post-degree program are equivalent to the courses in the regular stream but some are scheduled to run in an accelerated fashion and during the summer of the first year. Nursing courses include: 105, 115, 126, 127, 205, 235, 245, 275, 251, 252, 305, 315, 345, 355, 330 or 336, 310 or 300, 491, 493, 405, 416, 455, 399 (co-op placement, non-credit) is optional.

Students in the regular nursing program, who were admitted following the completion of all or most of another degree, and who have grades of 75% or higher, no history of nursing practice alert or failure, may apply to be considered to accelerate in their senior year and graduate in the December convocation. Admission to this option is competitive and subject to the availability of seats. Application to this option follows completion of all second-year level nursing courses and the decision reserved until successful completion of all third-year level courses (NURS 300 or 310, 305, 315, 330 or 336, 345, 355; and 6 credits arts/science electives). Students conditionally accepted for this option will be required to take NURS 493 in third year.

### **Certificate in Gerontological Nursing**

A 12-credit certificate program in nursing gerontology is offered by distance education to graduates of nursing diploma programs. Applicants must have a minimum two years RN experience. The required courses are NURS 115, 245, 425, 488.

For information on this limited enrolment program, write Distance Nursing, Continuing Education, StFX University, Antigonish, NS, B2G 2W5 or phone 902-867-5190 or 1-800-565-4371.

### **Certificate in Continuing Care**

A 12-credit course certificate program in continuing care is offered by distance education to graduates of nursing diploma programs. The required courses are NURS 115, 135, 205, 425.

For information on this limited-enrolment program, write Distance Nursing, Continuing Education, StFX University, Antigonish, NS, B2G 2W5 or phone 902-867-5190 or 1-800-565-4371.

### **105 Introduction to Professional Nursing**

Focuses on nursing as a profession and its historical evolution to the present. Theoretical and philosophical bases of nursing are explored, with a focus on Orem's self-care theory. The role of the professional nurse is examined. Factors that influence contemporary nursing, such as legal and ethical issues, health care reform, and changing health care priorities, are discussed. This course introduces the philosophy and framework for nursing at StFX. Prerequisite: Documentation for program entry. Three credits.

### **115 Health Promotion and Learning**

In this course, students explore the concepts of health and wellness along with aspects of the socio-cultural and economic environment that influence lifestyle and in turn determine health. An emphasis is placed on the nurse's role in health promotion using principles of teaching and learning and Orem's educative-supportive system of nursing. A major health education project provides students with an opportunity to implement the nursing process, apply theory to practice, and develop interviewing and assessment skills. Prerequisites: NURS 105 and 125 or 126. Three credits.

### **126 Introduction to Clinical Nursing Practice**

This course provides a foundation for nursing practice with an introduction to the theory and practice of nursing skills and techniques. The nursing process and Orem's theory of self-care are used as organizing frameworks for the course. The focus of this course is on selected skills appropriate to meet the needs of individuals with self-care deficits. Classroom instruction and supervised lab practice are integral components of this skills-based course. Crisis Prevention Intervention (CPI) is a mandatory certification for students in their first year. This six-hour certification is delivered as part of this course. Three credits. Credit will be granted for only one of NURS 126 and NURS 125.

### **127 Introduction to Therapeutic Interpersonal Skills and Clinical Practice**

This course is a non-credit course that offers an opportunity for students to learn therapeutic communication skills for professional nursing interaction with others. Students will have the opportunity to apply communication techniques along with other foundational nursing skills learned in NURS 126, during a two-week supervised practice. Weekly therapeutic communication labs and clinical practice in a long-term care setting are integral components of this practice-based course. Prerequisite: NURS 126. Credit will be granted for only one of NURS 127 and NURS 125.

### **205 Community Health Nursing I**

This course explores community health nursing practice in the context of a health care system that is undergoing change. The major themes of this course are community assessment; population-focused nursing practice; and population health, including epidemiology and health determinants. Clinical component. Pass of 60% of course theory component. Three credits.

### **235 Introduction to Pharmacology**

This course provides an overview of the basic principles of pharmacology from a nursing perspective. It focuses on the application of the nursing process as it relates to drug therapy, with particular emphasis on safe drug administration and client education. It also considers a variety of legal, professional, and contemporary issues related to drug therapy. The course provides the opportunity for practice in dosage calculations as well as laboratory practice in the administration of medications, specifically oral, topical, inhalation, ear, nose, eye. Students must successfully complete a medication dosing calculation test. Students must achieve a minimum of 80% on the medication calculation portion of the final exam (which is offered separately, with one chance to retake if 80% was not achieved initially). Three credits.

### **245 Healthy Aging**

This course addresses issues of health and wellness important to an increasingly aging population. Many psychological, social and physical factors affect one's health potential. Students will examine the impact these factors have in making the older adult who he or she is today. Through interaction with a senior in the community, the student will learn how the older adult defines and promotes his or her own health. Clinical component. Pass of 60% of course theory component. Three credits.

### **251 Nursing of Adults I: Theory Component**

This course focuses on the integration of theory and nursing practice. Structured around the nursing process framework and Orem's theory, the course enables second year nursing students to explore, understand, and practice comprehensive nursing care of adults in the acute care institutional setting. Students delve into concepts and nursing care related to a variety of acute disease processes with an emphasis on pre/intra/post-operative nursing. Prerequisites: NURS 205, 235, 245, 275. Three credits.

### **252 Nursing of Adults I: Practice Component**

An inter-session course (May-June) with practice experience in selected clinical settings. Prerequisite: All second year nursing courses. Three credits.

### **260 Developmental Psychology**

Cross-listed as PSYC 260; see PSYC 260. Six credits.

### **275 Comprehensive Health Assessment**

This theory and practice course focuses on a systematic assessment of a client's health status and the normal functions and findings related to various body systems. The emphasis is on developing the assessment skills necessary to carry out a comprehensive examination of body systems, for the purpose of identifying self-care requisites. A practicum is provided in the lab setting. Three credits.

### **300 Research Methods**

Cross-listed as SOCI 300; see SOCI 300. Credit will be granted for only one of NURS 300 and NURS 310. Six credits and lab.

### **305 Nursing of Adults II**

In this course, students focus on the self-care and major health-deviation self-care requisites of adults arising from pathology in the cardiovascular, respiratory, and

peripheral vascular systems. A strong emphasis is placed on the biological basis for these diseases and their impact on the human experience of illness. The nursing care requirements of clients arising from these disease states also constitute a major content area. Clinical component. Three credits.

### 310 Nursing Research Methods

Cross-listed as SOCI 305; see SOCI 305. Credit will be granted for only one of NURS 310 and NURS 300. Six credits.

### 315 Nursing of Children

This course is based on the philosophy and principles of family-centred care, promotion of self-care for child-bearing families, and family empowerment. Students will explore the ways in which families cope with illness in childhood and adolescence, and what nursing interventions children and families find helpful. Clinical component. Three credits.

### 330 Legal and Ethical Issues in Nursing Care

Cross-listed as RELS 300; see RELS 300. Six credits.

### 336 Ethics in Health and Medicine

Cross-listed as PHIL 336; see PHIL 336. Prerequisite: junior standing or PHIL 100. Six credits.

### 345 Mental Health Nursing

In this course, students engage in a comprehensive study of the mental health aspects of nursing. Included among them: anxiety, depression, dementia, and psychosis; eating disorders, trauma, and substance and gambling dependency. Students explore the principles of social justice and ethical and legal aspects of mental health care from socio-cultural, political, economic, historical, and biophysical perspectives. Clinical component. Three credits.

### 355 Perinatal Nursing

This course is based on the philosophy and principles of family-centred health care, promotion of self-care for child-bearing families, and family empowerment. Students will explore the philosophical, cultural, physiological, psychological, and spiritual dimensions of childbirth, post-partum adaptation, lactation, and infant care. Clinical component. Three credits.

### 364 Social Justice and Health

Examines the relationship between injustice and health outcomes nationally and globally. Core social justice ideas are analyzed, including the cycle of oppression, distinctions between equality and equity, and achievement of human rights as an ethical imperative. Modern and historical contexts are explored in key justice related areas: corporatization of health care; policy-created poverty; worldwide water crisis; links between planetary health and human health; and global conflict as a key driver of injustice. Learning includes analysis of selected award winning films. Cross listed with WMGS 364. Three credits.

### 365 Gender and Health

This course examines theoretical concepts relevant to gender and health. The broad determinants of health, sexuality, reproductive health and fertility, common diseases, substance abuse, violence and culture are examined from a gender perspective. Strategies for promoting holistic health and preventing disease will be examined. Cross-listed as WMGS 365. Three credits.

### 399 Co-operative Service Learning

This elective, independent nursing practice course is designed for third-year students. In an institution where registered nurses practice, students will apply their psycho-motor nursing skills, acquire confidence and independence, and gain valuable experience working as a member of a health care team. No credit.

Note: Fourth-year courses focus on trends and developments in the health field, the role of the professional nurse, and the application of research to the practice of nursing.

### 405 Nursing of Adults III

A theory and practice course designed to provide the senior nursing student with opportunities to render comprehensive care for adults who are experiencing, or who are at risk for, selected complex health problems. Students participate in the selection of nursing practice experiences that enable them to apply knowledge and critical thinking in the application of the nursing process in acute care, community, and home settings. Clinical component. Three credits.

### 416 Nursing of Adults IV

A theory and practice course, which provide students with opportunities to render comprehensive care to individuals experiencing common health problems. Students will examine current research; develop leadership and management skills; plan, implement, and evaluate an independent experience of their choice in any setting or country that meets requirements; and participate in a consolidated nursing

practice experience. Prerequisite: NURS 405. Clinical component. Six credits in second semester.

### 455 Community Health Nursing II

This course builds on the theory and practice content in NURS 205 and critically examines community health nursing practice in Canada. This clinical practice component provides opportunity for students to work with an agency/organization using a variety of health care provision models in partnership with individuals, families, communities, populations and health care providers in areas of health promotion and illness prevention. Clinical component. Three credits.

### 473 Basic Concepts of Pathophysiology

This online course provides the student with an understanding of the basic concepts of pathophysiology, and builds upon a foundational knowledge of anatomy and physiology to meet the challenges presented in the study of disease process mechanisms. Prerequisites: BIOL 105, 115, 251, 252; CHEM 150 recommended. Three credits.

### 483 Hospice Palliative Care Nursing

This online course provides an overview of theories, current practices, and relevant issues in the field of palliative care, with a focus on the nurse's role. In line with the philosophy of nursing at StFX, students will explore concepts of self-care and health promotion as they relate to quality of life issues. Restricted to third- and fourth-year nursing and post-RN students. Three credits.

### 486 International Health and Development

This course is designed to introduce students to a holistic understanding of health within the context of international development. The relationship between health and development and the impact of development programs on health will be examined. Health concepts and issues will be examined within a social, political, economic and cultural framework. Models and case studies will focus mainly on countries of the south but examples will also be drawn from the Canadian context. Can be used as an open elective. Three credits.

### 488 Challenges in Aging

Using nursing and sociological perspectives on aging, this online course will allow students to explore holistic care of the older client, including current gerontological issues and trends, and their implications for nursing. This course may be used as an open or NURS elective by third- or fourth-year B.Sc.Nursing students. Prerequisite: NURS 245. Three credits.

### 491 Trends in Health Care

A senior nursing course which examines the evolution of health care, and the development of, and challenges to, nursing education and practice. While focusing on the Canadian health care system, students will consider the international scene, particularly health conditions and needs in the developing world. The course is designed to facilitate independent inquiry and research. Three credits.

### 493 Leadership and Research in Nursing

Examines nursing theories, management models, and leadership concepts. Qualitative research methodologies are reviewed, with emphasis on their usefulness in exploring specific nursing problems. Three credits.

### 496 Senior Honours Seminar

A full-year seminar devoted to the theoretical, methodological, and presentation issues involved in preparing an honours thesis. No credit.

### 497 Nursing Informatics

Teaches the knowledge and skills necessary to ensure that computers have a positive impact on the nursing environment and delivery of patient care. Students learn computer concepts and terms, and examine ways computers can enhance nursing practice, education, administration, and research. Trends and issues related to the use of computers in nursing are explored. Three credits. Not offered every year.

### 498 Honours Thesis

The honours thesis provides an opportunity for students to document the steps performed in carrying out an empirical research investigation. To satisfy department requirements for the B.Sc.Nursing with Honours, an acceptable thesis based on the research project must be submitted before the conclusion of classes for the academic year. Three credits.

### 499 Directed Study and Practice

This course for advanced major students requires application and testing of nursing knowledge as well as knowledge from related disciplines in a clinical setting of the student's choice (within the limits of available resources). The student selects a faculty advisor, as well as agency staff for consultation and supervision as appropriate. Prerequisite: permission of the department chair. See section 3.5. Three credits.



**DISTANCE NURSING PROGRAM OPTION**

Patsy MacDonald, M.Ad.Ed., RN

Program Director

**Bachelor of Science in Nursing  
for Registered Nurses**

See chapter 7 for program requirements. All courses are offered through the distance-delivery format. Distance nursing and science courses are restricted to post-RN students. Distance science courses may be taken by students outside the post-RN program with permission of the Dean of Science. Science labs and tutorials are incorporated into the course content.

Note: Students must complete DNUR 115 and 135 before enrolling in any other nursing course.

**DNUR 115 Health Teaching and Learning**

In contrast to health protection and illness prevention, health promotion is a broad and holistic concept. This course explores the concept of health promotion; the nurse's role in health promotion; the teaching-learning process; population health; social action and justice; the socio-cultural, economic, and political factors that influence health and behaviour. Three credits.

**DNUR 135 Contemporary Issues in Nursing**

The foundation for all subsequent nursing courses, this class explores the evolution of nursing as a profession, including its theoretical and philosophical bases. Topics include Orem's self-care theory; legal and ethical issues; health care reform; the image of professional nursing; changing health care priorities. Three credits.

**DNUR 201 Community Mental Health Nursing I**

Introduces the application of mental health nursing principles to specific clinical disorders. A subsequent elective course, DNUR 202, builds on the foundations explored in this class. Practice component. Three credits.

**DNUR 202 Community Mental Health Nursing II**

Examines the theory of and concepts in mental illness, treatment regimens, and nursing interventions. Students will apply mental health nursing principles to specific clinical disorders, building on the foundations of practice explored in DNUR 201. Three credits.

**DNUR 205 Community Health Nursing**

Explores the role of the community health nurse in the context of a changing health care system. Topics include population health; primary health care; community assessment; epidemiology and demography; environment and ecology; cultural competence; ethics; the community as partner. Three credits. Offered in on-line delivery format.

**DNUR 230 Nursing of Women, Children, and Families**

Using a population-health approach, this course examines the social, economic, cultural, and political perspectives that affect the health and health care of women, children, and families, both locally and globally. Students will explore selected issues in illness prevention, wellness promotion, and care during illness. Community-based practice component. Six credits.

**DNUR 245 Aging and the Older Adult**

This course covers the process of growing older with reference to theories on universal aging. Students will learn to improve the function, quality of life, and self-care abilities of the elderly well, to assist them in maintaining independence. Topics include aging-related changes; the role of the family and other aggregates; how elderly adults define and promote their health; the use of community resources. Three credits.

**DNUR 300 Research Methods**

Introduces students to research methods used in nursing science. Topics include conducting and appraising research; concepts of research design, implementation, analysis, and interpretation; descriptive and inferential statistics; quantitative and qualitative research design; research ethics and bias. Six credits.

**DNUR 330 Legal and Ethical Issues in Nursing**

Examines the moral and ethical implications of various practices in the field of health care as they affect human life and the basic dignity of the person. Also treats the moral, ethical, legal and theological issues raised by recent developments in the life sciences. Six credits.

**DNUR 405 Nursing of Adults I**

A theory- and practice-based course exploring chronic health issues related to violence, immune system dysfunction, cancer, and other selected conditions. In a primary, secondary or tertiary setting, students will deliver comprehensive medical or surgical nursing care to adults at risk for or experiencing a complex health problem. Three credits. Offered in on-line delivery format.

**DNUR 415 Nursing of Adults II**

A theoretical and practice-based course exploring chronic health issues related to diseases of the nervous, endocrine, and sensory systems, among others. In a primary, secondary or tertiary setting, students will deliver comprehensive medical or surgical nursing care to adults at risk for or experiencing a complex health problem. Leadership practice component. Three credits.

**DNUR 425 Comprehensive Health Assessment**

This theory and practice course focuses on a systematic assessment of the well adult. Students will incorporate health history and physical examination of body systems in identifying self-care requisites for a diverse population. Three credits.

**DNUR 473 Basic Concepts of Pathophysiology**

This course provides the student with an understanding of the basic concepts of pathophysiology, and builds upon a foundational knowledge of anatomy and physiology to meet the challenges presented in the study of disease process mechanisms. Prerequisites: BIOL 105, 115, 251, 252; CHEM 150 recommended. Three credits. Offered in on-line delivery format.

**DNUR 483 Hospice Palliative Care Nursing**

Provides an overview of theories, current practices, and relevant issues in the field of palliative care, with a focus on the nurse's role. In line with the philosophy of nursing at StFX, students will explore concepts of self-care and health promotion as they relate to quality of life issues. Restricted to third- and fourth-year students and post-RN students. Three credits. Offered in on-line delivery format.

**DNUR 488 Challenges in Aging**

Using nursing and sociological perspectives on aging, students will explore holistic care of the older client, including current gerontological issues and trends, and their implications for nursing. This course may be used as an open or NURS elective by third- or fourth-year B.Sc.Nursing students. Three credits. Offered in on-line delivery format.

**DNUR 490 Forensic Nursing**

Forensic nursing refers to the application of nursing science and knowledge to legal proceedings. This course will examine the application of nursing science to the investigation and treatment of trauma, death, violent or criminal activity, and traumatic accidents within the clinical or community institution. Patient populations to be considered include: victims of sexual assault; elder, child and spousal abuse; unexplained or accidental death; trauma and assault; as well as the perpetrators of these and other criminal activity. This course may be used as an open or NURS elective by third- or fourth-year B.Sc.Nursing students. Six credits. Offered in on-line delivery format.

**DNUR 494 Leadership and Management in Nursing**

Examines nursing leadership theories and management models, and their relationship to client care. The course explores the changing roles and expectations for registered nurses as leaders in the health care system. Three credits.

**NURS 497 Nursing Informatics**

Teaches the knowledge and skills necessary to ensure that computers have a positive impact on the nursing environment and delivery of patient care. Students learn computer concepts and terms, and examine ways computers can enhance nursing practice, education, administration, and research. Trends and issues related to the use of computers in nursing are explored. Three credits. Offered in on-line delivery format.

**DNUR 499 Independent Study and Practice**

This nursing elective is designed to give registered nurses credit for a hospital-based course or program. Courses are evaluated for credit on an individual basis by the distance nursing education committee. Three credits.

**9.30 PHILOSOPHY**

D. Al-Maini, Ph.D.

L. Groarke, Ph.D.

S. Baldner, Ph.D.

J. Mensch, Ph.D.

C. Byrne, Ph.D.

W. Sweet, D.Ph.

J. Cook, Ph.D.

What is the purpose of our existence? How do we discover the principles which ought to guide our actions? Can we prove that God exists? Philosophy is the reasoned study of these and other questions of fundamental importance. The study of philosophy also introduces students to the main currents of intellectual history, provides a basis for critically understanding their own ideas, and develops analytical reasoning skills.

Students planning the major, advanced major, honours or honours with subsidiary degree in this field are required to consult the department chair about their program of study. Degree requirements are outlined below and at the department's webpage at [www.mystfx.ca/academic/philosophy](http://www.mystfx.ca/academic/philosophy).

**Major Program**

Of the 36 credits of philosophy required for the major, a minimum of 12 credits must be in the history of philosophy, with at least 6 credits from the ancient or medieval periods and at least 6 credits from the modern or contemporary periods. A minimum of 12 credits in the major must be at the 300/400 level.

**Advanced Major Program**

Of the 36 credits of philosophy required for the advanced major, a minimum of 12 credits must be in the history of philosophy, with at least 6 credits from the ancient or medieval periods and at least 6 credits from the modern or contemporary periods. A minimum of 18 credits in the major must be at the 300/400 level, including 6 credits of 400-level senior seminar coursework. Advanced major students are also required to complete a senior research paper. In the case of a joint advanced major in which philosophy is subject B, the senior research paper is completed only in subject A.

**Honours Program**

Of the 60 credits of philosophy required for the honours program, a minimum of 18 credits must be in the history of philosophy, with at least 6 credits from the ancient or medieval periods and at least 6 credits from the modern or contemporary periods. A minimum of 33 credits in the honours courses must be at the 300/400 level, including 6 credits of 400-level senior seminar coursework and the honours thesis.

**Honours with Subsidiary Program**

When philosophy is the honours subject: Of the 48 credits of philosophy required for the honours program, a minimum of 18 credits must be in the history of philosophy, with at least 6 credits from the ancient or medieval periods and at least 6 credits from the modern or contemporary periods. A minimum of 27 credits in the honours courses must be at the 300/400 level, including 6 credits of 400-level senior seminar coursework and the honours thesis.

When philosophy is the subsidiary subject: Of the 24 credits of philosophy required for the subsidiary, a minimum of 12 credits must be in the history of philosophy, with at least 6 credits from the ancient or medieval periods and at least 6 credits from the modern or contemporary periods. A minimum of 12 credits in the subsidiary must be at the 300/400 level, including 6 credits of 400-level senior seminar coursework.

When religious studies is the honours or the subsidiary subject with philosophy, PHIL 240 will normally be included in the course pattern.

Note: PHIL 100 is normally a prerequisite for advanced courses; exceptions are PHIL 210, 251, 331 and 336.

**100 Introductory Philosophy**

An introduction to the study of philosophy that looks at major thinkers in the history of western philosophy as well as the fundamental and enduring questions they raised. Among the philosophers considered are Socrates, Plato, Aristotle, Aquinas, Descartes, and Hume. The questions raised by these thinkers include: What is it to think rationally and critically? Can we demonstrate the existence and nature of God? Can we discover any ethical principles that should guide our actions? What are the limits of human knowledge? Six credits.

**210 Philosophy of Science**

Examines the methodology of the positive sciences, including the logic of scientific discovery and experimental testing, the confirmation of hypotheses, and the nature of scientific explanation. Six credits.

**230 Philosophy of Human Nature**

A philosophical examination of what it means to be human. Topics may include: whether we possess free will; how the mind and the body are related; the nature of death and the possibility of survival/immortality; the nature of personal identity; skepticism and the reliability of our cognitive faculties; the limits of human knowledge; the function of art and its relation to human existence; egoism and the possibility of altruism; and the 'meaning of life.' Prerequisite: PHIL 100 or permission of the instructor. Six credits.

**240 Philosophy of Religion**

Explores the philosophy of religion, including different concepts of God with emphasis on the Judeo-Christian tradition; grounds for belief and disbelief in God; and issues such as human destiny, religious language, evil, faith, revelation, and verification. Prerequisite: PHIL 100 or RELS 100 or 110 or permission of the instructor. Cross-listed as RELS 230. Six credits.

**251 Critical Thinking**

What is an argument? How do arguments work? What makes some arguments better than others? This course will equip students to recognize and analyze arguments as they occur in a variety of contexts such as media editorials, speeches, textbooks, argumentative essays, and philosophical texts. To accomplish this, we will study the components of good arguments and techniques for criticizing and

constructing arguments. Students will also be introduced to propositional logic. Prerequisite: normally at least one semester of successful university study. Three credits.

**271 Philosophy and Literature**

Examines selected philosophical themes as they occur in world literature. The course will explore issues such as the nature of tragedy, the conflict of existence and meaning, and the relation of the unconscious to philosophy and literature. Prerequisite: PHIL 100 or permission of the instructor. Three credits.

**281 Aesthetics**

Is beauty in the eye of the beholder? Is it necessary or possible to define art? What is the nature of aesthetic experience? This course will examine several classical and modern theories of art and beauty selected from such writers as Plato, Aristotle, Hume, Kant, Hegel, Maritain, Dewey, Goodman, Danto, Foucault. It will also draw on a variety of examples of art, including literature, visual arts, music, poetry, theatre, architecture, and artistic handiwork. Three credits.

**331 Introduction to Ethics**

This course introduces students to several major ethical theories, including utilitarianism, virtue-based ethics, natural law theory and deontology. It addresses such questions as: Is there an objective moral standard? Is there a common good? Do we have duties to others? What does morality have to do with personal happiness? Prerequisite: PHIL 100 or third-year standing or permission of the department chair. Credit will be granted for only one of PHIL 331, 334 and 336. Three credits.

**332 Contemporary Moral and Social Issues**

Building on PHIL 331, this course examines contemporary moral and social issues such as freedom of speech and censorship; equality and affirmative action; legalization of non-medical drug use; the duty to alleviate suffering; assisted suicide and euthanasia; justifications for punishment and capital punishment. Prerequisite: PHIL 331. Credit will be granted for only one of PHIL 332, 334 and 336. Three credits.

**333 Environmental Ethics**

This course examines the ethical relationship between humans and the natural environment. It begins with the theoretical principles that help determine human conduct within the natural world. Once these beliefs about nature have been examined, it assesses different normative models that might govern our behaviour regarding the environment. Prerequisite: PHIL 331. Three credits.

**336 Ethics in Health and Medicine**

This course introduces students to ethical theories and values, and to the critical examination of contemporary issues arising in health care and medicine. Issues to be discussed may include: the concept of health; the ethical responsibilities of professionals and professional integrity; freedom, autonomy, and consent; death, dying, and euthanasia; abortion; infanticide; research involving human subjects; the allocation of scarce medical resources; confidentiality and privacy; reproductive technologies and rights; medical and non-medical drug use. Prerequisite: junior standing or PHIL 100 or permission of the instructor. Cross-listed as NURS 336. Credit will be granted for only one of PHIL 336, 331, and 334. Six credits.

**342 Logic**

A course in formal logic. Presupposing a familiarity with propositional logic, it focuses on first order predicate logic (with identity) and metalogic. Topics to be covered include translating sentences from English into symbolic notation, the semantics of predicate logic, deductions, soundness and completeness. Prerequisite: PHIL 251. Three credits.

**351 Socrates and Plato**

Topics include the nature of Socratic dialectic, Socrates' response to the pre-Socratic philosophers, and Plato's contributions to ethics, political philosophy, metaphysics, and epistemology. Three credits.

**352 Aristotle**

Topics include Aristotle's contributions to metaphysics, natural philosophy, and epistemology; his response to Plato and the pre-Socratic philosophers; and the development of Greek philosophy in the subsequent Stoic, Epicurean, and Neo-Platonic schools. Three credits.

**361 Early Medieval Philosophy**

A study of the Christian and Neo-Platonic influence on philosophy from the 4th to the 12th centuries. Principal thinkers: Augustine, Boethius, Anselm, and Abelard. Principal problems: faith and reason; knowledge; evil; providence; free will; immortality of the soul; universals; ethical principles. The course ends with an introduction to important medieval Islamic and Jewish thinkers: Avicenna, Averroës, Maimonides. Prerequisite: PHIL 100. Three credits.

**362 Philosophy in the High Middle Ages**

A study of the influence of Christian theology and Aristotelian philosophy on thinkers of the 13th and 14th centuries. Principal figures: Bonaventure, Thomas Aquinas, John Duns Scotus, William of Ockham. Principal problems: faith and reason: knowledge; evil; providence; free will; immortality of the soul; universals; and ethical principles. Prerequisite: PHIL 100. Three credits.

**365 Modern Philosophy I**

A review of the intellectual developments of the Renaissance relevant to philosophy is followed by a study of Descartes and his rationalist successors, such as Spinoza and Leibniz. Prerequisite: PHIL 100 or permission of the instructor. Three credits.

**366 Modern Philosophy II**

British philosophy of the late 17th and 18th century is traced through a study of the writings of Locke, Berkeley, and Hume. Works by Kant may also be studied. Prerequisite: PHIL 365 or permission of the instructor. Three credits.

**367 Philosophy from Kant to Hegel**

In the 19th century, German philosophy found expression in the idealist movement. Major figures such as Kant, Fichte, Schelling, and Hegel were united in the belief that reality, and the categories we use to understand it, had a common origin and development. Out of this belief came new conceptions of science, history, theology, and politics. Prerequisite: PHIL 100 or permission of the instructor. Three credits.

**371 Social and Political Philosophy**

Examines fundamental issues in social and political philosophy through a discussion of such questions as: What would an ideal society be like? Should there be limits on human freedom? Do human beings have rights that everyone should respect? Is it ever morally acceptable to disobey or rebel against the state? Texts will be selected from the classical, medieval, modern, and contemporary periods, but topics will focus on issues of current interest. Prerequisite: PHIL 100. Three credits.

**372 Philosophy of Law**

Examines fundamental issues in legal philosophy through a discussion of such questions as: What is the nature and function of law? What is the relation between law and morality? What is the character of legal reasoning and judicial decision-making? What are the justifications and aims of punishment? Texts will be selected from the classical, medieval, modern, and contemporary periods, including works on liberal, libertarian, Marxist, and feminist thought. Three credits.

**381 Existentialism and Phenomenology**

Examines 19th- and early 20th-century philosophical ideas in continental Europe. A look at the philosophical antecedents of existentialism and phenomenology will be followed by an discussion of the writings of some of the major figures in these movements: Kierkegaard, Sartre, Beauvoir, Marcel, Merleau-Ponty, Husserl, Arendt, and Heidegger. Prerequisite: PHIL 100 or permission of the instructor. Three credits.

**382 Contemporary Continental Philosophy**

Examines late 20th- and early 21st-century philosophical ideas in continental Europe. A discussion of the writings of some of the major figures in contemporary philosophical movements, particularly in France and Germany: Derrida, Lévinas, Foucault, Deleuze, Kristeva, Cixous, Gadamer, Habermas, and Horneth. Prerequisite: PHIL 381 or permission of the instructor. Three credits.

**391 Anglo-American Philosophy to 1950**

Presents some of the major currents of philosophy in the English-speaking world in the 20th century, up to 1950. The course includes a brief account of 19th-century empiricism, pragmatism, and idealism, before turning to 'common sense analysis' (e.g., G.E. Moore), early discussions of logical positivism and the place of metaphysics, ethics, and aesthetics (e.g., Bertrand Russell, A.N. Whitehead, Ludwig Wittgenstein, A.J. Ayer, and Karl Popper), and the beginnings of 'ordinary language' philosophy. Prerequisites: PHIL 100 or permission of the instructor; junior standing strongly recommended. Three credits.

**392 Anglo-American Philosophy, 1950 to Present**

Reviews recent Anglo-American philosophy, beginning with Ludwig Wittgenstein's *Philosophical Investigations*, and continuing with major texts in 'ordinary language philosophy' (e.g., Ryle, Strawson, Austin) and reactions to it (e.g., Quine). Debates on meaning and truth (e.g., Donald Davidson and Hilary Putnam), on knowledge and justification (e.g., Edmund Gettier and Alvin Plantinga), and on contemporary pragmatism (e.g., Richard Rorty) and contemporary metaphysics (e.g., Charles Taylor, Crispin Wright, David Chalmers) will also be presented. Prerequisite: PHIL 391 or permission of the instructor. Three credits.

**451 Seminar in Ethics, Political Philosophy, and the Philosophy of Law I**

A seminar course that focuses on questions of ethics, political philosophy, and the philosophy of law. Topics to be addressed may include: the state and society, rights

and duties, justice and equality, freedom and punishment, the moral basis of political obligation, and the concept of law. Prerequisite: junior standing in philosophy or permission of the instructor. Three credits.

**452 Seminar in Ethics, Political Philosophy, and the Philosophy of Law II**

A seminar course that focuses on questions of ethics, political philosophy, and the philosophy of law, not discussed in PHIL 451. Content varies from year to year. The course will include both classical and contemporary authors. Prerequisite: junior standing in philosophy or permission of the instructor. Three credits.

**461 Seminar in Metaphysics and Epistemology I**

A seminar course that focuses on issues in classical and contemporary epistemology and metaphysics. Topics to be considered may include: an investigation of the ultimate structure of reality as a whole: the nature of material things; the existence of the immaterial; the meaning of being; what can and cannot be known of reality; whether there is a First Cause. Prerequisite: junior standing in philosophy or permission of the instructor. Three credits.

**462 Seminar in Metaphysics and Epistemology II**

A seminar course that focuses on issues in metaphysics and epistemology not discussed in PHIL 461. Content varies from year to year. The course will include both classical and contemporary authors. Prerequisite: junior standing in philosophy or permission of the instructor. Three credits.

**489 Honours Thesis**

Each student works under the supervision of a professor who guides the selection of a thesis topic, the use of resources, the methodological component, and the quality of analysis. Restricted to honours students. Three credits over full year.

**9.31 PHYSICS**

C. Adams, Ph.D.  
K. LeBris, Ph.D.  
K. Marzlin, Ph.D.  
P. Poole, Ph.D.  
M. Steinitz, Ph.D.  
B. van Zyl, Ph.D.

Professor Emeritus  
D. Hunter, Ph.D.  
N. Jan, Ph.D.  
Senior Research Professor  
D. Pink, Ph.D.

Physics deals with the fundamental properties of matter and energy. Physicists explore phenomena both in analytical detail and through statistical or average results, to create precise descriptions of the way in which systems behave. Physics courses stress analytical thinking and problem solving, while trying to communicate the excitement of discovery and the beauty of physics. The physics program prepares students for graduate study in physical and related sciences, engineering, meteorology, oceanography, and business administration; for professional programs such as medicine, dentistry, law and education; and for careers in science, business, and industry.

The physics department offers honours, advanced major, and major programs; joint advanced major and honours programs combining physics with mathematics (mathematics or computer science concentration), earth science, chemistry, or biology; and an advanced major in physics with business administration. Students interested in these programs, or in combining a physics degree with the engineering diploma, should consult the relevant department chairs. Since physics depends upon mathematics, most of the programs described below require at least four mathematics courses.

See chapter 7 for information on the degree patterns, declarations of major, advanced major and honours, advancement and graduation requirements. First-year students considering a physics program should consult the department chair before registration. See the department website at [physics.sfx.ca](http://physics.sfx.ca)

**Major Program**

The typical program outlined below may be varied with approval of the department chair.

Year 1	PHYS 120; MATH 111, 112 or 121, 122; CHEM 120 or 100; 6 credits arts electives; 6 credits open electives
Year 2	PHYS 201, 221, 241, 242; MATH 221, 267; 6 credits arts electives; 6 credits open electives
Year 3	PHYS 325, 6 credits PHYS elective; MATH 253, 254; CSCI 125 or 161; 6 credits arts electives; 6 credits open electives
Year 4	PHYS 302, 6 credits PHYS elective; 12 credits arts electives; 9 credits open electives

**Advanced Major Program**

The typical program outlined below may be varied with approval of the chair.

Year 1	Same as major program
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Year 2	PHYS 201, 221, 241, 242; MATH 221, 253, 254, 267; CSCI 125 or 161; 3 credits approved elective
Year 3	PHYS 302, 322, 323, 325; MATH 361; 6 credits arts electives; 6 credits open electives; 3 credits approved elective
Year 4	PHYS 343, 344, 491 (no credit); 6 credits PHYS electives; 6 credits arts electives; 12 credits open electives; advanced major paper (consult the department chair).

### Honours Program

The typical program outlined below may be varied with approval of the chair.

Year 1	Same as major program
Year 2	PHYS 201, 221, 241, 242; MATH 221, 253, 254, 267; CSCI 125 or 161; 3 credits approved electives.
Year 3	PHYS 302, 322, 323, 325, 343, 344; MATH 361; one of 462 and 481; 6 credits arts electives
Year 4	PHYS 422, 443, 491 (no credit), 493; four of 223, 303, 342, 425*, 444*, 473, 475*, 476* (*choice must include at least 2 marked); MATH 481 or 462; 6 credits arts electives.

Honours students of superior academic standing will be encouraged to enrich their programs by taking up to one additional course each year.

### 100 General Physics

An introduction to mechanics, electricity, magnetism, waves, optics, and modern physics. The course includes applications of physics to biological problems. Recommended for students in the life sciences program. However, any student expecting to take additional physics courses should take PHYS 120. Credit will be granted for only one of PHYS 100 and PHYS 120. Six credits and lab.

### 120 General Physics

An introduction to physics (mechanics, electricity and magnetism), this course is suitable for science students seeking a firm understanding of how the world works, e.g., from the flight of a golf ball to the orbit of a planet, or from the nature of an electron to how a generator works. Recommended for those considering further study in the physical sciences, engineering, mathematics and computer science. MATH 111/112 or 121/122 should be taken concurrently, as this course uses concepts developed in the calculus course. Credit will be granted for only one of PHYS 120 and PHYS 100. Six credits and lab.

### 171 Introduction to Astronomy I

This course provides an introduction to astronomy for students who have no background in mathematics or science. Topics include observing the night sky with and without optical aid, the development of astronomy and related sciences, time, the evolution of the solar system, sun, planets, comets, and meteors. Observing sessions will be arranged. Recommended for arts students. Credit will be granted for only one of PHYS 171 and PHYS 271. Three credits.

### 172 Introduction to Astronomy II

This course provides an introduction to astronomy for students who have no background in mathematics or science. Topics include stellar systems, galaxies, quasars, black holes, dark matter, dark energy, cosmology, cosmogony and life in the universe. Observing sessions will be arranged. Recommended for arts students. Credit will be granted for only one of PHYS 172 and PHYS 272. Three credits.

### 201 Modern Physics: Introduction to Relativity and Quantum Physics

Topics include Einstein's special relativity; wave description of matter; early atomic quantum theory; introduction to nuclear and particle physics; Schrödinger's quantum mechanics. Prerequisite: PHYS 120 or PHYS 100 with permission of the department chair; concurrently with MATH 112 or MATH 122/ENGR 122. Three credits and lab.

### 221 Basic Electric Circuits Theory

Topics include introductory concepts; resistive networks; response to linear circuits with energy storage; exponential excitation functions; steady-state AC circuits; analysis; network analysis; systems. Cross-listed as ENGR 237. Prerequisites: PHYS 120 or PHYS 100 with permission of the department chair; concurrently with MATH 221/ENGR 221. Three credits and lab.

### 223 Digital Electronics

This hands-on, practical course introduces digital electronics with applications to computer hardware and micro-computer peripherals. Topics include the families of digital electronic technology; combinational and sequential logic; digital device characteristics; micro-computer interfacing; data acquisition; instrument control; data transmission. Labs provide an opportunity to design and test practical digital devices. Prerequisite: PHYS 120 or PHYS 100 with permission of the department chair. Cross-listed as ENGR 238. Three credits and lab.

### 241 Mathematical Physics: Oscillations and Waves

An introduction to complex numbers, treatment of experimental uncertainties, ordinary differential equations, partial differential operators, partial differential equations and Fourier series for dealing with the physics of oscillating systems and waves. Simple, damped, forced, and coupled oscillators are treated in detail. The one-dimensional wave equation is derived and solved. Fourier series are introduced in order to satisfy the initial conditions. Prerequisites: PHYS 120 or PHYS 100 with permission of the department chair; concurrently with MATH 112 or MATH 122/ENGR 122. Three credits.

### 242 Classical Dynamics I

The course covers conservative systems and potential energy; non-inertial frames; multi-particle systems; calculus of variations; Lagrangian mechanics; the connection between symmetries and conservation laws; central force problems; orbital mechanics; coupled oscillators and normal modes; Hamilton's equations of motion. Concurrent prerequisites: PHYS 241; MATH 221/ENGR 221 or MATH 367. Three credits.

### 271 Astronomy: The Solar System

This course provides a quantitative and more detailed treatment of the topics covered in PHYS 171. These Topics include the evolution of the solar system, sun, planets, comets, meteors, and solar wind. Open to science students as a free elective and to arts students with the permission of the instructor. Three credits. Not offered 2012-2013.

### 272 Astronomy: The Stellar System

This course provides a quantitative and more detailed treatment of the topics covered in PHYS 172. These Topics include stellar evolution, supernovae, quasars, pulsars, neutron stars, black holes, the universe, our galaxy, and cosmology. Prerequisite: PHYS 271 recommended. Open to science students as a free elective and to arts students with the permission of the instructor. Three credits. Offered 2012-2013 and in alternate years.

### 278 Introduction to Atmospheric Physics

This course aims at developing an understanding of the physical processes that influence our climate. It is suitable for science students interested by atmospheric sciences, climate and air quality issues. Topics include introduction to radiation, atmospheric composition, planetary atmospheres, introduction to molecular spectroscopy and photochemistry, radiation balance - natural variability and anthropogenic effects, greenhouse effect, ozone depletion, clouds, methods of sounding atmospheric constituents, instrumentation, introduction to climate modeling. Cross-listed as ESCI 278. Prerequisites: MATH 112 or 122, CHEM 100 or 120, PHYS 100 or 120. Three credits.

### 302 Modern Physics: Properties of Matter

This course considers the properties of matter in its various states of greater and lesser order. Topics include classical thermodynamic treatment of phase transitions; an introduction to fluid mechanics; crystallographic order in crystals; elasticity; magnetic order; electrons in metals; and electrical resistance. Prerequisites: PHYS 201, 241. Three credits and lab.

### 303 Modern Physics: Subatomic Physics and Cosmology

Topics include nuclei; elementary particles; concepts of general relativity; cosmology. Prerequisite: PHYS 201. Three credits.

### 322 Electromagnetic Theory I

This course presents a comprehensive study of electrostatics in the presence of conductors and dielectrics. Particular attention is paid to developing and solving the differential equations that describe the electric field and scalar potential. Topics include vector fields; Coulomb's Law; Gauss's Law; Poisson's/Laplace's equation; Green's function; multipole expansion; method of images; polarization of materials; the displacement field; introduction to magnetostatics. Prerequisites: PHYS 120 or PHYS 100 with permission of the department chair; MATH 267 or MATH 222/ENGR 222; PHYS 241 or MATH 361. Three credits.

### 323 Electronics

An introduction to electronic devices and circuits. Devices and topics discussed include equivalent circuits, diodes, bipolar junction transistors, field effect transistors, linear models, single-stage amplifiers, operational amplifiers, and digital circuits. Prerequisites: PHYS 221/ENGR 237; MATH 221/ENGR 221 or MATH 367. Three credits and lab.

### 325 Optics

Topics include the nature of light; geometric optics, aberrations, optical instruments; Maxwell's equations, vector nature of light, polarization; coherence and interference; Fourier transform spectroscopy and interferometry; Fraunhofer diffraction, Fresnel diffraction; optics of solids. Prerequisites: PHYS 201, 241; MATH 221/ENGR 221 or MATH 367. Three credits and lab.

**342 Classical Dynamics II**

Topics include calculus of variations; Hamilton's principle and equations; non-linear dynamic equations; van der Pol's equation; orbits; limit cycles; graphical analysis; fixed and periodic orbits; bifurcations; the transition of chaos; symbolic dynamics; chaos; Sarkovskii's theorem; Newton's method; fractals; the Julia and Mandelbrot sets. Prerequisite: PHYS 242. Three credits.

**343 Quantum Mechanics I**

Covers states as vectors, measurable quantities as operators in a linear vector space, eigenstates and eigenvalues; the process of measurement, superposition of eigenstates; Schrödinger's equation, applications; orbital and spin angular momentum, application; time-independent perturbation theory, applications. Prerequisites: PHYS 201, 242; MATH 254, 267 or ENGR/MATH 223; PHYS 325 is strongly recommended. Three credits.

**344 Thermal Physics**

This course introduces the statistical nature of physical systems from an energetic perspective. Topics covered: laws of thermodynamics; ideal gases and Einstein solids; entropy and its relation with temperature, pressure, and chemical potential; engines and refrigerators; Helmholtz and Gibbs free energy; chemical thermodynamics; Boltzmann statistics; partition functions; Maxwell distribution; Gibbs factors and quantum statistics; Fermi-Dirac and Bose-Einstein distributions; degenerate electron gases; blackbody radiation and Planck's distribution; Debye theory of solids. Prerequisites: PHYS 242; ENGR 144 or CSCI 161. Three credits and lab.

**415 Special Topics in Physics**

This course will introduce one or more current topics in physics research. The topics will vary from year to year depending upon the availability of faculty and their interests. Three credits.

**422 Electromagnetic Theory II**

This course, a continuation of PHYS 322, covers magnetic fields in magnetic and non-magnetic materials, electromagnetic induction, the electric and magnetic fields of moving electric charges; Maxwell's equations; and the propagation and radiation of electromagnetic waves in various media. Prerequisites: PHYS 322; MATH 221/ENGR 221 or MATH 367; MATH 361. Three credits.

**425 Lasers and Modern Optics**

An introduction to the theory, operation, and applications of lasers. Topics include the principles of optical coherence; optical resonators; operating principles and the most important laser types; holography; wave mixing; harmonic generation; the optical Kerr effect; stimulated Raman scattering and fiber optics. Prerequisites: PHYS 201, 325, 343. Three credits and lab.

**442 Fluids**

From the majesty of the Great Red Spot on Jupiter to the common-place phenomena of ocean waves, cream mixing in coffee and smoke rings, the motion of fluids is of aesthetic, practical and fundamental interest. Continuum descriptions of ideal and viscous fluid flows, both with and without compressibility, will be presented. Common flow geometries, wave and surface phenomena, solitons, convective instabilities and turbulent flow will be discussed. Prerequisites: PHYS 242, concurrently with PHYS 344 and MATH 361. Three credits.

**443 Quantum Mechanics II**

Topics include function space analysis; state vectors, pure and non-pure states described by density operators; unitary and antiunitary transformations, symmetries and group theory in quantum mechanics; Schrödinger, Heisenberg, and interaction pictures; angular momentum coupling, tensor operators, the Wigner-Eckart theorem; time-dependent perturbation theory, variational approach; scattering theory with applications to modern physics. Prerequisite: PHYS 343. Three credits.

**444 Statistical Mechanics**

This advanced course explores thermodynamics and its relationship to statistical mechanics. Topics include review of the thermodynamic postulates and conditions for equilibrium; extensive and intensive quantities; entropic and energetic formulations; Euler equation and Gibbs-Duhem relation; Legendre-transformed representations; response functions and Maxwell relations; stability; first-order phase transitions; van der Waals fluid; critical point and second-order phase transitions; Ising model of magnetic systems; connection to statistical mechanics through numerical models. Prerequisite: PHYS 344. Three credits and lab.

**473 Soft Materials and Biophysics**

Examples of soft materials are familiar from everyday life: glues, paints, soaps, plastics, and foods. These materials are neither simple liquids nor crystalline solids. Topics will be chosen from: the physical properties of colloids, polymers, and liquid crystals; the self-assembly properties of block co-polymers; amphiphiles and biopolymers (DNA and proteins) in solution; and interfaces such as bio-membranes

and bacterial cell walls. Prerequisites: PHYS 302, 344, concurrently with PHYS 444. Three credits.

**474 Computational Physics**

This course covers computational modeling of a variety of systems relevant to physics, physical chemistry, and engineering. Topics will include: deterministic and stochastic methods; drawing connections among different phenomena from underlying similarities revealed through the modeling process; implementing simulations and analyzing the results; numerical integration of neural networks and spin glasses. Prerequisites: PHYS 241; MATH 221/ENGR 221 or MATH 367, ENGR 144 or CSCI 161. Three credits and lab.

**475 Atomic and Molecular Physics**

Covers the development of atomic physics; one-electron and multi-electron atoms; fine and hyperfine structure; radiation and radiative transitions; the Pauli principle and atomic shell structure; atomic spectroscopy. Also covers a selection of current areas of research in the field such as lasers, laser cooling, and quantum computing. Prerequisite: PHYS 343. Three credits and lab.

**476 Solid-State Physics**

An introduction to the theory of solids and important experimental results. Topics include crystal structure; diffraction methods; lattice vibrations; specific heat of solids; thermal conductivity; the behaviour of electrons in metals and semiconductors; magnetism; superconductivity. Prerequisites: PHYS 201, 302, 344, concurrently with PHYS 343. Three credits and lab.

**491 Physics Seminar**

All students in the fourth year of a physics program are required to attend department seminars as scheduled. No credit.

**493 Honours Thesis**

Students will prepare and present a thesis based on original research they have performed under the supervision of a faculty member. Required for honours students. Open to advance major students who have demonstrated aptitude in physics research with permission of the department chair. Three credits.

**9.32 POLITICAL SCIENCE**

J. Bickerton, Ph.D.

D. Brown, Ph.D.

Y. Cho, Ph.D.

P. Clancy, Ph.D.

S. Dossa, Ph.D.

Y. Grenier, Ph.D.

S.K. Holloway, Ph.D.

C. Schaler, Ph.D.

L. Stan, Ph.D.

**Department Regulations**

Normally, all courses above the 100 level, except PSCI 240, require PSCI 100 as a prerequisite. Students who wish to register in courses at the 300 level or above should have 12 credits in PSCI or permission of the instructor.

See chapter 4 for information on the degree patterns, declarations of major, advanced major and honours, advancement and graduation requirements.

There are four areas within the discipline: Canadian Politics; Political Theory/Philosophy; Comparative Politics; and World Politics/International Relations. Students will normally concentrate in two of those areas.

**Major and Joint Major Programs**

Candidates for the major degree should choose their courses in consultation with a member of the political science department, and they must have their major form approved by the department chair. Students will normally concentrate in two areas within the discipline, and have a minimum of 15 credits at the 300 level or above. Majors are encouraged to include PSCI 399 in their course pattern.

**Advanced Major and Joint Advanced Major Programs**

Candidates for a degree with advanced major in political science must choose their courses in consultation with the chair. All students will take PSCI 100, 399, at least two three-credit seminar courses and a senior research paper as part of their program. Students will normally concentrate in two areas within the discipline, and have at least 15 credits at the 300 level or above, including PSCI 399 and two three-credit seminars. Joint advanced major candidates must complete all of the above requirements, including the senior paper if political science is the primary subject (major 1).

**Honours Program**

Candidates for the degree with honours in political science require credit for PSCI 100; 200; 399; a minimum of 6 credits from the following: 211, 212, 221, 222, 240, 250; two three-credit seminars; a thesis; and 27 other PSCI credits. Non-Canadian students may, with permission of the department, substitute another 6 credits for PSCI 221/222 or 240. Students will normally have at least 24 credits at the 300 level or above, including PSCI 399, 490 and two seminars.

**Honours with a Subsidiary Subject**

See section 4.1 for program requirements.

Note: Not all courses are offered every year. Most 300-level courses are offered in alternate years. To confirm course offerings students should check the StFX timetable prior to registration.

**100 Introduction to Political Science**

An introduction to the nature, variety, and use of political power in contemporary society and the state, especially Canada. This course will introduce students to the four areas of the discipline. Six credits.

**200 History of Political Thought**

An introductory survey of the Western tradition of political thought as it reflects persistent concern with questions of justice, political obligation, the origin of law and the purpose of government. Thinkers to be studied include Plato, Aristotle, Augustine, Thomas Aquinas, Niccolò Machiavelli, Thomas Hobbes, John Locke, Jean-Jacques Rousseau, Edmund Burke, and Karl Marx. Six credits.

**211 Comparative Politics I**

This course provides an introduction to comparative politics and/or regional politics as a field of study, and prepares students for upper level courses in the field. It will present the basic methodological and theoretical tools in the field and take a close look at countries whose history, political institutions, political culture, political processes and political outcomes are similar or closely related to Canada's: Great Britain, France and the United States among others. Credit will be granted for only one of PSCI 211 and 210. Three credits.

**212 Comparative Politics II**

This course provides an introduction to comparative politics and/or regional politics as a field of study, and prepares students for upper level courses in the field. It examines the evolution and diversity of governments in countries whose history, political institutions, political culture, political processes, and political outcomes differ from Canada's. These countries may include Russia, China, Brazil, Japan, India or Nigeria, among others. Credit will be granted for only one of PSCI 212 and 210. Three credits.

**215 Comparative Politics of Latin America**

This course offers a comparative analysis of Latin American governments. It focuses on political institutions and governance in countries such as Argentina, Brazil, Chile, Costa Rica, Cuba, El Salvador, Guatemala, Mexico, Peru and Venezuela. It also examines political forces, interest groups and social movements in the region. Credit will be granted for only one of PSCI 215 and 390. Three credits.

**221 Canadian Politics I**

This course covers the origins and evolution of Canadian politics, the cultural and regional context, and the key political structures and institutions (the Constitution, the political executive, parliament, federalism and intergovernmental relations, and the courts) which constrain, shape and give impetus to Canadian politics, governance and decision-making. Credit will be granted for only one of PSCI 221 and 220. Three credits.

**222 Canadian Politics II**

This course will cover how citizens interact with the Canadian state, through political parties, elections, advocacy groups, and other forms of political participation, the role of the media, and the implications for the political process of key social divisions such as gender, language and race. Language politics, multicultural groups, the women's movement and aboriginal peoples will receive attention. The course concludes with a review of globalization and Canada's place in the world. Credit will be granted for only one of PSCI 222 and 220. Three credits.

**231 United States Politics**

This course introduces U.S. government with a focus on the historical development of American political institutions. It examines the U.S. federal system and constitutional development, as well as executive, legislative, and judicial powers with particular attention to the founding and its enduring legacy in American political culture. Credit will be granted for only one of PSCI 231 and 230. Three credits.

**240 Business and Government**

This course examines the historical roots and the current contours of the business-government relationship. While the focus is on Canada, conditions in other advanced capitalist states are also considered. Topics include the mechanisms of business power; state intervention in the modern economy; the micro-politics of business; and state policies affecting business interests. Six credits.

**247 Environmental Social Sciences I: Problems and Paradigms**

Cross-listed as SOCI 247; see SOCI 247. Three credits.

**248 Environmental Social Sciences II: Power & Change**

Cross-listed as SOCI 248; see SOCI 248. Three credits.

**250 World Politics**

Examines the nature of the international state system. The course explores the political, military, cultural, economic, and ideological factors affecting the behaviour of states and international organizations in world politics. Six credits.

**291 Violence, Conflict, and Politics**

An introduction to the comparative study of types of collective political violence: war, terrorism, ethnic or identity-based conflicts, coup d'état, revolution, civil war, and genocide. Specific case studies are examined along with the main theoretical approaches in the field. Three credits.

**292 Selected Topics**

This course introduces current topics and problems in political science. Course content may change yearly, depending on faculty availability. Students should consult the department chair for the current topic. Three credits.

**295 Religion and Politics**

An examination of the impact of religion on politics and politics on religion. Students will consider the relationship between religion and politics in the Middle East, Northern Ireland, India and Pakistan, Eastern Europe and North America. Case studies will demonstrate interactions between the state and Christianity, Islam, Hinduism, and Judaism, as well as the influence of religion on citizenship, education, the party system, and social issues. Cross-listed as RELS 295. Three credits.

**301 Liberalism and Its Critics**

A critical study of liberal political theory, its basic concepts and its limitations in a multi-cultural age. Theorists considered include: John Stuart Mill, John Rawls, Joseph Raz, Charles Taylor, Michael Sandel, Amartya Sen John Gray. Prerequisite: PSCI 200 recommended. Three credits.

**302 Marx and the Marxists**

A study of the socialist and/or communist critique of industrial capitalism, encompassing ethical, historical, economic, and revolutionary perspectives. The course examines the works of Karl Marx, and their adoption by revolutionaries and critics of liberalism. Prerequisite: PSCI 200 recommended. Three credits.

**303 Contemporary Political Arguments**

An analysis of the claims of contemporary cultural and moral arguments on politics in liberal-democratic societies. Topics include war, racism, feminism, nationalism, and liberal democracy. Prerequisite: PSCI 200 recommended. Three credits.

**311 The European Union**

This course examines European integration since World War II, with emphasis on the European Community (EC) and European Union (EU), their institutions and policy processes, and the consequences of European unity for the political process in European societies. Prerequisite: PSCI 210 or 211 recommended. Three credits.

**312 Art and Politics**

This course introduces students to what modern artists have to say about politics and what governments do and say about art. It provides some of the historical and theoretical tools needed to analyze the political role of art in our time. Students will examine literary works, painting, music, and architecture, and discuss specific policies on art. Cross-listed as ART 312. Three credits.

**313 West European Politics**

This course surveys governmental institutions and political processes in major Western European states like the United Kingdom, France, Germany, Italy, and Sweden. Among these cases we will compare systematically general historical patterns of social, economic, and religious conflict; structures of citizen representation in interest groups and political parties; electoral systems; constitutional relationships between executive, legislature, and judiciary; outlines of economic and foreign policies; and current problems of national identity. Credit will be granted for only one of PSCI 313 and PSCI 310. Three credits.

**314 Topics in European Politics**

This course examines themes and issues relevant to European politics and societies, ranging from political institutional arrangements, state-society relations, and the role of civil society and social capital to public policy, immigration, church-state relations, security, the EU Eastern enlargement, and the EU Neighborhood Policy. By examining different European countries, Europe as a whole and the European Union, students are encouraged to develop their own project to understand politics in that part of the world. Credit will be granted for only one of PSCI 314 and PSCI 310. Three credits.

**315 Democratization around the World**

This course investigates the problems facing countries from different parts of the world that have sought to move from non-democratic political systems to democracy.



Students will learn the social, cultural and economic conditions necessary for the process of democratization; analyze the institutional structures and constitutional designs most conducive to the transition from authoritarianism to democracy; and consider the consequences of democratization for development. Prerequisite: PSCI 210 or 212 recommended. Three credits.

### 321 Federalism

This course examines the theory and practice of federalism, with a focus on Canadian federalism. Topics include theories of federalism, comparative federal systems, inter-governmental relations, fiscal arrangements, federal-provincial diplomacy, and constitutional reform. Prerequisite: PSCI 220 or 221 and 222 or 240 recommended. Three credits.

### 322 Atlantic Canada

A course on modern government and politics in the four Atlantic provinces. Regional development and dependence are the themes within which students will explore federal-provincial relations, fiscal and administrative changes, development policies, political culture, and party systems. Prerequisite: PSCI 220 or 221 and 222 or 240 recommended. Three credits.

### 323 Parties and Elections

This course is concerned with parties and elections in Canada. Topics include party and electoral systems; intra-party politics and political personnel; party financing; representation and policy development; the campaign process; polling; and voting behaviour. Prerequisite: PSCI 220 or 221 and 222 recommended. Three credits.

### 324 Provincial Politics

A comparative study of the differing political cultures, institutions, behaviour, and public policies of the Canadian provinces. Students will seek explanations for the similarities and differences in the social and economic structures and political histories of the provinces. Prerequisite: PSCI 220 or 221 and 222 or 240 recommended. Three credits.

### 331 Comparative Nationalism

An analysis of the historical origins of nationalism and of its central concepts and justifications. Both Western and non-Western nationalism (focusing on four or five cases) will be examined in a comparative context. Evidence for the recent decline of the nation state will be explored. Prerequisite: PSCI 210 or 250 recommended. Credit will be granted for only one of PSCI 331 and PSCI 330. Three credits.

### 335 Human Rights and International Justice

Human rights and international justice are important components of politics. This course examines the theoretical and practical concerns shaping the study and promotion of human rights today. Using a variety of material and case studies, we examine the debate over whether rights are universal; the institutions and organizations enforcing human rights; and the role states play in protecting human rights. A strong component of this class are state responses to massive human rights violations. Prerequisite: PSCI 210 or 212 or 250 recommended. Credit will be granted for only one of PSCI 335 and PSCI 330. Three credits.

### 341 Canadian Public Administration

The focus of this course is Canadian public administration. Topics include organizational theory applied to the public sector; the origins and social function of bureaucratic institutions in Canada; cabinet organization; federal-provincial administrative relations; budgeting; and human resource management. Prerequisite: PSCI 220 or 221 and 222 or 240 recommended. Three credits.

### 342 Canadian Public Policy

An examination of contemporary public policy process and issues in Canada, including economic, social and other policy fields (e.g. environment, security and cultural). Emphasis will be on policy analysis and decision-making process. Prerequisite: PSCI 220 or 221 and 222 or 240 recommended. Three credits.

### 343 Law and Politics

This course explores the role of the courts in politics, particularly in Canada. Possible Topics include recent constitutional developments; the impact of the Charter of Rights; the judicialization of politics; philosophy of law; and strategic litigation. Prerequisite: PSCI 220 or 221 and 222 or 240 recommended. Three credits.

### 344 Citizenship and Identity

This course examines various aspects of Canadian citizenship and identity. Topics include citizenship theory, the evolution of the Canadian citizenship regime, arenas and processes of citizenization, majority and minority nationalisms, Aboriginal citizenship and multiculturalism. Prerequisite: PSCI 220 or 221 and 222 or 240 recommended. Three credits.

### 345 Women and Politics

An introduction to the study of women and politics, this course has three parts: feminist political thought and the women's movement; political participation and

representation; and public policy. Topics include feminist political thought in the Western political tradition; the evolution and politics of the women's movement; political parties and legislatures; women and work; women and the welfare state. Cross-listed as WMGS 345. Three credits.

### 346 The Politics of Resource Management

This course examines the power relations arising from attempts to exploit and manage natural resources. The commodities in question range from wildlife and fish to agriculture, forests, and minerals. Topics will include: preservation and conservation strategies; crown rights and systems; co-management regimes; environmental assessment techniques; commodity-marketing schemes and sustainable-development policies. Three credits.

### 347 Politics of the Environment

Environmental factors have increasingly become important components of political decisions. This class examines how environmental issues arise and the different ways they are framed, argued, and dealt with politically in that context. It will also explore the theoretical assumptions, questions and ethical frameworks that have been developed to guide and analyze environmental policy-making. Prerequisite: PSCI 247, 248. Three credits.

### 351 Canadian Foreign Policy

This course is designed as a general historical survey of Canadian external interests, external policy-making processes, and contemporary themes and issues. Prerequisite: PSCI 250 recommended. Three credits.

### 352 American Foreign Policy

This course examines the major foreign policy interests in the United States from the late 19th century to the present. Emphasis is placed on the ideologies and personalities of key decision-makers, the effect of the domestic socio-economic structure on policy decisions, and America's position in the international system. Prerequisite: PSCI 250 recommended. Three credits.

### 353 International Organizations

A study of the development and role of international organizations in world politics. Topics include the history and evolution of the United Nations, the effects of international law on state behaviour, and the extent to which international co-operation has been effective in resolving global problems. Prerequisite: PSCI 250 recommended. Three credits.

### 354 International Political Economy

This course examines the politics of international economic relations: international trade, the international monetary system, multinational corporations and international development. Cross-listed as DEVS 354. Prerequisite: PSCI 250 recommended. Three credits.

### 355 Global Issues

This course examines the state's supremacy and its capacity to manage such global issues as: transnational flows of goods, services, money, and ideas; the continuing problem of poverty in the developing world; the phenomenon of failed states in the post-Cold War period; global environmental issues; international concerns with human rights; weapons proliferation; terrorism and other forms of transnational crime; and the rise of trans-national social activist groups. Prerequisite: PSCI 250 recommended. Cross-listed as DEVS 355. Three credits.

### 356 War and Peace in the Middle East

The first part of this course will survey the major explanations of war and conflict among states and within states. The second part will apply these theories to conflict in the past half century in the Middle East, including the Arab-Israeli wars, the Yemen and Lebanon civil wars, the Iran-Iraq and Iraq-Kuwait wars, and the two Palestinian Intifadas. Finally the prospects for conflict resolution will be discussed. Prerequisite: PSCI 250 recommended. Three credits.

### 361 East European Politics

A comparative study of government and politics in Central and Eastern Europe during communist and post-communist times. Topics include parties and elections, political representation, opposition and dissent, political police and citizen surveillance, nationalism and ethnic conflict, the cult of personality and political succession. Prerequisite: PSCI 210(211, 212) recommended. Three credits.

### 362 Contemporary China

This course examines the domestic politics and foreign policy of a dynamic, rising power. From its birth in 1949, the People's Republic of China will be examined with emphasis on the changing roles of the Communist Party, the central bureaucracy, local governments, the military, the emerging business class and the overseas Chinese community. Prerequisite: PSCI 250 recommended. Three credits.

### 363 Politics in East Asia

An examination of politics in and among major regional actors in East Asia. Topics

include the historical context of politics in the region since the late 19th century, the political economy of East Asian industrialization, economic regionalism, and regional security. Prerequisite: PSCI 250 recommended. Three credits.

### 365 Russian Politics

This course explores the reasons for the collapse and the pursuit of political and economic alternatives to state socialism in the Russian Federation. Students are encouraged to develop their own project, examining the manner in which forms of ownership, constitutional developments, party formation, political personalities, and domestic and international pressure influence events in Russia's developing system. Credit will be granted for only one of PSCI 365 and PSCI 360. Three credits.

### 366 Topics in Russian Politics

This course explores the reasons for the collapse and the pursuit of political and economic alternatives to state socialism in the Russian Federation. Students are encouraged to develop their own project, examining the manner in which forms of ownership, constitutional developments, party formation, political personalities, and domestic and international pressure influence events in Russia's developing system. Prerequisite: PSCI 100. Credit will be granted for only one of PSCI 366 and PSCI 360. Three credits.

### 370 Third World/South-North Politics

A critical introduction to the politics of new nations. The course will focus on the impact of colonization; theories of development and dependency; the role of the state; the debt crisis and the IMF; north-south dialogue; and prospects for democracy in the Third World. Two case studies drawn from Asia, the Middle East, and Africa will be considered in detail. Cross-listed as DEVS 370. Six credits.

### 372 Iran and the Muslim World

A critical study of Iranian politics since the 1979 Revolution with particular focus on the role of Shiite Islam and Iranian culture in shaping the Iranian state, its internal dynamics, and its political influence in Lebanon and Iraq. This course will also consider Iranian relations with the West and Israel. Students will be introduced to the basic tenets of Islam. Prerequisite: PSCI 210(211, 212) recommended. Three credits.

### 380 African Politics and Society

A critical exploration of the history, politics and culture of sub-Saharan African states, in the context of Africa's place in global politics and the world economy. Topics will include: the colonial legacies, development strategy, state and national formation, economic autonomy, the impact of AIDS, the IMF and World Bank policies. Several case studies, drawn from Southern, Central and East Africa, will be the focus of intensive study each year. Prerequisite: 12 credits PSCI or permission of the instructor. Six credits.

### 391 Democratization and Development in Latin America

This course examines issues related to the challenges of development and democracy in the region. It provides historical background as well as discussions of theoretical approaches and specific public policies. Prerequisite: PSCI 212 or 215 recommended. Credit will be granted for only one of PSCI 391 and PSCI 390. Three credits.

### 392 Selected Topics in Political Science

This course introduces current topics and problems in political science. Course content may change yearly, depending on faculty availability. Students should consult the department chair for the current topic. Three credits.

### 395 Mexican Politics

This course looks at Mexico's distinct political tradition. It presents and discusses Mexico's main political actors (political parties, groups, social movements) and institutions (democratic, republican, federal, presidential), and examines the political challenges of democratization and liberalization. Prerequisite: PSCI 210 or 215 recommended. Three credits.

### 399 Research Methods and Statistics

Covers research methods and controversies in the field of political science today. Students learn to use statistics and computers in political science research, broadening their employment opportunities and introducing them to post-graduate research methods. Mathematical or computer skills not required. Three credits.

### 401 Political Theory I (Seminar)

This seminar will involve an advanced, in-depth analysis of selected concepts, problems, themes and controversies in Western classical, medieval and early modern political theory, and their current relevance to the discipline of political science and politics. Prerequisite: PSCI 200 recommended. Three credits.

### 402 Political Theory II (Seminar)

This seminar will critically analyze selected themes, issues and controversies in contemporary political theory, as well consider non-western political thought and

its relevance to Western political science and politics. Prerequisite: PSCI 200 recommended. Three credits.

### 421 Canadian Politics I (Seminar)

This seminar will consider theoretical perspectives on Canadian politics and the Canadian state, followed by an examination of Canadian political institutions and their setting. Prerequisite: PSCI 220 or 221 and 222 or 240 recommended. Three credits.

### 422 Canadian Politics II (Seminar)

This seminar deals with the analysis of power in Canada, through the study of selected policy fields and cases. Prerequisite: PSCI 220 or 221 and 222 or 240 recommended. Three credits.

### 442 Public Policy (Seminar)

This seminar explores the analysis and evaluation of public policy, with applications to policy issues in different political systems. Policy sectors may include the environment, fiscal policy, health, energy and natural resources. Cross-listed as IDS 405. Prerequisite: PSCI 342 recommended. Three credits.

### 451 International Politics (Seminar)

This seminar seeks to introduce the student to the advanced theories and great works of International Relations. Prerequisite: PSCI 250 or permission of instructor. Three credits.

### 452 Comparative Politics (Seminar)

This seminar discusses major issues in comparative politics and examines the advanced theories, methods, and concepts in the field. Prerequisite: PSCI 211 or 212 recommended. Three credits.

### 490 Thesis

Six credits.

### 499 Directed Study

See section 3.5. Six credits.

## 9.33 PSYCHOLOGY

E. Austen, Ph.D.

A. Bigelow, Ph.D.

K. Brebner, Ph.D.

T. Callaghan, Ph.D.

J. Edwards, Ph.D.

P. Hauf, Ph.D.

P. Henke, Ph.D.

E. Koch, Ph.D.

C. Lomore, Ph.D.

K. MacLean, Ph.D.

P. McCormick, Ph.D.

J. McKenna, Ph.D.

E. Pencer, Ph.D.

J. Sullivan, Ph.D.

M. Watt, Ph.D.

A. Weaver, Ph.D.

E. Wright, Ph.D.

### BA Major Program

Candidates must follow the degree regulations in chapter 4 and complete:

- PSYC 100;
- PSYC 291, 292; one of PSYC 210, 220, 225 or 230;
- 12 PSYC credits at the 300 or 400 level; and,
- 6 additional PSYC credits.

### BSc Major Program

Candidates must follow the degree regulations in chapter 7 and complete:

- PSYC 100;
- PSYC 291, 292; one of PSYC 210, 220, 225 or 230;
- 12 PSYC credits at the 300 or 400 level; and,
- 6 additional PSYC credits.

Students contemplating pursuing an advanced major or honours degree are strongly recommended to complete PSYC 291 and 292 in their second year.

### BA and B.Sc. Advanced Major Program

Candidates must follow the degree regulations in chapter 4 or 7 and complete:

- PSYC 100, 291, 292; at least 6 PSYC credits at the 400 level;
- PSYC 391, 491 (non-credit);
- a senior research paper; and,
- a total of 36 PSYC credits for BA; total of 42 credits for B.Sc.

### BA and B.Sc. Honours Program

Candidates must follow the degree regulations in chapter 4 or 7 and complete:

- PSYC 100; one of PSYC 210, 220, 225 or 230; PSYC 291, 292, 300, 394;
- 6 credits at the 400 level;
- PSYC 391, 491 (non-credit) and PSYC 490, the honours thesis; and
- a total of 60 PSYC credits.

### Psychology as a Subsidiary Subject

If psychology is selected as a subsidiary subject by an honours student in the BA program, 24 PSYC credits are required. These credits must include PSYC 300.

### B.Sc. Programs

Candidates must follow the degree regulations in chapter 7 and should note the following:

- PSYC courses are considered science courses only when they are taken as part of a major, advanced major or honours subject in the B.Sc. program;
- B.Sc. major program must include BIOL 111, 112; MATH 111, 112 and 12 additional credits in science courses (excluding PSYC)
- B.Sc. advanced major and honours degree programs must include BIOL 111, 112; CHEM 100; MATH 111, 112; and 6 additional credits in science courses (excluding PSYC);
- for the B.Sc. advanced major and honours programs, the 18 credits of electives approved by the department must consist of courses in PSYC or in other science subjects.

### B.Sc. with Joint Honours

Students enrolled in joint honours programs in which psychology is one of the two honours subjects must take PSYC 230.

Note: PSYC 100 is a prerequisite for all other courses except PSYC 291, 292 and 390.

### 100 Introduction to Psychology

A survey of the major topics of psychology and an introduction to the methodology of psychological research. Students are normally expected to be involved with ongoing research in the department by participating in experiments as subjects during the course of the academic year. Six credits.

### 210 Learning

A review of research on animal and human learning, and a consideration of the major issues that have shaped the study of learning. Topics include general principles of learning; classical conditioning; operant conditioning; radical behaviourism and its limitations; biological constraints on learning and social-cognitive learning. Recommended for students considering graduate work in clinical psychology. Prerequisite: PSYC 100. Lab component. Six credits.

### 220 Cognitive Psychology

This course deals with the basic cognitive processes: perception, attention, memory, language, thinking, and problem-solving. Prerequisite: PSYC 100. Lab component. Six credits.

### 225 Sensation and Perception

An examination of how the physical structure of sensory systems and the psychological interpretation of sensory information influence what is perceived. Major sensory systems will be covered. Theoretical and empirical work will be explored. Prerequisite: PSYC 100. Lab component. Six credits.

### 230 Brain and Behaviour

An introduction to behavioral neuroscience, including analysis of the anatomical, physiological, and biochemical mechanisms underlying behaviour. Recommended for students considering graduate work in clinical psychology. Prerequisite: PSYC 100. Lab component. Six credits.

### 240 Social Psychology

This course covers relationships among individuals and the effect of those relationships on behaviour and personality. Topics may include: aggression, altruism, conformity, attributions, and attitudes. Lab component. Prerequisite: PSYC 100. Six credits.

### 260 Developmental Psychology

The study of major environmental and maturational influences and their relationship to the growing person. Lab component. Cross-listed as NURS 260. Prerequisite: PSYC 100. Six credits.

### 291 Research Methods in Psychology

An introduction to the methods used to conduct psychological research. Topics include identifying research questions, theory development, experimental, correlational, and observational research designs, ethics, qualitative methods, measurement, sampling, survey development, and APA style research proposals. Credit will be granted for only one of PSYC 291 and SOCI 300. Lab component. Three credits.

### 292 Introductory Statistics for Psychological Research

An introduction to the statistical methods used to conduct psychological research. Topics include descriptive statistics, hypothesis testing, inferential statistics including z-test, t-tests, correlation and regression, and basic analysis of variance, and non-parametric procedures such as chi-square. Students will learn to use statistical

software. Lab component. Credit will be granted for only one of PSYC 292 and STAT 201, 231 and SOCI 300. Three credits.

### 300 History and Theory of Psychology

An examination of psychology's evolution, including the theoretical issues that underlie past and present debates about the discipline's subject matter and methodology. Approaches to historiography within the history of the sciences will also be discussed. Prerequisite: honours standing or permission of the chair. Six credits.

### 310 Health Psychology

This course provides an introduction to key issues in health psychology. In adopting a bio-psycho-social approach the course will examine the ways in which biological, psychological, and social factors interact to affect health. Restricted enrolment. Prerequisite: 12 credits PSYC; PSYC 210 is recommended. Six credits.

### 325 Biopsychology of Pain

Contrary to popular belief, a person's experience of pain is not necessarily linked to the presence of intense energy, or injury that is encountered by his or her body. This course discusses the variable link between pain and injury, as well as: the relationship between sensation and perception; the neuro-anatomical bases of pain; pain measurement and clinical pain syndromes; contrasting theories of pain perception; and, different approaches to pain control. Lectures, discussions and student presentations are included. Prerequisite: 12 credits of PSYC, PSYC 225 and 230 are recommended. Six credits.

### 341 The Self

This course explores contemporary perspectives and research on the self as it relates to social behaviour. The nature and function of the self and the ways in which the self is both influenced by and influences other people will be examined from a social-psychological perspective. Topics will include: knowledge of the self, self-motivation, self-esteem, self-regulation, self-prediction, the self in the context of relationships with others, and the influence of culture on views of the self. Prerequisite: 12 credits PSYC, including PSYC 240. Three credits.

### 345 Communication and Language

This course explores the social psychology of language and communication. Topics include basic concepts in language; language attitudes; language variation; bilingualism and multiculturalism; language and culture; discourse analysis; the relationship between language and social identity. This seminar will consist largely of student presentations. Restricted enrolment. Prerequisite: 12 credits PSYC. Six credits.

### 350 Psychology of Personality

The purpose of this course is to explore the diverse body of contemporary research and theory on personality psychology. The course may involve small group research projects and/or an APA-style research proposal. Prerequisite: 12 credits PSYC. Six credits.

### 360 Psychology of Gender

This lecture course explores the development of gender roles and gender differences in behaviour and abilities. Prerequisite: 12 credits PSYC. Cross-listed as WMGS 360. Six credits.

### 370 Abnormal Psychology

Examines current perspectives and research on the various classes of psychological abnormality. Courses in learning, brain and behaviour, and personality form a useful background for this course. Prerequisite: 12 credits PSYC. Six credits.

### 372 Cultural Psychology

The focus of this course is on how culture influences human behaviour and mind. The evolution of culture is considered as we dissect the debate surrounding claims that culture exists outside of the human species. Contemporary research and theory in human development and socialization, self-identity and cultural constructs of collectivism and individualism, acculturation and multi-culturalism, building relationships with others, conceptions of health and healing, and the impact of culture on the basic psychological processes will be covered. Prerequisites: 12 credits PSYC. Three credits. Subject to Senate approval.

### 375 Applied Psychology

Two topic areas are covered in this lecture course: industrial/organizational psychology, which will be covered in the first term, and sports psychology, which will be covered in the second term. In these fields, psychological principles, theory, and research are applied in work and sports settings. Prerequisite: 12 credits PSYC. Six credits. Not offered 2012-2013.

### 377 Drugs and Behaviour

This course explores the effect of psychoactive drugs on the brain. The course will cover basic pharmacological principles, the basis of cellular communication in the brain and how drugs that cross the blood brain barrier affect brain function, and in turn affect behaviour. Drugs that will be discussed include antidepressants,



antipsychotics and drugs of abuse such as alcohol, cocaine, heroin and marijuana. Prerequisite: 12 credits PSYC; PSYC 230 recommended. Six credits.

### 378 Human Sexuality

This course provides a broad introduction to research and theory in human sexuality. It includes examination of fundamental topics such as the nature of human sexuality and contemporary issues. Specific topics include historical perspective, theories of sexuality, sex research, sexual anatomy, sexual variation, sexual response, gender, sexual dysfunction and sex therapy. Prerequisites: 12 credits PSYC. Three credits. Not offered 2012-2013.

### 380 Forensic Psychology

This lecture and seminar course will focus on the relationship between psychology and law. Course content will include the history of the relationship between psychology and law; basic concepts in criminal justice and the study of crime; and the nature of offending from a psychological perspective. Restricted enrolment. Prerequisite: 12 credits PSYC, including PSYC 370 or permission of the department chair. Field trip component. Six credits. Not offered 2012-2013.

### 386 Selected Topics

The topic for 2012-2013 is Persuasion. This course will provide an introduction to social psychological research and theories in the area of persuasion, and their applications to everyday life and real-world problems. Specific topics to be covered include compliance techniques, attitudes and psychological consistency, persuasive language, non-verbal persuasion, advertising, propaganda, the ethics of persuasion, and resisting influence. Prerequisite: 12 credits PSYC. Three credits. Subject to approval.

### 387 Selected Topics in Psychology

Prerequisite: 12 credits PSYC. Six credits.

### 389 Selected Topics in Psychology

Prerequisite: 12 credits PSYC. Three credits.

### 391 Junior Seminar

The purpose of this non-credit course is to assist students in carrying out their thesis or senior paper research, choosing a career, and gaining admission to graduate or professional school. Attendance at colloquia and guest lectures relevant to psychology is mandatory. Prerequisite: junior standing in an advanced major or honours program in psychology.

### 394 Advanced Statistics for Psychological Research

An examination of intermediate and advanced statistical procedures for the psychology researcher, with emphasis on the use of statistical software packages. Lectures and lab sessions cover topics such as factorial analysis of variance; mixed designs; contrasts and comparisons; power; multiple regression and correlation; the MRC approach to factorial and mixed designs; and multivariate analysis. Prerequisite: Grade of 70 PSYC 291, 292. Credit will be granted for only one of PSYC 394, 390 or STAT 331. Three credits.

### 420 Advanced Topics in Cognition and Perception

An examination of topics in perception and cognition, including pattern recognition; attention; memory; and cognitive skills such as reading-skill acquisition. Laboratory component. Prerequisites: PSYC 220 or 225; advanced major or honours standing or permission of the chair. Six credits. Not offered 2012-2013.

### 430 Advanced Topics in Behavioral Neuroscience

This is a lecture, seminar, and laboratory course in which current topics in the field of behavioral neuroscience will be considered. Prerequisites: PSYC 230; advanced major or honours standing or permission of the chair. Lab component. Cross-listed as BIOL 450. Six credits. Not offered 2012-2013.

### 440 Advanced Social and Personality Psychology

An examination of topics in experimental social psychology, and consideration of the overlap between social psychology and studies in personality. Prerequisites: PSYC 240 or 350; advanced major or honours standing or permission of the chair. Lab component. Six credits.

### 460 Advanced Developmental Psychology

An examination of topics in developmental psychology from various theoretical perspectives and in terms of empirical evidence. Lab component. Prerequisites: PSYC 260; advanced major or honours standing or permission of the chair. Six credits.

### 490 Honours Thesis

Prerequisites: PSYC 394, completed or concurrent; honours standing in psychology. Six credits.

### 491 Senior Seminar

The purpose of this non-credit course is to assist students in carrying out thesis or senior paper research, choosing a career, and gaining admission to graduate or professional school. Students will present their thesis proposal orally in the fall

term and their completed research in the spring. Attendance at colloquia and guest lectures relevant to psychology is mandatory. Prerequisite: senior standing in an advanced major or honours program in psychology.

### 499 Directed Study I and II

These are reading or laboratory courses in which the student pursues an individual program of study under the direction of a faculty member. See section 3.5. Three credits each.

## 9.34 RELIGIOUS STUDIES

B. Appleby, Th.D.

L. Darwish, Ph.D.

R. Kennedy, Ph.D.

M.Y. MacDonald, D.Phil.

K. Penner, Ph.D.

A. Sandness, Ph.D.

Senior Research Professor

B. MacDonald, Ph.D.

Religious studies grew out of the field of theology in North America during the 1950s and 1960s in response to religious pluralism, ecumenism, and secularization. Students will be introduced to the religions of the world as well as to new religious groups. Recognizing its place in a university that has been shaped by the Catholic tradition, the department's course offerings are weighted towards the Christian tradition, paying close attention to Roman Catholicism. Although students are able to complete a major, advanced major or honours degree in religious studies, the courses are intended for a broad range of undergraduate students who wish to examine the religious answers to the major questions about human existence.

Students planning a major, advanced major, or honours degree in religious studies must consult the department chair. The department offers an honours degree with other departments as a subsidiary subject. See *chapter 4 for regulations*. Further information is available in the department handbook.

### 100 Introduction to Christianity

This course examines the place of Christianity among world religions, in particular its relationship to Judaism and Islam. Students will explore the Bible, the history of Christianity, Christian beliefs and practices. Topics will include: Catholicism, Protestantism, Orthodoxy, various forms of modern Christianity, and contemporary issues such as social justice, women's leadership, evangelicalism, apocalypticism, and spiritual renewal. Six credits.

### 110 An Introduction to World Religions

An introduction to the study of religion will be followed by a detailed consideration of the history, sacred literature, beliefs, practices, institutions, and contemporary situation of a number of religious traditions: Hinduism, Buddhism, Taoism and Confucianism, Shinto, Judaism, Christianity, and Islam. Six credits.

### 120 Religion, Spirituality, and Health

This is an introductory course which provides a thematic focus on spirituality, healing and well-being in selected Eastern and Western religious traditions. Each unit of study will include an introduction to the tradition; explore spiritual paths pursued by its practitioners; examine characteristics of illness, healing and well-being in the tradition; and explore one or more specific contemporary health concerns and healing practices which arise from within each religious tradition. Six credits.

### 200 Introduction to Religious Ethics

An introduction to religious ethics, this course examines Christian and other religious traditions and their approaches to social justice, ecology, pluralism, healthcare, and non-violence. Six credits.

### 210 The Bible and Film

This course examines the impact of the Bible on film, and introduces major biblical themes in films with, and films without, explicit religious content. Students will learn how biblical knowledge can enrich our understanding of modern culture and important human issues, such as creation, redemption, election, messiah-ship, charisma, and tradition. Prerequisite: RELS 100 or 110 or 120. Three credits.

### 215 Sociology of Religion

An introduction to the sociological study of religion. Topics include social factors that influence religion at individual and communal levels; religion as agent of social cohesion and social conflict; religion and power structures; the impact of pluralism and globalization on religion today. Prerequisite: RELS 100, 110, or 120. Three credits.

### 219 Celtic Paganism

Cross-listed as CELT 220; see CELT 220. Three credits.

### 225 Cults and New Religious Movements

A study of cults in the context of 20th-century North American society, beginning with defining cults in relation to sects and churches. Topics include neo-paganism; Hare Krishna; the theosophical tradition; the Unification Church; tragic endings to

cults such as the Branch Davidians and Heaven's Gate; why people join cults; and the religio-cultural significance of cults today. Prerequisite: RELS 100, 110, or 120. Three credits.

### **229 Celtic Christianity**

Cross-listed as CELT 230; see CELT 230. Three credits.

### **230 Philosophy of Religion**

Cross-listed as PHIL 240; see PHIL 240. Six credits.

### **235 Introduction to Hinduism and Buddhism**

This course will explore various paths to enlightenment as identified by members of classical Hindu and Buddhist traditions of India and Tibet. By means of this exploration, we will examine the philosophy, mythology and ritual traditions of Hinduism and Buddhism as well as classical Hindu deities and both historical and mythological figures of Theravada, Mahayana and Vajrayana Buddhism. Prerequisite: RELS 110 or permission of the instructor. Three credits. Not offered 2012-2013.

### **253 Introduction to the Hebrew Bible or Old Testament**

Designed for students who wish to begin a systematic study of the Hebrew Bible or Old Testament. Each biblical book will be placed in its historical, theological, and literary context, and will be augmented by archeological data, historical background, and contemporary scholarship. Prerequisite: RELS 100 or 110 or 120. Three credits.

### **255 Introduction to the New Testament**

This course is designed for students who wish to begin a systematic study of the New Testament. Each biblical book will be placed in its historical, theological, and literary context, and will be augmented by archeological data, historical background, and contemporary scholarship. Prerequisite: RELS 100 or 110 or 120. Three credits.

### **265 Introduction to the Gospels**

In this course, students will employ source, form, and redaction criticism to explore the four canonical gospels, and to examine ideas about the kingdom of God, the parables, and the quest for the historical Jesus. Prerequisite: RELS 100 or 110 or 120. Three credits. Not offered 2012-2013.

### **275 Introduction to Paul's Letters**

The course will consist of a literary and historical study of the letters ascribed to Paul in the New Testament. Attention will be given to recent research on Paul and Judaism; Paul and the Law; the Pauline churches. Prerequisite: RELS 100 or 110 or 120. Three credits. Not offered 2012-2013.

### **295 Religion and Politics**

Cross-listed as PSCI 295, see PSCI 295. Three credits

### **300 Health Care Ethics**

This course examines the role of ethical theory in the development of bio-medical ethics. Topics will be analyzed from the perspective of the health care professional as well as the patient, and will include end-of-life care, genetics, reproductive technologies, and medical research. Cross-listed as NURS 330. Six credits.

### **310 Religion in Modern India**

This course will explore continuity and change in modern Indian religion. After an introduction to contemporary Indian secular democracy, we will explore traditional Indian religion as a living phenomenon and review basic elements of traditional Hinduism. As well, examine the contribution of various change-makers to the evolution of Indian religious tradition and traditional Indian responses to the challenges created by Buddhism, Islam, British colonization, the partition of India, and Indian secular democracy itself. Through this examination, consideration of the influence of important modern Indian thinkers and modern Indian religious movements including India's experience of fundamentalism. Prerequisite: RELS 110 or permission of the instructor. Six credits.

### **315 Women in Hinduism and Buddhism**

This course examines diverse images of the feminine, both human and divine, in the philosophy, mythology and experience of women in Hinduism and the Buddhism of India and Tibet. It concentrates on the roles of Hindu and Buddhist women by means of historical and phenomenological approaches, and it promotes reflection on the interaction of gender, culture and religious identity in these societies as well as in our own. Prerequisite: RELS 110 or 100 or WMGS 100. Cross-listed as WMGS 397. Three credits.

### **323 Mary and the Identity of Women**

An examination of Mary in the New Testament and the development of ideas concerning her status as Mother of God. Students will explore depictions of Mary in art and literature, and examine the ways in these images have both shaped and reflected ideas about women. The continuing devotion to Mary in the modern world including ongoing interest in Marian shrines, apparitions, and movements will be

discussed. Cross-listed as WMGS 323. Three credits. Not offered 2012-2013.

### **325 Early Christian Women**

This course investigates women's participation in early Christian groups from the time of Jesus' ministry to the 6th century. Christian women's lives will be compared to those of women in Jewish and Greco-Roman societies. Students will analyze New Testament and other early Christian writings, read feminist scholarship, and examine such issues as women's leadership and violence against women. Cross-listed as WMGS 325. Three credits.

### **337 Mysticism**

This course offers a survey of mysticism as encountered in various world religions. Theories for the modern student of mysticism in its various forms will be discussed at length, including the ideas of such thinkers as William James, Carl Jung, Stephen Katz, and Walter Stace, among others. Following their introduction to these theoretical frameworks, students will read and discuss passages from an array of mystical texts from several of the world's religions. Religious traditions that will be represented include those of Ancient Greece, Judaism, Christianity, Islam, Hinduism, Buddhism and Taoism. Supplementing the study of these more familiar world religions will be some discussion of experiences not presented by any specific religious traditions. Prerequisite: RELS 110. Three credits. Not offered 2012-2013.

### **350 The History of Ancient Israel and Judah**

This course explores the history of ancient Israel and Judah from their origin to the fall of Jerusalem in 70 CE. Students will examine the geography, culture, and historical milieu that gave rise to the Old Testament and Hebrew Scriptures, and discuss the major persons and events in ancient Israel and Judah. Prerequisite: RELS 100 or 110 or 120. Six credits. Not offered 2012-2013.

### **353 Christian Art: The Life of Christ**

Cross-listed as ART 356; see ART 356. Three credits.

### **354 Christian Art: The Saints**

Cross-listed as ART 357; see ART 357. Three credits.

### **355 Current Issues in Biblical Archeology**

While many histories of Israel and Judah depend on biblical narratives, contemporary scholars question the use of the Bible as the principal source for understanding the social world of ancient Israel, and look instead to other Near Eastern texts and documents, and to archeology, anthropology, and sociology. This course will examine current debates on the place of biblical narratives, other ancient texts, and archeology in the study of ancient Israel and Judah. Three credits.

### **356 Religion and Ecology**

The course explores the two most prevalent ways that religion intersects with ecology: as a significant resource containing rich and varied myths, symbols and teachings about our earth home that promotes ecopraxis and, in an opposite manner as a conserving force that does not wish to challenge "global militaristic capitalism". The course looks at each of the major religious traditions and their approaches to these issues. Prerequisites: RELS 100 or 110 and 6 credits in RELS at the 200-level. Six credits. Not offered 2012-2013.

### **363 The First Christians**

Examines the development of Christianity from its beginnings in the 1st century to its acceptance as the official religion of the Roman Empire in the 4th century. Students will learn about early Christian beliefs and practices, and explore the challenges faced by the first Christians. Topics include community organization, persecution, martyrdom, Gnosticism, and women in the church. Prerequisite: RELS 100 or 110 or 120. Three credits. Not offered 2012-2013.

### **365 Spirituality in Medieval Christianity**

This course will focus on the spirituality of the formative years in the development of Christian thought, beginning with the legalization of Christianity in 313 CE and ending with the Reformation. Students will see how some of the most searching and intelligent men and women in both the Western and Eastern churches have wrestled with the question of how it is possible to know God. Three credits. Not offered 2012-2013.

### **370 Islam in the Modern World**

This course will explore the social and political dimensions of contemporary Islam. The current Islamic revival will be viewed within the context of renewal and reform in Islamic history. Students will analyze case studies (including Saudi Arabia, Iran, Egypt, and Pakistan) and examine such issues as the re-assertion of Islam in politics, Islamic fundamentalism, and the status of women in today's Islam. Six credits.

### **383 Reformation Christianity**

A history of Christianity during the Reformation period. The course pays close attention to the transformation during this time of new Christian groups into the

Anglican, Presbyterian, Mennonite, Baptists and Lutheran churches. Topics include Luther and Calvin, critical events, prominent Protestant women, and new creeds. Prerequisite: One of RELS 100, 110, or 120. Credit will be granted for only one of RELS 383 and RELS 460. Three credits. Not offered 2012-2013.

### 385 Modern Christianity

This course delves into the history of Christianity in North America from the colonial period to the 20th century. It covers revivalism, mission activity, the ecumenical movement, the charismatic movement, and the birth of new Christian churches. Other topics include the social gospel, the feminist movement within the churches, and the impact of Vatican II on North American Catholicism. Prerequisite: RELS 100 or 110 or 120. Credit will be granted for only one of RELS 385 and RELS 460. Three credits.

### 398 Selected Topics

Three or six credits.

### 401 Religious Approaches to Sexuality

Human sexuality is explored from two main perspectives: first, the teachings and practices of various religious traditions; and second, contemporary developments in sexual and reproductive health and rights. Among the issues to be considered are sexuality and gender roles, contraception and abortion, marriage and family. Cross-listed as WMGS 411. Prerequisite: RELS 100 or 110 or 120 or WMGS 100. Three credits.

### 402 Religious Approaches to Sexual Diversity

This course will focus on religious teachings and traditions on sexual diversity within the broader context of human rights associated with sexual orientation and sexual differences. In particular, we will look at the experiences of gay, lesbian, bisexual, intersexual and transgendered persons within religious communities. Cross-listed as WMGS 412. Prerequisite: RELS 110 or WMGS 100. Three credits.

### 426 The Jewish World of Jesus

This course examines the history and literature of the Jewish people from the period of the Maccabean Revolt in the second century BCE to the Bar Kokhba Revolt in the second century CE. The literary sources for the study of the Jewish world at the turn of the era include the Dead Sea Scrolls, the Bible, and the Mishnah. This course serves as an introduction to the religious and social environment of the historical Jesus. Prerequisite: RELS 100 or 110 or 120. Credit will be granted for only one RELS 426 and RELS 440. Three credits.

### 427 Jesus the Christ

Building upon RELS 426, this course begins with an examination of aspects of the life of the historical Jesus, including his teaching, ministry, and the events leading to his crucifixion. The four canonical Gospels and Letters of Paul will be analyzed as students probe the question of why Jesus came to be understood as the Messiah by the first Christians. Prerequisite: RELS 426 or permission of the instructor. Credit will be granted for only one RELS 427 and RELS 440. Three credits.

### 490 Honours Thesis

Each student works under the supervision of a chosen professor who guides the selection of a thesis topic, use of resources, methodological component, quality of analysis and execution, and literary calibre of the student's work. Required for all honours students. Six credits.

### 499 Directed Study

Under the direction of a faculty member, students may pursue an individual program of study in an area of religious studies not available in the course offerings. For eligibility, see section 3.5. Three or six credits.

» **SERVICE LEARNING** see 9.25 Interdisciplinary Studies

## 9.35 SOCIOLOGY

R. Bantjes, Ph.D.	P. Mallory, Ph.D.
P. Cormack, Ph.D.	S. Marmura, Ph.D.
L. Harling Stalker, Ph.D.	R. Olstead, Ph.D.
D. Lynes, Ph.D.	J. Phyne, Ph.D.
D. MacDonald, MA	N. Verberg, Ph.D.
D. MacInnes, Ph.D.	

The Department of Sociology offers honours, advanced major and major programs. Second year sociology courses (200 level) require SOCI 100 as a prerequisite. 300-level and 400-level courses require at least twelve credits in sociology below the 300-level as a prerequisite, or the permission of the instructor. SOCI 100 counts as one of these credits.

### BA Major in Sociology

Candidates must follow the degree requirements of the Faculty of Arts and complete 36 SOCI credits which include:

- SOCI 100;
- SOCI 202 and at least 3 more credits at the 200 level; and,
- at least 18 SOCI credits at the 3rd- or 4th-year level including at least 3 credits in theory or methods: SOCI 300, 301, 302, 303, 307.

### BA Advanced Major in Sociology

Candidates must follow the degree requirements of the Faculty of Arts and complete 36 SOCI credits which include:

- SOCI 100;
- SOCI 202 and at least 3 more credits at the 200 level;
- at least 6 SOCI credits at the 3rd year or 4th year level;
- SOCI 300 or 307; and at least 3 credits from: SOCI 301, 302, 303;
- a senior research paper.

### BA Honours in Sociology

Candidates must follow the degree requirements of the Faculty of Arts and complete 60 SOCI credits which include:

- SOCI 100;
- SOCI 202 and at least 3 more credits at the 200 level;
- at least 6 SOCI credits at the 3rd year level;
- SOCI 300 or 307 and at least 6 credits from SOCI 301, 302, 303,
- SOCI 400 (thesis), SOCI 491, plus at least 6 credits at the 4th year level.

### Honours with a Subsidiary Subject

If sociology is selected as a subsidiary subject by an honours student in the BA program, 24 SOCI credits are required, with at least 6 of those credits at the 300 level.

### 100 Introduction to Sociology

Sociology provides tools for understanding a wide range of human experience and action, from the search for identity, to struggles against exploitation, to the making of a new 'global' world order. This course introduces the basic concepts and methods of sociology; helps students make sense of the social world; and explores the extent and limits of our capacity to change the social world. SOCI 100 is a prerequisite for all other sociology courses. Six credits.

### 201 Traditions in Social Thought

This course is an introduction to the dominant traditions of social thought. It establishes how the sociological tradition explores questions about social life and social organization. More specifically the course explores the variety of perspectives that have shaped sociological discourse: positivism, marxism, structuralism, symbolic interactionism, functionalism, feminism and postmodernism. Three credits.

### 202 Research Principles and Practices

This course addresses how various philosophic assumptions shape the aims and practices of research in sociology. It provides students with empirical research design principles and an introduction to methods of collecting and recording data, assessing reliability and validity, and conducting data analysis. Different research strategies are introduced. The ethical implications of research will be discussed. Three credits.

Note: SOCI 202 is a prerequisite for entry into higher level methods courses (except SOCI 305 and NURS 310).

### 210 Sociology of Marriage and the Family

This course analyzes the institution of the family from a sociological perspective. Attention is given to macro and micro levels of analysis. Statistical profiles of family patterns are employed to illuminate change in family structure over the past century. Topics include marriage, fertility, parenting, family violence, divorce, and family policy. Cross-listed as WMGS 210. Six credits.

### 212 Social Dissent

Social dissent has been a persistent, perhaps necessary, feature of modern (capitalist, bureaucratic, technocratic, patriarchal) societies. Students will explore ways in which dissent has been voiced and alternatives have been envisioned in the 20th century, including new organizational forms and tactics of dissent, and new technologies and international networks. Students may use the course as a basis for advanced social scientific research. Three credits.

### 215 Race, Class, Gender, and Sex

This course discusses the interconnected realities of race, class, gender and sex from various sociological perspectives. Substantive topics will include the socially constructed nature of these concepts in places like media, and the experiences of



classism, sexism and racism in the workplace, schools, and everyday life. Cross-listed as WMGS 215. Six credits.

### **230 Sociology of Education**

This course provides students with a social interpretation of education in Canada, emphasizing contemporary structures. Students will investigate the relationship between educational opportunity and conditions of inequality arising from socio-economic status, the economy, family, and religion. Six credits.

### **241 Socialization**

This course examines traditional and contemporary theories of identity formation, and the influence of self-conception on the development of policy, research, and education. Emphasis is placed on boundary crossing (liminality) as it relates to the social construction of identity. Students will explore the liminal space between child and adult, able and disabled, the body and technology; and between races, sexualities, and genders. Three credits.

### **247 Environmental Social Science I: Problems and Paradigms**

This course introduces students to the major environmental challenges of the 21st century from a social science perspective. Modern societies that have sought to conquer natural limits have now conjured up unanticipated "environmental" consequences. Students will explore how human understandings of environmental "problems" as well as action towards environmental solutions are shaped by ways of thinking, social contexts and institutional power relations. Cross-listed as PSCI 247. Three credits.

### **248 Environmental Social Science II: Power and Change**

As a continuation of SOCI 247, this course addresses the same conceptual problems but focuses more on understanding the societal and political response to environmental issues. Students will critically examine both proposed ecological futures, as well as means of environmental problem solving and societal change: state policy, intergovernmental treaties, environmental movements, and market solutions. Cross-listed as PSCI 248. Prerequisite: SOCI 247 or PSCI 247. Three credits.

### **250 Deviance and Social Control**

This course introduces students to the processes of deviance and social control by critically examining the social category of deviance and its use in social institutions and daily social practices. Topics include mental illness, drug and alcohol use, alternative sexualities, social violence, business crime, the normalization of disability; and forms of social control such as the judicial system, law, medicine, education, and social interaction. Six credits.

### **290 Social Inequality**

Explores the distribution of social, political, and economic resources in Canadian society, and the unequal access to these resources based on social class, race, ethnicity, gender, age, and region. Using a central theme based upon the concepts of class and power, the course examines specific issues such as the socio-economic bases of social inequality, ascription, and the consequences of poverty in Canada. Six credits.

Note: Third year (300 level) and fourth year (400 level) courses require at least twelve credits in sociology below the third year level as a prerequisite, or the permission of the instructor. SOCI 100 counts as six of these credits.

### **300 Research Methods**

This course covers the many phases of the research enterprise, from designing studies, to analyzing data with an SPSS computer program, to writing up the final research. Students will test theories used in nursing and related disciplines, paying special attention to the transition from theoretical statement to testable hypothesis. Cross-listed as NURS 300. Prerequisite: SOCI 202. A 70 percent average is recommended for entry. Credit will be granted for only one of SOCI 300 or SOCI 305 or PSYC 291. Six credits and lab.

### **301 Classical Social Theory**

Explores the development and diversity of sociology's foundational perspectives through the study of selected original works by such authors as Karl Marx, Emile Durkheim and Max Weber. Three credits.

### **302 Topics in Contemporary Theory**

This seminar course on contemporary theory varies from year to year. While a survey approach to contemporary theory may be part of the course, it is probable that the professor will choose specific interests for in-depth analysis. Potential perspectives include feminist theory, anti-racist theory, postmodernism, and neo-Marxist theory. Three credits.

### **303 Early Modern Social Thought**

This course examines early modern ways of thinking about the social world. These

include theories of social contract, liberalism, political economy, positivistic science, evolution and progressive history. Students will discuss these intellectual influences in terms of how they either provided assumptions and authority for the emergence of the discipline of sociology in the 19th century or were questioned and challenged by sociologists. Three credits.

### **305 Applied Methods in Social Research**

An introduction to the research process, and to quantitative and qualitative research methods used in appraising nursing and health care literature. Topics include the language and culture of research; the context within which nursing research is conducted; research design, implementation, analysis, and interpretation. Restricted to students in nursing and nursing with advanced major. Cross-listed as NURS 310. Credit will be granted for only one of SOCI 305 or SOCI 300. Six credits.

### **307 Qualitative Research Methods**

The course introduces students to the qualitative research methods used by sociologists. The course introduces the philosophical, theoretical, and ethical aspects of qualitative research as well as qualitative approaches to data collection, data analysis, presentation of results, and methods of evaluating qualitative research. The various aspects of qualitative research are illustrated with classical and contemporary studies. Prerequisite: SOCI 202. A 70 percent average is recommended for entry. Three credits.

### **310 Gender**

The course will examine the origin and persistence of gender-based inequalities in our society and their impact on personal lives. Biological, psychological, economic, and cultural analyses of male-female social relations will be considered. Cross-listed as WMGS 310. Six credits.

### **311 Men and Masculinities**

A critical review of the 'science' of masculinity and recent theoretical developments on the social construction of men's lives and masculinities. Topics include male gender role socialization; the role social institutions play in shaping masculinities; masculinity politics, men's movements, and social change. Cross-listed as WMGS 311. Three credits.

### **312 Social Movements**

This course provides students with the tools for analyzing popular movements for social change. Students will survey the best examples of social movement analysis in the neo-Marxist, new social movement, social constructionist, and resource mobilization traditions. Movements covered may include: labour, environmental, student, peace, anti-racist, women's. Prerequisite: SOCI 212. Three credits.

### **320 The Black/African Diaspora**

This course critically examines structural and sociocultural factors that operate to produce and/or reproduce powerlessness among Black people in the Diaspora. Attention will also be given to the contributions of Blacks to society, Black resistance, self-determination, and self-reliance. The course will discuss globalization, racism, and transnationalism as factors in the contemporary Black experience. Six credits.

### **321 Sociology of Atlantic Canada**

Treats the Atlantic provinces as a distinctive region of Canada. The three areas of investigation are: the progress of various ethnic and religious groups who settled the region; the socio-economic development of the Maritimes and Newfoundland (from pioneer settlement through industrialization); and the strategies employed in the ongoing recovery from a century of regional disparity within Canada. Three credits.

### **322 The Antigonish Movement as Change and Development**

Explores both social change and economic development through the history, philosophy, and practice of the Antigonish Movement as experienced at home and abroad. This movement will be used to examine political systems, labour relations, class conflict, education, co-operative strategies, religion, and ethnicity in the context of social transformation. Cross-listed as DEVS 322. Three credits.

### **325 Mass Media**

This course explores the various forms of media and their function in society. Students will be expected to critique the use of media in communications and the social construction of popular culture as portrayed in mass media. Six credits.

### **330 Sociology of First Peoples**

Examines how the contemporary situation of First Peoples in Canada is related to historical interactions among Aboriginal and non-Aboriginal societies and indigenous cultural traditions. Attention will be paid to the intersection of race, class and gender and the relevance of existing theoretical perspectives in explaining the experiences of First Peoples. Six credits.

**340 Sociology of Health and Health Systems**

This course discusses racial/ethnic, gender, and class disparities in health and inequities in access to health services from various sociological perspectives. It also examines barriers in access to the health professions; the discourses on race which link racialized and ethno-specific groups to certain health problems such as SARS and AIDS, and the effects of the discourses on immigrant settlement and integration. The course will discuss health policy reforms to address health inequities. Six credits.

**350 Criminal Justice and Corrections**

This course examines the structures and theories of the criminal justice system in Canada, with contrasting references to the United States and other western countries. Elements of the system studied include policing, the court system, institutional and non-institutional correctional practices, the role of politicians, victims' rights organizations, and the general public. Regular class sessions will be supplemented when possible with guest lectures, attendance at court sessions and field trips. Prerequisite: SOCI 250. Six credits.

**352 Policing and Society**

An introduction to the social science literature on policing, this course covers both public and private policing. The course has four sections: the social and historical context of public policing in Canada and the UK; the structure and operation of policing in Canadian society; contemporary issues (police-community relations, aboriginals and policing, women in public policing); the emergence and development of regulatory and private security policing. Prerequisite: SOCI 250. Three credits.

**360 Social Policy**

The aim of this course is to explain social service systems in Canada and other industrial nations. The course will address historical and contemporary trends in federal and provincial social policies, and the effects of these programs (e.g., unemployment insurance, welfare) on the state, social institutions, and groups. Six credits.

**364 Food and Society**

This course emphasizes linkages between food production and consumption in the changing global political economy. The social organisation of food production and consumption will be assessed from the standpoint of comparative research on global food chains and recent insights surrounding the social construction of food risks and benefits. Case studies will change on an annual basis but will always involve some consideration of the interrelations between countries from the 'North' and the 'South'. Three credits.

**366 Coastal Communities**

This course introduces students to social research on coastal communities. Emphasis is given to the social transformation of common property fisheries, the rise of industrial aquaculture, demographic transitions in coastal communities and recent moves towards integrated coastal resource management. Comparative case materials from North Atlantic coastal communities in Atlantic Canada, Britain, Ireland, and the Nordic Countries will be used in this course. Three credits.

**370 Sociology of Work**

What is the meaning of work in pre-modern and capitalist societies? How is globalization influencing the experience of work, labour, and un/employment in Canada and internationally? The course introduces the theory and research on how labour markets, work organizations, industrial relations, and economic restructuring influence patterns of employment and the subjective experience of work, labour and un/employment. Six credits.

**373 Irish Society**

This course emphasizes the major factors that contributed to the making of modern Ireland. The topics to be covered include: the role of the Great Famine in altering both the social structure of Ireland and claims to Irish identity, the Irish diaspora and Irish emigrants to Atlantic Canada, social and political changes in the Republic of Ireland from independence to the 'Celtic Tiger' phenomenon and continuity and change in the conflict in Northern Ireland. Three credits.

**391 Junior Seminar**

This seminar will assist honours students in their third-year and their thesis planning and provide an environment in which to learn with senior students working on their thesis. Students will choose an advisor with whom they will develop a proposal, collect materials, and consider methodological and ethical issues relevant to their research. Students are expected to attend colloquia, guest lectures and public talks relevant to the discipline. Required for and restricted to honours students. Three credits.

**400 Honours Thesis Research**

A required course for all senior honours students. Six credits.

**417 Social Difference: Race, Ethnicity, Gender, Class, Sex, and Disability**

Explores current theories of social difference and the personal, social, economic, and political effects of these differences in Canadian, western, and international contexts. Topics include oppression, resistance, identity politics, and discourse theory. Starting with the question, "What differences do some differences make?" Students will examine how issues of difference become relations of dominance. Prerequisite: SOCI 215. Cross-listed as WMGS 417. Three credits.

**421 Ancestry, Society, and Personal Identity**

This course attempts to locate personal biography in the context of social history. Students' genealogies provide the starting point for explorations of family, social history, and personal identity. Students will apply sociological ideas to the historical periods that helped shape their personal and family histories. Three credits.

**424 Women and Work**

This course will focus on feminist analyses of women's paid and unpaid work in 20th-century Canada, though historical and cross-cultural perspectives will be considered. Topics include race, class, and ability; pay equity, affirmative action, sexual harassment; women in family enterprises; domestic labour, the division of labour in the home, and mother work. Prerequisite: SOCI 310 recommended. Cross-listed as WMGS 424. Three credits.

**426 Consumer Society**

An examination of the ways in which identity, relationships, and social policies are shaped by the drive to expand consumer credit, spending, and needs. Students will analyze the impact of the consumer ethic on gender roles, family life, sexuality and reproduction; work and leisure; developing nations and the environment; and will explore individual resistance to expanding consumer demands, cultural imperialism, and the globalization of consumer markets. Three credits.

**433 Advanced Problems in Environment and Society**

The course allows students to pursue issues raised in SOCI 247 and 248 in greater depth. It also exposes them to new developments in social theory. Each year will have a different thematic focus which could include: the ways in which social conceptions of "natural" and "unnatural" have changed over time; the social implications of new biotechnologies; the global environmental movement; or ideals of an ecological future. Prerequisites: SOCI 247, 248 or PSCI 247, 248. Three credits.

**435 Sociology of Surveillance and Social Control**

This course explores the significance of contemporary surveillance practices in information-based societies such as Canada. It begins with a focus on relevant historic developments concerning state formation, governance and social control. Students will then consider surveillance in relation to such issues as public attitudes to privacy, the 'security state', popular culture, the workplace, and consumerism. Three credits.

**436 Sociology of Fear, Identity and Politics**

This course will examine the significance of fear in shaping and organising everyday life. More than simply a psychological situation, it will develop an understanding of the complexity of fear and its relationship to social order and meaning. In particular, it will pay attention to the relationship between fear and identity formation as well as how we define and interact with others. It will also examine how fear is employed as a socio-political instrument. Three credits.

**451 Selected Topics in Social and Criminal Justice**

This course examines current theoretical and research issues in crime and social justice. Using qualitative, quantitative, and historical methodologies, students will explore topics such as gender, class, minorities, and criminal justice; police-community relations; carceral and non-carceral forms of punishment; criminal and regulatory legal procedures. Prerequisite: SOCI 350 or 352. Three credits.

**491 Senior Seminar**

A forum in which students gain scholarly experience by presenting and discussing their research; and taking part in colloquia, guest lectures, and public talks relevant to sociology. Required for honours students in their senior year. No credit.

**499 Directed Study**

Under the direction of a professor, students will work in an area of sociology not available in other course offerings. Students must consult with the faculty member by March 31 of the academic year in which they wish to take the course. See section 3.5. Three or six credits.

► **SPANISH** see 9.27 Modern Languages

### 9.36 STATISTICS

See section 9.26 for Mathematics, Statistics and Computer Science faculty listing and other departmental regulations.

Statistics is the science of data and is a useful tool for research in virtually all areas of human endeavor. It involves collecting, organizing, summarizing, and analyzing information in order to draw conclusions. The practice of statistics takes into account the notion of uncertainty (variability), which leads to error when estimating something, predicting something, or making a decision. It is important, therefore, to measure and, if possible, control error. The framework for quantifying uncertainty is probability, which is a mathematical theory used to describe and analyze chance events. For this reason, probability is the foundation of statistics. Statistics is used in many different fields: medical studies, economics, GNP growth, forecasting, stock market valuations, futures pricing, sociological studies, social policy, marketing research, opinion polls, political polls, industrial processes, environmental processes, and ecological processes and issues.

The Department of Mathematics, Statistics, and Computer Science offers degrees in both the Faculty of Science and the Faculty of Arts with Major and Advanced Major in Statistics. Students must meet the general requirements of both the faculty and the department. Course and program regulations for mathematics are listed in section 9.26.

All students who want to pursue a major or advanced major degree in statistics must take the following core courses: MATH 111, 112, 253, 267, 277, STAT 231 (201 if the degree is in the Faculty of Arts), 311, 331, 333, 491, and CSCI 161.

#### Major in Statistics

Additional courses in MATH, STAT, and CSCI to meet the degree requirements.

#### Advanced Major in Statistics

In addition to the core courses, STAT 334, and one other three credit STAT course at the 300 or 400 level are required, plus additional courses in MATH, STAT, and CSCI to meet the degree requirements. STAT 493 is optional. Advanced major students may count CSCI 161 and 162 only as approved or open electives in their program.

#### Typical Advanced Major Pattern

Year 1: MATH 111, 112, CSCI 161

Year 2: MATH 253, 267, 277, STAT 231 or 201

Year 3: STAT 311, 331, 333, 334; additional MATH, STAT, and CSCI courses

Year 4: STAT 491 (no credit); additional MATH, STAT, and CSCI courses

#### Honours in Statistics

There is no honours program currently offered in Statistics. Students wishing to pursue honours may do so in the Mathematics program, as outlined in section 9.26.

#### 201 Elementary Statistics

This course teaches statistics for students in business and arts. Topics include descriptive statistics; data collection, tabulation, and presentation; measures of central tendency and variability; binomial, normal, and chi-square distributions; estimation of parameters and tests of hypothesis; simple linear regression and correlation; introduction to a statistical computer package. Acceptable for credit in the Faculties of Arts and Business, and the Departments of Human Kinetics and Human Nutrition. Cross-listed as HKIN 301. Credit will be granted for only one of STAT 201 and STAT 224, 231, PSYC 292. Three credits.

#### 224 Probability and Statistics for Engineers

This course covers probability laws and the interpretation of numerical data, probability distributions and probability densities, functions of random variables, joint distributions, characteristic functions, inferences concerning mean and variance, tests of hypotheses, linear regression, and time series analysis. Engineering applications are emphasized and statistical computer packages are used extensively. Cross-listed as ENGR 224. Prerequisite: ENGR 122 or MATH 122. Credit will be granted for only one of STAT 224 and STAT 201, 231, PSYC 292. Three credits and two-hour problem session.

#### 231 Statistics for Students in the Sciences

Topics include descriptive statistics; data collection, tabulation, and presentation; measures of central tendency and variability; elementary probability; binomial, normal and chi-square distributions; parameter estimation and tests of hypotheses; linear regression and correlation. Students will learn about statistical significance and the communication of statistical evidence, and be introduced to a statistics computer package. Prerequisite: MATH 112 or 122. Credit will be granted for only one of STAT 231 and STAT 201, 224, PSYC 292. Three credits and a one-hour lab.

#### 311 Survey Sampling Design

Topics include simple random sampling, stratified sampling, systematic sampling, cluster sampling, multi-stage sampling, bootstrap samples. Prerequisite: STAT 201

or 224 or 231. Three credits and a one-hour lab.

#### 331 Statistical Methods

An investigation of statistics and experimental design in the context of biological and health science issues. Topics include analysis of variance, categorical data; distribution-free tests; linear and multiple regression. Students will learn to analyze data and interpret conclusions using a statistical software package. Recommended strongly for all major, advanced major, and honours students. Prerequisite: STAT 201 or 224 or 231. Cross-listed as BIOL 331. Credit will be granted for only one of STAT 331 and PSYC 390. Three credits and a one-hour lab.

#### 333 Introductory Probability Theory

Material will include: combinatorial analysis; axioms of probability; the law of total probability and Bayes' Theorem; discrete and continuous random variables; mathematical expectation and variance; joint distributions; introduction to moment-generating functions and their applications; limit theorems. Prerequisites: MATH 222 or 267 and MATH 223 or 253. Three credits.

#### 334 Mathematical Statistics

Topics include distribution theory; order statistics; point and interval estimation; MVUEs and the Rao-Blackwell theorem; consistency and sufficiency; the method of maximum likelihood; the method of moments; uniformly most powerful tests and the Neymann-Pearson fundamental lemma; likelihood ratio tests; least squares theory; statistical models and estimation in ANOVA. Prerequisite: STAT 333. Three credits. Not offered 2012-2013.

#### 435 Regression Analysis

Topics include straight-line regression, multiple regression, variable selection, residual analysis, multicollinearity, multiple and partial correlations, analysis of co-variance, logistic regression. Prerequisite: STAT 231 or 333. Three credits and a one-hour lab. Not offered 2012-2013.

#### 472 Topics in Statistics

This course will cover a selection of current statistical topics, such as sampling theory, time-series analysis, stochastic processes, design and analysis of experiments, bootstrap methods, and multivariate analysis. Prerequisite: STAT 231 or 333. See [www.stfx.ca/academic/mathcs/topics.html](http://www.stfx.ca/academic/mathcs/topics.html). Three credits.

#### 491 Senior Seminar

Cross-listed as CSCI 491 and MATH 491. The purpose of this non-credit course is to assist students in carrying out senior paper research, composition, and oral presentation. Students will present their research topic in the fall term and their completed research in the spring. Attendance at Departmental seminars is mandatory. No credit.

#### 493 Senior Thesis

Students will prepare and present a thesis based on original research conducted under the supervision of a faculty member. Three credits.

### 9.37 WOMEN'S AND GENDER STUDIES

R. Semple, Ph.D., Co-ordinator

#### Advising Faculty

E. Austen, Ph.D.  
C. Fawcett, Ph.D.  
N. Forestell, Ph.D.  
R. Hurst, Ph.D.  
J. Langdon, Ph.D.  
R. Olstead, Ph.D.  
A. Weaver, Ph.D.  
C. Weaving, Ph.D.

#### Department

Psychology  
Anthropology  
History  
Anthropology  
Development Studies  
Sociology  
Psychology  
Human Kinetics

The academic field of women's and gender studies provides an interdisciplinary, multicultural and feminist analysis of women's lives and history. It re-examines traditional ideas about women and their place in society and introduces theoretical frameworks for understanding questions about the roles, problems and accomplishments of women.

Through a combination of core courses and cross-listed courses offered by various university departments, students will critically examine topics such as women and politics; women in sport; the psychology of gender; women's history; the relationship of gender, class and race; women's literature; feminist theory; women and religion; women and medicine; women in management; and women and work. Service-learning projects may be incorporated into some women's studies courses.

See chapter 4 for information on the degree patterns, declarations of major, advanced major and honours, advancement and graduation requirements.



**Program Requirements**

Students may choose a BA with Advanced Major or Major or a BA with Joint Advanced Major or Major in women's and gender studies and a Faculty of Arts subject. See *chapter 4*. Arts and science students may fulfill requirements for a pair in women's studies and gender.

Students interested in women's and gender studies should consult with the co-ordinator as early as possible.

**Major in Women's and Gender Studies**

- a) 12 credits of WMGS 100, 205 and 303; and,
  - b) 24 credits WMGS including cross-listed courses.
- No more than 12 credits of cross-listed courses may be from a single department. None of the cross-listed courses may be in the student's declared minor subject.

**Joint Major in Women's and Gender Studies and a Faculty of Arts Discipline**

- a) 36 credits in WMGS (subject A) and 36 credits in another Faculty of Arts department (subject B). The program or department requirements for majors are applicable in both subjects. Students must complete the following:
  - i) 12 credits of WMGS 100, 205 and 303; and,
  - ii) 24 credits WMGS including cross-listed courses.

No more than 12 credits of cross-listed courses may be from a single department. None of the cross-listed courses may be in the student's declared subject B.
- b) Course Pattern: see section 4.1.3

**Advanced Major in Women's and Gender Studies**

- a) 18 credits of WMGS 100, 205, 303 and 400;
- b) 18 credits WMGS including cross-listed courses; and
- c) A senior paper. Guidelines for the senior paper are available from the co-ordinator or the course instructor for WMGS 400. The senior paper is written in conjunction with WMGS 400. No more than 12 credits of cross-listed courses may be from a single department. None of the cross-listed courses may be in the student's declared minor subject.

**Joint Advanced Major in Women's and Gender Studies and a Faculty of Arts Discipline**

- a) 36 credits in WMGS (subject A) and 36 credits in another Faculty of Arts department (subject B) or 36 credits in a Faculty of Arts department (subject A) and 36 credits in WMGS (subject B). The program and department requirements for advanced majors are applicable in both subjects. Students must complete the following:
  - i) 18 credits of WMGS 100, 205, 303 and 400;
  - ii) 18 credits WMGS including cross-listed courses.

No more than 12 credits of cross-listed courses may be from a single department. When WMGS is subject A, none of the cross-listed courses may be in the student's declared subject B. When WMGS is subject B, none of the cross-listed courses may be in the student's declared subject A.
- b) Course Pattern: see section 4.1.3
- c) A senior paper is required for all advanced major students. Guidelines for the senior paper are available from the women's and gender studies co-ordinator or the course instructor for WMGS 400. The senior paper will be written in WMGS 400 when women's and gender studies is subject A. When women's and gender studies is subject B, the senior paper will be written for the department or program of subject A.

**Subsidiary in Women's and Gender Studies**

- a) 24 credits in WMGS and 48-60 credits in the honours subject. Students are encouraged to include an additional six credits of WMGS cross-listed courses. No more than 6 credits of WMGS cross-listed courses may be from a single department. None of the cross-listed courses may be in the student's declared honours subject.
  - i) 12 credits of WMGS 100, 205 and 303
  - ii) 12 credits WMGS including cross-listed courses.

**Minor in Women's and Gender Studies**

- a) WMGS 100; and,
- b) 18 credits in women's and gender studies, which may include WMGS 205 and/or 303 in addition to cross-listed courses. No more than six credits of cross-listed courses may be from a single department. None of the cross-listed courses may be in the student's declared major subject.

**Pair**

- a) WMGS 100 (6 credits); and

- b) 6 credits in women's and gender studies, which may include WMGS 205 and/or 303 or cross-listed course(s).

**100 Introduction to Women's and Gender Studies**

This course will offer an overview of women's and gender studies from an interdisciplinary perspective. Students will study the development of feminist movements and will examine how concepts of race, class, sexuality and ability intersect in shaping colonialism, sexual and reproductive health, violence, family relations, paid and unpaid labour, political systems and poverty. The course will consider the relationship between the local and the global through discussion of such topics as popular culture, consumerism and environmentalism. Credit will be granted for only one of WMGS 100 and WMNS 200. Six credits.

**205 Gender, Sexuality and the Body**

This course focuses on the ways that all bodies are sexualized and gendered in Western philosophical thought, biomedicine and science. Topics include Western binaries (man/woman, form/matter, mind/body), the sociocultural processes through which bodies are sexualized, the biological/medical sciences and objectivity, a critique of the dual sex model from the perspective of transfeminist theory and bodily transformations and normalizations (including cosmetic surgery, monstrosity and disability, and the feminist debate about female genital surgeries). Three credits.

**210 Sociology of Marriage and the Family**

Cross-listed as SOCI 210; see SOCI 210. Six credits.

**215 Race, Class, Gender, and Sex**

Cross-listed as SOCI 215; see SOCI 215. Six credits.

**229 Women in English Literature**

Cross-listed as ENGL 229; see ENGL 229. Six credits. Not offered 2012-2013.

**232 Gender and Popular Culture**

This course will introduce a range of topics within the broad field of gender and popular culture as well as how to study and critique genres of popular culture. Beginning with the questions, "What is cultural studies?" and "Why is it important to study popular culture?" we move on to study a range of pop culture media, including music, television, film, video games and graphic novels/memoirs through this methodological and theoretical lens. Three credits. Subject to Senate approval.

**299 Selected Topics**

Three credits.

**303 Feminist Theory**

This course examines various directions feminists have taken in studying women's experiences and the construction of gender. Students will learn how these theoretical approaches have influenced feminist research and critical practice. The course will include early feminist thought as well as contemporary feminist theory. Prerequisite: WMGS 100 or permission of the instructor or co-ordinator. Three credits.

**310 Gender**

Cross-listed as SOCI 310; see SOCI 310. Six credits.

**311 Men and Masculinities**

Cross-listed as SOCI 311; see SOCI 311. Three credits.

**317 Canadian Women's and Gender History: From Colony to Nation**

Cross-listed as HIST 317; see HIST 317. Credit will be granted for only one of WMGS 317 and WMGS 308. Three credits.

**318 Canadian Women's and Gender History: Modernity**

Cross-listed as HIST 318; see HIST 318. Credit will be granted for only one of WMGS 318 and WMGS 308. Three credits.

**323 Mary and the Identity of Women**

Cross-listed as RELS 323; see RELS 323. Three credits.

**324 Anthropology of Gender**

Cross-listed as ANTH 324; see ANTH 324. Three credits.

**325 Early Christian Women**

Cross-listed as RELS 325; see RELS 325. Three credits.

**326 Issues in the Anthropology of Kinship**

Cross-listed as ANTH 326; see ANTH 326. Three credits.

**329 Studies in Women Writers: Feminisms and Their Literature**

Cross-listed as ENGL 329; see ENGL 329. Three credits. Not offered 2012-2013.

**330 Studies in Women Writers:****Genres, Cultures, and Contexts**

Cross-listed as ENGL 330; see ENGL 330. Three credits.

**332 Gender in Sport and Physical Activity**

Cross-listed as HKIN 332; see HKIN 332. Three credits.

**333 The Medieval Body**

Cross-listed as HIST 332; see HIST 332. Three credits.

**345 Women and Politics**

Cross-listed as PSCI 345; see PSCI 345. Three credits.

**360 Psychology of Gender**

Cross-listed as PSYC 360; see PSYC 360. Six credits.

**364 Social Justice and Health**

Cross-listed as NURS 364; see NURS 364. Three credits.

**365 Gender and Health**

Cross-listed as NURS 365; see NURS 365. Three credits.

**367 Current Challenges: Women in Management**

Cross-listed as BSAD 367; see BSAD 367. Three credits.

**370 European Women's History**

Cross-listed as HIST 360; see HIST 360. Three credits. Not offered 2012-2013.

**378 Human Sexuality**

Cross-listed as PSYC 378; see PSYC 378. Three credits.

**395 Selected Topics in****Women's and Gender Studies I**

Course content changes from year to year and may reflect faculty involvement in a specific area of research. Three credits.

**397 Women in Hinduism and Buddhism**

Cross-listed as RELS 315; see RELS 315. Three credits.

**398 Themes in the History of Sexuality**

Cross-listed as HIST 398; see HIST 398. Three credits.

**399 Selected Topics in****Women's and Gender Studies II**

The topic for 2012-2013 is Critical Race and Sexuality Studies in Canada. This course offers students a survey of contemporary critical race feminism and sexuality studies in Canada. Through a careful consideration of the values of multiculturalism and tolerance, students will explore in-depth the erasure of Canada's colonial legacies, the exclusion of people of colour and immigrants in Canada, and the social construction of the normative Canadian citizen as white and heterosexual. Prerequisite: WMGS 100. Three credits.

**400 Research Methods Seminar**

This course focuses on understanding inequality from an academic perspective, and seeks to do so through understanding grass-roots activism and movements for social change. This course is designed to combine feminist theories with feminist activist work, allowing students to learn from how feminism looks as gender challenges are enacted in homes, workplaces and political spaces. Students will examine research regarding social change through a feminist lens, and will gain field-based knowledge through placement with an organization, community group or service. Six credits.

**411 Religious Approached to Sexuality**

Cross-listed as RELS 401; see RELS 401. Three credits.

**412 Religious Approached to Sexual Diversity**

Cross-listed as RELS 402; see RELS 402. Three credits.

**417 Social Difference: Race, Ethnicity, Gender, Class, Sex, and Disability**

Cross-listed as SOCI 417; see SOCI 417. Three credits.

**424 Women and Work**

Cross-listed as SOCI 424; see SOCI 424. Three credits.

Other courses may be considered WMGS cross-listed courses after consultation with the women's and gender studies co-ordinator.

**UNIVERSITY PERSONNEL**

As of February 15, 2012

**University Officers**

Sean E. Riley, D.Ph.	President
Mary B. McGillivray, Ph.D.	Academic Vice-President & Provost
H. Ramsay Duff, BAH	Vice-President, Finance & Operations
Tim Lang, MA	Vice-President, Advancement
Keith Publicover, BA Rec	Vice-President, Recruitment & Student Experience
Keith De'Bell, Ph.D.	Associate Vice-President (Research)
Richard Nemesvari, Ph.D.	Dean of Arts
Leo Gallant, MBA, CFP, FCA(ICANS)	Dean of Business
Jeff Orr, Ph.D.	Dean of Education
Robert van den Hoogen, Ph.D.	Dean of Science
Lynne Murphy, MLIS	University Librarian
Fred Rosmanitz, B.A.Sc.Eng.	Registrar
Rev. Daniel MacLennan, M.Div.	Chaplain
John Gaventia, D.Ph.	Director, Coady International Institute & Vice President International Development
Corinna Fitzgerald, M.Ed.	Director, Student Life
Justin Fox, MA, MLIS	Director, Admissions & Recruitment
Angela Marshall, M.Ed.	Director, Health and Counselling

**University Faculty****Professors**

Amoako-Tuffour, J., Ph.D.(Alberta)	Economics
Anderson, A., Ph.D.(Queen's)	Earth Sciences
Apaloo, J., Ph.D.(Montana)	Mathematics, Statistics & Computer Science
Aquino, M.A.S., Ph.D.(Carleton)	Chemistry
Arpin, M., Ph.D.(Laval)	Modern Languages
Baldner, S., Ph.D.(Toronto)	Philosophy
Bantjes, R., Ph.D.(Lancaster, UK)	Sociology
Beltrami, H., Ph.D.(UQAM)	Earth Sciences
Bernard, I., Ph.D.(Pennsylvania)	Education
Bickerton, J., Ph.D.(Carleton)	Political Science
Bigelow, A., Ph.D.(Simon Fraser)	Psychology
Bilek, L., Ph.D.(Prague)	Human Kinetics
Callaghan, T., Ph.D.(Brown)	Psychology
Clancy, P., Ph.D.(Queen's)	Political Science
De'Bell, K., Ph.D.(London, UK)	Mathematics, Statistics & Computer Science
DeMont, M.E., Ph.D.(UBC)	Biology
Diochon, M.C., Ph.D.(Durham)	Business Administration
Dossa, S.A., Ph.D.(Toronto)	Political Science
Edwards, J.R., Ph.D.(McGill)	Psychology
El-Sheikh, S., Ph.D.(Queen's)	Economics
English, L., Ed.D.(Columbia)	Adult Education
Gallant, L., MBA(Queen's) CFP, FCA(ICANS)	Business Administration
Gallant, M., M.Sc.P.E.(Dalhousie)	Human Kinetics
Garbary, D., Ph.D.(Liverpool)	Biology
Genge, A., Ph.D.(State U. NY)	Music
Gerriets, M., Ph.D.(Toronto)	Economics
Gillis, A., Ph.D.(Texas)RN	Nursing
Grenier, Y., Ph.D.(Laval)	Political Science
Henke, P.G., Ph.D.(Georgia)	Psychology
Holloway, S., Ph.D.(Ohio State)	Political Science
Kellman, L., Ph.D.(UQAM)	Earth Sciences
Klapstein, D., Ph.D.(Victoria)	Chemistry
Kocay, V., Ph.D.(Toronto)	Modern Languages
Langille, E.M., D. ès L.(Sorbonne)	Modern Languages
Leaist, D.G., Ph.D.(Yale)	Chemistry
MacCaul, W., Ph.D.(McGill)	Mathematics, Statistics & Computer Science
MacDonald, M.Y., D.Phil.(Oxford)	Religious Studies
Madden, R.F., MBA(Queen's), FCA(ICANS)	Business Administration
Mahaffey, T., Ph.D.(Queen's)	Business Administration
Marangoni, D.G., Ph.D.(Dalhousie)	Chemistry
Marquis, P.A., Ph.D.(Queen's)	English
Marshall, W.S., Ph.D.(UBC)	Biology
McGillivray, M.B., Ph.D.(Queen's)	English
Melchin, M.J., Ph.D.(UWO)	Earth Sciences
Mensch, J. R., Ph.D.(Toronto)	Philosophy
Moynagh, M.A., Ph.D.(Texas-Austin)	English
Murphy, J.B., Ph.D.(McGill)	Earth Sciences
Naczka, M., Ph.D.(Technical U. Gdansk)	Human Nutrition
Nemesvari, R.A., Ph.D.(Queen's)	English
O'Mahoney, T., M.Mus.(Miami)	Music
Orr, J., Ph.D.(Alberta)	Education
Phyne, J., Ph.D.(McMaster)	Sociology

Poole, P., Ph.D.(Boston)	Physics	Oxner, M., Ph.D.(Alberta), CFA(AIMR)	Business Administration
Quinn, W.R., Ph.D.(Queen's)P.Eng.	Engineering	Palanisamy, R., Ph.D.(IIT, New Delhi)	Information Systems
Rasmussen, R., Ph.D.(Saskatchewan)	Human Kinetics	Pencer, E.L., Ph.D.(Waterloo)	Psychology
Smith, D., Ph.D.(Manitoba)	English	Risk, D., Ph.D.(Dalhousie)	Earth Sciences
Smith, G., M.Mus.(Eastman)	Music	Roy, C., Ph.D.(OISE)	Adult Education
Smith-Palmer, T., Ph.D.(Auckland)	Chemistry	Rushton, C., Ph.D.(Bristol)	English
Stanley-Blackwell, L., Ph.D.(Queen's)	History	Sandness, A., Ph.D.(Sorbonne)	Religious Studies
Steinitz, M.O., Ph.D.(Northwestern)	Physics	Scrosati, R., Ph.D.(UBC)	Biology
Sweet, W., Ph.D.(Ottawa), DEA(Sorbonne), D.Ph.(Saint Paul)	Philosophy	Semple, R., Ph.D.(King's College, UK)	History
van Bommel, M., Ph.D.(Waterloo)	Mathematics, Statistics & Computer Science	Stan, L., Ph.D.(Toronto)	Religious Studies
van den Hoogen, R., Ph.D.(Dalhousie)	Mathematics, Statistics & Computer Science	Taylor, B., Ph.D.(Calgary)	Biology
Wang, P., Ph.D.(Regina)	Mathematics, Statistics & Computer Science	Taylor, T., Ph.D.(Dalhousie)	Mathematics, Statistics & Computer Science
Watt, M., Ph.D.(Dalhousie)	Psychology	Thompson, A., Ph.D.(Saskatchewan)	Human Kinetics
Wilputte, E., Ph.D.(Toronto)	English	Tkacz, G., Ph.D.(McGill)	Economics
Wright, E., Ph.D.(Alberta)	Psychology	Tompkins, J., Ed.D.(OISE)	Education
		Tynan, P., MM(U. North Texas)	Music
<b>Associate Professors</b>		van Zyl, B., Ph.D.(Queen's)	Physics
Adams, C., Ph.D.(Toronto)	Physics	Verberg, N.J., Ph.D.(Waterloo)	Sociology
Alex, M., M.Sc.N.(Dalhousie)RN	Nursing	Vincent, S., Ph.D.(Toronto)	Anthropology
Appleby, B., Th.D.(Toronto)	Religious Studies	Vossen, D., Ph.D.(UWO)	Human Kinetics
Black, P.A., Ph.D.(Simon Fraser)	English	Wadsworth, L., Ph.D.(Saskatchewan)	Human Nutrition
Boucher, J.L., Ph.D.(Université de Montréal)	Human Kinetics	Weaving, C., Ph.D.(UOW)	Human Kinetics
Boyle, T., Ph.D.(Carleton)	Information Systems	White, R., Ph.D.(OISE)	Education
Brebner, K., Ph.D.(Carleton)	Psychology	Williams, P.J., Ph.D.(Memorial)	Biology
Brown, D., Ph.D.(Melbourne)	Political Science	Yang, L.T., Ph.D.(Victoria)	Mathematics, Statistics & Computer Science
Brunkhorst, K., MM(University of North Texas)	Music	Zecker, R., Ph.D.(Pennsylvania)	History
Byrne, C., Ph.D.(Toronto)	Philosophy	Zhou, P., Ph.D.(Witwatersrand)	Mathematics, Statistics & Computer Science
Cameron, J. D., Ph.D.(Queen's)	History		
Carter, G.G., M.Mus.(Eastman)	Music	<b>Assistant Professors</b>	
Cormack, P., Ph.D.(York)	Sociology	Abolghasem, G.H., Ph.D.(Dalhousie)	Information Systems
Cormier, J., Ph.D.(McGill)	Chemistry	Al-Maini, D., Ph.D. (Calgary)	Philosophy
Dodaro, S., Ph.D.(Toronto)	Economics	Anthony, D., Ph.D.(Liverpool)	Business Administration
Fabijancic, U., Doc. Ille cycle (Montpellier III)	Modern Languages	Austen, E., Ph.D.(UBC)	Psychology
Fawcett, C., Ph.D.(McGill)	Anthropology	Beye, A., Ph.D.(UWO)	Biology
Finbow, S., Ph.D.(Victoria)	Mathematics, Statistics & Computer Science	Billington, R., M.Mus.(W. Michigan)	Music
Foran, A., Ph.D.(Alberta)	Education	Bishop, C., Ph.D.(Simon Fraser)	Biology
Forestell, N.M., Ph.D.(OISE)	History	Braid, J., Ph.D.(Dalhousie)	Earth Sciences
Frazer, C., Ph.D.(Brown University)	History	Casey, A., Ph.D.(Calgary)	Human Kinetics
Galea, C., Ph.D.(Lancaster, UK)	Business Administration	Cho, Y., Ph.D.(Queen's)	Political Science
Galway, M., Ph.D.(Australian NU)	Biology	Coady, M., Ph.D.(Nottingham, UK)	Adult Education
Gillis, D., Ph.D.(Nottingham)	Human Nutrition	Collins, K., Ph.D.(Ottawa)	Business Administration
Gondra, I., Ph.D.(Oklahoma State)	Mathematics, Statistics & Computer Science	Comeau, F., Ph.D.(Dalhousie)P.Eng.	Engineering
Graham, L., Ph.D.(Calgary)	Biology	Cook, J., Ph.D.(Toronto)	Philosophy
Gregory, S., Ph.D.(University of London)	Art	Cormier, J., MN(Dalhousie)RN	Nursing
Groarke, L., Ph.D.(Waterloo)	Philosophy	Curry, A., B.Ed.(Carleton)	Education
Hansen-Ketchum, P., Ph.D.(Alberta)	Nursing	D'Arcy, M., Ph.D.(Cornell)	English
Hauf, P., Ph.D.(Frankfurt)	Psychology	Darwish, L., Ph.D.(Concordia)	Religious Studies
Hawley, M.P., Ph.D.(Alberta)	Nursing	Delgado, I., MFA(Instituto Allende)	Art
Jensen, E., MN(Dalhousie)RN	Nursing	Dockrey, P., Ph.D.(Cambridge, UK)	Political Science
Kalman, S., Ph.D.(McMaster)	History	Dolorey, R., MBA(Moncton)	Business Administration
Kennedy, R., Ph.D.(Notre Dame)	Religious Studies	Derksen, D., Ph.D.(Alberta)	Chemistry
Khoury, J., Ph.D.(Carleton)	English	Durepos, G., Ph.D.(Saint Mary's)	Business Administration
Koch, E., Ph.D.(Florida)	Psychology	Foroughi, B., M.Sc.(Guelph)	Adult Education
Lalande, G., Ph.D.(McGill)	History	Foshay, N., MBA(UBC)	Information Systems
LeBlanc, R., Ph.D.(Laval)	Modern Languages	Fuller, M., Ph.D.(York)	Business Administration
Lin, M., Ph.D.(Linkoping)	Mathematics, Statistics & Computer Science	Graham, H., MN(Dalhousie)RN	Nursing
Lynes, D.A., Ph.D.(York)	Sociology	Graham, D., Ph.D.(Nottingham)	Education
MacAulay, K., Ph.D.(Queen's)	Business Administration	Haller, M., Ph.D.(Pittsburgh)	Anthropology
MacDonald, C., MN(Dalhousie)RN	Nursing	Harling-Stalker, L., Ph.D.(Carleton)	Sociology
MacDonald, L., Ph.D.(Alberta)	Education	Hurst, R., Ph.D.(Carleton)	Anthropology
MacDougall, D., Ph.D.(Calgary)RN	Nursing	Jewers, H., MN(Dalhousie)RN	Nursing
MacIsaac, A., M.Sc.N.(McGill)RN	Nursing	Johnson, C., M.Sc.(MSVU)	Human Nutrition
Mackenzie, S., Ph.D.(Saskatchewan)	Human Kinetics	Kane, D., Ph.D.(East Carolina)	Human Kinetics
MacLean, B.J., Ph.D.(Memorial)	Chemistry	Karunakaran, V., Ph.D.(Strathclyde)	Biology
MacLean, K., Ph.D.(Simon Fraser)	Psychology	Kearns, L., Ph.D.(Toronto)	Education
Marzi, H., Ph.D.(U-Wales)	Information Systems	Lange, E., Ph.D.(Alberta)	Adult Education
Marzlin, K., Ph.D.(Konstanz, Germany)	Physics	LeBris, K., Ph.D.(École Polytechnique de Montréal)	Physics
McCormick, P., Ph.D.(Waterloo)	Psychology	Leo, T.W., Ph.D.(Toronto)	Economics
McGibbon, E., Ph.D.(Toronto)RN	Nursing	Linkletter, M., Ph.D.(Harvard)	Celtic Studies
McInnis, P., Ph.D.(Queen's)	History	Litz, S.A., Ph.D.(Konstanz, Germany)	Business Administration
McKenna, J., Ph.D.(McGill)	Psychology	Lomore, C., Ph.D.(Waterloo)	Psychology
McMillan, L.J., Ph.D.(UBC)	Anthropology	Long, B., Ph.D.(Saint Mary's)	Business Administration
McPherson, C., Ph.D.(McMaster)RN	Nursing	Lukeman, R., Ph.D.(British Columbia)	Mathematics, Statistics & Computer Science
Meyer, M., Ph.D.(McGill)	Education	Lunney Borden, L.A., Ph.D.(UNB)	Education
Murray-Orr, A., Ph.D.(Alberta)	Education	MacDonald, B., M.Sc.(Boston)RN	Nursing
Mwebi, B., Ph.D.(Alberta)	Education	MacDonald, J., MN(Dalhousie)RN	Nursing
Ogwejiofor, E., Ph.D.(Saskatchewan)P.Eng.	Engineering	MacLellan, M., MN(Dalhousie)RN	Nursing
Orlova, G., Ph.D.(Boston)	Chemistry	MacLellan-Peters, J., B.Sc.N.(Dalhousie)RN	Nursing



MacLeod, K., M.Sc.(Brock)	Education	Vossen, J., M.Sc.(UWO)	Human Kinetics
Mallory, P., Ph.D.(York)	Sociology	Wolf, R., M.Ed.(Acadia)	Education
Maltby, N., Ph.D.(Strathclyde)	Business Administration	Young, R., BD Vis.Com.(NSCAD), M.Ad.Ed.(StFX)	Art
Marmura, S., Ph.D.(Queen's)	Sociology		
Mazier, P., Ph.D.(UBC)	Human Nutrition	<b>Adjunct Professors</b>	
Montenegro, A., Ph.D.(Florida State)	Earth Sciences	Barr, D.E., Ph.D.(Guelph)	Human Nutrition
Morgan, D., Ph.D.(Chicago)	Chemistry	Graham-Pole, J., DM(London)	Adult Education
Morrison, B., MBA(Dalhousie)	Business Administration	Holmes, C., Ph.D.(Dalhousie)	Anthropology
Moseley, J., M.Ad.Ed.(StFX)RN	Nursing	Lander, D., Ph.D.(Nottingham)	Adult Education
Mukerji, B., Ph.D.(Carleton)	Business Administration	Mathie, A., Ph.D.(Cornell)	Development Studies
Munroe, E., Ph.D.(Calgary)	Education	Menzies, A., Ph.D.(Pittsburgh)	Anthropology
Newton, M. S., Ph.D.(Edinburgh)	Celtic Studies	Merrifield, J., D.Ph.(Oxford)	Adult Education
Nilges, M., Ph.D.(Illinois)	English	Norris, J.J., Ph.D.(Alberta)	Education
Olstead, R., Ph.D.(York)	Sociology	Quigley, A., Ed.D.(North Illinois)	Adult Education
Penner, K., Ph.D.(McMaster)	Religious Studies	Tarasov, L., Ph.D.(Toronto)	Earth Sciences
Potts, J., Ph.D.(John Hopkins)	English		
Robinson, D.B., Ph.D.(Alberta)	Education	<b>Distinguished University Fellow</b>	
Rosborough, J., Ph.D.(UWO)	Economics	Stewart, J.B., Ph.D.(Columbia)	Political Science
Schaler, C., Ph.D.(Brandeis)	Political Science		
Sullivan, J., Ph.D.(Waterloo)	Psychology	<b>Retired Faculty</b>	
Tokarz, W., Ph.D.(Alberta)	Modern Languages	Aalto, S., Ph.D.(Oregon State)	Mathematics, Statistics & Computer Science
Trembinski, D., Ph.D.(Toronto)	History	Aboud, Sr. H.T., Ph.D.(Cornell)	Human Nutrition
Vishwakarma, V.K., Ph.D.(U of New Orleans)	Business Administration	Asadulla, S., Ph.D.(Florida)	Math, Computing & Info. Sys.
Wang, X., Ph.D.(Waterloo)	Mathematics, Statistics & Computer Science	Balawyder, A., Ph.D.(McGill)	History
Weaver, A., Ph.D.(UNB)	Psychology	Beck, J.F., Ph.D.(UBC)	Chemistry
Whitty-Rogers, J., MN(Dalhousie)RN	Nursing	Beckwith, C., Artist in Residence	Music
Wyeth, R., Ph.D.(Washington)	Biology	Berridge, J., Ph.D.(Basel)	Religious Studies
Young, D.C., Ph.D.(Western)	Education	Bourbeau-Walker, M., Ph.D.(UBC)	Modern Languages
		Brooks, G.P., Ph.D.(Queen's, Belfast)	Psychology
		Buckland-Nicks, J., Ph.D.(Alberta)	Biology
		Burke, Sr. B., MA(Columbia TC)	Music
		Calliste, A., Ph.D.(Toronto)	Sociology and Anthropology
		Campbell, Sr. M.E., CND, M.Ed.	Principal, Mount Saint Bernard
		Carty, E., M.Litt.(Glasgow)	Philosophy
		Chiasson, L.P., Ph.D.(Toronto)	Biology
		Currie, S., Ph.D.(Alabama)	English
		den Heyer, K.C., Ph.D.(Manitoba)	Psychology
		Duncan, C.M., Ph.D.(UWO)	Business Administration
		Fiaz, M., Ph.D.(Toronto)	Sociology and Anthropology
		Gallant, C.D., Ph.D.(Illinois)	Mathematics, Statistics & Computer Science
		Gillen, M., Ed.D.(Toronto)	Adult Education
		Gillis, H.A., Ph.D.(Notre Dame)	Chemistry / Academic Vice-President 1995-99
		Gillis, M.L., M.Sc.(Boston)RN	Nursing
		Grant, C., Ph.D.(Purdue)	Economics
		Grant, J., Ed.D.(Toronto)	Education
		Grant, Sr. J., M.A.(Notre Dame)	Art
		Grew, E., MNS(Harvard)	Nursing
		Harrison, J.F., Ph.D.(Durham)	Political Science
		Hayes, Z.L., Ph.D.(Waterloo)	Psychology
		Hogan, M.P., Ph.D.(Toronto)	History
		Hunter, D., Ph.D.(King's, London)	Physics
		Jackson, W., Ph.D.(Washington)	Sociology and Anthropology
		Jan, N., Ph.D.(Cambridge)	Physics
		Johnson, R.W., Ph.D.(Manitoba)	Psychology / Academic Vice-President & Provost 1999-2005
			Political Science
		Kontak, W., MA(Oxford)	Education
		Kuzsman, F.J., Ph.D.(East Coast U.)	Adult Education
		Lander, D., Ph.D.(Nottingham)	Administrative Vice-President 1972-2002
		Langley, J.T., M.Sc.(Nebraska)FCGA	Chemistry
		Liengme, B.V., Ph.D.(Imperial)	Theology
		Losier, Sr. A., Ph.D. (Notre Dame)	Chemistry
		Lynch, B.M., Ph.D.(Melbourne)	Human Kinetics
		MacAdam, A.J., MPE(Springfield)	Religious Studies
		MacDonald, B., Ph.D.(CUA)	Religious Studies
		MacDonald, Rev. R.B., SSL(Biblicum), STD(Urban)	Celtic Studies
		MacDonell, Sr. M., Ph.D.(Harvard)	History / President 1970-78
		MacDonell, Rev. M., MA(Toronto)	Mathematics, Statistics & Computer Science
		MacEachern, A., Ph.D.(Iowa State)	Nursing
		MacFarlane, E., M.Ad.Ed.(StFX) RN	Sociology and Anthropology
		MacInnes, D., Ph.D.(McMaster)	Education
		MacInnis, M., M.Ed.(Alberta)	Education
		MacIsaac, T., Ph.D.(Temple)	Theology / President 1978-90
		MacKinnon, Rev. G.A., Ph.D.(Ottawa)	History
		MacKinnon, N., Ph.D.(Queen's)	Information Systems
		MacKinnon, R.J., Ph.D.(Oklahoma State)	Education
		MacMullin, Sr. M.R., Ed.D.(Temple)	Adult Education
		MacNeil, T., Ph.D.(Wisconsin)	English
		MacPherson, J., Ph.D.(Ottawa)	Education
		Mahody, M.J., M.Ed.(MSVU)	

**Lecturers**

Curry, A., B.Ed.(Mount Allison)  
 Gunn, D., MBA(Saint Mary's)  
 Jamieson, J., M.Sc.(Manitoba)  
 Paz, M., MA(Ottawa)  
 Sutherland, D., BAM(StFX)

**Part-Time Faculty**

Allan, L., LL.B.(UNB)  
 Bowman, C., M.Mus.(Memorial)  
 Brown-Georgallas, K., BFA(NSCAD)  
 Carty, E., M.Litt.(Glasgow)  
 Cavanagh, M.  
 Clark, S.  
 Crouse, Z., M.Ed.(StFX)  
 Dockrey, P., Ph.D.(Cambridge)  
 Elliott, B., MA(London)  
 Fecteau, J., BA(StFX)  
 Fish, K.  
 Gibson, M., MA(Goldsmiths College, UK)  
 Gillies, C., LL.B.(Dalhousie)  
 Haley, F., MHSA(Dalhousie), P.Dt.  
 Hanlon, J., M.Mus.(North Texas)  
 Hills, G.  
 Hinchey, M., M.Ed.(StFX)  
 Jan, S., BA(StFX)  
 Kellman, T., Ph.D.(York)  
 Kraglund-Gauthier, W., M.Ad.Ed.(StFX)  
 Lade, M., M.Ed.(Kiell)  
 MacDonald, B., MA(UNB)  
 MacDonald, B., Ph.D.(CUA)  
 MacDonald, D., MA(Acadia)  
 MacDougall, N.K., M.Ed.(Saint Mary's)  
 MacFarlane, M., BFA(NSCAD)  
 Milner, P., Ph.D.(Notre Dame)  
 Nicholson, M., B.E.D.S.(TUNS)  
 Pulsifer, M., M.Sc.(Acadia)  
 Pygott, I.  
 Rancy, C., Ph.D.(Toulouse)  
 Redgrave, J., Fine Arts Dip.(Sheridan College)  
 Reid, L., M.Ed. P.Dt., C.D.E.  
 Rogers, W., CSPWC, TWSA, SCA  
 Ryan, R., M.Ed.(Memorial)  
 Sparks, B., MA(Carleton)  
 Strickler, J., MA(Queen's)  
 Sutherland, T., M.Kin.(Calgary)  
 Syperek, A., BFA(NSCAD)  
 Tetu, O.  
 Tinkham, L., M.Ed.(StFX)  
 Turniawan, N., B.Ed.(Toronto)

McAlduff, E.J., Ph.D.(Toronto)	Chemistry		
McDonnell, R., ME(TUNS)	Engineering		
McFarland, J.M., DPE(Springfield)	Human Kinetics		
McMullin J., Ph.D.(Boston College)	Director of Counselling		
Miffelen, Rev. S., Ph.D.(Indiana)	Education		
Miller, A.G., Ph.D.(Queen's)	Biology		
Milner, P., Ph.D.(Notre Dame)	English		
Morrissey, L., MNS(Cornell)	Human Nutrition		
Mutimer, B.T.P., Ph.D.(Alberta)	Human Kinetics		
Nash, R., Ph.D.(Calgary)	Sociology and Anthropology		
Newsome, G.E., Ph.D.(Manitoba)	Biology		
O'Brien, K., Ph.D.(Notre Dame)	English		
O'Donnell, J.C., C.M., M.Mus.(King's, London)	Music		
Olson, M., Ph.D.(Alberta)	Education		
Palepu, R., Ph.D.(India)	Chemistry		
Parsons, C.N., MA(Hons.)(Edinburgh)	Celtic Studies		
Phillips, P., Ph.D.(Toronto)	History		
Pink, D., Ph.D.(UBC)	Physics		
Pluta, L., Ph.D.(Queen's)	Economics		
Quinn, J., Ph.D.(Wisconsin)	Mathematics, Statistics & Computer Science		
Roach, T., MFA(Guanajuato)	Art		
Rousell, Rev. G., Ph.D.(Fordham)	Biology		
Schuegraf, E.J., Ph.D.(Alberta)	Mathematics, Statistics & Computer Science		
Sears, J.T., DBA(Harvard)	Business Administration / Academic Vice-President		
	1984-1987, 1991-1995		
Seymour, N., Ph.D.(McGill)	Biology		
Shaw, J., Ph.D.(Arizona)RN	Nursing		
Sony, S.D., MN(Delhi)RN	Nursing		
Sproull-Sepelaki, B., M.Sc.N.(Pennsylvania)RN	Nursing		
Stewart, Hon. J.B., Ph.D.(Columbia)	Political Science		
Stouffer, A.P., Ph.D.(Claremont)	History		
Sullivan, A., Ph.D.(UBC)	Human Nutrition		
Taylor, J.O., Ph.D.(Ottawa)	English		
Trites, G., BA(York), FCA(ICANS)	Business Administration		
Walsh, P., Ph.D.(Dublin)	English		
Weingartshofer, A., D.Sc.(Laval)	Physics		
Wood, G., Ph.D.(Bologna, Italy)	Modern Languages		
Woodfine, W., Ph.D.(MIT)	Economics		
Young, R.K., Ph.D.(Toronto)	Business Administration		
<b>Clinical Associates</b>			
Beiswanger, D., MN(UNB)RN	Nursing		
Bowman, S., BN(Calgary)RN	Nursing		
Cameron, C., M.Ad.Ed.(StFX)RN	Nursing		
Chiasson, M., BSc.N.(StFX)RN	Nursing		
Chisholm, M., B.Sc.N.(StFX)RN	Nursing		
Connolly, D., MN(Southern Queensland)RN	Nursing		
Delorey, D., B.Sc.N.(Dalhousie)RN	Nursing		
Dobbin, A.M., B.Sc.N.(StFX)RN	Nursing		
Farrell, L., B.Sc.N.(StFX)RN	Nursing		
Fraser, Y., B.Sc.N.(StFX)RN	Nursing		
Kenny, K., B.Sc.N.(StFX)RN	Nursing		
LeBlanc, F., MN(Southern Queensland)RN	Nursing		
Livingston S., B.Sc.N.(StFX)RN	Nursing		
Lukeman, J., B.Sc.N.(StFX)RN	Nursing		
MacDonald, L., B.Sc.N.(StFX)RN	Nursing		
MacDonald, M., MN(Dalhousie)RN	Nursing		
MacNeil, M., B.Sc.N.(StFX)RN	Nursing		
Panagopoulos, W., B.Sc.N.(StFX)RN	Nursing		
Saulnier, K., B.Sc.N.(StFX)RN	Nursing		
Stewart, C., MN(Dalhousie)RN	Nursing		
Wood, S., B.Sc.N.(StFX)RN	Nursing		
<b>Professor Emeritus/a</b>			
Aalto, S., Ph.D.(Oregon State)	Mathematics, Statistics & Computer Science		
Brooks, G.P., Ph.D.(Queen's, Belfast)	Psychology		
den Heyer, K.C., Ph.D.(Manitoba)	Psychology		
Hunter, D., Ph.D.(King's, London)	Physics		
Jackson, W., Ph.D.(Washington)	Sociology and Anthropology		
Jan, N., Ph.D.(Cambridge)	Physics		
Johnson, R.W., Ph.D.(Manitoba)	Psychology / Academic Vice-President & Provost 1999-2005		
MacDonell, Sr. M., Ph.D.(Harvard)	Celtic Studies		
McAlduff, E.J., Ph.D.(Toronto)	Chemistry		
O'Donnell, J.C., C.M., M.Mus.(King's, London)	Music		
<b>Senior Research Professors</b>			
Buckland-Nicks, J., Ph.D.(Alberta)	Biology		
MacDonald, B., Ph.D.(CUA)	Religious Studies		
Miller, A.G., Ph.D.(Queen's)	Biology		
Phillips, P., Ph.D.(Toronto)	History		
Pink, D., Ph.D.(UBC)	Physics		
<b>Chaplains</b>			
MacLennan, Rev. Daniel G., M.Div.(Toronto)	University Chaplain		
Walsh, Cathy	Associate Chaplain		
Sample, Rebecca	Anglican		
Smith, Rev. Peter	United		
<b>Library</b>			
Murphy, L., MLIS(McGill)	University Librarian		
Brin, L., MLIS(Dalhousie)	Librarian		
Campbell, R., MLS(UWO)	Librarian		
Cameron, S., MLIS(UWO)	Librarian		
MacKenzie, K. MA(Saint Mary's)	Archivist		
MacLean, E., MLIS(Dalhousie)	Librarian		
MacPherson, G., MLS(Dalhousie)	Librarian		
Matheson, L., MLIS(McGill)	Librarian		
Quinn, G., MLS(Dalhousie)	Librarian		
van den Hoogen, S., MLIS(Dalhousie)	Librarian		
<b>Coady International Institute</b>			
Achola, P., M.Sc.(Guelph)	Program Manager,		
	International Centre for Women's Leadership		
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Perry, R., Dip. BRJR(Fanshawe)	Media & Communications Officer		
Peters, B., MA(Carleton)	Program Associate		
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Dodaro, S., Ph.D.(Toronto)			
Eaton, S., M.A.Ed.(OISE)			
Goulet, L., MA(Laval)			
Lee, N., MSc.(Guelph)			
MacLellan, E., Ph.D.(Waterloo)			
Sikazwe, E., M.A.Ed.(StFX)			
Subedi, N.R., Ph.D.(Tribhuvan)			
Turay, T., Ph.D.(Toronto)			
Venkatesh, B., MA(Madrash)			
Wallace, R., Ph.D.(Bradford)			

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 MacInnis, M. M.Ad.Ed.(StFX) Co-ordinator, Ministry Programs

**Diploma in Adult Education**

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**Enterprise Development Centre**

Toner Fung, A., MBA(Queen's) Acting Director

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 MacIntosh, P., M.A.Ed.(MSVU) Fieldworker  
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 Assistant Athletic Therapist Angela Wylie, B.ScHK., CAT(C)  
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 Coach, Women's Rugby Michael Cavanagh  
 Coach, Cross Country & Indoor Track Bernard Chisholm, B.Ed.  
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 Coach, Men's Basketball Stephen Konchalski, LLB  
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 Manager, Custodial Services Peter MacDonald  
 Budget Analyst Dave MacNeil, BBA  
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 Project Manager Tim Handforth, CET  
 Project Co-ordinator Candice Finbow, BA

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 Associate Registrar Danny McInnis, M.Sc.  
 Assistant Registrar Shannon Morell, B.Ed.  
 Financial Aid Officer Rachel MacFarlane, BA  
 Research Analyst Aimee Lyons, BIS, HRM

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 Program Manager Marla Gaudet, M.Ad.Ed.

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 Director, Residence Services TBA  
 Director, Student Life Corinna Fitzgerald, M.Ed., MA  
 Student Conduct Co-ordinator Tiffany Hallett, BSW  
 Manager, Student Career Centre Jane MacDonald, MLIS, M.Ad.Ed.  
 Black Students Advisor Vacant  
 International Students Advisor Brenda Berthiaume, BA  
 Director of Health & Counselling Angela Marshall, M.Ed., ICADC, CCC  
 Students with Disabilities Co-ordinator Elizabeth Kell, B.Ed.  
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 Human Rights & Equity Advisor Marie Brunelle, LLM  
 Aboriginal Students Advisor Molly Peters, BA  
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*Term Expires September 2013*

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N. Forestell, Ph.D.  
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*Term Expires September 2014*

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M. Coady, Ph.D.  
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*Term Expires May 2012*

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M.A. MacDonald  
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M. Meehan  
M. Saade

## GLOSSARY

### Academic Calendar (also known as the Calendar)

The university's official publication which outlines admission requirements, fees, grading systems, academic regulations, course offerings, and other information. Students admitted in a particular year are bound by the regulations described in the Academic Calendar for that year.

### Academic Year

The regular academic year at StFX runs from September to April. The first term lasts from early September to mid-December and the second term, from early January to late April. See also spring and summer sessions.

### Advanced Standing

Students may enter a higher level of courses in a subject when they have mastered the lower, usually introductory, level. This is normally permitted after completion of international baccalaureate (IB) or advanced placement (AP) courses. See section 1.3 h. Advanced standing does not reduce the number of credits required for a degree.

### Audit

Audit means to listen. A student may attend a course without working toward or expecting to earn credits for the course. Only courses without a laboratory or hands-on component may be audited. Fees for a course taken for audit are normally one-half of the usual fee.

### Bachelor's or Baccalaureate Degree

The degree usually awarded after three or four years of study and successful completion of course and program requirements. A bachelor's degree may be awarded in arts (BA), science (B.Sc.), business administration (BBA), education (B.Ed.) or information systems (BIS); some may be earned with honours, with advanced major, or with major. See page 3 for more information on bachelor's degrees at StFX.

### Bursary

A monetary award based on financial need and reasonable academic standing.

### Chair

The head of an academic department, for example, the chair of the Department of Celtic Studies.

### Concentration

A tertiary subject or area of study, normally at least 18 credits in one subject.

### Convocation

The graduation ceremony held every spring and fall at which degrees and diplomas are awarded.

### Credit

The value assigned to a course. A course with three or more contact hours per week for the academic year has a value of six credits and is called a full course. A course taught for three hours a week for one term has a value of three credits and is called a half course. When students successfully complete a course, they are said to have credit for the course.

### Dean

At StFX, there are four deans: The Dean of Arts, the Dean of Business, the Dean of Education and the Dean of Science.

### Dean's List

An academic honour granted to students who achieve high grades while enrolled in 30 credits. See 3.19.

### Decile

The student decile ranking in a course (10 high, 1 low) recorded for courses with 15 or more registrants.

### Diploma

An earned document which follows a program of study typically lasting two years or less.

### Distinction

A designation awarded to students whose general average over their final three years of study is 80 or higher. Minimum averages each year may also apply. See 3.20.

### Electives

Courses which are not specified in a degree program. Electives may be open, that is, chosen by the student, or approved. Approved electives require permission from either the chair of the department of the student's major, or the chair of the

department in which the student wishes to take a course. Arts/Science electives do not include professional program courses such as business administration, human kinetics, human nutrition or nursing.

### Faculty

A grouping of departments which give academic instruction in related subjects. At StFX, there are four faculties: the Faculty of Arts, the Faculty of Business, the Faculty of Education and the Faculty of Science. The Faculty of Arts is comprised of subjects in the humanities and social sciences. Within the Faculty of Business are the business administration and information systems subjects. The Faculty of Education includes education courses at the undergraduate, graduate and doctoral level. The Faculty of Science contains the life, earth and physical sciences, as well as engineering, human kinetics, human nutrition, nursing and mathematics, statistics, and computer science. The term faculty is also used to describe members of the teaching staff of the university.

### Full Time/Part Time

There are several definitions of full time/part time. Normally a student carries 30 credits for an academic year. Only students carrying at least 30 credits are considered for in-course scholarships. For the purpose of billing students, the business office considers a student carrying 24 or more credits to be full time. For the purpose of student loans 18 to 24 credits, or 60 percent to 80 percent of the normal load, may be considered full time by agencies which administer loan programs. For purposes of reporting to Statistics Canada full time is defined as 18 credits or more.

### Grade Appeal

The process by which a student appeals his or her final grade for a course. See 3.13.

### GPA (Grade Point Average)

Grades and averages reported in a 4.0 scale: at StFX the conversion of number grades to letter grades to a 4.0 scale, for example, 50 = D- = 0.5; 55 = D = 1.0; 60 = C- = 1.5; 65 = C = 2.0; 70 = B- = 2.5; 75 = B = 3.0; 80 = A- = 3.5; 85 = A+ = 4.0

### Graduate Degree

Master's or doctoral (Ph.D.) degrees require completion of an undergraduate degree first.

### Honours

A degree which requires not only depth and breadth of subject study, but also superior academic achievement.

### Humanities

The study of human thought which includes literature, philosophy, history, religion, languages, and the fine arts.

### Invigilator

A person who, in the absence of the professor, administers and oversees examinations.

### Junior

A third-year student.

### Levels

#### Course Level

Courses are numbered and referred to according to the normal year of study in which a student would complete them, as in 100-level (first year), 200-level (second year), 300-level (third year) and 400-level (fourth year) courses.

#### Student Level

A student's level corresponds to the level of his/her degree program. The most common student levels at StFX are UG (Undergraduate), ED (Bachelor of Education) and GR (Graduate).

#### Year of Study

Most four-year degree programs require the completion of 120 credits, normally at 30 credits per year for four years. Students' year of study is based on the number of credits they have earned towards their current degree. Students are "promoted" to the next year of study when they are within six of the required number of credits for that year. For example, a student who has earned 54 credits is considered to be a third year (junior) student.

**Major**

A student's primary subject. StFX also offers joint majors, studying a combination of two subjects. While StFX does not have programs with double majors, there are opportunities for students to have the equivalent of double majors.

**Mature Student**

A candidate who has not fulfilled the normal admission requirements and has been out of school for at least three years.

**Minor**

The secondary subject or area of study, normally at least 24 credits in one subject.

**Non-Degree Student**

A student who is not registered in a degree program but is enrolled in courses either part time or full time.

**Orientation**

A program for new students providing an academic and social introduction to university life, held during the three days prior to the beginning of classes in September.

**Pair**

Twelve credits in one subject, with six credits at the 200-level or higher. As exceptions, language pairs in French, Celtic Studies and Classics may be composed of 12 credits at the 100-level. A student may complete only one pair from a department, and may not complete a pair in the major or minor subject. A pair may not be completed in any of the professional or applied program disciplines: AQUA, BSAD, ENGR, HKIN, HNU, INFO or NURS.

**Passing Grade**

The passing grade for all undergraduate courses is 50. See *chapter 3*. For education, see *chapter 4*. For graduate studies, see *chapter 8*.

**Pattern**

The recommended or suggested series of courses a student takes in order to fulfill degree requirements.

**Placement Test**

Incoming students who wish to study music or modern languages must take placement tests to determine their eligibility for, and appropriate level of, study. See *department guidelines, chapter 9*.

**Plagiarism**

A form of cheating in which a student attempts to pass off as his or her work the words or ideas of another person or another writer. See 3.8.

**Prerequisite**

A course which must be completed before taking another course.

**Program**

An approved set of courses, requirements and study pattern, leading to a degree, diploma or certificate.

**Rank**

The student's rank in his/her group and year of study. Ranking is not recorded for students enrolled in less than 18 credits or for those who withdraw during an academic year.

**Registrar**

The university officer responsible for managing academic information and processes and enforcing the regulations contained in the Academic Calendar as they pertain to students' academic performance.

**Registration**

The process of formally enrolling in courses.

**Repeated Course**

When a student repeats a course, the original grade remains on the transcript and in the student's average. However, the credits originally earned are removed from the student's transcript.

**Scholarship**

A monetary award based on academic merit or excellence.

**Senior**

A fourth-year student.

**Service Learning**

Service learning is an innovative way to integrate experiential learning, academic

study and community service. It is an opportunity for students to apply what they are learning in the classroom in a community setting. The goal is to blend service and learning so that the service reinforces, improves and strengthens learning. Service learning is possible in many academic disciplines and through a broad range of courses and service experience.

**Social Sciences**

The systematic study of human behaviour, including anthropology, development studies, economics, political science, psychology, sociology and women's and gender studies.

**Sophomore**

A second-year student.

**Special Needs Student**

A student with a physical or learning disability. See 1.1.

**Spring Session**

An eight-week term from early May to late-June.

**Student Loan**

A sum of money which must be repaid. Loans to university students are obtained through the Canada Student Loan Plan.

**Study Abroad**

The opportunity for a student enrolled in a four-year program to study at another accredited university as part of a degree from StFX. See 3.18.

**Subject Abbreviations**

The abbreviations below are used throughout the Calendar and on transcripts:

ADED	Adult Education
ANTH	Anthropology
AQUA	Aquatic Resources
ART	Art
BIOL	Biology
BSAD	Business Administration
CATH	Catholic Studies
CELT	Celtic Studies
CHEM	Chemistry
CLAS	Classical Studies
COML	Comparative Literature
CSCI	Computer Science
COOP	Co-operative Education
DEVS	Development Studies
ECON	Economics
ESCI	Earth Sciences
EDUC	Education
ENGR	Engineering
ENGL	English
ENSC	Environmental Sciences
FREN	French
GERM	German
HIST	History
HKIN	Human Kinetics
HNU	Human Nutrition
IDS	Interdisciplinary Studies
INFO	Information Systems
MATH	Mathematics
MIKM	Mi'kmaq
MNST	Ministry
MUSI	Music
NURS	Nursing
PHIL	Philosophy
PHYS	Physics
PSCI	Political Science
PSYC	Psychology
RELS	Religious Studies
SOCI	Sociology
SPAN	Spanish
STAT	Statistics
WMGS	Women's and Gender Studies



**Subsidiary Subject**

When the study of two subjects is combined such that one is subordinate to the other, the second is considered a subsidiary to the first. Within the BA Honours with a subsidiary program, the subjects in which an honours is possible are those in which one may complete a single honours, with the added exception of development studies. A subsidiary is possible in those fields in which one may complete at least a major with the added exception of art history.

**Summer Session**

A six-week term scheduled from early July to mid-August.

**Thesis**

The lengthy paper required for an honours or graduate degree.

**Transcript**

The record of a student's program of study, courses taken, and grades achieved. See section 3.15 for information on academic records.

**Transfer Credit**

Courses taken at another university or college are given equivalent StFX course numbers and credit value for transfer credit.

**Undergraduate Degree**

A first degree completed at a university or college. At StFX, the first degree is the baccalaureate degree which takes four years of full-time study to complete.

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