Graduate Courses

**ORG A 701 Seminar in Organization Theory**

*3 (fi 6) (either term, 3-0-0). Introduces students to the major schools of thought in organization and management theory. Considers the development of the field, major and foundational works in these schools of thought, and provides a cognitive map with which to evaluate contemporary research and debates. At the end of the course the student will have an understanding of the strengths and weaknesses of each major perspective. Prerequisite: Registration in Business PhD Program or written permission of instructor. Approval of the Business PhD Program Director is also required for non-PhD students.

**ORG A 702 Seminar in Human Behavior in Organization**

*3 (fi 6) (either term, 3-0-0). Examines current and classic research on human behavior as it occurs within the boundaries of organizations. Reviews pertinent theories and research findings that relate to topics such as motivation, social influence process, organization roles, leadership, change and inter- and intra-group dynamics. Issues of job design, conflict resolution, communications processes and problem solving may also be covered. Prerequisite: Registration in Business PhD Program or written permission of instructor. Approval of the Business PhD Program Director is also required for non-PhD students.

**ORG A 703 Seminar in Strategic Management**

*3 (fi 6) (either term, 3-0-0). Understands the current state of knowledge in strategic management. Topics may include the sources of competitive advantage, the role of industry evolution and technology, the organization of top management, and managerial decision-making and cognition. Introduces students to alternative theoretical perspectives and available empirical evidence related to these topics. Prerequisite: Registration in Business PhD Program or written permission of instructor. Approval of the Business PhD Program Director is also required for non-PhD students.

**ORG A 704 Individual Research**

*1.5 (fi 16) (first term, 18 hours). A week-long intensive course. Identifying and developing the human resources, leadership, and strategy skills essential for today’s successful executive. Restricted to Executive MBA students only.

**ORG A 820 Managing Human Resources**

*3 (fi 32) (first term, 3-0-0). Understanding interpersonal behavior within organizations; assessing and developing interpersonal effectiveness both as a leader and a team member. Restricted to Executive MBA students only.

**ORG A 860 Management of Technology/Innovation**

*3 (fi 32) (first term, 3-0-0). Understanding basic science and technology; integrating new technology into operations; managing research and development. Restricted to Executive MBA students only.

**ORG A 870 Corporate Strategy**

*3 (fi 32) (second term, 3-0-0). Understanding corporate strategy and processes to mobilize resources to achieve corporate objectives; industry and competitive analysis. Restricted to Executive MBA students only.

**ORG A 875 Leadership**

*3 (fi 32) (second term, 3-0-0). Understanding the unique perspectives, tasks, and responsibilities of the executive in providing leadership to the organization; dynamic processes of organizations; and developing leadership skills. Restricted to Executive MBA students only.

Undergraduate Courses

**PAED 546 Paediatrics Student Internship**

*6 (fi 12) (either term, 6 weeks). Student internship in paediatrics for students registered in the MD program.

**PAED 556 Paediatrics Student Internship**

*3 (fi 6) (either term, 3 weeks). Student internship in paediatrics for students registered in the MD Program.

231.210 Paediatrics, PAED

Department of Paediatrics
Faculty of Medicine and Dentistry

**Paleontology, PALEO**

Departments of Biological Sciences; and Earth and Atmospheric Sciences
Faculty of Science

Undergraduate Courses

**PALEO 400 Paleontology Field School**

*3 (fi 6) (first term, 0-1s-6). Students will learn the techniques of collection, curation and analysis of fossils at major dinosaur sites in Western Canada. The field component of the course will take place during the summer at a field station off campus. Each student will complete assignments in the field and will prepare a written report for completion by the end of October based on data acquired and methods learned during the field component. Prerequisite: Consent of Department. Requires payment of additional student instructional support fees. Refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar.

**PALEO 412 Selected Topics in Paleontology**

*3 (fi 6) (variable, 3-0-0). Covers specialized topics of current interest to advanced undergraduates in Biological Sciences and Earth and Atmospheric Sciences. Consult the Paleontology advisor for details about current offerings. Prerequisite: Consent of Instructor. Credit for this course may be obtained more than once.

**PALEO 414 Paleontology**

*3 (fi 6) (second term, 3-0-3). Morphology, paleoecology and evolution, with emphasis on both the theoretical aspects and practical techniques of paleontology. Concentration on invertebrate paleontology, but examples from vertebrate paleontology and paleobotany included. Prerequisite: EAS 230.

**PALEO 418 Paleobiology of the Lower Vertebrae**

*3 (fi 6) (first term, 3-0-3). Paleontology, evolution and paleoecology of early vertebrates, fishes, and amphibians, with emphasis on osteology, systematics, major adaptive shifts and subsequent radiations. Prerequisites: ZOOL 225 and any 300 level EAS or Biological Sciences course. Not available to students with credit in PALEO 318.

**PALEO 419 Paleobiology of the Higher Vertebrae**

*3 (fi 6) (second term, 3-0-3). Paleontology, evolution and paleoecology of Synapsida (e.g. therapsids and mammals) and Reptilia (e.g. snakes, lizards, dinosaurs, and birds) with emphasis on osteology, systematics, major adaptive shifts and subsequent radiations. Prerequisites: ZOOL 225 and any 300 level EAS or Biological Sciences course. Not available to students with credit in PALEO 319.

Graduate Courses

Note: The following undergraduate courses may be taken for credit by graduate students: PALEO 418, 419.

**PALEO 512 Advanced Selected Topics in Paleontology**

*3 (fi 6) (variable, 3-0-0). Credit for this course may be obtained more than once. Classes concurrent with PALEO 412.

**PALEO 513 Advanced Paleontology**

*3 (fi 6) (second term, 3-0-3). Morphology, paleoecology and evolution, with emphasis on both the theoretical aspects and practical techniques of paleontology. Concentration on invertebrate paleontology, but examples from vertebrate paleontology and paleobotany included. Classes concurrent with PALEO 414. Not available to students with credit in PALEO 414.

**PALEO 520 Problems in Vertebrate Paleobiology**

*3 (fi 6) (either term, 0-3s-0). [Faculty of Science]

231.211 Persian, PERS

Department of Modern Languages and Cultural Studies
Faculty of Arts

Notes

(1) The Department reserves the right to place students in the language course appropriate to their level of language skill.

(2) Placement tests may be administered in order to assess background. Students with a Persian language background should consult a Department advisor. Such students may be granted advanced placement and directed to register in a more advanced course suitable to their level of ability. Students seeking to fulfill their Language Other than English requirement may begin at any one appropriate level, but must take the full #6 in one language.

(3) The Department will withhold credit from students completing courses for which background makes them ineligible. For example, 100-level courses are normally restricted to students with little or no knowledge in that language. Should students with matriculation standing or those possessing background (such as native speakers or those for whom it is their first language) register in the 100-level course, credit may be withheld.
Undergraduate Courses

**PERS 111 Beginners’ Persian I**
3 (fi 6) (either term, 5-0-0). Introduction to pronunciation, reading, writing and conversation. Note: not to be taken by students with native or near native proficiency, or Persian 35 or its equivalents in Canada and other countries. Not open to students with credit in PERS 100 or RELIG 299.

**PERS 112 Beginners’ Persian II**
3 (fi 6) (either term, 5-0-0). Continuation of PERS 111. Prerequisite: PERS 111 or consent of Department. Note: not to be taken by students with native or near native proficiency, or Persian 35 or its equivalents in Canada and other countries. Not open to students with credit in PERS 100 or RELIG 299.

**PERS 211 Intermediate Persian I**
3 (fi 6) (either term, 4-0-0). Uses of Persian in various social contexts with illustrations drawn from films, classical and modern literature, including poetry. Prerequisite: PERS 112 or consent of Department. Note: not open to students with credit in PERS 301 or 302.

**PERS 212 Intermediate Persian II**
3 (fi 6) (either term, 4-0-0). Continuation of PERS 211. Prerequisite: PERS 211 or consent of Department. Note: not open to students with credit in PERS 301 or 302.

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231.212 Petroleum Engineering, PET E
School of Mining and Petroleum Engineering
Department of Civil and Environmental Engineering
Faculty of Engineering

Note: See also Materials Engineering (MAT E); Mining (MIN E), and Petroleum Engineering (PET E) listings.

The following course was renumbered effective 2001-02:

Old PET 465
New PET E 365

Undergraduate Courses

**PET E 295 Introduction to Fundamental Petroleum Engineering**
3.8 (fi 6) (second term, 3-6-3/2). The relationships of geology, basic reservoir rock properties, surface and interfacial phenomena, the flow of fluids through porous media, classification of oil and natural gas reservoirs, and introduction to reserve estimation principles. Prerequisite: consent of Instructor.

**PET E 362 Petroleum Reservoir Fluids**

**PET E 364 Oil Well Drilling and Completion**
3.5 (fi 6) (first term, 3-1s-0). Elements of rock mechanics, drilling fluids, factors affecting rate of penetration, formulation evaluation and well completions. Prerequisites: CIV E 270, CH E 322, and CH E 243, or consent of Instructor.

**PET E 365 Well Logging and Formation Evaluation**
3.5 (fi 6) (first term, 3-1s-0). Theory and engineering applications of measurements of physical properties of the formation near the well bore; interpretation and use of the information in reservoir engineering. Corequisite: PET E 362 or consent of Instructor.

**PET E 366 Petroleum Production Operations**
3 (fi 6) (second term, 3-0-0). Land units in Western Canada, types and characteristics of well completions, perforating, wellbore damage and simulation, combined inflow and well performance analysis, multi-phase flow through conduits, oil inflow, gas lift, surface facilities and flow measurement, applied mass transfer. Prerequisite: CH E 312 or consent of Instructor.

**PET E 367 Drilling Fluids Laboratory**
1.8 (fi 6) (second term, 1-0-3/2). Functions and types of drilling fluids, drilling fluid properties and their control, equipment and test procedures used to determine drilling fluid properties, common drilling fluid additives, and drilling problems related to drilling fluids will be discussed. Laboratory experiments are designed to help students better understand the factors controlling drilling fluid properties as well as familiarize students with field testing procedures of drilling fluids.

**PET E 368 Fundamentals of Well Test Analysis**
3.3 (fi 6) (second term, 3-2s-3/2). A basic course in well test design and interpretation. Analysis methods for pressure drawdown, buildup, and interference tests. Principle of superposition and its application in well test analysis. Average reservoir pressure estimation. Effect of wellbore conditions on pressure behavior. An introduction to drill stem testing and gas well testing. Prerequisite: PET E 295 or consent of Instructor.

**PET E 444 Natural Gas Engineering**
3 (fi 6) (first term, 3-0-3). Topics include gas properties, resources and reserves estimation, material balance equation, decline curve analysis, gas well deliverability, gas well testing, gas storage, transmission. Prerequisite: PET E 362 or consent of Instructor.

**PET E 470 Heavy Oil Recovery**
3 (fi 6) (either term, 3-0-0). The objectives of this course are to introduce the student to the current heavy oil recovery technology, and to develop the practical project design techniques. Emphasis will be on thermal methods, although nonthermal methods will be developed briefly. This is designed to be suitable for both undergraduate and graduate students. Prerequisite or corequisite: PET E 473.

**PET E 471 Enhanced Oil Recovery**

**PET E 473 Fundamental Reservoir Engineering**
3.8 (fi 6) (first term, 3-0-3/2). Rock properties, rock-fluid interaction, flow through porous media; material balance. Prerequisite: PET E 362 or consent of Instructor.

**PET E 475 Applied Reservoir Engineering**

**PET E 477 Modelling in Petroleum Engineering**
3.5 (fi 6) (second term, 3-0-0). Fundamentals of Modelling in Petroleum Engineering. Simulation methods as applied to specific problems in petroleum reservoir behavior. Examples will be drawn from primary, secondary and tertiary recovery phases of petroleum production. Prerequisites: PET E 473, ENCMC 100 and MATH 201 or equivalent.

**PET E 484 Oil and Gas Property Evaluation**
3.5 (fi 6) (first term, 2-0-3). An economic and property evaluation in petroleum engineering involving exploration, drilling, production and development fundamentals and field case histories. Canadian oil and gas regulations, unitization and equalization of investment. Prerequisite: ENG M 310 or 401 or equivalent.

**PET E 488 Petroleum Field Trip**
0.5 (fi 1) (either term, 0-1s-0). Students in fifth and sixth terms of the traditional program, and students in the seventh and eighth terms of the co-op program, will be required to make several trips to selected field installations, laboratories and industrial plants.

**PET E 489 Petroleum Engineering Seminar**
1 (fi 2) (second term, 1-0-0). Meetings of students and staff for discussion of topics related to petroleum engineering, including coverage of elements of ethics, equity, concepts of sustainable development and environmental stewardship, public and worker safety and health considerations including the context of the Alberta Occupational Health and Safety Act.

**PET E 496 Petroleum Engineering Design Project**
4 (fi 6) (second term, 1-6s-0). Designed to deal with special case studies in the mining and petroleum industries; an analysis of reserves; the prediction of production and operating procedures related to the project; the application of economics in the analysis of profitability; economics and planning as tools for a management position. Prerequisite: PET E 484 or consent of Instructor.

Graduate Courses

**PET E 630 Petroleum Reservoir Engineering**
3.5 (fi 6) (either term, 3-1s-0). Characteristics of reservoir materials (rock, reservoir fluids); reservoir evaluation (volumetric method, material balance method with water influx); fundamental production processes (primary recovery).

**PET E 635 Numerical and Analytical Solution of Porous Media Flow Problems**
3.5 (fi 6) (either term, 3-1s-0). The goal of this course is to develop techniques for the solution of a wide variety of single phase flow problems in porous media for compressible and incompressible flow. Two dimensional flow will be considered for the greater part. Selected mathematical techniques, analytical as well as numerical, will be developed for specific problems. In a number of cases, analytical and numerical solutions will be compared.

**PET E 644 Fluid Mechanics of Natural Gas Production**
3.5 (fi 6) (either term, 3-1s-0). Review of natural gas properties; reserve estimation techniques and advanced treatment of water influx in gas reservoirs; steady and transient single-phase gas flow in porous media; non-Darcy flow; deliverability tests; transient gas well testing; single and multiphase flow in circular conduits. Normally offered in alternate years.
PET E 650 Reservoir Simulator Development  
3.5 (fi 6) (either term, 3-1s-0). The principal objective of this course is the development of reservoir simulation theory to the level required for the construction of a three-phase, three-dimensional reservoir simulator. In addition to providing practice in developing a reservoir simulator, the course will also cover recent advances in simulation and history matching.

PET E 664 Advanced Drilling Engineering  
3.5 (fi 6) (either term, 3-1s-0). Recent advances and changes in drilling techniques will be discussed. The topics will include directional drilling and deviation control, aspects of horizontal and multilateral well drilling, measurement while drilling, drillingstring mechanics, bottomhole assembly design, tubular stability, drag and torque problems. Prerequisite: PET E 364 or consent of Instructor.

PET E 668 Advanced Well Test Analysis  
3.5 (fi 6) (either term, 3-1s-0). Analytical techniques employed to solve complex well test problems. Pressure derivative analysis, production time effects on buildup analysis, Pressure transient analysis for fractured wells. Layered reservoir testing. Prerequisite: PET E 368 or consent of Instructor. Normally offered in alternate years.

PET E 679 Thermal Recovery  
3.5 (fi 6) (either term, 3-1s-0). Thermal recovery processes are mainly steam-based and can be divided into two main categories: placement or drive processes and stimulation processes. Will cover steam displacement processes (steamfloodin, steam-assisted gravity drainage), cyclic steam stimulation, in situ combustion, and briefly mention hot waterflooding. It will also cover properties of fluid and rock, vaporization heat losses, and a selection of thermal processes. Prerequisites: Permission of Instructor.

PET E 686 Advanced Resource Economics and Risk Analysis  
3.5 (fi 6) (either term, 3-0-0). An Advanced application of economic principles to natural resources project evaluation. Analysis of oil and gas prospects, its associated costs, expected profits and the risks involved. Exploration, drilling and production analysis including advanced evaluation techniques, risk analysis, decision trees, sensitivity analysis, capital allocation, Monte Carlo simulations, project analysis, portfolio management and Canadian regulations for the industry.

PET E 694 Advanced Topics in Petroleum Engineering  
3.5 (fi 6) (either term, 3-1s-0). An advanced treatment of selected petroleum engineering topics of current interest to staff and students.

PET E 709 Special Topics in Petroleum Engineering  
3.5 (fi 6) (either term, 3-0-0). Reading Course. Reading and discussion of selected topics in Petroleum Engineering.

PET E 900 Directed Research  
3.5 (fi 6) (variable, unassigned). An engineering project for students registered in a Masters of Engineering program.

231.213 Pharmacology, PMCOL  
Department of Pharmacology  
Faculty of Medicine and Dentistry

Undergraduate Courses  
Note: The following courses may be used by students in the Faculty of Science as science courses: PMCOL 201, 202, 303, 305, 337, 343, 344, 371, 407, 412, 415 and 416, 424, 425, 442 and 498.

PMCOL 201 Introductory Pharmacology  
3.5 (fi 6) (either term, 3-0-0). An introduction to the discipline of pharmacology. What are drugs and how do they bring about their effects; how are drugs modified by the body; how are drugs developed and licensed for therapeutic use? These and related questions are addressed and the underlying pharmacological principles illustrated with examples drawn from an array of commonly used drugs. Prerequisites: CHEM 101 and 102, and either BIOL 107 or 108. Restricted to students in second year.

PMCOL 202 Topics in Pharmacology  
3.5 (fi 6) (second term, 3-0-0). This course is an extension of PMCOL 201. Lectures will examine in more detail the basic pharmacology of autonomic, cardiovascular, renal and gastrointestinal systems. Prerequisites: PMCOL 201.

PMCOL 300 Introduction to Pharmacology  
3.5 (fi 4) (first term, 28 hours). Lectures are used to illustrate the principles of pharmacology including rational application of commonly used drugs to the treatment of disease. This course is available only to students registered in the Dental Hygiene Diploma program.

PMCOL 303 Introduction to Toxicology  
3.5 (fi 6) (either term, 3-0-0). The adverse effects of xenobiotics on biological systems are discussed. Principles of toxicology, including dose-response relationships and toxicant metabolism, are introduced. Responses of target organs to selected toxicants are described, with emphasis on molecular mechanisms; haloalkane and hydrocarbon solvents, heavy metals, carbon monoxide, cyanide, pesticides, pulmonary irritants, ethanol, and methanol serve as examples. Special topics include chemical carcinogenesis, teratogenesis, and the toxic effects of ionizing radiation, toxins, and food additives. Prerequisites or corequisites: BIOCH 203 and 205, PHYSYL 210 or 211, or consent of Department.

PMCOL 305 An Introduction to the Pharmacology of Drug Abuse  
3.5 (fi 6) (either term, 3-0-0). An introduction to the complexities of drug abuse and the drugs of abuse. The student will be introduced to the psychological and social problems of drug abuse and their impact upon the abuser. Objectives of the course are to develop an understanding of addiction and a detailed knowledge of the nature of the commonly abused substances. Emphasis will be placed upon the pharmacology of drugs of abuse. Prerequisite: a 200-level Biological Sciences course.

PMCOL 337 Experimental Procedures in Pharmacology  
3.5 (fi 6) (either term, 0-0-6). A laboratory course in which the use of biochemical techniques, as well as intact animal and isolated tissue preparations, as applied to pharmacological problems are explored. Course includes both theoretical consideration of the procedures under study, together with practical instruction and practice in their execution. Normally restricted to Pharmacology Specialization or Honors programs. Prerequisite: PMCOL 343 and 344.

PMCOL 343 Scientific Basis of Pharmacology: Part I  
3.5 (fi 6) (first term, 3-0-0). A course designed as the first part of a two course detailed review of clinically important drugs having their actions on the vertebrate body and its systems. Will provide a sound scientific knowledge of the ways in which drugs are used to produce therapeutic responses, and how these may be quantified. It will review the pharmacological intervention in physiological signaling systems, and consider aspects of neuropsychopharmacology ranging from the autonomic nervous system to drugs useful in psychiatric illness. Prerequisite: PMCOL 201. Pre- or co-requisite: BIOCH 200 and PHYSYL 210 or 211. In the case of over subscription, preference will be given to students in the Pharmacology Specialization or Honors Programs.

PMCOL 344 Scientific Basis of Pharmacology: Part II  
3.5 (fi 6) (second term, 3-0-0). A continuation of PMCOL 343 with an emphasis on cardiovascular pharmacology, the pharmacology of the endocrine and immune systems and the chemotherapy of malignant and infectious diseases. Prerequisite: PMCOL 343.

PMCOL 371 Cellular Neuroscience  
3.5 (fi 6) (first term, 3-0-0). Lectures presented by the Faculty of Medicine and Dentistry and the Faculty of Science on nerve cell membranes, ion channels, neurotransmitters and their receptors, synaptic mechanisms and plasticity, gene regulation and development, the physiology of small neural networks and disorders involving basic mechanisms. Prerequisite: PHYSYL 210, 211, 252, or ZOOL 242.

PMCOL 400 Industrial Internship Practice  
3.5 (fi 6) (first term, 0-3s-0). Required by all students who have just completed a Pharmacology Industrial Internship Program. Must be completed during the first academic term following return to full-time studies. Note: a grade of F - A+ will be determined, by the students job performance as evaluated by the employer, by the students performance in the completion of an internship practicum report and by the students ability demonstrated in an oral presentation.

PMCOL 401 Pharmacology Tutorial  
3.5 (fi 6) (first term, 3-0-0). Research and/or Reading course. This course allows a student to study an area of pharmacology in much greater detail than is usual in most courses. The format is usually a reading/tutorial in which the student carries out directed reading and meets with the tutor at regular intervals for discussion and further guidance. Term papers are often used for evaluation purposes. A mature attitude towards learning is essential, as the course often requires independent study and research. Students who have a particular interest in any specific area of pharmacology are encouraged to meet with the faculty members to explore the possibilities of arranging a mutually satisfactory topic. Prerequisite: PMCOL 343 and 344.

PMCOL 402 Pharmacology Tutorial  
3.5 (fi 6) (second term, 3-0-0). Research and/or Reading course. This course allows a student to study an area of pharmacology in much greater detail than is usual in most courses. The format is usually a reading/tutorial in which the student carries out directed reading and meets with the tutor at regular intervals for discussion and further guidance. Term papers are often used for evaluation purposes. A mature attitude towards learning is essential, as the course often requires independent study and research. Students who have a particular interest in any specific area of pharmacology are encouraged to meet with the faculty members to explore the possibilities of arranging a mutually satisfactory topic. Prerequisite: PMCOL 343 and 344.

PMCOL 407 Neuromuscular Pharmacology  
3.5 (fi 6) (either term, 3-0-0). A detailed study of synaptic transmission, excitation-contraction coupling in skeletal muscle, and the drugs known to be active at these sites. Diseases of neuromuscular transmission, their etiology, and therapy will also be included. The scope of the lectures will range from molecular considerations,
through structure–activity relationships, to clinical usefulness and experience. Prerequisites: PMCOL 343 and 344 or 371.

PMCOL 412 Drugs and the Nervous System
★3 (fi 6) (either term, 3-0-0). Pharmacological management of disease in the central nervous system is presented in the context of current knowledge of neuroscience and neurochemistry. Prerequisite: PMCOL 343 and 344 or 371.

PMCOL 415 Cardiovascular Pharmacology
★3 (fi 6) (either term, 3-0-0). A lecture course that examines the pharmacology of drug action on the cardiovascular system. Topics include the molecular and cellular mechanisms involved in drug action on both the vasculature and the heart, the mechanisms involved in myocardial ischemic injury, and the control of heart inotropy and rhythmicity. Also provides an overview of current therapeutic options in the treatment of cardiovascular disease. Prerequisite: PMCOL 343 and 344.

PMCOL 416 Current Topics in Endocrine Pharmacology
★3 (fi 6) (either term, 3-0-0). This course examines in detail, drugs (including natural hormones) that are used for treatment of endocrine diseases (e.g., diabetes, infertility, and growth deficiency). The focus of the course is the action of drugs on hormone receptors and on the regulation of hormone synthesis and secretion. Prerequisite: PMCOL 343 and 344.

PMCOL 424 Advanced Topics in Toxicology
★3 (fi 6) (second term, 3-0-0). A discussion of selected topics of current interest in toxicology. Content may vary from year to year, but will generally include mechanisms of cell injury and cell death, mechanisms of chemical carcinogenesis, and topics from genetic toxicology, radiation toxicology, and forensic toxicology. Intended for senior undergraduate students. Prerequisites: PMCOL 303 and consent of Department.

PMCOL 425 Problem Solving in Pharmacology and Therapeutics
★3 (fi 6) (second term, 3-0-0). Students will be presented with problem cases involving patients with conditions, possibly needing drug therapy. They will identify the issues needing resolution, work collectively to find information to resolve them, and present these and their application to each patient to the group. The group will work to resolve outstanding issues after the presentations. Intended for senior undergraduate students. Prerequisites: PMCOL 343 and 344 and consent of Instructor.

PMCOL 442 Pharmacological Characterization of Drugs
★3 (fi 6) (first term, 3-0-0). This course will familiarize students in some detail with the various pharmacological concepts and approaches important during preclinical and early clinical drug development, both at the bench and in the clinic. Lectures cover the drug discovery process, advanced principles of ligand-receptor interactions, including how these interactions are observed and qualified in in vitro and in vivo binding experiments, animal models of disease conditions used by the pharmaceutical industry, drug metabolism, basic principles of pharmacokinetics, and therapeutic drug monitoring. Prerequisite: PMCOL 343 and 344. Restricted to fourth year honors and specialization Pharmacology students.

PMCOL 475 Signal Transduction Systems as Pharmacological Targets
★3 (fi 6) (either term, 3-0-0). Regulation of various aspects of cell regulation, including proliferation, differentiation, metabolism, survival, motility, and gene transcription, occur mainly via protein phosphorylation in a complex array of well-organized signal transduction pathways. This course will cover topics related to the pharmacological investigation of cellular transduction systems, the discovery of small molecules that alter cell signaling, and how pharmacological manipulation of these signaling pathways may be useful in the drug treatment of a diverse range of diseases, including metastatic, cardiovascular, inflammatory, immune, metabolic and neurodegenerative diseases. Prerequisites: PMCOL 343 and 334.

PMCOL 498 Pharmacology Research Program
★6 (fi 12) (two term, 0-0-6). During their fourth year all honors candidates are required to carry out a program of directed research under the supervision of a staff member. This program will be related to the special interest of the student and will involve experimental work as well as two presentations and a written report on the part of the student. Students are encouraged to make arrangements with a supervisor of their choice before the fall term begins. Prerequisite: consent of Department. Normally available to fourth-year honors students only.

Graduate Courses

Note: Not all graduate courses are offered each year. The Chair of the Department should be consulted regarding the prerequisites for and availability of graduate courses in any academic session.

PMCOL 501 Pharmacology Tutorial, Research, and Reading Course
★3 (fi 6) (first term, 3-0-0). This course is similar to PMCOL 401 except that the course material and student performance will be at a level suitable for graduate students.

PMCOL 502 Pharmacology Tutorial, Research, and Reading Course
★3 (fi 6) (second term, 3-0-0). This course is similar to PMCOL 401 except that the course material and student performance will be at a level suitable for graduate students.

PMCOL 504A Advanced Topics in Toxicology
★3 (fi 6) (second term, 3-0-0). A discussion of selected topics of current interest in toxicology. Content may vary from year to year, but will generally include mechanisms of cell injury and cell death, mechanisms of chemical carcinogenesis, and topics from genetic toxicology, radiation toxicology, and forensic toxicology. Intended for graduate students. Prerequisites: PMCOL 303 and consent of Department.

PMCOL 508 Molecular Pharmacology
★3 (fi 6) (either term, 3-0-0). This course aims to provide an understanding of the general mechanisms of drug action at the molecular level. Theoretical aspects of drug-receptor interaction are presented in detail followed by a consideration of the mechanisms of signal transduction that have been associated with different receptor types. Prerequisite: consent of Department.

PMCOL 510 Advanced Topics
★3 (fi 6) (first term, 3-0-0).

PMCOL 511 Advanced Topics
★3 (fi 6) (second term, 3-0-0).

PMCOL 512 Pharmacology of the Synapse
★3 (fi 6) (either term, 3-0-0). Current concepts of neurotransmitters, neuromodulators and trophic factors are discussed in the context of the normal, diseased and developing nervous systems. Students should have some biological background either in physiology, pharmacology, zoology, or the neurosciences. Prerequisite: consent of Department.

PMCOL 515 A Biophysical Aspect of Ion Channel Pharmacology
★3 (fi 6) (either term, 3-0-0). A comprehensive examination of ion channels and their pharmacology. Topics to be covered include: molecular pharmacology, fundamental principles of bioelectricity, ion channel recording, analysis, classification, molecular biology, structure, pathophysiology and hereditary disease. Prerequisite: consent of the Department

PMCOL 515 Advanced Topics in Cardiovascular Pharmacology
★3 (fi 6) (either term, 3-0-0). Current concepts of cardiovascular pharmacology will be discussed in the context of the normal and diseased cardiovascular system. Recent developments and use of the literature will be emphasized. Prerequisites: PMCOL 415 and consent of Department.

PMCOL 525 Problem Solving in Pharmacology and Therapeutics
★3 (fi 6) (second term, 3-0-0). Students will be presented with problem cases involving patients with conditions, possibly needing drug therapy. They will identify the issues needing resolution, work collectively to find information to resolve them, and present these and their application to each patient to the group. The group will work to resolve outstanding issues after the presentations. Intended for graduate students. Prerequisites: PMCOL 343 and 344 and consent of Instructor.

231.214 Pharmacy, PHARM
Faculty of Pharmacy and Pharmaceutical Sciences

Undergraduate Courses

PHARM 300 Experiential Learning - Part 1 - Service Learning
★1 (fi 2) (two term, 60 hours). Part 1 of the experiential learning course is a structured experience in which students have the opportunity to adopt a patient-centred approach to care and develop a self-awareness of one’s understanding of the patient’s illness and needs. The practice experience is in conjunction with a structured volunteer program in an institution or with a patient care agency. (Restricted to Pharmacy students).

PHARM 301 Principles of Drug Action and Disposition -Introduction to Medicinal Chemistry
★2.5 (fi 5) (first term, 6-0-0 IN 7 weeks). Introduction to medicinal chemistry, functional group recognition and properties, drug-receptor interactions, structure-activity relationships, rational drug design, and principles of drug absorption, distribution, metabolism and excretion. (Restricted to Pharmacy students).

PHARM 304 Introduction to Core Skills Required of a Health Professional-Drug Information
★0.5 (fi 1) (first term, 1-2S-2 in 7 weeks). Self-development of requisite of abilities for health professionals - Drug Information. (Restricted to Pharmacy students).

PHARM 305 Experiential Learning-Part 2-Community
★4 (fi 8) (Spring/Summer, 160 hours). This structured practical learning experience will allow students to integrate the knowledge and skills they have obtained in the classroom to the actual care of patients in community practice sites. Using the pharmaceutical care model and philosophy of practice, they will develop their patient interviewing skills, prepare and monitor pharmaceutical care plans, provide patient counseling on the administration of various dosage forms, answer drug information questions, participate in health promotion activities and begin to adopt the professional ethics, behaviours and attitudes of a pharmacist. Prerequisites: PHARM 300 (Restricted to Pharmacy students). Course is offered in Spring Term only.
PHARM 306 Introductory Biomedical Science  
2.5 (fi 5) (first term, 6-0-0 in 7 weeks). Introduces basic general concepts in the biomedical sciences, as a foundation for the systems blocks which follow in the undergraduate pharmacy curriculum. Integrates cell and tissue function in health and disease with basic principles of drug action and toxicity. (Restricted to Pharmacy students.)

PHARM 307 Dermatology, Eye, Ear, Nose and Throat  
2.5 (fi 5) (second term, 7-2.5S-3 in 5 weeks). Anatomy, physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacometrics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist's role in providing patient care for conditions relating to dermatology and eye, ear nose and throat disorders. (Restricted to Pharmacy students.)

PHARM 311 Radiopharm and Diagnostic Imaging  
1 (fi 2) (first term, 3-0-3 in 5 weeks). A pharmacy-oriented introduction to radiopharmaceuticals and contemporary diagnostic imaging techniques. Emphasis is placed on basic radiological and radiopharmaceutical principles, instrumentation and clinical applications. The advantages and limitations of various imaging modalities, including SPET, PET, MRI, x-ray CT and ultrasound are presented. (Restricted to Pharmacy students.)

PHARM 314 Introduction of Core Skills Required of a Health Prof-Communications-Part I  
1 (fi 2) (first term, 1-2S-3 in 8 weeks). Self-development of requisite values and abilities for health professionals. Topics covered include: abilities such as communication, self-directed learning, and group processes. (Restricted to Pharmacy students.)

PHARM 315 Experiential Learning – Part 3 Institutional  
2 (fi 4) (Spring/Summer, 98 H in 2.5 weeks). This structured practical learning experience following second year will provide an orientation to institutional pharmacy practice and allow students to apply the knowledge and skills they have obtained in the classroom to the actual care of patients in institutional practice sites. (Restricted to Pharmacy students.)

PHARM 321 Pharmacy Biotechnology and Immunology  
2.5 (fi 5) (first term, 6-0-0 in 7 weeks). An introduction to molecular biology and immunology from a pharmaceutical perspective. The applications of genetic manipulations, immunological approaches, and biotechnological processes for the design of drugs based on nucleic acids and proteins will be discussed. Topics include basic principles, emerging methodologies, and examples of diagnostic and therapeutic applications. (Restricted to Pharmacy students.)

PHARM 322 Role of the Pharmacist in the Canadian Health Care System  
2 (fi 4) (first term, 37 hours in 13 weeks). Designed to introduce the student to the profession of pharmacy and its position in the Canadian health care system. Topics covered include: Anatomy, physiology, pharmacology, medicinal chemistry, toxicology, pharmacometrics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist's role in providing patient care for conditions relating to nutrition. (Restricted to Pharmacy students.)

PHARM 324 Introduction to Core Skills Required of a Health Professional—Evidence Based Medicine  
1 (fi 2) (second term, 8-4S-0 in 5 weeks). Focuses on self-development of requisite abilities for health professionals. Topics covered include: critical appraisal of the literature. (Restricted to Pharmacy students.)

PHARM 327 Nutrition  
2 (fi 4) (second term, 4-25-2 in 7 weeks). Physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacometrics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist's role in providing patient care for conditions relating to nutrition. (Restricted to Pharmacy students.)

PHARM 330 Comprehensive Assessment 1  
0.5 (fi 1) (second term, 0-10-2 in 1 week). This block summarizes and provides a final integration of knowledge, skills and attitudes developed during the second year. A final comprehensive examination and clinical skills assessment examination are administered. (Restricted to Pharmacy students.)

PHARM 331 Pharmacometrics 1  
3 (fi 6) (second term, 6-15-3 in 8 weeks). Principles of pharmaceutical dosage forms. Factors affecting the physical and chemical behavior of drug products. Rationale underlying the formulation and compounding techniques of pharmaceutical preparations. (Restricted to Pharmacy students.)

PHARM 334 Introduction to Core Skills Required of a Health Professional - Communications - Part 2  
1.5 (fi 3) (second term, 3-2.5S-0 in 8 weeks). Self-development of requisite values and abilities for health professionals. Topics covered include: communications skills with an emphasis on interpersonal communication; and time and stress management. (Restricted to Pharmacy students.)

PHARM 341 Pharmaceutical Analysis  
2.5 (fi 4) (first term, 6-0-0 in 6 weeks). An overview of the methods of pharmaceutical analyses used in the pharmaceutical sciences including pharmacy math. (Restricted to Pharmacy students.)

PHARM 342 Introduction to Drug Use Control Process and Patient Care  
2.5 (fi 5) (second term, 3-1.5S-1.5 in 11 weeks). An introduction to the professional and technical aspects of drug use control, jurisprudence, drug information, and the provision of pharmaceutical care. Communication focuses on the development of basic interpersonal, rapport building, and patient counselling skills relating to the provision of various dosage forms. (Restricted to Pharmacy students.)

PHARM 347 Hematology  
1.5 (fi 3) (first term, 3-4S-2 6 weeks). Anatomy, physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacometrics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist's role in providing patient care for conditions relating to Hematology. (Restricted to Pharmacy students.)

PHARM 351 Biopharmaceutics and Pharmacokinetics  
2 (fi 4) (first term, 3-0-0 in 11 weeks). Application of biopharmaceutics and pharmacokinetics to patient care and drug therapy. (Restricted to Pharmacy students.)

PHARM 357 Gastrointestinal  
2.5 (fi 5) (first term, 6-3S-2 5 weeks). Anatomy, physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacometrics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist's role in providing patient care for conditions relating to the gastrointestinal tract and liver. (Restricted to Pharmacy students.)

PHARM 361 Pharmaceutics 2  
3 (fi 6) (first term, 6-1S-3 in 8 weeks). Physicochemical principles of pharmaceutical dosage forms. Factors affecting the physical and chemical behavior of drug products and dosage forms. Rationale underlying the formulation and quality control of pharmaceutical preparations. (Restricted to Pharmacy students.)

PHARM 362 Pharmacy Laws and Ethics  
1 (fi 2) (first term, 3-9-0 7 in 7 weeks). A study of the statutes governing the practice of Pharmacy, an understanding of the legal rights and responsibilities of the pharmacist and a practical application of these laws. Ethical theories and principles and their application in Pharmacy Practice. (Restricted to Pharmacy students.)

PHARM 367 Cardiology  
6.5 (fi 6) (second term, 6-2S-2 11 weeks). Anatomy, physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacometrics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist's role in providing patient care for conditions relating to cardiology. (Restricted to Pharmacy students.)

PHARM 372 Pharmacy Management  
2 (fi 4) (first term, 3-0-0 in 11 weeks). An introduction to the elements of pharmacy administration consisting of: management principles, and pharmacy practice management. Provides the student with an understanding of the economic, social, and professional environment of the profession of pharmacy. (Restricted to Pharmacy students.)

PHARM 377 Immunotherapeutics and Transplant  
1.5 (fi 3) (second term, 3-2S-2 in 5 weeks). Anatomy, physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacometrics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist's role in providing patient care for conditions relating to immunology and transplant. (Restricted to Pharmacy students.)

PHARM 382 Provincial and Canadian Healthcare  
3 (fi 6) (second term, 3-3S-5 in 12 weeks). An examination of healthcare and its issues from a pharmacy perspective within the context of the Canadian health care system. The course will provide a review of the health care; identify key problems, issues, and solutions in regards to delivering pharmacy services; review key stakeholders roles, responsibilities and relationships (current and future); and review issues relating to pharmacy as a profession and a business. (Restricted to pharmacy students.)

PHARM 387 Pediatrics / Geriatrics  
1.5 (fi 3) (first term, 3-3S-0 in 6 weeks). An integrated science and therapeutics based course covering the relevant material relating to anatomy, physiology, pathophysiology, clinical biochemistry, clinical toxicology, medicinal chemistry, pharmacology, pharmacometrics, pharmacometrics, therapeutics, complementary/alternative medicine and new or future advances in the treatment and management of age related issues in special populations. (Restricted to Pharmacy students.)

PHARM 392 Pharmacoeconomics and Pharmacy Practice Research  
1.5 (fi 3) (second term, 3-0-0 in 9 weeks). An introduction to understanding the basic principles and concepts of pharmacoeconomics and to research design relevant to pharmacy practice. (Restricted to Pharmacy students.)

PHARM 397 Lab Values, Urology and Nephrology  
2.5 (fi 5) (first term, 3-2S-3 in 11 weeks). Anatomy, physiology, pharmacology, medicinal chemistry, toxicology, therapeutics and pharmacy practice relating to the pharmacist's role in providing patient care for conditions relating to lab values, fluids, electrolytes urology and nephrology. (Restricted to Pharmacy students.)
PHARM 407 Infectious Diseases I
☆4 (fi 6) (first term, 6-2S-2). Microbiology, pharmacology, medicinal chemistry, pathophysiology, toxicology, pharmacology, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist’s role in providing patient care for conditions relating to infectious diseases. (Restricted to Pharmacy students).

PHARM 417 Neurology
☆3 (fi 6) (first term, 7-3S-2 in 5 weeks). Anatomy, physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacokinetics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist’s role in providing patient care for conditions relating to the central nervous system. (Restricted to Pharmacy students).

PHARM 425 Experiential Learning Part 4
☆16 (fi 32) (either term, 640 hours in 16 weeks). The student will be expected to demonstrate professional competencies in the provision of pharmaceutical care. Direct patient care activities will include drug therapy monitoring, patient interviewing, patient counseling, provision of drug information, and contributing to patient care as part of an interdisciplinary team. (Restricted to Pharmacy students).

PHARM 427 Pain
☆2 (fi 4) (second term, 3.5-3S-2 in 9 weeks). Anatomy, physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacokinetics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist’s role in providing patient care for conditions relating to non-malignant pain management. (Restricted to Pharmacy students.)

PHARM 430 Comprehensive Assessment 2
☆0.5 (fi 1) (second term, 0-10S-2 in 1 week). This block summarizes and provides a final integration of knowledge, skills and attitudes developed during the third year. A final comprehensive examination and clinical skills assessment examination are administered. (Restricted to Pharmacy students)

PHARM 437 Bone and Joint
☆2 (fi 4) (second term, 7.5-3S-3 in 4 weeks). Anatomy, physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacokinetics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist’s role in providing patient care for conditions relating to bone and joint disorders. (Restricted to Pharmacy students).

PHARM 447 Psychiatry
☆2.5 (fi 6) (first term, 9-3S-3 in 4 weeks). Pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacokinetics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist’s role in providing patient care for psychiatric conditions. (Restricted to Pharmacy students).

PHARM 455 Specialty Pharmacy Rotation
☆2-6 (variable) (either term, variable). Consists of 80-240 hours in a practice area, on a full-time or part-time basis. Students are required to prepare a proposal for the placement with desired objectives, activities and an evaluation mechanism. The proposal is to be agreed to by the Placement Coordinator and the Site Coordinator/preceptor. The placement will be conducted under the coordination of the Placement Coordinator and preceptor(s) at the practice site. The student is also required to prepare a report on the outcomes of the placement in the form of a portfolio. Travel and accommodation costs are the responsibility of the student. Prerequisites: Dependent on specialty and consent of Faculty. Restricted to Pharmacy students.

PHARM 458 Hospital Pharmacy
☆3 (fi 6) (either term, 3-0-0). Current literature analysis and presentation of modern concepts in drug distribution, drug information systems, application of data processing to decentralized pharmacy services and administrative principles peculiar to institutional pharmacy. (Restricted to Pharmacy students.)

PHARM 467 Oncology
☆2.5 (fi 5) (first term, 6-2S-2 in 5 weeks). Basic science of oncology, anatomy, physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacokinetics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist’s role in providing patient care for conditions relating to cancer. (Restricted to Pharmacy students and to graduate students in Faculty of Pharmacy and Pharmaceutical Sciences).

PHARM 472 Complementary/Alternative Medicinal Therapies
☆3 (fi 6) (either term, 3-0-0). The study of herbal preparations, nutritional supplements, and homeopaths. These are widely used by the general public as self-selected OTC (over-the-counter) products/NPDs (nonprescription drugs), or food items for therapeutic, disease prevention, or health promotion purposes. Emphasis will be placed on the role of the pharmacist to help clients make an informed choice and counsel them on the selection of useful and safe products. Restricted to Pharmacy students in Faculty of Pharmacy and Pharmaceutical Sciences).

PHARM 477 Infectious Diseases II
☆4 (fi 6) (second term, 6-3S-3 in 13 weeks). Pharmacology, medicinal chemistry, pathophysiology, toxicology, pharmacokinetics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist’s role in providing patient care for conditions relating to infectious diseases. (Restricted to Pharmacy students).

PHARM 481 Veterinary Pharmacology
☆3 (fi 6) (second term, 3-0-0). A course in the commonly used veterinary biological and pharmaceutical preparations; general sanitary and management procedures for the prevention and control of livestock diseases; a brief review of infectious diseases and animal parasites.

PHARM 483 Home Health Care
☆3 (fi 6) (second term, 3-0-0). To acquaint students with the variety of home health care products; to demonstrate the proper assembly, fitting, adjustment, and use of various products and supplies; to discuss the economics, marketing, and management of running a home health care department and supplying home health care products and services. (Restricted to Pharmacy students.)

PHARM 487 Pulmonary
☆2 (fi 4) (second term, 7.5-3S-3 in 4 weeks). Anatomy, physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacokinetics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist’s role in providing patient care for conditions relating to the pulmonary system. (Restricted to Pharmacy students).

PHARM 489 Seminars in Therapeutics and Professional Practice
☆3 (fi 6) (either term, variable). A seminar course for fourth year pharmacy students covering selected topics in therapeutics, pharmacokinetics and clinical pharmacy. (Restricted to fourth year Pharmacy students.)

PHARM 492 Epidemiology Applications for Pharmacy
☆3 (fi 6) (second term, 3-0-0). An examination of how epidemiologic methods may be applied to the study of drug use and effects. Students will gain an understanding of factors that may influence pharmaceutical use, and develop skills necessary to critically evaluate research designed to promote safe, effective, equitable, and efficient use of pharmaceuticals in the population. (Restricted to Pharmacy students).

PHARM 494 Pharmacy Management: Selected Topics
☆3 (fi 6) (either term, variable). Continuation of PHARM 372 with emphasis on financial management and the management of human resources. Projects on pharmacy operations. Prerequisite: PHARM 372.

PHARM 497 Endocrine
☆2 (fi 4) (second term, 3-2S-3 in 11 weeks). Anatomy, physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacokinetics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist’s role in providing patient care for conditions relating to the endocrine system. (Restricted to Pharmacy students.)

PHARM 498 Pharmaceutical Research
☆3 (fi 6) (either term, 0-0-4). Investigational work under the direction of a member of the Faculty. Preparation of a written report. Prerequisites: consent of the Faculty and the approval of a Faculty member to direct the research. This course may be taken during Spring/Summer by special arrangement. (Restricted to Pharmacy students.)

PHARM 499 Women’s and Men’s Health
☆2 (fi 4) (second term, 6-3S-3 in 5 weeks). Anatomy, physiology, pathophysiology, pharmacology, medicinal chemistry, toxicology, pharmacokinetics, clinical pharmacokinetics, therapeutics and pharmacy practice relating to the pharmacist’s role in providing patient care for conditions relating to women’s and men’s health. (Restricted to Pharmacy students.)

Graduate Courses

Note: The following undergraduate courses may be taken for credit by graduate students: PHARM 481, 494.

PHARM 570 Advanced Pharmaceutical Analysis – Spectroscopy
☆3 (fi 6) (first term, 3-0-3). Applications of instrumental methods of analysis (ultraviolet and infrared spectroscopy; NMR; mass spectrometry; atomic absorption spectroscopy) to pharmaceutical compounds. Offered in odd-numbered years. Prerequisite: Consent of Faculty.

PHARM 573 Analytical Techniques in Pharmaceutical Sciences
☆3 (fi 6) (second term, 3-0-3). The course emphasises the key skills required to study and explore recent trends in pharmaceutical analysis and the latest analytical technologies. The core analytical techniques such as chromatography, LC-MS, ELISA, and, electrophoresis will be discussed in detail along with hands-on experience during laboratory sessions. Prerequisite: PHARM 570 or consent of the Faculty. Offered alternate years.

PHARM 580 Introduction to Computer-Aided Drug Design
☆3 (fi 6) (second term, 3-0-2). An introductory course designed to provide students with the background and a hands-on understanding of techniques involved in computer-aided drug design, including bioinformatics, molecular modeling, molecular simulation, docking and QSAR. Prerequisite: consent of the Faculty.
PHARM 589 Pharmacy in Neoplastic Disease
(3 (fi 6) (first term, 3-0-0). Description of neoplastic disease, its prevalence and drug treatment with an emphasis on patient management. There is an emphasis on the pharmacists’ role in preparing chemotherapy medication, minimizing toxic effects of cancer drugs, dosage considerations, concomitant use of medication for other diseases and psychosocial aspects of care. Students will also learn about newer forms of treatments and changes in the provision of treatment services. Restricted to Pharmacy graduate students.

PHARM 593 Advanced Radiopharmaceutical Sciences II
(3 (fi 6) (first term, 3-0-4). Application of radionuclides in medical diagnosis and treatment; control of radionuclides in the hospital. Laboratory: preparation, quality control and clinical utility of currently used radiopharmaceuticals in nuclear medicine. Prerequisite: PHARM 601 or consent of Faculty.

PHARM 595 Clinical Rotations
(6 (fi 12) (two term, 900 hours). A clinical experience which will provide the student with the opportunity to practice clinical pharmacy in several specialty areas. The student will be expected to demonstrate professional competence in patient counselling, obtaining medication histories, providing drug information, applied pharmacokinetics and related areas. Credit will be granted after the completion of 900 hours of approved clinical training.

PHARM 596 Pharmaceutical Marketing
(3 (fi 6) (first term, 3-0-0). An examination of the process of marketing pharmaceuticals in Canada. Topics to be covered are: pre-marketing requirements, regulatory control over drugs, price and product competition, promotion and advertising of pharmaceuticals, channels of distribution, packaging, ethics, price, and group purchasing. The course stresses the unique factors to be considered in marketing pharmaceuticals. Prerequisite: PHARM 372.

PHARM 601 Isotope Tracer Methodology I
(3 (fi 6) (first term, 3-0-3). Fundamental principles of radioactivity and health physics. The importance of radioisotopes in medicine, agriculture, industry, and research. Problems and limitations in the use of radioisotopes as tracers. Instrumentation and analysis methods. Experimental procedures, application of methods of analysis and criteria for evaluation of results. Laboratory: handling and preparation of radioisotopes for counting. Counting procedures, Tracer chemical and biochemical analyses.

PHARM 603 Activation Analysis
(3 (fi 6) (second term, 2-0-0). Physical and chemical basis of activation analysis, use of slow neutrons from the Slowpoke reactor, proton and charged particle activation; x-ray fluorescence; modern pulse-height analysis technique. Prerequisite: consent of Faculty. Note: Offered-alternate years.

PHARM 604 Applied Problems in Current Research
(3 (fi 6) (either term, 0-0-3). The student will work with one or two faculty members on special research techniques in biocatalysis or radiopharmacy. Prerequisite: consent of Faculty.

PHARM 605 Radiopharmaceutical Chemistry
(2 (fi 4) (second term, 2-0-0). A discussion of preparation of short-lived radiopharmaceuticals with emphasis on radiochemical synthesis using carbon-11, fluorine 18 and radionuclides of iodine and bromine; stability, storage and purity of radio-labelled compounds; labelling with long-lived radionuclides. Prerequisite: consent of Faculty. Note: Offered-alternate years.

PHARM 606 Current Topics in Biocatalysis and Radiopharmacy
(3 (fi 6) (either term, 3-0-0). Assigned readings, tutorials and seminars in recent advances in the fields of biocatalysis and radiopharmacy, conducted under the direction of several faculty members. Prerequisites: PHARM 601, 603, 604 or consent of Faculty.

PHARM 610 Advanced Drug Delivery Systems
(3 (fi 6) (first term, 3-0-0). The focus of this course is on the design and development of novel delivery systems for various treatment and diagnostic applications. A particular attention will be paid to the physicochemical principles behind the development of different drug delivery systems, their biological application and significance. Emphasis is given to polymer based systems and assembled nano-carriers for the delivery of therapeutic drugs, proteins, vaccines and genes. Prerequisite: Consent of Faculty.

PHARM 611 Pharmaceutical Formulation and Development
(3 (fi 6) (either term, 0-3s-2). Theoretical considerations basic to the technology of pharmaceutical dosage forms to meet the requirements of therapeutic efficacy, stability, and safety. Laboratory: development and formulation of pharmaceutical products. Prerequisite: consent of Faculty.

PHARM 615 Advanced Pharmacokinetics
(3 (fi 6) (second term, 3-0-0). This course deals with the theoretical aspects of pharmacokinetics. Compartmental and non-compartmental theories are treated in depth. The application of these theories is made in various areas where kinetics are involved. Prerequisite: PHARM 351 or equivalent or consent of Faculty. Note: Offered alternate years.

PHARM 624 Application of Nuclear Magnetic Resonance Spectroscopy to Medicinal and Pharmaceutical Chemistry
(3 (fi 6) (first term, 3-0-0). Basic interpretation and examples of use of NMR spectroscopy in problems of pharmaceutical synthesis and its studies of the mode of action of medicinally active compounds. Prerequisite: consent of Faculty. Note: Offered alternate years.

PHARM 626 Applications of Mass Spectrometry to Medicinal and Pharmaceutical Chemistry
(3 (fi 6) (either term, 3-0-0). Examples of the use of mass spectrometry in the identification of medicinal compounds are considered. Diagnostic spectra of extracts of medicinal preparations, identification of drug metabolites and applications of mass spectrometry to chemical toxicology and neurochemistry are studied. Prerequisite: consent of Faculty. Note: Offered alternate years.

PHARM 630 The Metabolism and Excretion of Drugs
(3 (fi 6) (either term, 3-0-0). The chemistry, biochemistry and kinetics of drug metabolism together with the factors affecting metabolism; the practical aspects of in vitro and in vivo studies of drug metabolism; the excretion of drugs by various routes and factors affecting excretion, the kinetics of excretion. Note: Offered alternate years.

PHARM 690 Advanced Seminar in Pharmacy and Pharmaceutical Sciences
(3 (fi 6) (either term, 3-0-0). Assigned readings, tutorials, and seminars on recent advances and methodological approaches in Pharmacy, conducted under the direction of academic staff members in the Faculty of Pharmacy and Pharmaceutical Sciences.

PHARM 694 Directed Project
(3 (fi 6) (either term, 0-0-3). Directed studies in pharmaceutical research, using one or more techniques of special interest to individual students. Prerequisites: consent of the Faculty and the supervising faculty member.

PHARM 697 Graduate Seminar
(1 (fi 1) (two term, 0-16s). Seminar training and short seminar presentations on topics related to the student’s field of research. Normally, the seminar will be presented during the student’s second or third term. Required of all MSc and PhD students.

PHARM 698 Graduate Seminar
(1 (fi 1) (either term, 0-16s). Seminar presentation based on the student’s research. Normally to be taken during the final term, prior to thesis defense. Required of all MSc and PhD students. Prerequisite: PHARM 697.

PHARM 900 Directed Research Project
(1 (fi 12) (variable, unassigned).

231.216 Philosophy, PHIL
Faculty Saint-Jean
Cours de 1er cycle

PHILE 125 Logique pratique
(3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Les procédés et les principes d’analyse des arguments. La matière du cours pourra inclure les sophismes informels, l’initiation à la méthode scientifique, le raisonnement statistique élémentaire, la logique propositionnelle élémentaire et les procédés susceptibles de mener à une décision rationnelle. Note: La priorité sera accordée aux étudiants du BA de la Faculté Saint-Jean.

PHILE 140 Introduction à la philosophie occidentale
(3 (fi 6) (aux deux semestres, 3-0-0). Introduction aux principaux problèmes et théories qui ont dominé la pensée philosophique en Occident, par l’étude et la discussion critique de quelques classiques de la philosophie. Les lectures inclureront la République de Plato et les Méditations métaphysiques de Descartes et une œuvre majeure de Hobbes, Locke, Berkeley ou Hume.

PHILE 386 La bioéthique
(3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Regard philosophique sur les problèmes majeurs de la bioéthique. Exemples: les droits et les devoirs du personnel hospitalier et du patient, l’euthanasie active et passive, le droit à la vie et l’avortement, la recherche et l’expérimentation en médecine humaine et animale, la manipulation génétique.

231.216 Philosophy, PHIL
Department of Philosophy
Faculty of Arts
Notes
(1) No junior course presupposes background in Philosophy. PHIL 101, 102, and 120 are recommended for all students intending to continue in Philosophy. Courses at the 200-level are intended to provide a foundation for further study in Philosophy.

(2) There are no formal prerequisites for 200- or 300-level courses (except for PHIL 220). Entrance to 400-level courses requires 6 of prior courses in PHIL, at least three of which must be at the 200-level.
Undergraduate Courses

PHIL 101 Introduction to Philosophy: Values and Society
3 (fi 6) (either term, 2-1s-0). An introduction to the classical problems of philosophy through study and critical discussion of selected philosophical classics and contemporary works. Emphasis will be placed on questions of moral and other values and on the nature of society and justice.

PHIL 102 Introduction to Philosophy: Knowledge and Reality
3 (fi 6) (either term, 2-1s-0). An introduction to the classical problems of philosophy through study and critical discussion of selected philosophical classics and contemporary works. Emphasis will be placed on questions of the nature and extent of human knowledge and basic problems about the nature of reality and our place in it.

PHIL 103 Critical Thinking, Reading, and Writing
3 (fi 6) (either term, 3-0-0). An introduction to some central topics in philosophy, with frequent writing assignments and a minimum 30% of class time devoted to writing instruction. Note: Credit cannot be obtained for both PHIL 103 and any of PHIL 101, 102, or 125.

PHIL 120 Symbolic Logic I
3 (fi 6) (either term, 3-0-0). A study of sentential logic, including translation, semantics, decision procedures and natural deduction followed by an introduction to predicate logic, concentrating on translation. Note: Not open to students with credit in PHIL 220.

PHIL 125 Practical Logic
3 (fi 6) (either term, 3-0-0). Elementary methods and principles for analyzing reasoning as it occurs in everyday contexts. Topics may include informal fallacies, introduction to scientific method, elementary statistical reasoning, elementary sentential logic, as well as the study of argument in contemporary debates about issues of social concern.

PHIL 200 Metaphysics
3 (fi 6) (either term, 3-0-0). Basic questions concerning the nature of reality. Topics may include existence, materialism and idealism, freedom and determinism, appearance and reality, causality, identity, time and space, universals and particulars.

PHIL 205 Philosophy of Mind
3 (fi 6) (either term, 3-0-0). Basic questions concerning the mind and our attempts to study it scientifically.

PHIL 215 Epistemology
3 (fi 6) (either term, 3-0-0). A study of such central topics in the theory of knowledge as truth and rationality, skepticism and the limits of knowledge, relativism and the objectivity of knowledge, the role of perception, memory and reason as sources of knowledge.

PHIL 217 Biology, Society, and Values
3 (fi 6) (either term, 3-0-0). The philosophical and social impact of historical and contemporary topics in the biological sciences.

PHIL 220 Symbolic Logic II
3 (fi 6) (either term, 3-0-0). A brief review of sentential logic followed by an intensive study of predicate logic with identity. Topics include translation, semantics, decision procedures, natural deduction systems, mathematical induction. Other topics include: theories of definite descriptions, elementary modal logic, formal axiomatic systems. Prerequisite: PHIL 120 or consent of Department.

PHIL 230 Greek Philosophy to Plato
3 (fi 6) (either term, 3-0-0). A survey of the thought of the ancient Greek world from its beginnings with the Pre-Socratics up to and including Plato.

PHIL 240 Descartes to Hume
3 (fi 6) (either term, 3-0-0). A survey of Philosophy in the 17th- and 18th centuries. Philosophers studied will include Descartes, Leibniz, Spinoza, Locke, Berkeley, and Hume.

PHIL 250 Ethics
3 (fi 6) (either term, 3-0-0). An examination of questions of right and wrong, good and evil, and reasons for action, through the study of ethical thought of authors such as Plato, Aristotle, Hobbes, Kant, and Mill.

PHIL 265 Philosophy of Science
3 (fi 6) (either term, 3-0-0). An introduction to the central issues in contemporary philosophy of science. Topics may include theory evaluation, paradigm shifts and theory change, laws of nature, causation and explanation, the rationality of science and its social and historical setting.

PHIL 270 Political Philosophy
3 (fi 6) (either term, 3-0-0). A survey of issues in contemporary political philosophy with attention to liberalism and communitarianism, sovereignty, feminism, entitlement and distribution, and global justice.

PHIL 272 Feminist Philosophy
3 (fi 6) (either term, 3-0-0). An introduction to feminist issues in current philosophy. Note: Not open to students with credit in PHIL 332 or W ST 332.

PHIL 280 Philosophy of Art
3 (fi 6) (either term, 3-0-0). An introduction to some of the traditional theories, such as the expressionist and the formalist theories, which investigate the nature and function of the arts. The nature of aesthetic experience will also be considered.

PHIL 291 Existentialism
3 (fi 6) (either term, 3-0-0). An introduction to the background and main themes of existentialist philosophy. Authors such as Kierkegaard, Nietzsche, Heidegger, and Sartre are considered.

PHIL 301 World Philosophies
3 (fi 6) (either term, 3-0-0). An introduction to one or more non-Western approaches to philosophy, such as African, Asian, or aboriginal traditions of thought. Attention will be given to the internal structure of particular philosophical theories, as well as to connections with and interactions among broader cultural traditions, values, and practices.

PHIL 305 Philosophy of Psychology
3 (fi 6) (either term, 3-0-0). Central topics at the interface of philosophy and psychology. Prerequisite: PHIL 205, or two courses in Psychology, or consent of Department.

PHIL 317 Philosophy of Biology
3 (fi 6) (either term, 3-0-0). Core topics at the interface of biology and philosophy.

PHIL 325 Risk, Choice, and Rationality
3 (fi 6) (either term, 3-0-0). A study of the formal theory of rationality including probability and induction, and elementary decision theory, with attention to the paradoxes of choice.

PHIL 333 Aristotle and Hellenistic Philosophy
3 (fi 6) (either term, 3-0-0). The thought of the ancient Greek world from Aristotle into the Hellenistic Period. Note: Not open to students with credit in PHIL 242.

PHIL 343 Kant to Nietzsche
3 (fi 6) (either term, 3-0-0). A survey of the philosophy of Kant and the 19th century. Philosophers studied will include Kant, Hegel, Marx, the Utilitarians, and Nietzsche. Note: Not open to students with credit in PHIL 245.

PHIL 355 Philosophy of the Environment
3 (fi 6) (either term, 3-0-0). Philosophical dimensions of issues raised by our relationship to the environment. Topics may include anthropocentrism versus biocentrism, the value of biodiversity, the aesthetic appreciation of nature, the relationship between environmental and economic values.

PHIL 357 Philosophy of Religion
3 (fi 6) (either term, 3-0-0). General topics in the Philosophy of Religion, which may include the concept of ‘religion,’ the existence of God, meaning and intelligibility in religious language, religion and morality, implications of the social scientific study of religion.

PHIL 365 Philosophy of Computing
3 (fi 6) (either term, 3-0-0). Emphasis on artificial intelligence, artificial life, and virtual reality. No previous familiarity with computing is necessary.

PHIL 366 Computers and Culture
3 (fi 6) (either term, 3-0-0). A philosophical examination of moral and social issues arising from the computer revolution. Possible topics include hacking, internet culture, smart environments and cyborgs.

PHIL 368 Equality and Social Justice
3 (fi 6) (either term, 3-0-0). A philosophical study of the notions of equality, privilege, and freedom. Readings from classical and contemporary texts on justice, equality, group identity and difference, oppression and liberation. Attention will be paid to areas of current controversy such as welfare policies, affirmative action, and the nature and implications of sexual, cultural, and ethnic identity.

PHIL 375 Science and Society
3 (fi 6) (either term, 3-0-0). A broadly based introduction to the intellectual, cultural, and social dimensions of science and their implications. Topics may include the impact of the Newtonian revolution, mechanism, materialism and Darwinism, and the nature of objectivity and rationality.

PHIL 379 Philosophy and Nursing I: Christian Perspectives
1.5 (fi 3) (either term, 18 hours). Examining traditional applications of moral philosophy to issues in healthcare from a Christian perspective. Topics may include professionalism, confidentiality, nurse-patient relationships, and principled approaches to bioethics. Note: Open only to students registered in the BSN-Collaborative program. Not available for credit to students who have completed PHIL 388.

PHIL 380 Philosophy of Criticism
3 (fi 6) (either term, 3-0-0). An introduction to the philosophical foundations of art criticism. Questions concerning the standards of interpretation and evaluation of the arts will be given special attention.
**PHIL 381 Philosophy and Literature**

3 (fi 6) (either term, 3-0-0). An introduction to the philosophical study of literature.

**PHIL 382 Philosophy of Law: Theoretical and Social Issues**

3 (fi 6) (either term, 3-0-0).

**PHIL 384 Applied Ethics**

3 (fi 6) (either term, 3-0-0). Moral theory applied to practical problems in areas such as business, war and peace, the environment, and human relations.

**PHIL 386 Philosophy and Health Care**

3 (fi 6) (either term, 3-0-0). A philosophical examination of concepts and issues central to knowledge and practice of health care. Topics may include: rights and responsibilities of patients and health care personnel, passive and active euthanasia, abortion, research and experimentation, disclosure of diagnosis and risks, death and suffering.

**PHIL 389 Philosophy and Nursing I**

1.5 (fi 3) (either term, 18 hours). Examining traditional applications of moral philosophy to issues in healthcare. Topics include professionalism, confidentiality, nurse-patient relationships, and principled approaches to bioethics. Note: Open only to students registered in the BScN-Collaborative program.

**PHIL 392 Topics in Recent Continental Philosophy**

3 (fi 6) (either term, 3-0-0). An introduction to such movements in recent European Philosophy as phenomenology, hermeneutics, critical theory, structuralism, and post structuralism. Prerequisite: PHIL 291 or consent of the Department.

**PHIL 396 Third-Year Honors Seminar**

3 (fi 6) (either term, 0-3s-0). Note: For students in the third year of the Honors program.

**PHIL 397 Philosophy and Nursing II: Christian Perspectives**

1.5 (fi 3) (either term, 18 hours). Examining moral and social issues surrounding the goals of nursing and of healthcare from a Christian perspective, using traditional bioethics principles and complementary approaches (e.g. ethics of care, virtue ethics, etc.). Topics may include death and dying, allocation of scarce resources, issues in paediatric care, and global health issues. Note: Open only to students registered in the BScN-Collaborative program and who have completed PHIL 396. Not available for credit to students who have completed PHIL 398.

**PHIL 398 Philosophy and Nursing II**

1.5 (fi 3) (either term, 18 hours). Examining moral and social issues surrounding the goals of nursing and of healthcare, using traditional bioethics principles and complementary approaches (e.g. ethics of care, virtue ethics, etc.). Topics may include death and dying, allocation of scarce resources, issues in paediatric care, and global health. Note: Open only to students registered in the BScN Collaborative program and who have completed PHIL 398. Not available for credit to students who have completed PHIL 396.

**PHIL 400 Topics in Metaphysics**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 401 Topics in Epistemology**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 405 Topics in Philosophy of Mind**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 411 Philosophy of Space and Time**

3 (fi 6) (either term, 3-0-0). Selected theories and problems concerning the nature of space and time. A strong background in philosophy, mathematics, or physical sciences is desirable. Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 412 Topics in Philosophy of Science**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 415 Topics in Philosophy of Biology**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of the Department.

**PHIL 417 Philosophy and Cognitive Science**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 420 Metalogic**

3 (fi 6) (either term, 3-0-0). The theoretical study of formal systems of logic. Topics include formal axiomatic systems, formal syntax and semantics, soundness and completeness proofs for both sentential and predicate logic. Prerequisite: PHIL 220 or consent of Department.

**PHIL 421 Modal Logic**

3 (fi 6) (either term, 3-0-0). Standard modal systems in sentential and predicate logic including possible world semantics and completeness proofs. Tense logic and epistemic logic may be considered. Prerequisite: PHIL 220 or consent of Department.

**PHIL 422 Topics in Advanced Symbolic Logic**

3 (fi 6) (either term, 3-0-0). Prerequisite: PHIL 220 or consent of Department.

**PHIL 425 Topics in Rationality**

3 (fi 6) (either term, 3-0-0). Prerequisite: PHIL 325, ECON 101, or consent of Department.

**PHIL 426 Philosophy of Language**

3 (fi 6) (either term, 3-0-0). Selected problems concerning the nature of language and meaning. Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 428 Logic and Language**

3 (fi 6) (either term, 3-0-0). Philosophical logic and its application to the semantics of natural language. Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 433 Topics in Feminist Philosophy**

3 (fi 6) (either term, 3-0-0). Prerequisite: PHIL 272 or 332 (taken prior to 2006) or W ST 301 or consent of Department.

**PHIL 436 Topics in Medieval Philosophy**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200 level, or consent of Department.

**PHIL 440 Topics in Ancient Philosophy**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200 level, or consent of Department.

**PHIL 442 17th- and 18th-Century Continental Philosophy**

3 (fi 6) (either term, 3-0-0). Topics concerning the early modern philosophical tradition of Descartes, Spinoza, and Leibniz. Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 443 17th- and 18th-Century British Philosophy**

3 (fi 6) (either term, 3-0-0). Topics concerning the early modern British philosophical tradition of Locke, Berkeley, and Hume. Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 444 Kant**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 445 Topics in 19th-Century Philosophy**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 446 Early Analytic Philosophy**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200 level, or consent of Department.

**PHIL 447 Wittgenstein**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 448 Topics in 20th-Century Philosophy**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 450 Topics in Ethics**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 453 Philosophy of History**

3 (fi 6) (either term, 3-0-0). Study of one or more of the following themes: Speculative accounts of our historical being and of the sense of history as a whole; critical analysis of the scope and limits of historiographic knowledge and explanation; historicist theses that philosophy is essentially historical. Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 470 Topics in Social and Political Philosophy**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 480 Topics in Aesthetics**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 481 Topics in Philosophy and Literature**

3 (fi 6) (either term, 3-0-0). Prerequisite: At least 6 in PHIL, 3 of which must be at the 200-level, or consent of Department.

**PHIL 486 Directed Reading I**

3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

**PHIL 487 Directed Reading II**

3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.
PHIL 488 Current Research in Philosophy
★3 (fi 6) (either term, 3-0-0). Prerequisite: At least ★8 in PHIL, ★3 of which must be at the 200-level, or consent of Department.

PHIL 493 Fourth-Year Honors Seminar
★3 (fi 4) (first term, 0-3a-0). Note: For students in the fourth year of the Honors program.

PHIL 498 Honors Essay
★3 (fi 6) (either term, 3-0-0). Preparation of the honors essay, required in the fourth year of the Honors program.

Graduate Courses
Note: Only a selection of the courses listed below are offered each year.

PHIL 500 Metaphysics
★3 (fi 6) (either term, 3-0-0).

PHIL 501 Epistemology
★3 (fi 6) (either term, 3-0-0).

PHIL 505 Philosophy of Mind
★3 (fi 6) (either term, 3-0-0).

PHIL 510 Philosophy of Science
★3 (fi 6) (either term, 3-0-0).

PHIL 522 Topics in Logic
★3 (fi 6) (either term, 3-0-0).

PHIL 526 Philosophy of Language
★3 (fi 6) (either term, 3-0-0).

PHIL 536 Topics in Medieval Philosophy
★3 (fi 6) (either term, 3-0-0).

PHIL 540 Topics in Ancient Philosophy
★3 (fi 6) (either term, 3-0-0).

PHIL 546 Topics in Modern Philosophy
★3 (fi 6) (either term, 3-0-0).

PHIL 547 Topics in 20th Century Philosophy
★3 (fi 6) (either term, 3-0-0).

PHIL 550 Moral Philosophy
★3 (fi 6) (either term, 3-0-0).

PHIL 570 Social and Political Philosophy
★3 (fi 6) (either term, 3-0-0).

PHIL 580 Aesthetics
★3 (fi 6) (either term, 3-0-0).

PHIL 594 Selected Problems in Philosophy
★3 (fi 6) (either term, 3-0-0).

PHIL 596 Directed Reading I
★3 (fi 6) (either term, 3-0-0). Prerequisite: Open only to graduate students beyond the qualifying year.

PHIL 597 Directed Reading II
★3 (fi 6) (either term, 3-0-0). Prerequisite: Open only to graduate students beyond the qualifying year.

231.216.1 Philosophy (from within the Roman Catholic Tradition) St Joseph's College

PHIL 239 Greek Philosophy and the Christian Tradition
★3 (fi 6) (either term, 3-0-0). Issues concerning human beings, knowledge, ethics and society among Greek thinkers and their impact on Christian thought. Note: Not available for credit with PHIL 139.

PHIL 249 Medieval Philosophy and the Christian Tradition
★3 (fi 6) (either term, 3-0-0). Issues concerning human beings, faith and reason, free will and determinism, immortality and God among medieval thinkers and their significance for Christian thought. Note: Not available for credit with PHIL 139.

PHIL 269 Moral Issues in a Christian Context
★3 (fi 6) (either term, 3-0-0). Critical philosophical reflection on contemporary social and moral issues.

PHIL 309 Augustine
★3 (fi 6) (either term, 3-0-0). Philosophical issues in Augustine: their historical context, significance and influence. Prerequisite: At least ★3 in PHIL or consent of the College. Note: Not open to students with credit in PHIL 439.

PHIL 319 Thomas Aquinas
★3 (fi 6) (either term, 3-0-0). Philosophical issues in Aquinas: their historical context, significance and influence. Prerequisite: At least ★3 in PHIL or consent of the College. Note: Not open to students with credit in PHIL 449.

PHIL 339 Contemporary World Views and Christianity
★3 (fi 6) (either term, 3-0-0). Critical study of Christianity in dialogue with such worldviews as atheism, agnosticism, naturalism, materialism, existentialism, feminism, liberalism, postmodernism.

PHIL 389 Philosophy and Nursing II: Christian Perspectives
★1.5 (fi 3) (either term, 18 hours). Examining moral and social issues surrounding the goals of nursing and of healthcare from a Christian perspective, using traditional bioethics principles and complementary approaches (e.g. ethics of care, virtue ethics, etc.). Topics may include death and dying, allocation of scarce resources, issues in paediatric care, and global health issues. Note: Open only to students registered in the BSCN-Collaborative program. Not available for credit to students who have completed PHIL 398.

PHIL 399 Christian Existentialism
★3 (fi 6) (either term, 3-0-0). The philosophical foundations of contemporary Christian thought as seen in such authors as Kierkegaard, Marcel and Mounier. Prerequisite: At least ★3 in PHIL or consent of the College. Formerly PHIL 396.

Notes:
For Christian Theology courses offered by St Joseph's College, see Christian Theology (CHRTO), St Joseph's College (from within the Roman Catholic Tradition).

231.217 Physical Activity, PAC
Faculty of Physical Education and Recreation

Goal of PAC Level I:
1. Acquisition of basic skills required in the activity and an appreciation of how these skills are used in combination in performance situations.
2. Development of the specific theoretical knowledges associated with terminology, history, sociocultural context, rules and organizational aspects, basic strategies and tactics, technique, and other concepts relevant to the activity.

Notes:
(1) Students enrolled in courses offered by the Faculty of Physical Education and Recreation must take responsibility for ensuring that they are physically and medically fit to be taking such courses. If a student has a physical or medical condition that may compromise his/her participation in a course, it is the student's responsibility to so inform the instructor of that course. Students may contact the Faculty for further information on physical activity requirements and are encouraged to seek medical advice if necessary.
(2) Students are expected to attend the first class of any activity course appropriately dressed for active participation.
(3) These courses may require the payment of additional miscellaneous fees. See §22.2.3 for details.

Undergraduate Courses

PAC 101 Principles and Concepts of Physical Activity
★3 (fi 6) (either term, 0-3L-0). An exploration of the principles and concepts that underlie the movement of individuals and groups in a variety of settings. As the focus of the course is on the development of conceptual understanding of movement, a wide range of activities and their contexts will be examined and experienced. Note: credit will be granted for only one of PAC 101 or PEDS 294.

PAC 111 Aquatics
★1.5 (fi 3) (either term, 0-3L-0). Development of proficiency in swimming and aquatic skills and the examination of theoretical aspects of aquatics. Prerequisite: Aquacourse Level II, or RLSS Lifesaving II, or YMCA Level 3, or Red Cross Level Blue, or the ability to swim front and backcrawl efficiently.

PAC 113 Basketball
★1.5 (fi 3) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in Basketball.

PAC 112 Field Hockey
★1.5 (fi 3) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in Field Hockey.

PAC 114 Ice Hockey
★1.5 (fi 3) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in Ice Hockey. Prerequisite: Average to above average skating ability. Note: Students must provide their own skates, sticks, hockey gloves, helmets, elbow pads and shin pads.
PAC 117 Rugby
1.5 (fi 6) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in Rugby. Note: Mouth guards recommended.

PAC 118 Soccer
1.5 (fi 3) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in Soccer.

PAC 131 Badminton
1.5 (fi 3) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in basic Badminton strokes and strategies. Note: Students must provide their own racquets and shuttlecocks.

PAC 133 Squash
1.5 (fi 3) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in basic Squash strokes and strategies. Note: Students must provide their own racquets, balls, and non-marking Tennis shoes.

PAC 137 Volleyball
1.5 (fi 3) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in Volleyball.

PAC 140 Baseball/Fastball/Softball
1.5 (fi 3) (Spring/Summer, 0-3L-0). Acquisition of theoretical knowledge and personal skill in Baseball/Fastball/Softball.

PAC 145 Golf
1.5 (fi 3) (Spring/Summer, 0-3L-0). Acquisition of theoretical knowledge and personal skill in driving, chipping, pitching and putting. Note 1: Requires payment of additional student instructional support fees. Refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. Note 2: Students can rent equipment from the local golf course.

PAC 154 Wrestling
1.5 (fi 3) (either term, 0-3L-0). Acquisition of theoretical knowledge and personal skill in takedowns and groundwork.

PAC 156 Yoga for Beginners
1.5 (fi 3) (either term, 0-3L-0). This course is designed to introduce students to fundamental yoga postures while developing a basic appreciation of yoga theory as it pertains to health and wellness.

PAC 159 Intro to Sports Science
1.5 (fi 3) (either term, 0-3L-0). Introduction to basic concepts in human movement, physiology, and psychology of sport and exercise.

PAC 162 Physical Education for Children and Youth
1.5 (fi 3) (either term, 0-3L-0). This course examines the theoretical and practical aspects and techniques related to instructing swimming and aquatic skills. Certification at the Instructor's level is optional provided students meet some extracurricular requirements. Prerequisite: PAC 110 or RLSS Bronze Medallion or the equivalent in swimming skill.

PAC 211 Analysis and Instruction of Basketball
3 (fi 6) (either term, 0-3L-0). The theory, practice, and teaching of the fundamental skills of Basketball. Prerequisite: PAC 111.

PAC 313 Analysis and Instruction of Football
3 (fi 6) (either term, 0-3L-0). Development of individual skills as well as basic unit and team play. Coaching fundamentals and administrative skills are discussed. Prerequisite: PAC 113.

PAC 314 Analysis and Instruction of Ice Hockey
3 (fi 6) (either term, 0-3L-0). The theory, practice, and teaching of the fundamental skills of Hockey. Emphasis on skill acquisition and analysis. Prerequisite: PAC 114.

PAC 318 Analysis and Instruction of Soccer
3 (fi 6) (either term, 0-3L-0). The theory, practice, and teaching of the fundamental skills of Soccer. Emphasis on skill acquisition and analysis. Prerequisite: PAC 118.

PAC 320 Structure and Strategy of Games
3 (fi 6) (either term, 0-3L-0). A study of similarities and differences in games (sports) through an examination of their specific rules, skills and strategies. Class members will be exposed to experiences at the practical and theoretical levels in the categories of territory, target, field and court games. Prerequisite: One of: PAC 101, PEDS 293 or 294.

PAC 325 The Study of Games for Children and Youth
3 (fi 6) (either term, 1-2s-0). An in-depth study of games played by children and youth in informal situations and in organized programs. Opportunities to observe and work with children and youth will be provided. Prerequisite: One of PAC 101, PEDS 293, 294 or 338.

PAC 331 Analysis and Instruction of Badminton
3 (fi 6) (either term, 0-3L-0). Theory and practice of the skills and strategies of Badminton. Note: Students must provide their own racquets and shuttlecocks. Prerequisite: PAC 131.

PAC 333 Analysis and Instruction of Squash
3 (fi 6) (either term, 0-3L-0). The theory, practice, and teaching of the skills and strategies of Squash. Note: Students must provide their own racquets, balls, and eye guards. Prerequisite: PAC 133.

PAC 335 Analysis and Instruction of Tennis
3 (fi 6) (either term, 0-3L-0). Theory and practice of the skills and strategies of Tennis. Note: Students must provide their own racquets, balls, and non-marking Tennis shoes. Prerequisite: PAC 135.

PAC 337 Analysis and Instruction of Volleyball
3 (fi 6) (either term, 0-3L-0). The theory, practice and teaching of the fundamental skills of Volleyball. Emphasis will be on volleyball skill instruction, advanced personal skill acquisition and fundamental team systems. Prerequisite: PAC 137.

PAC 345 Analysis and Instruction of Golf
3 (fi 6) (Spring/Summer, 0-3L-0). The theory, practice, and teaching of the fundamental skills of Golf. Note 1: This course requires the payment of additional miscellaneous fees. See the University Regulations and Information for Students section of the Calendar, Fee Payment Guide. Note 2: Students can rent equipment from the local golf course. Prerequisite: PAC 145.

PAC 354 Analysis and Instruction of Wrestling
3 (fi 6) (either term, 0-3L-0). Emphasis on wrestling takedown and groundwork techniques. Includes theory, history, officiating and coaching principles. Prerequisite: PAC 154.

PAC 355 The Theory and Practice of Yoga
3 (fi 6) (either term, 0-3L-0). Emphasis on philosophy, scientific basis and unique yoga approach to fitness and stress management along with practice of yoga asanas.

PAC 356 Yoga for Stress Management
3 (fi 6) (either term, 0-3L-0). The purpose of the course is to: a) develop an understanding of stress, its causes and its effects on the human body; b) to comprehend the principles of yoga practices and their application in managing stress; and c) to learn and practice specific yoga exercises for stress management.

PAC 360 Analysis and Instruction of Gymnastics
3 (fi 6) (either term, 0-3L-0). Provides theoretical and practical foundations common to recreational and competitive gymnastics. Prerequisite: PAC 160.

PAC 365 The Study of Gymnastics for Children and Youth
3 (fi 6) (either term, 1-2s-0). A study of a variety of gymnastic programs from the perspective of their potential to meet the needs of children and youth at various ages. Class members will be required to plan, present, and evaluate...
gymnastic activities for children and youth. Prerequisite: One of PAC 101, PEDS 293 or 294.

**PACS 270 Analysis and Instruction of Track and Field Events**

★3 (fi 6) (either term, 0-3L-0). Sprinting, hurdles, long-jump, high jump, triple jump, pole vault, distance running, relays, shot, discus, hammer, javelin, and related strength training. Prerequisite: PAC 173 or PAC 174.

**PACS 380 Analysis, Instruction, and Leadership of Canoeing and Kayaking**

★3 (fi 6) (Spring/Summer, 0-2s-4). The theory and practice of canoeing and kayaking instruction and trip leadership appropriate for various populations. Prerequisite: PAC 180.

**PACS 383 Analysis and Instruction of Curling**

★3 (fi 6) (either term, 0-3L-0). Designed to offer students advanced skill and theoretical development fundamental to safe and enjoyable competitive involvement in Curling as a player, coach, and official. Prerequisite: PAC 183.

**PACS 397 Selected Topics in Physical Activity – Level II**

★3 (fi 6) (either term, 0-3L-0). Note: Topics may vary from year to year.

**PACS 399 Directed Studies**

★3 (fi 6) (either term, 3-0-0). The theory, practice and teaching of the fundamental skills of an individual or team activity. Prerequisite: Consent of Faculty. Note: Topics may vary from year to year.

**PACS 490 Applied Resistance Training**

★3 (fi 6) (either term, 1.5-0-1.5). The scientific examination of resistance training as an applied training methodology for general conditioning and sport-specific enhancement. Emphasis on resistance training techniques, lifting mechanics, program design and implementation will be the core element. Supplementary topics include plyometric training, Olympic lifts, and selected population program modifications. Prerequisite: PACS 335.

**PACS 491 Applied Endurance Training**

★3 (fi 6) (either term, 1.5-0-1.5). An examination of the theoretical and practical aspects of both aerobic and anaerobic endurance training for general conditioning and sport. Topics include: the physiological limitations to endurance exercise; the assessment of endurance capacities; and the development and monitoring of endurance training programs. Prerequisite: PACS 335.

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**231.218 Physical Education and Sport, PEDS**

*Faculty of Physical Education and Recreation*

**Undergraduate Courses**

*Note: Enrolment in all PEDS courses is restricted to students registered in the Faculty of Physical Education and Recreation, or to students registered in specified programs that require PEDS courses to meet degree requirements. Other students must obtain prior approval of the Faculty.*

**PEDS 100 Structural Anatomy**

★3 (fi 6) (either term, 3-0-2). Introductory study of human anatomy. Students learn structural and functional components of selected systems of the human body.

**PEDS 101 Introduction to Human Physiology**

★3 (fi 6) (either term, 3-0-0). An introduction to human physiology from the cellular to systemic level with special emphasis on systems that adapt to exercise stress. Note: Credit will be granted for only one of PEDS 101 or 102.

**PEDS 103 Integrative Human Physiology**

★3 (fi 6) (second term, 3-0-0). Introduction to Integrative Human Physiology. Focuses on the regulation, control, and integration of cellular functions in the human body with special emphasis on systems that respond to exercise stress. Prerequisite: PEDS 101. Note: credit will be granted for only one of PEDS 102 or 103.

**PEDS 200 Physiology of Exercise**

★3 (fi 6) (either term, 3-0-2). An introduction to physiological adaptations to stress of exercise and training. Prerequisite: PEDS 101.

**PEDS 203 Skill Acquisition and Performance**

★3 (fi 6) (either term, 3-0-0). The course presents a psychological approach to understanding human motor behavior. The course examines the processes involved in learning motor skills and controlling movement, and the factors that influence acquisition and performance.

**PEDS 205 Introduction to Outdoor Environmental Education**

★3 (fi 6) (either term, 1-0-3). A conceptual and experiential introduction to outdoor environmental education and leadership. In addition to weekly lecture and lab components, the course includes weekend commitments. Requires payment of additional student instructional support fees. Refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar.

**PEDS 206 Biomechanics**

★3 (fi 6) (either term, 3-0-0). A systematic procedure for qualitative analysis of human motion is presented. Students proceed from the identification of mechanical principles governing motion through to the formation of deterministic models and observational strategies. A weekly one-hour optional tutorial session will be scheduled.

**PEDS 240 Introduction to Sports Injuries**

★3 (fi 6) (either term, 3-0-2). Analysis of practical and theoretical concepts of sports injury. Includes an overview of sports medicine, care and prevention of injuries, and safety in athletics and physical education. Requires payment of additional student instructional support fees. Refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. Prerequisite: PEDS 100.

**PEDS 245 Introduction to the Profession of Coaching**

★3 (fi 6) (either term, 3-0-0). Examines the principles of coaching as they relate to the development of the athlete, the role of the coach, and organization of sport in contemporary society. Designed to present basic coaching theory that is applicable to a variety of sport settings with the focus on the practice and the season. Note: Credit will only granted for one of PEDS 245 or 345.

**PEDS 246 Coaching Practicum I**

★3 (fi 6) (variable, variable). Students will be required to coach for a complete season in a program approved by the student’s Mentor Coach. The purpose of the practicum is to provide the student with a practical coaching experience under the guidance of a Program Coach. It is intended to introduce the student to the demands of coaching. Note: at least 100 hours of outside-classroom time is required. Corequisite: PEDS 245 or 345.

**PEDS 293 Introduction to the Movement Activities of Children**

★3 (fi 6) (either term, 1.5-0-2). A study of developmentally appropriate movement activities for children. Students will participate and work with children in a variety of physical activities in recreational, educational and sport environments.

**PEDS 294 A Conceptual Approach to Physical Activity**

★3 (fi 6) (either term, 1-2s-0). A study of the fundamental movement concepts that underlie the physical activities engaged in by youth of secondary school age. Note: Credit will be granted for only one of PAC 101 or PEDS 294.

**PEDS 302 Human Motor Control**

★3 (fi 6) (either term, 3-0-2). Presents a multi-level approach that focuses on the neural and behavioral foundations underlying the control of movement. Prerequisite: PEDS 203.

**PEDS 303 Psychology of Sport and Physical Activity**

★3 (fi 6) (either term, 3-0-0). This course introduces the student to select psychological theory as it relates to sport and physical activity. Psychological constructs along with their theoretical perspectives will be viewed within a cognitive, emotional, and behavioral framework. An analytical approach is encouraged.

**PEDS 305 Adventure Education Leadership**

★3 (fi 6) (Spring/Summer, 0-3s-3). Principles and practice of wilderness travel with an emphasis on personal group development through outdoor pursuits. Technical skill development in navigation, rock climbing, minimal impact travel, survival and rescue, and rescue. Note: Requires payment of additional student instructional support fees. Refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. Prerequisite: PEDS 295.

**PEDS 306 Quantitative Biomechanics of Physical Activity**

★3 (fi 6) (either term, 3-0-2). Further application of the principles of mechanics to understanding, analyzing, and measuring human movement. Topics include linear and angular kinematics and kinetics, photo instrumentation, body segment parameters, the link segment model and work-energy relationships. Prerequisite: PEDS 206.

**PEDS 307 Physical Growth and Psychomotor Development**

★3 (fi 6) (either term, 3-0-0). A study of the sequential changes in physical growth and motor development with emphasis on individual differences.

**PEDS 309 Statistics, Measurement, and Evaluation**

★3 (fi 6) (either term, 3-0-0). Descriptive and inferential statistics, classical true-score reliability theory, validity, and evaluation. Emphasis on practical application of tests and measurement related to a variety of sport, community and institutional settings. Note: Students cannot receive credit for PEDS 309 if they received credit for PSYD 211, SOC 210, STAT 141 or STAT 151.

**PEDS 334 Body Composition, Nutrition and Physical Activity**

★3 (fi 6) (either term, 3-0-0). Emphasis on assessment and evaluation of body composition. Other topics include the regulation of body composition, nutritional requirements for athletes, eating disorders, and obesity. Prerequisite: PEDS 200 (no concurrent registration).

**PEDS 335 Advanced Conditioning Methodology**

★3 (fi 6) (either term, 3-0-0). A survey of the theoretical bases of conditioning programs. The course emphasis is on the nature of physiological adaptation to selected training regimens and the factors which influence the adaptive process. Prerequisite: PEDS 200 (no concurrent registration).
PEDS 338 Physical Activity and Sport for Children

3 (fi 6) (either term, 0-3s-0). This course focuses on the child from birth to twelve years of age in a wide range of physical activities in both free and structured environments. It will look at activities offered in home, recreational, educational and competitive environments. There will be emphasis on the developing capabilities of the child and the most appropriate types of activity for any age or stage of development.

PEDS 345 Introduction to Coaching

3 (fi 6) (either term, 3-0-0). This course introduces the student to a variety of coaching topics including both theoretical and practical applications. The course is designed to introduce the student to the demands of coaching of the High Performance-oriented program. Note: at least 150 hours outside-classroom time is required. Prerequisite: PEDS 246.

PEDS 385 Physical Activity and the Aging Adult

3 (fi 6) (either term, 3-0-0). An examination of the role of physical activity on the health and lifestyle of aging adults. Note: PEDS 385 was formerly PEDS 484. Credit will only be granted for one of these courses.

PEDS 391 Introduction to the Scientific Basis of Human Movement

3 (fi 6) (either term, 3-0-0). Lecture course with an emphasis on introducing the knowledge and practical applications of the structural and functional characteristics and capacities of the human body with respect to movement. Note: Degree Credit is not available for 188; 257; 270; and BSC-KIN students.

PEDS 400 Human Gross Anatomy

3 (fi 6) (either term, 3-0-3). The course is designed to provide an in-depth information on the structure of the human body. Lectures and laboratories emphasize the anatomical relationships in the extremities and the trunk as they relate to human movement, athletic therapy, and fitness. Lectures are followed by dissections of the human body and prosection demonstrations. Prerequisite: PEDS 100.

PEDS 401 Applied Ethics in Physical Education and Sport

3 (fi 6) (either term, 2-1s-0). A philosophical examination of ethical questions in the professional practice of physical education and sport. Prerequisite: PERLS 204. Note: This course was formerly PEDS 201. Credit will be granted for only one of these courses.

PEDS 402 Human Factors and Ergonomics

3 (fi 6) (either term, 3-0-0). The abilities and limitations of human performance are examined with respect to how we interact with tasks and objects in our environment. Work systems will be analyzed and evaluated in terms of the capabilities and limitations of human participants. This approach can be taken from a number of different and interdisciplinary perspectives such as biomechanics, motor behaviour, motor control, and physiology. Prerequisites: PEDS 203 and 206.

PEDS 403 The Application of Psychological Skills to Sport and Physical Activity

3 (fi 6) (either term, 3-0-0). The direct application of select psychological skills to sport and physical activity. A strong emphasis is placed on how to apply psychological skills in a variety of settings. Prerequisite: PEDS 303.

PEDS 409 Introduction to Research

3 (fi 6) (either term, 3-0-0). An overview of research in physical education with emphasis on practical application of research techniques and design. This course is intended for students who possess a minimal knowledge of statistics. Prerequisite: PEDS 309 or STAT 141 or 151.

PEDS 411 Physiology of Emergency Response Occupations

3 (fi 6) (either term, 3-0-2). Explores selected issues of work physiology related to emergency response occupations with the main emphasis on fire fighting. Topics will include: human rights legislation and policies related to bona fide occupational requirements; the assessment of workload; the physiological limitations to work capacity; the development and implementation of physical fitness testing programs for applicants and incumbents and, the development and monitoring of fitness training programs related to work demands. Prerequisite: PEDS 335.

PEDS 412 Selected Topics in Advanced Exercise Physiology

3 (fi 6) (either term, 3-0-0). Covers the acute and chronic response to exercise through an increased understanding of the mechanisms and adaptations that occur within the human body. Invited guest speakers will present topics of current interest that may include different sport modalities, different populations or different disease states to assist in the exploration of the field of exercise science. Prerequisites: PEDS 200 and 409.

PEDS 432 Dimensions of Physical Activity Performance

3 (fi 6) (either term, 3-0-0). This course explores the integrated nature of physical activity performance with emphasis on the biological, psychological, technical, and tactical dimensions. Skills in observation, interviewing, intervention, program development, and evaluation will be examined and developed through problem solving techniques. Prerequisite: PEDS 200, 203, 206, and 303. Recommended: PEDS 240, 245/345, 302, 335, and 403.

PEDS 440 Advanced Athletic Therapy Methods and Techniques

3 (fi 6) (either term, 3-0-0). Recognition of the potentially serious injury. Advanced prevention, treatment, and sport-specific rehabilitative methods and techniques in athletic therapy. Prerequisites: PEDS 100 and PEDS 240.

PEDS 444 Communication Skills and Strategies in Sport and Physical Activity

3 (fi 6) (either term, 1.5-1.5s-0). Through experiential learning activities, students will develop communication skills that will enhance their effectiveness as professionals in sport and physical activity settings. Students will explore distinctions of communication and conversations in a workshop format. Sample topics include self-awareness, listening, and interpersonal communication.

PEDS 446 Coaching Practicum III

6 (fi 12) (variable, variable). Students will be required to coach for a complete season, preferably as a Head Coach, in a program approved by the student’s Mentor Coach. The purpose of this practicum is to provide the students with the practical coaching experience of running their own program for one complete season. It is intended to familiarize the students with the demands of being a Head Coach. Note: at least 250 hours of outside-classroom time is required. Prerequisite: PEDS 346.

PEDS 447 Advanced Topics in Coaching

3 (fi 6) (either term, 3-0-0). Study of advanced topics in coaching as they relate to the development of the athlete, the coach, and the organization of sport in contemporary society. Designed to present coaching theory that will guide rising coaches in the development of sport programs that will positively contribute to Canadian society and its sport development model. Prerequisites: PEDS 245 or 345 and 246.

PEDS 471 Active Living for Individuals with Developmental Disabilities

3 (fi 6) (either term, 2-0-2). An in-depth review of characteristics of children with movement difficulties as well as adults with mental deficiencies with implications for program planning and service delivery. Prerequisite: PERLS 207.

PEDS 472 Active Living for Individuals with Physical Disabilities

3 (fi 6) (either term, 2-0-2). An in-depth review of characteristics of persons with physical disabilities with implications for program planning and service delivery. Prerequisites: PERLS 207.

PEDS 485 Educational Gerontology in Physical Activity, Fitness, and Sport

3 (fi 6) (either term, 1.5-0-1.5). The study and practical application of the principles of educational gerontology. Involves students in the analysis and instruction of older adults in a variety of sport, fitness, and physical activity settings. Focus is on the issues and challenges of instruction in two populations: (1) aged, frail adults and (2) elderly, athletic adults. Note: PEDS 485 was formerly PEDS 384. Credit will be granted for only one of these courses.

PEDS 490 Professional Practicum

6 (fi 12) (variable, variable). A half-time Professional Practicum that may run for a single term for 20 hours per week, two terms for 10 hours per week, or the equivalent time. Students must apply to the Practicum Supervisor. A limited number of placements are available. Note: Students will not be allowed to register in more than one concurrently with PEDS 490 unless approved by the Practicum Supervisor.

PEDS 491 Professional Practicum

12 (fi 24) (variable, variable). Fourteen weeks of professional experience in a full-time (approximately 35 - 40 hours per week) route-related placement. Students must apply to the Practicum Supervisor. A limited number of placements are available. Note: Students will not be allowed to register in any other course in conjunction with PEDS 491 unless approved by the Practicum Supervisor.

PEDS 497 Selected Topics in Physical Education and Sport

3 (fi 6) (either term, variable). A course offered on a topic of current interest in physical education and sport. Topics may vary from year to year. Prerequisite: consent of Faculty.

PEDS 499 Directed Studies

3 (fi 6) (either term, variable). A course designed to meet the needs of individual students. Prerequisite: consent of Faculty.

Graduate Courses

PEDS 500 Seminar in Biomechanics

3 (fi 6) (either term, 0-3s-0).

PEDS 511 Exercise Testing and Exercise Prescription

3 (fi 6) (either term, 1.1s-2). The theory and practice of exercise tests, interpretation, and exercise prescription for selected populations.
PEDS 512 Selected Topics in Advanced Exercise Physiology
3 (fi 6) (either term, 3-0-0). Covers the acute and chronic response to exercise through an increased understanding of the mechanisms and adaptations that occur within the human body. Invited guest speakers will present topics of current interest that may include different sport modalities, different populations or different disease states to assist in the exploration of the field of exercise science. Lectures are the same as for PEDS 412, but with additional assignments and evaluation appropriate to graduate studies. This course may not be taken for credit if credit has already been obtained in PEDS 412. Prerequisites: Consent of Faculty.

PEDS 515 Exercise Physiology Laboratory Techniques
3 (fi 6) (either term, 1-0-3). This is primarily a laboratory experience for students to gain competencies in performing basic histochemical and biochemical procedures that are common in exercise physiology research. Prerequisite: consent of the Instructor.

PEDS 518 Hormonal Response to Exercise
3 (fi 6) (either term, 1.5-2s-0). Designed to increase the student's knowledge about normal endocrine physiology and the hormonal response to acute and chronic exercise. Variables that influence the hormonal response to exercise and its subsequent measurement in circulation will be addressed. The use of hormonal analysis for monitoring health, body composition and training status of athletes will also be discussed. Offered in alternate years.

PEDS 530 Adapted Physical Activity
3 (fi 6) (either term, 0.3s-0). Seminar on current theoretical, practical and research issues in adapted physical activity.

PEDS 540 The Psychology of Performance Enhancement in Sport and Physical Activity
3 (fi 6) (either term, 0.3s-0). This seminar focuses on the role of psychology as it relates to performance enhancement in the areas of sport and physical activity. Performance constructs and skills along with mental skills training programs will be discussed and evaluated.

PEDS 544 Psychosocial Dimensions of Athletic Behaviour in the Competitive Sport Environment
3 (fi 6) (either term, 0.3s-0). An overview of the potential role of physical exercise in cancer prevention and control. Specifically, physical exercise is examined for purposes related to cancer prevention, coping, rehabilitation, palliation and survival. A multidisciplinary perspective draws on kinesiology, oncology, epidemiology, psychology, rehabilitation medicine and palliative care.

PEDS 549 Coaching Seminar I
3 (fi 6) (either term, 0.3s-0). This is the first of two courses designed as a series of specialized topics related to coaching. Seminar topics may include: Energy Systems; Nutrition for Optimal Performance; Environmental Factors and Performance; and Recovery and Regeneration. Prerequisite: consent of Faculty.

PEDS 571 Coaching Seminar II
3 (fi 6) (either term, 0.3s-0). This course is the second of two courses designed as a series of specialized topics related to coaching. Seminar topics may include: Psychological Preparation for Coaches; Planning and Periodization; Athlete Long-term Development, Self-awareness and Personal Management and the Canadian Sport System. Prerequisite: consent of Faculty.

PEDS 572 Coaching Practicum
6 (fi 12) (two term, variable). Students will be required to coach for a complete season as head coach or assistant coach with major responsibilities in High Performance program approved by the student's Coaching Mentor. The purpose of the practicum is to provide students with practical experience of running their own High Performance program for an entire duration of 1 annual cycle that will include 1 competitive season. Note: a minimum of 250 hours of outside-classroom time is required. Prerequisite: consent of the Faculty.

PEDS 577 Sport and Ethics
3 (fi 6) (either term, 0.3s-0). An examination of ethical problems in sport. Prerequisite: PEDS 401 or consent of Faculty.

PEDS 580 The Nature of Scientific Inquiry in Physical Education and Sport Studies
3 (fi 6) (either term, 0.3s-0). An introduction to the basic philosophy and nature of scientific inquiry as it applies to contemporary research. Prerequisite: PEDS 309 or consent of Faculty.

PEDS 610 Seminar in Exercise Physiology
3 (fi 6) (either term, 0.3s-0). Prerequisite: consent of Faculty.
PERLS 411 The Business of Hockey

3 (fi 3) (either term, 3-0-0). This course explores strategic, economic, and cultural issues related to the business of hockey - with a specific focus on the National Hockey League. Students will develop a critical understanding of the hockey industry and its stakeholders. Prerequisite: students should be in the 3rd or 4th year of their degree program.

PERLS 420 Play: The Foundation of Recreation, Sport and Physical Activity

3 (fi 3) (either term, 3-0-0). This course will provide students with an in-depth understanding of the concept of play. It will offer learning experiences that will enable students to create play in various recreation, sport, tourism and physical activity contexts. Prerequisite: RLS 100 or HE ED 110

PERLS 440 Play Around the World Program Preparation

3 (fi 3) (Spring/Summer, variable). The “Play Around the World” project provides a 3-month internationally based, cross-cultural field placement working with underserved populations in the area of play, recreation and sport. Students apply and are selected in Fall term, and then have a significant time commitment during the Winter term to prepare for their Intersession field placement. Travel takes place May through August. This course represents the theoretical aspect of the experience, and involves written and creative work in the area of programming in cross-cultural settings. Pre-requisite: PERLS 497 (Play Leadership) is strongly recommended. Co-requisite: PERLS 441

PERLS 441 Play Around the World - Field Placement

3 (fi 3) (Spring/Summer, variable). The “Play Around the World” project provides a 3-month internationally based, cross-cultural field placement working with underserved populations in the area of play, recreation and sport. Students apply and are selected in Fall term, and then have a significant time commitment during the Winter term to prepare for their Intersession field placement. Travel takes place May through August. This course represents the experiential part of the project. Pre-requisite: PERLS 497 (Play Leadership) is strongly recommended. Co-requisite: PERLS 440

PERLS 450 Process Management

3 (fi 3) (either term, 3-0-0). This course will introduce students to some of the concepts associated with process management and how, through the use of strategies associated with these concepts, individuals can assist organizations toward their desired goals. Such human processes as communication; problem solving and decision making; creating, building and maintaining a group; intergroup relationships; initiating and managing change; and assessing performance will be considered. Prerequisite: PERLS 350.

PERLS 451 Sport and Popular Culture in Canada

3 (fi 3) (either term, 0-3s-0). An examination of the play of sport in contemporary Canadian popular culture, with three principal aims: 1. To offer an introduction to cultural studies and its key concepts such as nation, identity, representation and ideology, 2. To give students a chance to think about how social difference and inequality work in contemporary Canadian society, and how it is reflected in the world of sport, and leisure, 3. To examine the effect of both cultural and economic globalization, past and present, in order to gauge its effects on sport in Canadian society. Not open to students with credit in INT D 405. Prerequisite: PERLS 104.

PERLS 452 Leisure Facilities: Planning and Management

3 (fi 3) (either term, 0-3L-0). An examination of the planning, design, and management processes associated with leisure facilities (inclusive of sport, recreation, and tourism facilities). Attention is focused on the provision of leisure opportunities of a predominantly intensive-use nature which tend to occur in an urban or near-urban setting. These facilities will be considered within the context of the communities in which they function. Note: Requires payment of additional student instructional support fees. Refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar. Prerequisite: PERLS 105.

PERLS 495 Senior Research Experience

3 (fi 3) (either term, 0-3s-0). This is an independent study course that allows fourth year students to explore a topic under the supervision of a Doctoral student. Students will choose an area of interest from a list of topics provided by the course coordinator. Students will use the resources of libraries, laboratories, and current research projects with the goal of gaining an understanding of the process of conducting research. The student will be introduced to methodology and theory in a designated research area through reading, discussion, and potentially practical application. Note: Students must have a minimum GPA of 3.0 over their last 30 credits. Prerequisite: PEDS 400 or RLS 210, and consent of the Faculty.

PERLS 497 Selected Topics in Physical Education, Recreation and Leisure Studies

3 (fi 3) (either term, variable). A course offered on a topic of current interest in physical education and sport. Topics may vary from year to year. Prerequisite: Consent of Faculty.

PERLS 499 Directed Studies

3 (fi 3) (either term, variable). A course designed to meet the needs of individual students. Prerequisite: Consent of Faculty.

Graduate Courses

PERLS 504 The History of Nature, Parks, and Travel

3 (fi 3) (either term, 0-3s-0). Examines history at the crossroads of nature, parks, and travel. It concerns the formation of ideas about nature expressed through leisure. Topics include: adventure, exploration, national parks, wildlife conservation, mountaineering, canoeing, wilderness art, recreation, youth movements, urban parks, holidays, cultural heritage, and tourism. Attention is given to the study of Canadian life in the 19th and 20th centuries, along with international tangents.

PERLS 541 Social Cognitive Approaches to Health Promoting Behaviors

3 (fi 3) (either term, 0-3s-0). This course will address social-cognitive theories as they relate to behavioral change in the broad areas of health-promoting-behaviors (HPBS) with particular emphasis on physical activity. The theories and models to be covered will include Stages of Change, Social-Cognitive and Self-efficacy, Reasoned Action and Planned behavior, Self-esteem (various), etc. The specific context areas and order of classes will be determined in consultation with the class members each term. Areas of common interest will be identified and used as the basis for classes and examples throughout the term. The course is appropriate for individuals interested in social psychological and social-cognitive influences on health promoting behaviors and sport performance. May contain alternative delivery sections; refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar.

PERLS 544 Aging, Health and Active Living

3 (fi 3) (either term, 0-3s-0). An exploration of the benefits and risks of late-life physical activity, as well as life course barriers and incentives to health promotion through active living. The course will examine theoretical explanations for sedentary leisure of older adults through a critical review of the interdisciplinary gerontological literature.

PERLS 550 Sport and Leisure Organizations and the Public Sector

3 (fi 3) (either term, 0-3s-0). Emphasis is on the role of the federal, provincial and municipal governments in Canada in amateur sport and leisure including the interorganizational relations between the public sector and nonprofit/voluntary amateur sport and leisure organizations.

PERLS 551 Organizational Analysis of Sport and Leisure

3 (fi 3) (either term, 0-3s-0). Concepts and perspectives in organizational theory are examined in relation to sport and leisure organizations in the public, nonprofit/voluntary, and commercial sector to help students understand and analyze the complexity of managing sport and leisure organizations effectively. Topics include, but are not limited to, organizational design, organizational environments, strategy and decision-making, organizational culture, power and politics, and conflict and change.

PERLS 581 Social Research Applications to Leisure and Sport

3 (fi 3) (either term, 0-3s-0). An examination of both quantitative and qualitative research methodologies as they apply to the sociocultural area of sport and physical education and to the general field of leisure studies.

PERLS 582 Graduate Seminar: A Seminar in Current Factors, Problems and Issues

3 (fi 3) (either term, 0-3s-0).

PERLS 590 Research and Directed Studies I

3 (fi 3) (either term, 0-3s-0).

PERLS 591 Research and Directed Studies II

3 (fi 3) (either term, 0-3s-0).

PERLS 599 Directed Studies and Research

3 (fi 6) (two term, 0-1.5s-0).

PERLS 613 Special Topics in the Socio-Cultural Study of Leisure, Sport, and Health

3 (fi 3) (either term, 0-3s-0). Explores topics in the socio-cultural study of leisure, sport, and health that are of interest to students enrolled in the course.

PERLS 690 Directed Studies and Research

3 (fi 3) (either term, 0-3s-0).

PERLS 691 Directed Studies and Research

3 (fi 3) (either term, 0-3s-0).

PERLS 699 Directed Studies and Research

3 (fi 6) (two term, 0-1.5s-0).

PERLS 900 Directed Research Project

0 (fi 12) (variable, unscheduled). A significant piece of scholarly writing. This course used by course-based Master’s students.

231.220 Physical Therapy, PTHEN

Department of Physical Therapy
Faculty of Rehabilitation Medicine

Note: All PTHER courses are open to Physical Therapy students only.
Undergraduate Courses

PTHER 431 Clinical Practice VI
★1-3 (variable) (either term, 5 weeks). Credit. Clinical practice in approved clinical affiliations.

PTHER 433 Clinical Practice VII
★1-3 (variable) (either term, 5 weeks). Credit. Clinical practice in approved clinical affiliations.

Graduate Courses

PTHER 504 Clinical Exercise Physiology
★3 (fi 6) (either term, 2-0-1.5 in 15 weeks). This course examines the acute and chronic physiological responses to exercise and explores the use of exercise in the management of chronic diseases and disabilities.

PTHER 511 Introduction to Clinical Education
★0.5 (fi 1) (either term or Spring/Summer, 10 hours). Credit. Seminars on the theory and practice of experiential learning will prepare students for clinical placements with diverse populations. Emphasis will be placed on professionalism and supervision and evaluation methods.

PTHER 515 Introduction to Physical Therapy Practice
★2 (fi 4) (either term, 5-6s-0 in 4 weeks). Introduction to the theory and concepts of rehabilitation science as applied to physical therapy in a variety of health care environments. Content will include disability issues, communication, models of disablement and introduction to a model of practice for guiding clinical decisions.

PTHER 516 Anatomy
★3 (fi 6) (either term, 3-0-3 in 14 weeks). Anatomy of the upper limb, lower limb and trunk. Specific emphasis on knowledge of joints, ligaments, nerve supply and deep muscles.

PTHER 517 Clinical Placement I
★1 (fi 2) (either term, 1 week). Introduction to clinical practice in approved clinical affiliations.

PTHER 518 Clinical Placement II
★4 (fi 8) (either term or Spring/Summer, 5 weeks). Credit. Clinical practice in approved clinical affiliations.

PTHER 520 Clinical Placement III
★1-4 (variable) (either term, 6 weeks). Credit. Clinical practice in approved clinical affiliations. Can be combined with INT D 411 for an interdisciplinary placement for a combined total weighting of ★4.

PTHER 521 Clinical Placement IV
★1-4 (variable) (either term, 5 weeks). Credit. Clinical practice in approved clinical affiliations. Can be combined with INT D 411 for an interdisciplinary placement for a combined total weighting of ★4.

PTHER 522 Clinical Placement V
★1-4 (variable) (either term or Spring/Summer, 5 weeks). Credit. Clinical practice in approved clinical affiliations. Can be combined with INT D 411 for an interdisciplinary placement for a combined total weighting of ★4.

PTHER 523 Clinical Placement VI
★1-4 (variable) (either term, 6 weeks). Credit. Clinical practice in approved clinical affiliations. Can be combined with INT D 411 for an interdisciplinary placement for a combined total weighting of ★4.

PTHER 524 Professional Issues I
★1 (fi 2) (either term, 1-3s-0 in 4 weeks). Credit. Introduction to concepts required for effective clinical experiences. Topics will include ethics, client-centred principles, communication and professional conduct.

PTHER 525 Professional Issues II - Health Care, Ethics and Medical-Legal Issues
★2 (fi 4) (either term or Spring/Summer, 3-5s-0 in 3 weeks). Credit. Continuation of the study of professional issues relevant to the practice of physical therapy. Ethical, cultural, medical-legal and regulatory issues and their impact on professional practice. Prerequisites: INT D 410 and Pther 524.

PTHER 526 Professional Issues III - Administration and Business in Physical Therapy
★1.5 (fi 3) (either term, 1-1.5S-0 in 10 weeks). Administrative issues in the public and private health care sectors. Focus on impact of health policy, payment systems, funding proposals and business planning. Prerequisite: Pther 525.

PTHER 527 Professional Issues IV - Professional Responsibilities
★1 (fi 2) (either term or Spring/Summer, 0-6s-0 in 3 weeks). Credit. Focus on learning issues in professional practice, including supervision of physical therapy students and therapist assistants, continuing competence and teaching interventions. Prerequisite: Pther 526.

PTHER 528 Foundations of Physical Therapy
★5 (fi 10) (either term, 3-25-5 in 10 weeks). Introduction to the theory and application of physical therapy skills with an emphasis on assessment and handling techniques. Functional application of anatomy knowledge will be emphasized. Corequisite: Pther 516. Prerequisite: Pther 515.

PTHER 529 Movement Analysis I
★2 (fi 4) (either term, 3-0-2 in 7 wks). Provides an introduction to mechanical and analytical concepts pertinent to physical therapy. Systematic analysis of posture, balance and functional movements will be included. The influence of person, task and environment on task performance will be addressed. Corequisite: Pther 516.

PTHER 530 Research and Directed Studies
★3 (fi 6) (either term, 3-0-0). Work on a special project under the supervision of a faculty member. Prior approval of the instructor and the student’s advisor required.

PTHER 531 Research and Directed Studies
★3 (fi 6) (either term, 3-0-0). Work on a special project under the supervision of a faculty member. Prior approval of the instructor and the student’s advisor required.

PTHER 532 Research and Directed Studies
★3 (fi 6) (two term, 1.5-0 in 9 weeks). Work on a special project under the supervision of a faculty member. Prior approval of the instructor and the student’s advisor required.

PTHER 533 Research and Directed Studies
★6 (fi 12) (two term, 3-0-6). Work on a special project under the supervision of a faculty member. Prior approval of the instructor and the student’s advisor required.

PTHER 534 Integrated Practice I
★1.5 (fi 3) (either term, 0-2s-2 in 8 weeks). Active learning strategies, including the use of case scenarios, will be used to integrate students’ learning in the block. Critical thinking skills are required to integrate knowledge of clinical skills, research application, measurement and evaluation, and professional issues.

PTHER 535 Integrated Practice II
★1.5 (fi 3) (either term, 0-2s-1.5 in 10 weeks). Active learning strategies, including the use of case scenarios, will be used to integrate students’ learning in the block. Critical thinking skills are required to integrate knowledge of clinical skills, research application, measurement and evaluation, and professional issues. Prerequisite: Pther 534, 538 and 544.

PTHER 536 Integrated Practice III
★1.5 (fi 3) (either term, 0-2s-1.5 in 7 weeks). Active learning strategies, including the use of case scenarios, will be used to integrate students’ learning in the block. Critical thinking skills are required to integrate knowledge of clinical skills, research application, measurement and evaluation, and professional issues. Prerequisite: Pther 535, Corequisite: Pther 548.

PTHER 537 Integrated Practice IV
★1.5 (fi 3) (either term or Spring/Summer, 0-3s-0 in 8 weeks). Self-directed learning applied to complex client scenarios across the continuum of care. Critical thinking skills are required to integrate knowledge of clinical skills, research application, measurement, evaluation and professional issues. Prerequisite: INT D 410, Pther 526, 536 and 548.

PTHER 538 Musculoskeletal
★4 (fi 8) (either term, 2-2s-4 in 15 weeks). The study of acute musculoskeletal conditions. Areas of practice will include: an understanding of pathology, assessment, intervention, outcome evaluation, relevant therapeutic exercise, electrophysical agents and evidence-based skills. These clinical skills will be integrated into the context of clinical practice with issues in research application, measurement and evaluation. Prerequisites: Pther 528 and 529.

PTHER 539 Movement Analysis II
★2 (fi 4) (either term, 3-0-2 in 7 wks). Application of anatomy and biomechanics knowledge to the systematic analysis of complex functional movements. Introduction to the phases of typical gait and application to atypical gait. Corequisites: Pther 528 and 529.

PTHER 540 Practicum
★0 (fi 3) (either term, unassigned). A practicum in the student’s area of concentration and interest to be taken by the student if his/her committee feels the student needs, or the student desires, further practical experience. This course may involve experience off campus in any geographical area where the student may gain the necessary experience.

PTHER 541 Critical Appraisal I
★2.5 (fi 3) (either term, 2-2s-0 in 10 weeks). Introduction to research methods with an emphasis on issues of measurement and evaluation in rehabilitation science and application of the knowledge to a critical evaluation of a selected measure used in physical therapy. Students will apply advanced information retrieval strategies to rehabilitation science literature. Corequisite: Pther 528.
PTHER 542 Critical Appraisal II
(2) (fi 6) (either term or Spring/Summer, 2-2S-4 in 8 weeks). Identification and evaluation of best evidence for a client observed during clinical placement. Critical appraisal methodologies such as single subject design, critically appraised topics, systematic review and clinical practice guidelines will be introduced and applied to the clinical context. Prerequisite: PATHER 541.

PTHER 543 Critical Appraisal III
(1) (fi 2) (either term, 0-3-6 in 10 weeks). Introduction to the concepts of systematic reviews applied to the clinical placement experiences. Prerequisite: PATHER 542.

PTHER 544 Cardiorespiratory I
(2) (fi 5) (either term, 1.5-2-1.5 in 8 weeks). The study of acute cardiorespiratory conditions. Areas of practice will include: an understanding of pathologic assessment, intervention, outcome evaluation, relevant therapeutic exercise, electrophysical agents and evidence-based skills. These clinical skills will be integrated into the context of clinical practice with issues in research application, measurement and evaluation. Prerequisites: PATHER 516, 528, 541.

PTHER 545 Tissue Mobilization I
(1.5) (fi 3) (either term or Spring/Summer, 3-2-6 in 3 weeks). An introduction to the use of mobilization techniques and associated therapeutic exercise to treat selected peripheral conditions. Corequisite: PATHER 538 and 539.

PTHER 546 Adult Neurology
(3) (fi 6) (either term, 3-3S-6 in 10 weeks). Introduction to the theory and application of physical therapy in neurology with adults. Areas of practice will include assessment, intervention, outcome evaluation, therapeutic exercise, electrophysical agents, and evidence-based skills. These clinical skills will be integrated into the context of practice with relevant issues in research application, measurement and evaluation. Corequisite: PATHER 567, 563 and 567. Prerequisites: PATHER 538, 542 and 544.

PTHER 548 Physical Therapy in Long-term Conditions
(5) (fi 10) (either term, 3-3S-6 in 10 weeks). Study of the theory and application of physical therapy in clients with selected musculoskeletal, neurological and cardioso-radiological conditions of a long-term nature. Areas of practice will include assessment, intervention, outcome evaluation, therapeutic exercise, electrophysical agents, and evidence-based skills. These clinical skills will be integrated into the context of practice with relevant issues in research application, measurement and evaluation. Prerequisites: PATHER 538, 542, 544, 546 and 547.

PTHER 549 Tissue Mobilization II
(1) (fi 2) (either term, 1-1.5-2 27 H in 10 wks). The use of mobilization techniques and associated therapeutic exercise to treat selected spinal conditions. These clinical skills will be integrated into the context of practice with relevant issues in research application, measurement and evaluation. Prerequisite: PATHER 545.

PTHER 551 Project Design I
(0.5) (fi 1) (either term, 0-1S-0 in 8 weeks). Credit. Identification and preparation of the written evaluative component of major project. Prerequisites: PATHER 541.

PTHER 552 Project Design II
(0.5) (fi 1) (either term, 0-3S-0 in 5 weeks). Credit. Identification and preparation of the written evaluative component of major project. Prerequisites: PATHER 543 and 545.

PTHER 553 Project Design III
(0.5) (fi 1) (either term or Spring/Summer, 0-1.5-0 in 8 weeks). Credit. Identification and preparation of the written evaluative component of major project. Prerequisites: PATHER 526, 543 and 548 and 552.

PTHER 554 Selectives
(1-3) (variable) (variable, unassigned). Students can register in these extra to requirement courses from a variety of topic areas. Note: Course title is variable; course may be repeated.

PTHER 555 Therapeutic Physical Agents
(1.5) (fi 3) (either term, 1-0-1.5 in 15 weeks). Theory and practice of the application of therapeutic physical agents in physical therapy. Use of these agents will be integrated into the context of practice with issues in research, application and outcome evaluation. Prerequisite: PATHER 528 and 529.

PTHER 557 Health Management Across the Continuum
(1.5) (fi 3) (either term, 4-2S-4 in 8 weeks). The study of selected clinical problems, their underlying conditions and physical therapy management. Prerequisites: PATHER 548.

PTHER 558 Medications in Physical Therapy
(2) (fi 4) (either term or Spring/Summer, 20 Hours in 4 Weeks). Pharmacology and management of medications commonly seen in physical therapy.

PTHER 559 Advanced Joint Mobilization, Stabilization and Manipulation
(1.5) (fi 3) (either term or Spring/Summer, 1-1.5S-4 in 5 weeks). The use and application of mobilization, stabilization and manipulation techniques in the treatment of peripheral and vertebral joint dysfunction. These clinical skills will be integrated into the context of practice with relevant issues in research application, measurement and evaluation. Prerequisite: PATHER 548 and 549.

PTHER 560 Individual Study/Special Subject
(1-6) (variable) (either term or Spring/Summer, variable). Registration will be contingent on the student’s having made prior arrangements with the Department. Credit for this course may be obtained more than once. Prerequisite: consent of Department.

PTHER 563 Gross Motor Development and Pediatric Physical Therapy
(2) (fi 4) (either term, 2-1.5S-1.5 in 10 weeks). Introduction to theories of motor development and a systematic observational approach to the assessment of gross motor skills in infancy and childhood. Introduction to issues in pediatric physical therapy including assessment and intervention approaches for children with developmental motor disabilities, appropriate outcome measures, service delivery models, important research findings and current issues. Corequisite: PATHER 546, and PATHER 567. Prerequisites: PATHER 539, 542 and 544.

PTHER 565 Aging and Physical Therapy
(1.5) (fi 3) (either term, 1-1.5S-1 in 8 weeks). An examination of age-related changes, prevalent age-related conditions treated by physical therapists and contextual factors that influence the activity and participation of older adults. Prerequisites: PATHER 538 and PATHER 544. Corequisite: PATHER 546.

PTHER 567 Neuroanatomy and Neuroscience for Rehabilitation
(3) (fi 6) (either term, 5-0-6 in 8 weeks). Structures and functions of the human nervous system. Emphasis is on the effects of injury, diseases and rehabilitation training on the nervous system. Corequisite: PATHER 546 and 563. Prerequisites: PATHER 516, 544 and 538.

PTHER 570 Measurement and Evaluation in Physical Therapy
(3) (fi 6) (either term, 2-0-2.5). The principles involved in measurement and evaluation and their application in the practice of physical therapy.

PTHER 581 Cardiopulmonary Rehabilitation
(3) (fi 6) (either term, 2-0-3). The general principles of cardiopulmonary rehabilitation as applied to patients with selected pathological conditions. Prerequisite: consent of Instructor.

PTHER 900 Major Project
(3) (fi 6) (either term, unassigned). Credit. This capping exercise has 2 components: a practical examination of clinical skills and a group written evaluative project. Prerequisite: PATHER 551, 552 and 553.

231.221 Physics, PHYS
Department of Physics
Faculty of Science

Notes
(1) Credit may normally be obtained for only one of PHYS 124, 144 or ENPH 131.
(2) Credit may normally be obtained for only one of PHYS 126, 130 or 146.
(3) Credit may normally be obtained for only one of PHYS 230 or 281.
(4) Credit may normally be obtained for only one of PHYS 208 or 271.
(5) Credit may normally be obtained for only one of PHYS 211 or 224.
(6) Also see Astronomy (ASTRO) and Geophysics (GEOPH) listings for other courses offered by the Department of Physics.
(7) PHYS 290, 301, 308, 319, 384, and 395 are offered alternate years only, Please consult the Department for course scheduling.
(8) If a student plans to proceed from PHYS 124 to PHYS 146, it is strongly recommended that the student achieve a minimum grade of B– in PHYS 124.

Undergraduate Courses

PHYS 114 Physics: The Big Picture
(3) (fi 6) (either term, 3-0-3). A qualitative and mostly non-mathematical course in which the overall structure and main concepts of physics are examined. Classical versus quantum worlds; order versus chaos; Newton’s versus Einstein’s universe; selected topics and issues in modern physics. Prerequisites: Pure or Applied Mathematics 30. Note: This course does not qualify as an equivalent to high school Physics 30. This course also does not qualify as a prerequisite for 200 or higher level ASTRO, GEOPH, MA PH, or PHYS courses. Not accepted as part of the Physics requirements for Faculty of Medicine and Dentistry applications.

PHYS 124 Particles and Waves
(3) (fi 6) (either term, 3-0-3). Algebra-based course primarily for students in life, environmental, and medical sciences. It guides the student through two distinct types of motion: motion of material (particles) and wave motion. Vectors, forces, bodies in equilibrium, review of kinematics and basic dynamics; conservation of momentum and energy; circular motion; vibrations; elastic waves in matter; sound; wave optics; black body radiation, photons, de Broglie waves. Examples relevant in environmental, life, and medical sciences will be emphasized. Prerequisites: Physics 20 or equivalent, Pure Mathematics 30. Physics 30 is strongly recommended. Note: Credit may be obtained for only one of PHYS 124, 144, or EN PH 131. Note: To proceed to PHYS 146 after taking PHYS 124, it is strongly recommended that a minimum grade of B– be achieved in PHYS 124.
PHYS 126 Fluids, Fields, and Radiation
3 (fi 6) (either term, 3-0-3). A continuation of PHYS 124 primarily for students in life, environmental, and medical science. Fluid statics and dynamics, gases, kinetic interpretation; electrostatics; currents and circuits; magnetic field; electromagnetic induction; nuclear radiation, its interaction with matter and applications. Prerequisite: PHYS 124. Note: Credit may be obtained for only one of PHYS 126, 130, or 146.

PHYS 130 Wave Motion, Optics, and Sound
3.8 (fi 6) (either term, 3-0-3/2). Geometrical optics, optical instruments, oscillations, waves, sound, interference, diffraction. Prerequisites: Pure Mathematics 30, Mathematics 31, Physics 30. Corequisite: MATH 100 or equivalent. Restricted to Engineering students. Other students who take this course will receive ★3.0.

PHYS 144 Newtonian Mechanics and Relativity
3 (fi 6) (first term, 3-0-3). A calculus-based course for students majoring in the physical sciences. Newtonian mechanics, including kinematics, dynamics, conservation of momentum and energy, rotational motion and angular momentum; special relativistic kinematics and dynamics, including length contraction, time dilation, and the conservation of energy and momentum in special relativity. Prerequisites: Pure Mathematics 30, Physics 30. Corequisites: MATH 113 or 114 or equivalent. Note: Credit may be obtained for only one of PHYS 124, 144, or EN PH 131.

PHYS 146 Fluids and Waves
3 (fi 6) (second term, 3-0-3). A calculus-based course for students majoring in the physical sciences. Fluid statics and dynamics, elasticity and simple harmonic motion; wave phenomena; wave properties of light; quantum waves, wave-particle duality. Prerequisite: PHYS 124 (see Notes following) or 144. Corequisite: MATH 115 or equivalent. Note: Credit may be obtained for only one of PHYS 126, 130 or 146. To proceed to PHYS 146 after taking PHYS 124, it is strongly recommended that a minimum grade of B- be achieved in PHYS 124.

PHYS 200 Relativistic Aspects of Modern Physics
3 (fi 6) (either term, 3-0-0). Topics included are limitations of classical physics; Einstein’s special theory; length contraction; time dilation; twin paradox; equivalence of mass and energy; relativistic mass and momentum; the General Theory of Relativity including deflection of light, black holes, models of the universe, and curvature of space. Prerequisite: First-year Physics course(s) (two-term). Pre- or corequisite: MATH 113 or 114. Note: This course is not available for credit toward Honors or Specialization Physics and Mathematical Physics degree programs. Offered alternate years only. Consult Department for course scheduling.

PHYS 208 Quantum Aspects of Modern Physics
3 (fi 6) (either term, 3-0-0). Experimental evidence leading to the development of quantum mechanics including the photo-electric effect, the Compton effect, X-ray production and electron diffraction; a discussion of the Heisenberg uncertainty principle and the Schrödinger theory of quantum mechanics including applications of one dimensional potential wells and barriers; tunneling; the simple harmonic oscillator; atomic physics; hydrogen atom; periodic table. Prerequisites: PHYS 126 or 146; MATH 113 or 114. Credit may be obtained in only one of PHYS 208 or 271.

PHYS 211 Thermodynamics and Kinetic Theory
3 (fi 6) (either term, 3-0-0). Temperature; heat, work, and the first law of thermodynamics; entropy and the second law, enthalpy, Helmholtz and Gibbs free energy; thermodynamic equilibrium criteria; Maxwell’s relations, phase transitions; elementary kinetic theory of gases. Prerequisite: PHYS 126 or 146 or EN PH 131. Pre- or corequisite: MATH 215 or 317 or equivalent. Credit may normally be obtained in only one of PHYS 211 or 224.

PHYS 212 Revolutions in Physics: The Structure of the Universe
3 (fi 6) (either term, 3-0-0). This course traces the conceptual development of our understanding of the structure of the physical universe from Babylonian astronomy up to Einstein’s Theory of Relativity, and its application to cosmology. Prerequisite: PHYS 126.

PHYS 213 Revolutions in Physics: The Quantum Theory of Matter
3 (fi 6) (either term, 3-0-0). This course traces the evolution of theories of matter, the limitations of classical causality, and the development and interpretations of Quantum Mechanics including implications for exciting current topics in Physics. Prerequisite: PHYS 126.

PHYS 224 Thermal Physics
3 (fi 6) (either term, 3-0-0). Thermal properties of matter: temperature, thermal expansion, ideal gas laws; thermal energy; specific and latent heats, calorimetry, heat conduction, radiation convection; thermodynamics: work, heat, internal energy, first law, thermal processes. Carnot engine, refrigerators, heat pumps, second law; kinetic theory of gases, Maxwell distribution, diffusion; mean free path, kinetic theory of transport processes; laws of probability and statistical physics: entropy, arrow of time; applications: diffusion, osmosis, membranes, unwinding of DNA molecules. Prerequisites: PHYS 126 or 146 or EN PH 131, and MATH 113 or 114. This course is part of a sequence with PHYS 124 and 126 for General program students. Credit may normally be obtained in only one of PHYS 211 or 224.

PHYS 230 Electricity and Magnetism
3.8 (fi 6) (either term, 3-0-3/2). Electric fields, Gauss’ Law; electric potential; capacitance and dielectrics; electric current and resistance; magnetic fields, Ampere’s Law; Faraday’s Law; inductance; magnetic properties of matter. Prerequisites: PHYS 130 or 146, and MATH 100. Corequisite: MATH 101 or 115. Note: Restricted to Engineering students. Other students who take this course will receive ★3.0. Credit may normally be obtained for only one of PHYS 230 or 281.

PHYS 234 Introductory Computational Physics
3 (fi 6) (either term, 3-0-3). Algorithms for scientific data analysis: sorting methods, polynomial fitting, regression, interpolation, and Fourier analysis; techniques for solving physics and geophysics problems with selected topics from mechanics, waves, geometrical optics and ray tracing, electricity and magnetism, statistical physics, decay processes, quantum physics, signal processing. Prerequisites: PHYS 126 or 146 or EN PH 131, and MATH 113 or 114, and MATH 102 or 120 or 125.

PHYS 244 Mechanics
3 (fi 6) (either term, 3-0-0). Particle dynamics; oscillating systems and normal modes; conservative forces and energy; introduction to Lagrangian and Hamiltonian dynamics; central forces; orbital motion and scattering. Prerequisite: PHYS 126 or 146 or EN PH 131. Corequisite: MATH 215 or 317 or equivalent.

PHYS 261 Physics of Energy
3 (fi 6) (either term, 3-0-0). Energy in its various forms; conservation of energy principle; consumption of primary energy resources; space heating, heat transfer, heating degree days; hydro, tidal, and wind power; ideal gases; heat engines, refrigerators and the second law of thermodynamics; nuclear fission, nuclear reactors; alternative and renewable energy resources. Prerequisites: ★6 in 100-level PHYS courses, and MATH 113 or 114, plus one other MATH course.

PHYS 264 Environmental Physics I
3 (fi 6) (either term, 3-0-0). Principles of materials balance and the calculation of the concentration of pollutants; exponential growth and decay; wet and dry adiabatic lapse rates and the dispersion of air pollutants; thermal convection, conduction and radiation; solar energy and solar technology; photovoltaics; water vapor and humidity. Prerequisites: ★6 in 100-level PHYS courses and MATH 113 or 114, plus one other MATH course.

PHYS 271 Introduction to Modern Physics
3 (fi 6) (either term, 3-0-0). Experimental evidence for limitations of classical physics; review of special relativity; quantization of charge, light, and energy; blackbody radiation, photoelectric effect, Compton effect; models of the atom; wavelike properties of particles; the uncertainty principle, the Schrödinger Equation, the infinite and finite square well, the harmonic oscillator, tunneling; the hydrogen atom, orbital angular momentum and electron spin; spin and statistics; selected topics. Prerequisite: PHYS 126 or 146 or EN PH 131. Corequisite: MATH 215 or equivalent. Note: Credit may be obtained in only one of PHYS 208 or 271.

PHYS 281 Electricity and Magnetism
3 (fi 6) (either term, 3-0-0). Electric fields; Gauss’ law; electric potential; capacitance and dielectrics; electric current and resistance; DC circuits; magnetic fields; Ampere’s Law; Faraday’s Law; inductance; magnetic properties of matter; AC circuits; Maxwell’s equations; electromagnetic waves. Prerequisite: PHYS 126 or 146. Corequisite: MATH 214 or 217 or equivalent. Credit may normally be obtained for only one of PHYS 230 or 281.

PHYS 292 Physics Laboratory A
3 (fi 6) (two term, 0-0-3). Experiments in mechanics, electromagnetism and atomic physics. Corequisites: PHYS 281 or 293, and MATH 214 or equivalent. Note: Restricted to Engineering students.

PHYS 294 General Physics Laboratory
3 (fi 6) (either term, 0-0-6). Introduction to methods of experimental physics with examples from modern physics. Prerequisite: MATH 113. Pre- or corequisite: PHYS 244. Note: Not to be taken by Specialization or Honors students in Physics, Geophysics or Mathematical Physics. Credit may be obtained in only one of PHYS 294 or 295.

PHYS 295 Experimental and Statistical Methods of Physics
3 (fi 6) (either term, 0-0-6). Detection of radioactive emissions using a Geiger counter, determination of the absolute zero of temperature using a gas thermometer, and other experiments illustrating the analysis of experimental data. Prerequisites: PHYS 126 or 146, and MATH 115. Credit may be obtained in only one of PHYS 294 or 295.

PHYS 297 Classic Experiments in Physics
3 (fi 6) (either term, 0-0-6). Choice of modern physics experiments including speed of light, measurement of e/m, Balmer series in hydrogen, photoelectric effect, and the Millikan oil drop and Franck-Hertz experiments. Prerequisite: PHYS 294 or 295. Corequisites: PHYS 208 or 271, and 281, and MATH 115.

PHYS 301 Particles, Nuclei, and the Cosmos
3 (fi 6) (either term, 3-0-0). Relativity; properties and structure of the nucleus;
radioactivity, carbon dating, tracer techniques; nuclear fission; fusion; nuclear reactors; elementary particles and particle accelerators; standard model; astrophysics; cosmology. Prerequisite: PHYS 208 or 271; MATH 115. Note: This course is not available for credit toward Honors Physics and Mathematical Physics degree programs. Offered alternate years only. Consult Department for course scheduling.

**PHYS 308 Statistical, Molecular, and Solid State Physics**

(3 (fi 6) (either term, 3-0-0). Classical and quantum statistics; fermions; bosons; molecular structure and spectra; molecular bonding; vibrational and rotational states; absorption; stimulated emission; population inversion; lasers; solid state physics; crystal structure; free-electron gas in metals; band theory of solids; semiconductors; semiconductor devices; superconductivity. Prerequisites: PHYS 208 or 271; MATH 115. Note: Not available for credit towards Honors Physics and Mathematical Physics degree programs. Offered alternate years only. Consult Department for course scheduling.

**PHYS 311 Statistical Physics**

(3 (fi 6) (either term, 3-0-0). Quantum states, probability distributions, temperature and entropy; canonical ensemble and the partition function; ideal gases, paramagnets; blackbody radiation. Debye model for phonons; quantum statistics; Fermi–Dirac distribution and electrons in metals; Bose–Einstein distribution. Prerequisites: PHYS 211 (or CH E 243 for Engineering Physics Program students in the Nanoelectronics Option stream), 271 and MATH 215 or 317 or equivalent.

**PHYS 319 Physical Principles of Electron Microscopy**

(3 (fi 6) (either term, 3-0-0). Application of the basic principles of optics, electricity, and magnetism to the focusing of electron beams and to the design of transmission and scanning electron microscopes; electron scattering by atoms; electron diffraction; interpretation of images of biological and crystalline specimens; microanalysis by X-ray emission spectroscopy. Prerequisite: PHYS 208. Offered alternate years only. Consult Department for course scheduling.

**PHYS 351 Relativity**

(3 (fi 6) (either term, 3-0-0). Lorentz transformations, definition of scalars, vectors, tensors; transformation of electromagnetic field; relativistic kinematics-collisions, centre of momentum, and laboratory frames; applications; introduction to general relativity. Prerequisites: PHYS 244, 281, and MATH 215.

**PHYS 362 Optics and Lasers**

(3 (fi 6) (either term, 3-0-0). Gaussian optics; optical instruments; matrix analysis of lens systems; aberrations; polarization; double- and multiple-beam interference; Fraunhofer and Fresnel diffraction; introduction to laser physics and applications; selected topics from contemporary optics. Prerequisite: PHYS 230 or 281, and MATH 215. For Engineering students, E E 335 is a corequisite in place of MATH 215.

**PHYS 364 Environmental Physics II**

(3 (fi 6) (either term, 3-0-0). Terrestrial thermal environment; molecular absorption of electromagnetic radiation and the carbon dioxide problem; factors affecting the long-term stability of the earth’s climate; the ozone problem; aspects of building ventilation; radioactivity and the effect of ionizing radiation on humans, the radon problem. Prerequisites: PHYS 264 and MATH 115. Offered alternate years only. Consult Department for course scheduling.

**PHYS 372 Quantum Mechanics A**

(3 (fi 6) (either term, 3-0-0). Origins of quantum mechanics; wave functions; Schrödinger equation and its application to one dimensional systems, postulates and physical interpretation of quantum mechanics; orbital angular momentum, central potentials and three-dimensional systems. Prerequisites: PHYS 271, and PHYS 230 or 281, and MATH 225 (or 102 for Engineering students). Corequisite: MATH 337 or equivalent.

**PHYS 381 Electromagnetic Theory I**

(3 (fi 6) (either term, 3-0-0). Review of scalar and vector fields; Gauss and Stokes theorems; curvilinear coordinates; Dirac delta function; electrostatic field and potential; electrostatic energy; conductors, capacitors; Laplace’s equation; boundary value problems of surfaces; use of multipole expansion to find electric and magnetic fields in matter; polarization; displacement; linear dielectrics; magnetostatic field; Boltz-Savart and Ampère’s law; vector potential; magnetostatic field in matter; magnetization; linear and nonlinear magnetic media. Prerequisites: PHYS 230 or 281, MATH 334 or equivalent. Corequisite: MATH 337 or equivalent.

**PHYS 395 Electronics**

(3 (fi 6) (either term, 3-0-3). DC and AC circuits; filter, diode, and transistor circuits; operational amplifiers; digital circuits; data acquisition; and computers. Lab component of the course provides practical experience in electronics. Prerequisites: PHYS 230 or 281, MATH 120 or 125, and MATH 215. Credit in PHYS 292 or 295 is strongly recommended. Offered alternate years only. Consult Department for course scheduling.

**PHYS 397 Projects in Experimental Physics**

(3 (fi 6) (either term, 0-0-6). Projects in optics, electricity, magnetism, and modern physics. Prerequisite: PHYS 292 or 295 or 297. Corequisite: PHYS 391 and MATH 337 or equivalent.
PHYS 512 Advanced Quantum Mechanics II
☆3 (fi 6) (second term, 3-0-0). Time-dependent scattering theory; relativistic quantum mechanics; Klein-Gordon and Dirac equations; introduction to quantum field theory.

PHYS 524 Classical Electrodynamics II
☆3 (fi 6) (second term, 3-0-0). Wave guides, radiating systems; special relativity, dynamics of relativistic particles and electromagnetic fields; radiation by moving charges; multiple fields. Additional special topics will be discussed.

PHYS 530 Statistical Mechanics
☆3 (fi 6) (either term, 3-0-0). Fundamentals of classical and quantum statistical mechanics, with selected applications.

PHYS 541 Condensed Matter Physics I
☆3 (fi 6) (either term, 3-0-0). Crystal structure and symmetries; electrons and band structure; semiconductors and heterostructures; lattice vibrations and thermal properties.

PHYS 543 Condensed Matter Physics II
☆3 (fi 6) (either term, 3-0-0). Dielectric and optical properties of solids; magnetism; electronic transport; disordered systems; electron-phonon interaction and superconductivity; strongly correlated electronic systems.

PHYS 574 Experimental Methods in Physics
☆3 (fi 6) (either term, 3-0-3/2). Statistics and data analysis: S/N considerations; interactions of photons, neutrons, and charged particles with matter; detectors; vacuum technology. Other topics to be selected according to students' needs and instructor's preference.

PHYS 580 Advanced Topics in Computational Physics
☆3 (fi 6) (either term, 3-0-0). Field theory and symmetries; gauge theories; spontaneous symmetry breaking; electroweak interactions of quarks and leptons; quantum chromodynamics; unified theories.

PHYS 610 Quantum Field Theory I
☆3 (fi 6) (first term, 3-0-0).

PHYS 614 Quantum Field Theory II
☆3 (fi 6) (second term, 3-0-0).

PHYS 635 Statistical Theory of Plasmas
☆3 (fi 6) (either term, 3-0-0).

PHYS 643 Superconductivity
☆3 (fi 6) (either term, 3-0-0).

PHYS 644 Analytical Electron Microscopy
☆3 (fi 6) (either term, 3-0-0).

PHYS 646 Special Topics in Condensed State Physics
☆3 (fi 6) (either term, 3-0-0).

PHYS 673 Special Topics in Subatomic Physics I
☆3 (fi 6) (either term, 3-0-0).

PHYS 683 Black Hole Physics
☆3 (fi 6) (either term, 3-0-0).

PHYS 698 Advanced General Relativity
☆3 (fi 6) (either term, 3-0-0).

PHYS 699 Special Topics in Theoretical Physics
☆3 (fi 6) (either term, 3-0-0).

231.222 Physiologie, PHYSE
Faculté Saint-Jean

Cours de 1er cycle

PHYS 152 Physiologie
☆6 (fi 12) (aux deux semestres, 5-0-0). Introduction à la physiologie humaine. Dout être complété avant l'année 2 du BSdSc (bilingue). Note: La priorité sera accordée aux étudiants du BSdSc (bilingue). Ce cours n'est pas accessible aux étudiants ayant ou postulant des crédits pour NURS 150 ou 151.

PHYS 210 Physiologie humaine
☆6 (fi 12) (l'un ou l'autre semestre, 6-0-0). Cours d'introduction à la physiologie humaine. Préalables : BIOLE 107 ou 108, ☆6 de CHIM. Ce cours n'est pas accessible aux étudiants ayant ou postulant des crédits pour PHYSL 211.

231.223 Physiology, PHYSL
Department of Physiology
Faculty of Medicine and Dentistry

Note: Details on the BS Program in Physiology can be found in the Faculty of Science section.

Undergraduate Courses

PHYS 210 Human Physiology
☆(fi 12) (two term, 3-0-0). Introductory course in human physiology. Prerequisites: BIOL 107 or 108; plus 6 credits in University level Chemistry. Credit may be obtained in only one of PHYSL 210 or 211. See PHYSL 211.

PHYS 211 Human Physiology
☆(fi 12) (two term, 3-0-0). Introductory course in human physiology. Required for students in Honors Physiology. Recommended for students in other Honors/ Specialization programs. Prerequisites: BIOL 107 or 108; CHEM 101 and 102. Pre-requisites: CHEM 164 or 261, and 263. Credit may be obtained in only one of PHYSL 210 or 211. Students with credit in PHYSL 210 or 211 may not obtain credit in ZOOL 241 or 242. Students in some Honors/Specialization programs may require PHYSL 210 or 211. See your departmental advisor.

PHYS 372 Systems Neuroscience
☆3 (fi 6) (second term, 3-0-0). Introduction to the organization and function of vertebrate nervous systems. Major topics will be neural development, control of movement, integration of sensory information, and the neuronal mechanisms underlying memory and learning. Prerequisite: PHYSL 210 or, or ZOOL 242.

PHYS 400 Reproductive Physiology
☆3 (fi 6) (second term, 3-0-0). The aim of this course is to describe (i) the causes of infertility, (ii) therapeutic approaches to restore or enhance fertility and (iii) contraceptive approaches to avoid pregnancy. Prerequisites: Physiology 210 or 211 or equivalent, and consent of the Department.

PHYS 401 Molecular and Cellular Physiology
☆3 (fi 6) (second term, 3-0-0). The molecular and cellular aspects of physiological processes. Major areas include the structure and functions of plasma membranes (emphasizing transport processes and their regulation) and the mechanism of action of hormones (hormone-receptor interactions, receptor regulation and interactions of intracellular mediators). The physiological significance of these processes will be stressed throughout. Prerequisites: PHYSL 210 or 211, and consent of Department.

PHYS 402 Homeostatic Physiology
☆3 (fi 6) (second term, 3-0-0). Principles of regulatory mechanisms in human and mammalian physiology. The interrelationships between different organ systems in the maintenance of homeostasis, will be discussed. Prerequisites: PHYSL 210 or 211 and consent of Department.

PHYS 403 Neuroendocrinomodulation
☆3 (fi 6) (first term, 3-0-0). The physiological and pathophysiological interrelationships between the nervous, endocrine and immune systems. Prerequisites: PHYSL 210 or equivalent.

PHYS 404 Cardiovascular Physiology
☆3 (fi 6) (first term, 3-0-0). General concepts in human cardiovascular physiology: properties of the myocardium, hemodynamics and control of the cardiovascular system; limited discussion of relevant clinical situations. Prerequisite: PHYSL 210, or 211 or equivalent.

PHYS 405 Sensory Physiology
☆3 (fi 6) (second term, 3-0-0). The sensory systems in human physiology. The topics covered will be vision, hearing, vestibular mechanisms, taste, smell, and touch, including receptor mechanisms and central organization. Prerequisites: PHYSL 210 or 211 and consent of the department.

PHYS 444 Advanced Topics in Neurophysiology
☆3 (fi 6) (first term, 3-0-0). A lecture course emphasizing contemporary aspects of developmental, cellular, systems and cognitive neurophysiology. Topics will include experience-dependent processes in the development of the nervous system, the molecular and cellular mechanisms for learning and memory, and voluntary movement, the representation and transformation of information in the nervous system, and the neuronal events associated with conscious experience. Students will be expected to demonstrate a thorough understanding of selected readings from current and classical literature. Suitable for honours students in Physiology, Pharmacology, Psychology and Neuroscience. Prerequisites: PMCOL 371 and PHYSL 372 and permission of course coordinator.

PHYS 465 Undergraduate Research Project
☆3 (fi 6) (either term, 0-0-6). Individual study. Restricted to students in the Physiology Honors Program. Students will spend one term in the laboratory of a faculty member and carry out a laboratory research project. Successful completion of an oral presentation is required at the conclusion of the project. Credit for this course may be obtained more than once.
Course Listings

PHYS 466 Undergraduate Tutorial
(3 (f 6) (either term, 3-0-0). Individual study. Restricted to students in the Physiology Honors Program. Students will select a faculty member who will guide them through a course of reading at an advanced level on a specialized topic. Successful completion of an oral presentation is required at the conclusion of the project. Credit for this course may be obtained more than once.

PHYS 467 Undergraduate Research Project
(6 (N 12) (two term, 0-6-0). Individual study. Restricted to students in the Physiology Honors Program. Students will spend two terms in the laboratory of a faculty member and carry out a research project. The student will be required to present an oral overview of the project at the end of the first term and a final oral presentation at the conclusion of the project. A paper in manuscript form is also required. The student must commit to stay with the project for two terms.

PHYS 501 Topics in Cardiovascular Physiology
(3 (f 6) (second term, 3-0-0). The goal of PHYS 501 is to develop critical appraisal and presentation skills in advanced undergraduate and graduate students. Through critical review of controversial topics in modern cardiovascular physiology, the participant will learn to appreciate that literature is a dynamic, changing and fallible source of information. Presentation skills are developed through both oral and written assignments and facility with the use of electronic library resources is encouraged. Course content varies from year to year. Prerequisites: PHYS 210 or 211, PHYS 404 and consent of Department.

PHYS 502 Problems in Current Research
(3 (f 6) (either term, 0-3-0). Individual study. Credit for this course may be obtained more than once.

PHYS 506 Tutorial and Seminar Course
(3 (f 6) (either term, 3-0-0). Guided reading course. Credit for this course may be obtained more than once.

PHYS 512 Physiology of the Respiratory System
(3 (f 6) (first term, 3-1s-3). Cellular and molecular physiology of airways and the lung. Major topics include ion transport mechanisms, fluid balance, epithelial electrophysiology, cysitic fibrosis, cellular mechanisms of asthma, neural and chemical control of respiration. Designed for advanced undergraduate and graduate students. Prerequisites: PHYS 210 or 211 or consent of Department.

PHYS 513 Fetal Physiology
(3 (f 6) (second term, 3-0-0). The course stresses experimental approaches to understanding fetal physiology as well as the development and function of the fetus from ovulation to birth and adaptation to independent life. This course also deals with maternal physiology during pregnancy, complications of pregnancy, and newborn health. Prerequisites: PHYS 210 or PHYS 211 and consent of Department.

PHYS 527 Experimental Approaches in Neuroscience
(3 (f 6) (second term, 3-0-0). Lecture course designed to provide an appreciation and understanding of the vast array of experimental approaches used in neurobiological research. Topics will include electrophysiological, neuropharmacological, and anatomical approaches used to understand how the nervous system functions at the molecular, cellular, and system levels. For advanced undergraduate and graduate students. Prerequisite: PHYS 372 or PMCOL 371. Offered in alternate years.

PHYS 545 Physiology of Transport Systems
(3 (f 6) (second term, 3-0-0). A consideration of transport mechanisms primarily from the physiological rather than biochemical viewpoint. Major models considered are the erythrocyte and a variety of epithelia from vertebrates. Designed for advanced undergraduate and graduate students. Offered in alternate years. Prerequisites: PHYS 210 or 211, or ZOOL 241 or 242.

Graduate Courses

PHYS 500 REPRODUCTIVE PHYSIOLOGY
(3 (f 6) (second term, 3-0-0). The aim of this course is to describe (i) the causes of infertility, (ii) therapeutic approaches to restore or enhance fertility and (iii) contraceptive approaches to avoid pregnancy. Lectures are the same as PHYS 400, but with additional assignments and evaluation appropriate to graduate studies. Credit cannot be obtained for both PHYS 400 and PHYS 500. Prerequisites: Physiology 210 or 211 or equivalent, and consent of the Department.

PHYS 546 Physiology of Reproduction
(3 (f 6) (first term, 3-0-0). Selected topics in reproductive physiology. Prerequisite: ZOOL 343 or PHYS 401.

PHYS 600 Colloquia in Physiology
(3 (f 6) (either term, 0-3s-0). This discussion course will provide an opportunity for Provisional PhD candidates in the Department of Physiology, prior to their candidacy examination, to research, present and critique publications in areas relevant to their research, but not their own research. Graded on a pass/fail basis. Prerequisite: consent of Department. Open to other graduate students in the Department of Physiology.

PHYS 124 Particules et ondes
(3 (f 6) (premier semestre, 3-0-3). Cours basé sur l'algebre, principalement pour les étudiants en sciences de la vie, de la santé et de l'environnement. Le cours décrit deux types de mouvements: la matière (particules) et les ondes. Vecteurs, forces, corps en équilibre, révision de cinématique et dynamique, conservation de la quantité de mouvement et de l'énergie, mouvement circulaire, Vibrations, ondes élastiques dans la matière, son, optique ondulatoire. Radiation du corps noir, photosensibilité de Broglie. L'accent sera mis sur des applications dans les sciences de la vie, de la santé et de l'environnement. Préalable(s): Physique 20 ou l'équivalent, Mathématiques 30. Physique 30 est fortement recommandé. Note: Ce cours n'est pas accessible aux étudiants ayant ou postulant des crédits pour PHYSQ 131, PHYS 144 ou EN PH 131.

PHYS 126 Fluides, champs et radiation
(3 (f 6) (deuxième semestre, 3-0-3). Suite de PHYSQ 124, principalement pour les étudiants en sciences de la vie, de la santé et de l'environnement. Statique et dynamique des fluides, gaz, interprétation cinématique. Électrostatique, courants et circuits, champs magnétiques, induction électromagnétique. Radiation nucléaire, son interaction avec la matière et ses applications. Préalable: PHYSQ 124. Note: Ce cours n'est pas accessible aux étudiants ayant ou postulant des crédits pour PHYSQ 130, PHYS 146.

PHYSQ 130 Ondes, optique et son
(3 (f 6) (premier semestre, 3-0-3). Optique géométrique, instruments d'optique, oscillations, ondes, interférence, diffraction. Préalable(s): Mathématiques 30, 31, Physique 30. Concomitant(s): MATHQ 110 ou 113, ou l'équivalent. Note: Ce cours n'est pas accessible aux étudiants ayant ou postulant des crédits pour PHYSQ 126, PHYS 146. Les étudiants de la Faculty of Engineering auront 3.8. PHYSQ 131 Mécanique
(3 (f 6) (deuxième semestre, 3-1s-3/2). Cinématique et dynamique des particules; gravitation; travail et énergie; moments linéaire et angulaire; systèmes de particules; dynamique des corps rigides. Préalable(s): MATHQ 108 ou 113, PHYSQ 130. Les étudiants de la Faculty of Engineering doivent avoir suivi ENGQ 130. Concomitant(s): MATHQ 115 ou MATH 101. Note: Ce cours n'est pas accessible aux étudiants ayant ou postulant des crédits pour PHYSQ 124, PHYS 144 ou EN PH 131.

PHYSQ 213 Révolutions en physique: théorie quantique de la matière
(3 (f 6) (l'annee 2, 3-0-0). Ce cours retrace l'évolution des théories de la matière, les limites de la notion classique de causalité, le développement et les interprétations de la mécanique quantique. Applications modernes: information quantique, physique nucléaire et des particules, théorie des cordes, cosmologie et Big Bang. Préalable: PHYSQ 124.

PHYSQ 224 Physique Thermique
(3 (f 6) (l'année 2, 3-0-0). Propriétés thermiques de la matière: température, dilatation thermique, gaz parfaits. Énergie thermique: chaleur spécifique, chaleur latente, calorimétrie, conduction, convection et radiation. Thermodynamique: travail, chaleur, énergie interne, première loi, processus thermiques; cycle de Carnot, réfrigérateurs, pompes à chaleur, deuxième loi. Théorie cinétique des gaz, distribution de Maxwell, effusion; libre parcours moyen, théorie cinétique des processus de transfert; loi de probabilité et physique statistique: entropie et flèche du temps. Applications: diffusion, osmose, membranes, déroulement de molécules d'ADN. Préalable(s): PHYSQ 126 ou 131 ou PHYS 146, MATHQ 113 ou MATHQ 114. Ce cours n'est pas accessible aux étudiants ayant ou postulant des crédits pour PHYSQ 211.

PHYSQ 230 Electricité et magnétisme
(3.8 (f 6) (l'année 2, 3-0-2). Champs électriques, loi de Gauss; potentiel électrique;condensateurs et diélectriques; courant électrique et résistance; champs magnétiques; loi d'Ampère; loi de Faraday; induction; Propriétés magnétiques de la matière. Préalable(s): PHYSQ 130 ou 146 et MATHQ 100. Concomitant(s): MATHQ 101 ou 115. Note: les étudiants de la Faculty of Engineering qui suivent ce cours obtiendront 3.8. Ce cours n'est pas accessible aux étudiants ayant ou postulant des crédits pour PHYS 281.

PHYSQ 271 Introduction à la physique moderne
PL SC 221 Introduction to Plant Science

(3 (fi 6) either term, 3-0-3). Principles of plant science for use in agriculture, forestry and environmental sciences. Emphasis on the structure, function and metabolism of biological macromolecules. Prerequisite: One of: CHEM 161, 164 or 261.

PL SC 331 Plant Biochemistry I

(3 (fi 6) first term, 3-0-0). An introduction to the concepts of biochemistry with an emphasis on the structure, function and metabolism of biological macromolecules. Prerequisite: PL SC 221 or consent of instructor.

PL SC 355 Plant Propagation

(3 (fi 6) first term, 3-0-3). Study of the physiological and practical aspects of sexual and asexual plant propagation. Propagation by seed and cuttings, layering, grafting and micropropagation. Prerequisite: PL SC 221 or consent of instructor.

PL SC 352 Weeds and Weed Control

(3 (fi 6) first term, 3-0-3). Crop-weed relationships, methods of control, herbicide properties and uses, weed identification. Prerequisite: PL SC 221 recommended.

PL SC 354 Forage Crops

(3 (fi 6) second term, 3-0-3). The establishment, management, conservation and utilization of forages. Morphological structure and adaptation of the principal forage grasses and legumes. Prerequisite: PL SC 221 or consent of instructor.

PL SC 356 Cereal, Oilseed, and Pulse Crops

(3 (fi 6) first term, 3-0-3). The role of cereals, oilseeds, and pulse crops in Western Canadian agricultural systems. Their botanical, physiological, agricultural, and market quality characteristics. Prerequisite: PL SC 221 or consent of instructor.

PL SC 357 Greenhouse Crops

(3 (fi 6) second term, 3-0-3). History and present status of protected cropping industry; greenhouse structural design; systems of environmental control; cultural procedures for some commonly grown greenhouse crops. Offered in alternate years beginning in 1998-99. Prerequisite: PL SC 221 or consent of instructor.

PL SC 380 Principles of Plant Pathology

(3 (fi 6) first term, 3-0-3). An introduction to plant diseases; the nature of nonparasitic and parasitic causal agents such as air pollutants, temperature, viruses, bacteria, fungi, higher plants and nematodes; principles involved in disease prevention and control. Prerequisite: BIOL 107 recommended.

PL SC 385 Forest Pathology

(3 (fi 6) first term, 3-0-3). An introduction to forest diseases. Lectures and discussions focus on the biology and management of the major types of tree diseases causing economic loss. Labs focus on disease identification. A basic knowledge of forestry is assumed. The course is intended for students in their third, or preferably fourth, year.

PL SC 465 Principles of Plant Breeding

(3 (fi 6) first term, 3-0-0). Basic principles of crop improvement by plant breeding. Different plant breeding methods and their relationship to the major crop species. Graduate students may not register for credit (see AFNS 565). Credit will only be given for one of AFNS 565 and PL SC 465. Prerequisite: BIOL 207 or consent of instructor and #3 statistics.
Undergraduate Courses

POL S 111 Beginners’ Polish I
3 (fi 6) (either term, 5-0-0). Essentials of grammar, reading, pronunciation. Designed to give a working knowledge of the Polish language. Not: not to be taken by students with credit in POL S 100, or with native or near native proficiency, or with Polish 30 or its equivalents in Canada and other countries.

POL S 112 Beginners’ Polish II
3 (fi 6) (either term, 5-0-0). Prerequisite: POL S 111 or consent of Department. Note: subject to be taken by students with credit in POL S 100, or with native or near native proficiency, or with Polish 30 or its equivalents in Canada and other countries.

POL S 211 Second-Year Polish I
3 (fi 6) (either term, 4-0-0). Intermediate grammar, creative composition, and oral practice based on selected topics of Polish contemporary and classical literature. Prerequisite: POL S 112 or consent of Department. Note: not to be taken by students with credit in POL S 201 or 202.

POL S 212 Second-Year Polish II
3 (fi 6) (either term, 4-0-0). A continuation of POL S 211, with greater emphasis on reading and composition. Prerequisite: POL S 211. Note: not to be taken by students with credit in POL S 202.

POL S 303 Advanced Polish I
3 (fi 6) (either term, 3-0-0). Films, short literary texts and journalistic prose serve as the basis for composition and discussion. Prerequisite: POL S 212 or consent of Department.

POL S 304 Advanced Polish II
3 (fi 6) (either term, 3-0-0). Prerequisite: POL S 303 or consent of Department.

POL S 407 Business Polish
3 (fi 6) (either term, 3-0-0). Specialized language of business in Polish, especially its managing and marketing aspects. Prerequisite: POL S 304 or consent of Department. Note: not to be taken by students with credit in POL S 307.

POL S 416 20th-Century Polish Literature
3 (fi 6) (either term, 3-0-0). Principal literary movements with emphasis on contemporary Polish literature, including the post-communist era. Polish literary criticism and literary theory before and after the war. Prerequisite: POL S 415 or consent of Department. Note: not to be taken by students with credit in POL S 412.

POL S 443 Polish-English Translation
3 (fi 6) (either term, 3-0-0). Introduction to translation theories and practice as applied to Polish. Exercises in translation of minimal textual units (written and oral) with emphasis on non-literary texts. Prerequisite: POL S 212 or consent of Department. Note: formerly POL S 441. Not to open to students with credit in POL S 441.

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Note: See also INT D 393, a course offered by more than one Department which may be taken as an option or as a course in this discipline.

Undergraduate Courses

POL S 101 Introduction to Politics
3 (fi 6) (either term, 3-0-0). An introduction to major political concepts and to the study of politics. Note: not open to students with credit in POL S 100 or 103.

POL S 210 History of Political Thought
3 (fi 12) (two term, 3-0-0). An historical and critical survey of the development of political and social philosophy from ancient Greece to the present time, with selected readings from major political writers. Note: This is the core course in the field of political philosophy and the prerequisite for 400-level courses in the field. Prerequisite: POL S 101 or consent of Department.

POL S 220 Canadian National Government and Politics
3 (fi 12) (two term, 3-0-0). The structure and function of the government of Canada, especially of the Commons, Senate, Cabinet System, Civil Service, and the role of political parties. Note: This is the core course in the field of Canadian government and politics and a prerequisite for most 400-level courses in the field. Prerequisite: POL S 101 or consent of Department.

POL S 221 Canadian Political Realities
3 (fi 6) (either term, 3-0-0). This introduction to Canadian politics is designed for students who do not intend to take more senior courses in Canadian politics. It provides an overview of Canadian political development, the key institutions and actors in Canadian politics, and a survey of Canada’s most pressing and persistent political challenges. Not open to students with credit in POL S 220.

POL S 223 City Government and Politics
3 (fi 6) (either term, 3-0-0). Selected public policies of city governments and the political and administrative processes through which they are produced. Prerequisite: POL S 101 or consent of Department.

POL S 230 Introduction to Comparative Politics: Global North
3 (fi 6) (either term, 3-0-0). Historical and contemporary comparisons among selected Northern countries. Political institutions, social change, development, and democratization. Note: This is a core course in the field of comparative politics and the prerequisite for many 300- and 400-level courses in the field. Not open to students with credit in POL S 200. Prerequisite: POL S 101 or consent of Department.

POL S 240 Introduction to Comparative Politics: Global South
3 (fi 6) (either term, 3-0-0). Historical and contemporary comparisons among selected Southern countries. Political institutions, social change, development, and democratization. Note: This is a core course in the field of comparative politics and the prerequisite for many 300- and 400-level courses in the field. Not open to students with credit in POL S 200. Prerequisite: POL S 101 or consent of Department.

POL S 260 International Relations
3 (fi 6) (two term, 3-0-0). An introduction to contemporary international relations that attempts to develop an understanding of political events at the international level. The course covers the nature of foreign policy, the dynamics of interactions between states, the causes of war, imperialism and the role of non-state actors. Note: This is the core course in the field of international relations and a prerequisite for most 400-level courses in the field. Prerequisite: POL S 101 or consent of Department.

POL S 266 Politics of Globalization
3 (fi 6) (either term, 3-0-0). Myths and realities of political, economic, and cultural globalization. Implications for nation-states, communities, citizens, and markets. Not open to students with credit in POL S 110. Prerequisite: POL S 101 or consent of Department.

POL S 299 Citizenship for Democracy
3 (fi 6) (either term, 3-0-0). Power, politics and political activism. Approaches to participatory and democratic citizenship.

POL S 302 Classic Works of Political Thought
3 (fi 6) (either term, 3-0-0). Critical examination of some major works in Political Philosophy not normally covered in POL S 210. Prerequisite: POL S 210 or consent of Department.

POL S 303 The Politics of Financial Crises
3 (fi 6) (either term, 3-0-0). Role of governments and institutions of governance in global finance. Prerequisite: POL S 230 or 240 or 260 or consent of Department.

POL S 315 Analysis of Political Science
3 (fi 12) (two term, 3-0-0). A philosophical investigation of the basic issues involved in the scientific study of politics. Prerequisite: POL S 210 or consent of Department. Formerly POL S 313 and 314.

POL S 321 The Politics of Health Care in Canada I
3.5 (fi 3) (either term, 18 hours). The development of Canada’s health care system, its legislative and philosophical grounds, as well as financing and delivery. Note: Open only to students in the Faculty of Nursing. Not open to students with credit in SC PO 320.

POL S 322 The Politics of Health Care in Canada II
3.5 (fi 3) (either term, 18 hours). Current stresses in the health care system such as challenges to universality; alternative health delivery system from a comparative perspective. Note: Open only to students in the Faculty of Nursing. Not open to students with credit in SC PO 320. Prerequisite: POL S 321.

POL S 324 Topics in Canadian Politics
3 (fi 6) (either term, 3-0-0). Prerequisite: POL S 220 or consent of Department.

POL S 325 Canadian Political Economy
3 (fi 6) (either term, 3-0-0). This course explores the political economy tradition in Canada, which emphasizes the historical interrelationships among the international political economy, Canadian public policy, political conflict and political movements. Prerequisite: POL S 220 or consent of Department.

POL S 327 Aboriginal Peoples and the Canadian State
3 (fi 6) (either term, 3-0-0). This course examines the recent history of relationships between Canada’s Aboriginal peoples and the Canadian State. It examines the ways that European political practices and public institutions were imposed upon the First Nations and Aboriginal reactions and resistance to these legal and political changes. Prerequisite: One of POL S 220, NS 210, or 211.

POL S 328 Managing Modern Government
3 (fi 6) (either term, 3-0-0). Topics include government organization and administration, budgets, policy making, and democratic control and accountability. The focus is on Canada, but other countries are also considered. Prerequisite: POL S 220 or 230 or consent of Department.
POL S 332 Introduction to United States Politics and Government
3 (fl 6) (either term, 3-0-0). The actors, institutions, and processes of American politics and governance, and the forces that influence them. Prerequisite: Any of the 200-level POL S core courses or consent of Department.

POL S 333 Ecology and Politics
3 (fl) (either term, 3-0-0). This course examines different approaches to understanding the links between politics, society and ecology. Prerequisites: POL S 230 or 240 or consent of Department.

POL S 334 North American Politics
3 (fl 6) (either term, 3-0-0). Comparative study of political institutions of Canada, Mexico, and the United States, and their interaction with NAFTA. Prerequisite: POL S 230 or 240 or 260 or consent of Department.

POL S 345 Issues in Globalization and Governance
3 (fl 6) (either term, 3-0-0). Prerequisite: POL S 230 or 240 or 260 or consent of Department.

POL S 350 The Politics of Gender
3 (fl 6) (either term, 3-0-0). Relationships between gender, politics and power. From ballot box to bedroom to boardroom, how political and social institutions shape and are shaped by the categories of gender and sex. Prerequisite: Any of the 200-level POL S core courses or consent of Department.

POL S 354 Topics in Comparative Politics
3 (fl 6) (either term, 3-0-0). The focus of this course changes yearly to reflect current issues in comparative politics and faculty research interests. Information about the specific topics can be obtained from the Department. Prerequisite: POL S 230 or 240 or consent of Department.

POL S 357 The Third World in Global Politics
3 (fl 6) (either term, 3-0-0). Explores the opportunities and constraints imposed on third world governments in an era of globalization and trade liberalization. Of particular interest are the politics of African and South American countries. Prerequisite: POL S 240 or 260 or consent of Department.

POL S 359 Topics in International Politics
3 (fl 6) (either term, 3-0-0). This course examines contemporary controversies in international politics. Information about specific topics are available from the Department. Prerequisite: POL S 260 or consent of Department.

POL S 364 Introduction to International Political Economy
3 (fl 6) (either term, 3-0-0). This course provides an introduction to the ideas, institutions, and forces which are shaping the new international political economy. It examines the politics of trading blocks such as NAFTA and the EU, North-South relations, and the interactions of markets and states in the global economy. Prerequisite: POL S 230 or 240 or 260.

POL S 365 Canadian Foreign Policy
3 (fl 6) (either term, 3-0-0). Major trends and developments in Canadian foreign policy since 1945. Prerequisite: POL S 260.

POL S 370 Politics of the European Union
3 (fl 6) (either term, 3-0-0). An examination of European Union institutions, processes, politics, and policy issues. Prerequisite: POL S 230 or 240 or 260 or consent of Department.

POL S 374 Politics and Society of Postcolonial Africa
3 (fl 6) (either term, 3-0-0). An intensive survey of selected African politics and societies from colonialism to globalization. Prerequisite: POL S 240 or MEAS major/minor or consent of Department.

POL S 375 Politics of East Asia
3 (fl 6) (either term, 3-0-0). A comprehensive introduction to East Asian politics in the postwar period, covering Greater China (Mainland, Taiwan and Hong Kong), Japan and the two Koreas. Prerequisite: POL S 240 or East Asian Studies Major/Minor or consent of Department.

POL S 376 Issues in Development Studies
3 (fl 6) (either term, 3-0-0). This course examines the politics of development, focusing specifically on Latin America, Africa, and Asia. It reviews various approaches to development undertaken by national governments and international agencies such as the United Nations, the World Bank and the International Monetary Fund as well as alternative models advanced by popular political movements. Issues of democractization, ecology, gender equality, and the rights of indigenous peoples also are examined. Prerequisite: POL S 240 or consent of Department.

POL S 379 Latin American Politics and Society
3 (fl 6) (either term, 3-0-0). An intermediate survey of Latin American politics and society. Prerequisite: POL S 240 or consent of Department.

POL S 380 Politics in the Middle East
3 (fl 6) (either term, 3-0-0). Evolution, future, and global significance of Middle Eastern regional politics. Prerequisite: POL S 240 or consent of Department.

POL S 385 Regional Politics in Western Canada
3 (fl 6) (either term, 3-0-0). Political issues, including rural impacts of globalization, urbanization, economic diversification. First Nations’ aspirations, government downsizing. Prerequisite: POL S 220 or consent of Department.

POL S 390 Law and Politics
3 (fl 6) (either term, 3-0-0). Relationships between law and politics in Canada and the United States including dispute resolution, societal and governmental influences on the judiciary, the policy-making role of courts, and the criminal process. Prerequisite: POL S 220 or 230 or 332 or consent of Department.

POL S 391 Canadian Political Parties
3 (fl 6) (either term, 3-0-0). Topics include party systems; ideologies and programs; members and supporters; organization and resources, and electoral and governmental activities. Prerequisite: POL S 220 or consent of Department.

POL S 396 Human Rights and World Politics
3 (fl 6) (either term, 3-0-0). This course examines the evolution of the concept of human rights and the current debates related issues in world politics. Prerequisite: POL S 230 or 240 or 260 or consent of Department.

POL S 397 Elections and Voting Behavior
3 (fl 6) (either term, 3-0-0). Analysis of contemporary politics; the various factors that shape party competition and voting behavior and determine election outcomes, and the consequences of these outcomes focusing mainly on recent Canadian federal elections. Prerequisite: POL S 220 or 230 or consent of Department.

POL S 398 Mass Media and Politics
3 (fl 6) (either term, 3-0-0). Mass media influence in democratic political processes and social movements, Canada or globally. Prerequisite: Any of the 200-level POL S core courses or consent of Department.

POL S 399 Third-Year Honors Seminar
3 (fl 6) (either term, 0-3s-0). Research design and research methods for Political Science Honors Students. Note: Restricted to Honors Students in Third Year or those with consent of Department.

POL S 404 Topics in Political Philosophy
3 (fl 6) (either term, 0-3s-0). Prerequisite: POL S 210 or equivalent.

POL S 405 Democratic Theory
3 (fl 6) (either term, 0-3s-0). An investigation of different conceptions of democracy in political thought. Prerequisite: POL S 210 or consent of Department.

POL S 406 Topics in the History of Political Philosophy
3 (fl 6) (either term, 0-3s-0). Prerequisite: POL S 210 or equivalent.

POL S 410 Topics in Contemporary Political Philosophy
3 (fl 6) (either term, 0-3s-0). A critical examination of contemporary trends in political philosophy. Prerequisite: POL S 210 or equivalent.

POL S 415 Marx and Marxism
3 (fl 6) (either term, 0-3s-0). An introduction to Marx's political thought and recent debates in Marxism. Prerequisite: POL S 210 or consent of Department. Not open to students with credit in POL S 305.

POL S 417 Philosophical Issues of Human Rights
3 (fl 6) (either term, 0-3s-0). An enquiry into the idea(s) of human rights and the adequacy of their philosophical grounding. Prerequisite: POL S 210 or consent of Department.

POL S 418 Politics of the Canadian Constitution
3 (fl 6) (either term, 0-3s-0). The political implications of judicial decisions in the areas of civil liberties, federal-provincial relations and international agreements. Prerequisite: POL S 220, or consent of Department.

POL S 421 Issues in Canadian Politics
3 (fl 6) (either term, 0-3s-0). The focus of this seminar changes yearly to reflect current issues in Canadian politics and faculty research interests. Information about the specific topic is available from the department. Prerequisite: POL S 220 or consent of Department.

POL S 423 Canadian Federalism
3 (fl 6) (either term, 0-3s-0). The analysis of the development and theories of Canadian Federalism. Attention will be given to current problems of the federal system. Prerequisite: POL S 220 or consent of Department.

POL S 429 Government and Politics of Alberta
3 (fl 6) (either term, 0-3s-0). The study of selected aspects of Alberta government and politics. Topics may range from political institutions, through political parties, to areas of public policy. Prerequisite: POL S 220 or consent of Department.

POL S 432 Politics of the Canadian North
3 (fl 6) (either term, 0-3s-0). An analysis of the politics of native claims, constitutional change and the non-renewable and renewable resource economics of Canada north of 60 degrees. Prerequisite: POL S 220 or consent of Department.

POL S 433 City Politics
3 (fl 6) (either term, 0-3s-0). The theory and practice of city politics in modern Canada. The course will normally employ as resource persons senior elected and
POL S 434 Cities and Globalization  
3 (fi 6) (either term, 0-3s-0). The global forces shaping urban economies, geographies, and cultures; urban social movements; the privatization of urban space and politics; and shifting conceptions of locality, community, and urbanity. Prerequisite: POL S 220 or 223 or 230 or consent of Department.

POL S 435 Metropolitan Government  
3 (fi 6) (either term, 0-3s-0). The comparative study of the political economy of metropolitan government. Prerequisite: POL S 223 or 230 or 240 or consent of Department.

POL S 437 Politics of Canadian Cultural Industries  
3 (fi 6) (either term, 0-3s-0). Canadian cultural politics and policy after NAFTA: impacts of trade agreements for cultural industries (publishing, music, television). Prerequisite: POL S 220 or 230 or consent of Department.

POL S 440 Topics in Canadian Public Policy  
3 (fi 6) (either term, 0-3s-0). Selected topics of contemporary interest in Canadian public policy. Information about the specific topic is available from the Department. Prerequisite: POL S 220 or consent of Department.

POL S 441 Gender and Public Policy  
3 (fi 6) (either term, 0-3s-0). The relationship between gender and public policy in Canada. Of particular concern are effects of restructuring, decentralization, privatization and deregulation on women. Prerequisite: POL S 220 or 350 or consent of Department.

POL S 442 The Canadian State and Identity Politics  
3 (fi 6) (either term, 0-3s-0). The relative power, impact and interconnections of both territorial (regional) divisions and other non-territorial divisions (e.g. gender, race, ethnicity, and class). Prerequisite: POL S 220 or consent of Instructor.

POL S 443 Globalization, Ethnic Politics and the Nation-State  
3 (fi 6) (either term, 0-3s-0). Theories of nationalism and the nation-state in an era of globalization. Prerequisite: POL S 230 or 240 or consent of Department.

POL S 445 Topics in Globalization and Governance  
3 (fi 6) (either term, 0-3s-0). Prerequisite: POL S 230 or 240 or 260 or consent of Department.

POL S 446 Nation-States in the New International Political Economy  
3 (fi 6) (either term, 0-3s-0). Pressures faced by nation-states in the new international political economy, especially in relation to macro-economic politics, national sovereignty, economic development, and democratic processes. Prerequisite: POL S 230 or 240 or 260 or consent of Department.

POL S 450 Topics in Comparative Theory  
3 (fi 6) (either term, 0-3s-0). Seminar in major areas of comparative theory such as political economy and the politics of collective action. Prerequisite: POL S 230 or 240 or consent of Department.

POL S 454 Feminism and Social Change  
3 (fi 6) (either term, 0-3s-0). This course looks at the interaction between feminism(s) and a variety of areas of social theory. A background in feminist theory is recommended. Topics may include: psychoanalysis, sociology, political economy, epistemology, social science methodology, cultural theory, and comparative development. Prerequisites: POL S 230 or 240 or 350 or consent of Department.

POL S 455 Topics in Gender and Politics  
3 (fi 6) (either term, 0-3s-0). Prerequisite: Any of the POL S 200-level core courses or consent of Department.

POL S 457 Foreign Policy Analysis  
3 (fi 6) (either term, 0-3s-0). Analysis of those main variables contributing to the formation of the foreign policies of selected nations. Prerequisite: POL S 260 or consent of Department.

POL S 458 United States Foreign Policy  
3 (fi 6) (either term, 0-3s-0). The contemporary foreign policies of the United States and their causes. Prerequisite: POL S 260 or consent of Department.

POL S 459 Topics in International Politics  
3 (fi 6) (either term, 0-3s-0). Prerequisite: POL S 260.

POL S 460 Global Security  
3 (fi 6) (either term, 0-3s-0). Historical and contemporary political issues of global security are examined from various theoretical perspectives. Prerequisite: POL S 260 or consent of Department.

POL S 462 Political Economy of Global Governance  
3 (fi 6) (either term, 0-3s-0). Competing analytical frameworks within international political economy; social and ideological dimensions of governance in a globalized world. Prerequisite: POL S 364 or consent of Department.

POL S 463 War and International Conflict  
3 (fi 6) (either term, 0-3s-0). A survey covering theorists and theories of war, conventional strategy, and revolutionary strategy. Prerequisite: POL S 260.

POL S 468 International Organization  
3 (fi 6) (either term, 0-3s-0). An examination of theoretical debates on international cooperation and international institutions and their application to contemporary international politics. Prerequisite: POL S 260 or consent of Department.

POL S 469 Ethics in International Relations  
3 (fi 6) (either term, 0-3s-0). Sources of and debates on ethical issues in international relations, especially surrounding human rights, economic justice and war. Prerequisite: POL S 260 or consent of Department.

POL S 470 Selected Topics in Comparative Politics  
3 (fi 6) (either term, 0-3s-0). Selected topics of current interest in comparative politics and government. Prerequisite: POL S 230 or 240 or consent of Department.

POL S 474 Topics in African Political Economy  
3 (fi 6) (either term, 0-3s-0). Prerequisite: POL S 240 or MEAS major/minor or consent of Department.

POL S 475 Politics of China and Japan  
3 (fi 6) (either term, 0-3s-0). Domestic politics and foreign policy of China and/or Japan. Note: Not open to students with credit in POL S 473. Prerequisite: POL S 240 or 375 or East Asian Studies major/minor or consent of Department.

POL S 477 Issues in Islamic Politics  
3 (fi 6) (either term, 3-0-0). Political ideas and practice in Islamic countries, including historical and contemporary constructions of Islam. Prerequisite: POL S 240 or 380 or consent of Department.

POL S 478 Topics in Latin American Politics  
3 (fi 6) (either term, 0-3s-0). Prerequisite: POL S 240 or consent of Department.

POL S 483 United States Constitutional Law  
3 (fi 6) (either term, 0-3s-0). Individual liberties and the equal protection of groups in the United States, focusing on court rulings about the Bill of Rights and 14th Amendment, controversies over constitutional interpretation, and the political of rights. Prerequisite: POL S 390 or 419 or consent of Department; also open to Law students.

POL S 484 Issues in United States Politics and Policy  
3 (fi 6) (either term, 0-3s-0). Prerequisite: POL S 232 or 332, or consent of Department.

POL S 486 Topics in European Politics  
3 (fi 6) (either term, 0-3s-0). Current debates in Europe, including the emergence of new radical right parties, green parties and movements, market liberalization and political change in Eastern and Central Europe, and the resurgence of nationalist discourses. Prerequisite: POL S 230 or consent of Department.

POL S 488 The Politics of Mexico  
3 (fi 6) (either term, 0-3s-0). Mexico's post-revolutionary politics, its current dynamics, and their continental impacts. Prerequisite: POL S 230 or 240 or consent of Department.

POL S 496 Representation and Electoral Systems  
3 (fi 6) (either term, 0-3s-0). An examination of the institutional framework within which the electoral process operates under representative government, with emphasis on voting as a mechanism of social choice. Prerequisite: POL S 220 or 230 or consent of Department.

POL S 499 Honors Essay: Fourth-Year Honors Political Science  
6 (fi 12) (two term, 0-3s-0). Preparation of the Honors Essay, required in the fourth year of the Honors program. Prerequisite: POL S 399.

Graduate Courses

Notes
(1) See also INT D 546 and 593 for courses which are offered by more than one Department or Faculty and which may be taken as options or as a course in this discipline.
(2) Consent of Department is required for all 500- and 600-level courses.

POL S 501 Comparative Institutions and Processes  
3 (fi 6) (either term, 0-3s-0).

POL S 505 Democratic Theory  
3 (fi 6) (either term, 0-3s-0). An investigation of different conceptions of democracy in political thought. Not open to students with credit in POL S 405.

POL S 508 Nature of Political Science I  
3 (fi 6) (either term, 0-3s-0). An examination of the classical (e.g. Aristotelian) conception of political science, and of the modern conception which replaced it (including some of the political and theoretical problems connected with this modern view).
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Title</th>
<th>Credits</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>POL S 508</td>
<td>Nature of Political Science II</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). An examination of some particular problems involving in attempting to understand political life (including language and history) scientifically. Prerequisite: POL S 508.</td>
</tr>
<tr>
<td>POL S 512</td>
<td>Early Modern Political Theory</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). Concentration on one or more works by major political theorists in the early modern period.</td>
</tr>
<tr>
<td>POL S 514</td>
<td>Topics in Contemporary Political Philosophy</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 515</td>
<td>Topics in Political Philosophy</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 516</td>
<td>Problems in Marxist Political Theory</td>
<td>3 (fi 6)</td>
<td>(either term, 3-0-0).</td>
</tr>
<tr>
<td>POL S 517</td>
<td>Philosophical Issues of Human Rights</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). An enquiry into the idea(s) of human rights and the adequacy of their philosophical grounding. Not open to students with credit in POL S 417.</td>
</tr>
<tr>
<td>POL S 520</td>
<td>Topics in Canadian Politics</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 522</td>
<td>Canadian Federalism</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 526</td>
<td>Selected Topics in Urban Politics</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 540</td>
<td>Topics in Public Policy</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 542</td>
<td>The Canadian State and Identity Politics</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). The relative power, impact and interconnections of both territorial (regional) divisions and other non-territorial divisions (e.g., gender, race, ethnicity, and class).</td>
</tr>
<tr>
<td>POL S 543</td>
<td>Globalization, Ethnic Politics and the Nation-State</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). Theories of nationalism and the nation-state in an era of globalization.</td>
</tr>
<tr>
<td>POL S 551</td>
<td>Topics in Comparative Politics: Industrialized Countries</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 552</td>
<td>Readings in Comparative Politics: Industrialized Countries</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 553</td>
<td>International Security</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). A review of analytical approaches to traditional and non-traditional international security issues.</td>
</tr>
<tr>
<td>POL S 555</td>
<td>Topics in Foreign Policy Analysis</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). Current approaches to the study of foreign policy that focuses the explanations upon factors within the state.</td>
</tr>
<tr>
<td>POL S 556</td>
<td>Topics in International Political Economy</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 557</td>
<td>Topics in Comparative Politics: Comparative Development</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 558</td>
<td>Readings in Comparative Politics: Comparative Development</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 578</td>
<td>Asian Systems</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 580</td>
<td>Western European Systems</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 595</td>
<td>Feminist Theory</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). An intensive examination of feminist theory in western political thought, as well as critiques provided by the non-western and post-colonial literatures.</td>
</tr>
<tr>
<td>POL S 596</td>
<td>Topics in Gender and Politics</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 600</td>
<td>Theories and Methods of Comparative Politics</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). Traditional and critical perspectives.</td>
</tr>
<tr>
<td>POL S 612</td>
<td>Classical Political Philosophy</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). Texts selected for doctoral students preparing for comprehensive exams in political philosophy.</td>
</tr>
<tr>
<td>POL S 613</td>
<td>Modern Political Philosophy</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). Survey of major works in Western political philosophy.</td>
</tr>
<tr>
<td>POL S 619</td>
<td>Readings in Political Philosophy</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 621</td>
<td>Canadian Government and Politics</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). The advanced study of politics, government and political science in Canada.</td>
</tr>
<tr>
<td>POL S 622</td>
<td>Contemporary Canadian Political Issues</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). Current debates in Canadian politics and public policy.</td>
</tr>
<tr>
<td>POL S 629</td>
<td>Readings in Canadian Politics</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 650</td>
<td>Comparative Studies in Industrialized Countries</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). A survey of the study of the politics of industrialized countries. Concepts, theories, and analyses of various state and society issues will be examined.</td>
</tr>
<tr>
<td>POL S 660</td>
<td>Theories of International Politics I</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). A review and critique of the traditional theories of international politics and their contemporary challenges.</td>
</tr>
<tr>
<td>POL S 661</td>
<td>Theories of International Politics II</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). Contemporary and critical approaches to the study of international politics.</td>
</tr>
<tr>
<td>POL S 668</td>
<td>Readings in International Studies</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 670</td>
<td>Studies in Comparative Development</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). A survey of the critical concepts and theories in development politics.</td>
</tr>
<tr>
<td>POL S 680</td>
<td>Political Theory</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). A review of major thinkers and themes. Core course for PhD students preparing comprehensive exams in political theory.</td>
</tr>
<tr>
<td>POL S 690</td>
<td>Gender and Politics</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0). A survey of various theoretical perspectives on gender, ranging from liberal to postmodern, as well as issues and debates in gender research. Also addressed are questions of difference, identity, and conflict arising from, among others, race, class, sexuality, and north-south relations.</td>
</tr>
<tr>
<td>POL S 696</td>
<td>Readings in Gender and Politics</td>
<td>3 (fi 6)</td>
<td>(either term, 0-3s-0).</td>
</tr>
<tr>
<td>POL S 900</td>
<td>Directed Research Project</td>
<td>3 (fi 6)</td>
<td>(variable, unassigned).</td>
</tr>
</tbody>
</table>

231.228  Portuguese, PORT  
Department of Modern Languages and Cultural Studies  
Faculty of Arts

Notes
(1) The Department reserves the right to place students in the language course appropriate to their level of language skill.
(2) Placement tests may be administered in order to assess prior background. Students with Portuguese language background should consult a Department advisor. Such students may be granted advanced placement and directed to register in a more advanced course more suitable to their level of ability. Students seeking to fulfill their Language Other than English require may begin at any one appropriate level, but must take the full 6 credits in one language.
(3) The Department will withhold credit if a course is completed which the student is deemed ineligible to take, based on their prior background. For example, 100-level courses are normally restricted to students with little or no prior knowledge in that language. Should a student with matriculation standing, or those possessing prior background (such as native speakers or those for whom it is their first language) register in the 100-level course, credit may be withheld.
(4) Student who have or will attain advanced standing in Spanish equivalent to SPAN 300 are not permitted to claim more than 6 credit for the study of Portuguese.

Undergraduate Courses

PORT 111 Beginners’ Portuguese I  
3 (fi 6) (either term, 5-0-0). A basic course for students with no previous knowledge of Portuguese. Note: not to be taken by students with credit in PORT 100, or with native or near native proficiency or with Portuguese 30 or its equivalents in Canada and other countries.

PORT 112 Beginners’ Portuguese II  
3 (fi 6) (either term, 5-0-0). Prerequisite: PORT 111 or consent of Department. Note: not to be taken by students with credit in PORT 100, or with native or near native proficiency or with Portuguese 30 or its equivalents in Canada and other countries.
PORT 211 Intermediate Portuguese I  
★3 (fi 6) (either term, 4-0-0). Intended to consolidate a basic understanding of Portuguese through a systematic grammar review and practice in various language skills. Prerequisite: Portuguese 30 (or equivalent), PORT 112 or SPAN 212 or consent of Department.

PORT 212 Intermediate Portuguese II  
★3 (fi 6) (either term, 4-0-0). Prerequisite: PORT 211 or consent of Department.

PORT 302 Advanced Portuguese I  
★3 (fi 6) (either term, 3-0-0). Further development of language skills and introduction to different forms of cultural expression in the Luso-Brazilian world.

PORT 303 Advanced Portuguese II  
★3 (fi 6) (either term, 3-0-0). Continuation of the study of language and culture at an advanced level.

231.229 Postgraduate Dental Education, PGDE  
Faculty of Medicine and Dentistry

Undergraduate Courses

PGDE 912 Postgraduate Dental Education  
★0 (fi 12) (two term, 52 weeks). This general residency program is one calendar year in length, July 1 through June 30. Six DDS graduates are accepted each year, those accepted primarily being DDS graduates in the year in which they begin the residency. Under the direction of dental specialists and general practitioners, residents will provide care to patients who cannot be seen by undergraduate dental students because of the complexity and/or scope of the required treatment. Through seminar sessions and clinical teaching, the areas of endodontics, periodontics, prosthodontics, oral surgery, dental implants, pediatric dentistry, hospital dentistry, conscious sedation, advanced oral diagnosis and treatment planning, oral medicine, orofacial pain and advanced general dentistry are taught. Residents will also be involved in the University of Alberta Hospital Dental Service, providing clinical treatment to patients during scheduled daytime clinicals, evening and weekend emergency walk-in clinics and on-call. An important additional component of this residency program is off site rotations to underserved areas of this province.

231.230 Postgraduate Medical Education, PGME  
Faculty of Medicine and Dentistry

Undergraduate Courses

PGME 901 One-Month Medical Traineeship  
★0 (fi 1) (either term, 4 weeks). This represents a contract period of registration with variable start and end dates for MD graduates who are completing training either as a Resident or as a Fellow. The focus of the traineeship is based upon the area of specialization. Prerequisites: MD degree and approval by the Division of Postgraduate Medical Education.

PGME 902 Two-Month Medical Traineeship  
★0 (fi 2) (either term, 8 weeks). This represents a contract period of registration with variable start and end dates for MD graduates who are completing training either as a Resident or as a Fellow. The focus of the traineeship is based upon the area of specialization. Prerequisites: MD degree and approval by the Division of Postgraduate Medical Education.

PGME 903 Three-Month Medical Traineeship  
★0 (fi 3) (either term, 12 weeks). This represents a contract period of registration with variable start and end dates for MD graduates who are completing training either as a Resident or as a Fellow. The focus of the traineeship is based upon the area of specialization. Prerequisites: MD degree and approval by the Division of Postgraduate Medical Education.

PGME 904 Four-Month Medical Traineeship  
★0 (fi 4) (either term, 16 weeks). This represents a contract period of registration with variable start and end dates for MD graduates who are completing training either as a Resident or as a Fellow. The focus of the traineeship is based upon the area of specialization. Prerequisites: MD degree and approval by the Division of Postgraduate Medical Education.

PGME 912 Twelve-Month Medical Traineeship  
★0 (fi 12) (two term, 52 weeks). This represents a contract period of registration with variable start and end dates for MD graduates who are completing training either as a Resident or as a Fellow. The focus of the traineeship is based upon the area of specialization. Prerequisites: MD degree and approval by the Division of Postgraduate Medical Education.

231.231 Psychiatrie, PSYCI  
Department of Psychiatry  
Faculty of Medicine and Dentistry

Graduate Courses

PSYCI 546 Psychiatry Student Internship  
★0 (fi 12) (either term, 6 weeks). Student internship in psychiatry for students registered in the MD program.

Cours de 1er cycle

231.232 Psychologie, PSYCE  
Faculté Saint-Jean

Université de Montréal

L PSYCE 105 Comportement social et individuel  

PSYCE 106 Principes psychologiques pour les infirmières  
★3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Principes et processus psychologiques pertinents aux sciences infirmières incluant les devoirs et l’analyse de la recherche, le développement au cours de la vie, les processus cognitifs et de mémoire, les processus socio-psychologiques, la personnalité, les troubles psychologiques et leurs traitements. Notes : La spécialité sera accordée aux étudiants du BScN (bilingue). Ce cours n’est pas accessible aux étudiants ayant postulé des crédits pour PSYCE 104, 105; PSYCO 104, 105 ou 106. 

L PSYCE 223 Psychologie de la croissance  

L PSYCE 233 Psychologie de la personnalité  
★3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Introduction aux différentes approches
théoriques et à la recherche dans le domaine de la personnalité. Préalable(s): PSYCE 104 et 105 ou l'équivalent.

**PSYCE 241 Psychologie sociale**
3 (6 h) (l'un ou l'autre semestre, 3-0-0). Introduction aux théories et à la recherche sur l'individu dans un contexte social. Préalable(s): PSYCE 104 et 105 ou l'équivalent. Note: PSYCE 241 et SOC 241 ne peuvent pas être suivis tous les deux pour crédits.

**PSYCE 258 Psychologie cognitive**
3 (6 h) (l'un ou l'autre semestre, 3-0-0). Une introduction à l'étude des processus cognitifs. Les principaux sujets abordés: la perception, l'attention, la représentation des connaissances, la mémoire, l'apprentissage, le langage, le raisonnement, et la résolution de problèmes. Préalable(s): PSYCE 104 et un parmi STATQ 151 ou SCSOC 322.

**PSYCE 339 Psychopathologie**
3 (6 h) (l'un ou l'autre semestre, 3-0-0). Introduction générale à l'historique, à la classification, au diagnostic et au traitement des troubles psychopathologiques. Préalable(s): PSYCE 233.

**PSYCE 49B Etude personnelle II**
3 (6 h) (l'un ou l'autre semestre, 3-0-0). Cours destiné à permettre aux étudiants au niveau du baccalauréat d'approfondir personnellement un sujet de leur choix. Sous forme de bibliographie dirigée ou de travaux de laboratoire. Préalable(s): l'approbation du Vice-doyen aux affaires académiques.

### 231.232.2 Domaine des Sciences

**PSYCE 104 Procédés psychologiques de base**
3 (6 h) (premier semestre, 3-0-1/4). Principes et développement de la perception, motivation, apprentissage et réflexion et leur relation avec le fonctionnement psychologique de l'individu. Ce cours est un préalable pour la plupart des cours de psychologie et est normalement suivi de PSYCE 105. Peut comprendre des sections Alternative Delivery; veuillez consulter le Fees Payment Guide dans la section University Regulations and Information for Students de l'annuaire.

**PSYCE 267 Perception**
3 (6 h) (l'un ou l'autre semestre, 3-0-0). Une introduction aux théories et à la recherche dans le domaine de la perception. Préalable(s): PSYCE 104 et un parmi STATQ 151 ou SCSOC 322.

**PSYCE 275 Cerveau et comportement**
3 (6 h) (l'un ou l'autre semestre, 3-0-0). Introduction à la fonction du cerveau et à son rapport à la sensation, à la perception, au mouvement, à l'apprentissage, à la motivation et à la pensée. Préalable(s): PSYCE 104 et Biologie 30 ou l'équivalent.

**PSYCE 281 Principes du changement de comportement**
3 (6 h) (l'un ou l'autre semestre, 3-0-0). Introduction aux techniques de changement de comportement. Le cours examinera l'origine de telles techniques dans l'expérimentation sur les animaux et la théorie de l'apprentissage, et fera une évaluation de leur efficacité quand elles sont appliquées aux populations qui ont des problèmes spécifiques. Préalable(s): PSYCE 104.

**PSYCE 377 Neuropsychologie humaine**
3 (6 h) (l'un ou l'autre semestre, 3-0-0). Introduction à la neuropsychologie et à l'organisation fonctionnelle du cerveau. Dommages cérébraux et leurs effets sur les fonctions mentales, le langage et le comportement moteur. Préalable(s): PSYCE 275.

**PSYCE 458 Psychologie avancée de la cognition**
3 (6 h) (l'un ou l'autre semestre, 3-0-0). Étude plus approfondie d'un ou de plusieurs thèmes dans le domaine de la cognition humaine. Préalable(s): PSYCE 258.

**PSYCE 496 Etude personnelle I**
3 (6 h) (l'un ou l'autre semestre, 1-0-3). Cours destiné à permettre aux étudiants d'approfondir personnellement un sujet de leur choix (ce que le cadre d'un cours ne permet pas). Prérequis: accord du Vice-doyen aux affaires académiques.

### 231.233 Psychology, PSYCO

**Undergraduate Courses**

**231.233.1 Faculty of Arts Courses**

**Note:** Prérequis à certains Arts courses in the Department may be found in the following Science section of this listing.

**PSYCO 105 Individual and Social Behavior**
3 (6 h) (either term, 3-0-1/4). Introduction to the study of human individuality, personality, and social psychological processes. Some aspects of normal and abnormal human development, psychological assessment and treatment may be reviewed. Fulfillment of the 1/4 laboratory credit typically entails serving as a research participant but can be fulfilled through the completion of alternative assignments. Prerequisite: PSYCO 104.

**PSYCO 106 Psychological Principles for Nursing**
3 (6 h) (second term, 3-0-0). Psychological principles and processes as they relate to nursing, including research design and analysis, lifespan development, memory and cognitive processing, social psychological processes, personality, psychological disorders and their treatment. Note: Open only to students enrolled in Nursing. Not open to students with credit in PSYCO 104 or 105.

**PSYCO 212 Introduction to Research Methods in Psychology**
3 (6 h) (either term, 3-0-0). Experimental and nonexperimental methods in psychology. Topics covered include philosophy of science; measurement; reliability and validity of methods, measures, and effects; experimental, quasi-experimental, and single-subject designs; biases in experimentation; and research ethics. Prerequisites: PSYCO 104 and 105, and STAT 141 or 151.

**PSYCO 223 Developmental Psychology**
3 (6 h) (either term, 3-0-0). Biological, cognitive and social aspects of psychological development, with special emphasis on infancy, childhood and adolescence. Prerequisites: PSYCO 104 and 105 or equivalent.

**PSYCO 233 Personality**
3 (6 h) (either term, 3-0-0). An introductory survey including representative theoretical points of view and research relevant to the major problems of the study of personality. Prerequisites: PSYCO 104 and 105 or equivalent.

**PSYCO 241 Social Psychology**
3 (6 h) (either term, 3-0-0). A survey of theories and research on the individual in a social context. Prerequisites: PSYCO 104 and 105 or equivalent. Note: PSYCO 241 and SOC 241 may not both be taken for credit.

**PSYCO 258 Cognitive Psychology**
3 (6 h) (either term, 3-0-0). A survey of findings of theoretical issues in the study of cognition, such as perception, attention, knowledge representation, memory, learning, language, reasoning, and problem solving. Prerequisites: PSYCO 104 and STAT 141 or 151.

**PSYCO 300 Honors Seminar I**
3 (6 h) (two term, 3-0-0). A range of conceptual and methodological issues in psychology are considered, and students receive intensive training and practice in both written and oral communications. The seminar meets once a week for the full Fall/Winter period. Restricted to, and required of, third-year students in the Arts Honors Psychology program.

**PSYCO 303 History of Ideas in Psychology**
3 (6 h) (either term, 3-0-0). History of psychological thought from ancient times to the recognition of psychology as an academic discipline in the mid 19th century. Prerequisite: PSYCO 104, 105, one 200-level PSYCO offered by the Faculty of Arts; one 200-level PSYCO offered by the Faculty of Science. Note: Not to be taken by students with credit in PSYCO 301.

**PSYCO 305 Special Topics in Psychology I**
3 (6 h) (either term, 3-0-0). Review and discussion of special topics or methods in one or more of the areas of contemporary psychology such as developmental, social, personality, cognitive. Prerequisites: PSYCO 104 and 105. Note: Consult with the Department for the specific topic offered each year and any additional prerequisites.

**PSYCO 323 Perceptual and Cognitive Development**
3 (6 h) (either term, 3-0-0). The development of the ability to process information from the environment including topics such as attention, memory, and concept formation in infants and young children. Prerequisite: PSYCO 223.

**PSYCO 325 Applied Research in Developmental Psychology**
3 (6 h) (either term, 3-0-0). Relations between research in developmental psychology and practical problems in human development. To gain insights about development, students work with infants, children, or adolescents as volunteers in local agencies and schools. Prerequisites: STAT 141 or 151 and PSYCO 223.

**PSYCO 327 Adolescent Development**
3 (6 h) (either term, 3-0-0). Biological, cognitive, and social aspects of development that occur during the period from early to late adolescence. Prerequisite: PSYCO 223.

**PSYCO 339 Abnormal Psychology**
3 (6 h) (either term, 3-0-0). Nature and treatment of psychological disorders, such as cross-disciplinary perspectives and an emphasis on improving understanding of psychopathology in everyday life. Prerequisite: At least one 200-level PSYCO (PSYCO 233 and 275 recommended).

**PSYCO 341 Cultural Psychology**
3 (6 h) (either term, 3-0-0). An introduction to psychological approaches to the study of culture, including cross-cultural psychology, cultural psychology, indigenous psychologies, and the psychology of ethnicity and intercultural contact. Prerequisites: one of PSYCO 223, 233, or 241.
PSYCO 350 Human Memory
3 (fi 6) (either term, 3-0-0). An introduction to the study of human memory. Topics include verbal learning and interference theory, the short-term/long-term memory distinction, semantic memory, working memory, sensory memory, autobiographical memory, amnesia, and implicit memory. The emphasis will be on developing coherent theoretical accounts of the evidence. Prerequisite: PSYCO 258.

PSYCO 357 Language Processing
3 (fi 6) (either term, 3-0-0). A survey of theories and research on the production and comprehension of spoken and written language. Topics include speech perception, printed word recognition, sentence production and comprehension, discourse processing, reading, language development, and language pathologies. The focus will be on the processing mechanisms implicated by findings in the area. Prerequisite: PSYCO 258.

PSYCO 399 Honors Thesis I: Research Apprenticeship
3 (fi 6) (two term, 0-0-6). Under the direction of a Faculty member, students pursue a topic of interest leading to the development of a thesis proposal and, during their fourth year, the thesis research. The work normally involves both directed readings and empirical research experience. Restricted to, and required of, third-year students in the Arts Honors Psychology program.

PSYCO 400 Honors Seminar II
3 (fi 6) (two term, 3-0-0). A continuation of PSYCO 300, with an emphasis on the development of professional skills. Topics include the new information technologies, the publication process, ethical issues, and the application of research findings to real-world problems. The seminar meets once a week for the full Fall/Winter period. Prerequisite: PSYCO 300. Restricted to, and required of, fourth-year students in the Arts Honors Psychology program.

PSYCO 405 Special Topics in Psychology II
3 (fi 6) (either term, 3-0-0). Review and discussion of special theoretical or methodological topics, or a novel or emerging research areas in contemporary psychology. Prerequisites: PSYCO 104 and 105, and STAT 141 or 151. Note: Consult with the Department for the specific topic offered each year and any additional prerequisites.

PSYCO 411 Cooperative Program Practicum
3 (fi 6) (first term, 0-3s-6). Required by all students who have completed the on-site portion of the Psychology Cooperative Program. The three credits will involve completion and defense of the practicum report and discussion of related issues. Prerequisites: WKEXP 961, WKEXP 962, and WKEXP 963.

PSYCO 412 Quantitative Methods in Sociocultural Psychology
3 (fi 6) (either term, 3-0-2). The assumptions that inform the design of experimental, quasi-experimental, and field studies in sociocultural psychology; the development of scales, questionnaires, and survey instruments, and the coordination of quantitative and qualitative research methods. Prerequisites: PSYCO 212, and one of PSYCO 223, 233, 241, or 341.

PSYCO 415 Qualitative Methods in Sociocultural Psychology
3 (fi 6) (either term, 3-0-2). The assumptions that inform the design of qualitative research in sociocultural psychology; the procedures for gathering meaningful information through interviews, conversation, observed interaction, and textual archives; and the analysis of such information. Prerequisites: STAT 141 or 151, and PSYCO 212, and one of PSYCO 223, 233, 241, or 341.

PSYCO 423 Advanced Topics in Developmental Psychology
3 (fi 6) (either term, 3-0-0). An in-depth review and analysis of research in an area of developmental psychology. Prerequisites: STAT 141 or 151 and PSYCO 323. Note: Consult with the Department for the specific topic offered each year and any additional prerequisites.

PSYCO 431 Theory and Practice of Psychometrics
3 (fi 6) (either term, 3-0-3). The nature of psychological tests; survey of the various types of standardized tests; some practical work in administration, scoring and interpretation of tests. Prerequisites: STAT 141 or 151 and PSYCO 323.

PSYCO 432 Psychological Studies of Dreaming
3 (fi 6) (either term, 3-0-0). An overview of dream studies, including the psychobiology of dreaming, dreaming and cognition, personality and dreaming, therapeutic dream use, and dreams in art and culture. Prerequisite: one of PSYCO 223, 233, 241, or 341.

PSYCO 435 Introduction to Clinical Psychology
3 (fi 6) (either term, 3-0-0). The study of the profession of clinical psychology, including topics such as using case studies to examine diagnosis and assessment, judgement and decision making, and psychotherapeutic and community interventions. Prerequisite: PSYCO 339.

PSYCO 436 Psychology of Self-Estrangement
3 (fi 6) (either term, 3-0-0). Basic description of self-deception and self-estrangement in psychoanalytic and existential humanitarian theories. Discussion of basic determinants of self-deception and, alternatively, self-awareness, as well as considerations of the methods of inquiry appropriate to the area. Prerequisite: PSYCO 339.

PSYCO 443 Social Cognition
3 (fi 6) (either term, 3-0-0). Advanced treatment of topics in the study of how we think about the world of persons and events. Topics may include the role of categories, schemas, theories, and heuristics in social cognition, factors underlying the stereotyping of persons and groups, and the question of motivated bias in social perception. Prerequisites: STAT 141 or 151 and PSYCO 241.

PSYCO 450 Topics in Memory and Problem Solving
3 (fi 6) (either term, 3-0-0). Examines theoretical and empirical issues in human memory and problem solving. Topics include memory representations, real-world memory, memory-based decision making, expert-novice differences in memory and problem solving. Prerequisite: PSYCO 350.

PSYCO 490 Honors Thesis II: Thesis Research
3 (fi 6) (two term, 0-0-6). Under the direction of a faculty member, students conduct an empirical research project culminating in the Honors Thesis. Prerequisite: PSYCO 399. Restricted to, and required of, fourth-year students in the Arts Honors psychology program.

PSYCO 495 Psychology of Aesthetics
3 (fi 6) (either term, 3-0-0). An introduction to the psychological analysis of response to art. Consideration is both theoretical and empirical. Illustrative materials are drawn from several arts, including painting, sculpture and literature. The contribution of aesthetic behavior to personality development is considered. Prerequisites: PSYCO 233 or 241; and a senior level course in C LIT, DES, DRAMA, ENGL, F ST, or MUSIC.

PSYCO 498 Individual Study
3 (fi 6) (either term, 0-3s-3). A course intended to allow the senior undergraduate student the opportunity to pursue a research topic in greater depth than the classroom structure permits. This pursuit may take the form of directed reading, library research, and/or laboratory experience. A formal paper, research proposal, research report, annotated bibliography, lab notes, and/or essay is required. Cannot be taken more than twice. Prerequisites: A 300-level psychology course and consent of Department.

231.233.2 Faculty of Science Courses

L PSYCO 104 Basic Psychological Processes
3 (fi 6) (either term, 3-0-1/4). Principles and development of perception, motivation, learning, and thinking and their relationship to the psychological functioning of the individual. Fulfillment of the 1/4 laboratory credit typically entails serving as a research participant, but can be fulfilled through the completion of alternative assignments. The course is a prerequisite to all courses in the department and is normally followed by PSYCO 105.

L PSYCO 267 Perception
3 (fi 6) (either term, 3-0-0). An introduction to theoretical and experimental issues associated with sensory and perceptual experience. Prerequisites: PSYCO 104 and STAT 141 or 151.

L PSYCO 275 Brain and Behavior
3 (fi 6) (either term, 3-0-0). An introduction to brain mechanisms involved in sensation, perception, movement, motivation, learning, and cognition, as studied in both humans and lower animals. Prerequisites: PSYCO 104 and Biology 30 or equivalent.

L PSYCO 281 Principles of Behavior
3 (fi 6) (either term, 3-0-0). An introduction to behavior change techniques. The course will examine how contingencies of the environment affect the behavior of organisms. Prerequisite: PSYCO 104.

PSYCO 299 Research Opportunity Program in Psychology
1.5 (fi 6) (either term, 6-0-3). A credit/no-credit course for supervised participation in a faculty research project. Normally taken after completion of a minimum of 20 term credits, except by permission of the Department. Prerequisites: GPA of 2.5 or higher, PSYCO 104 and one other PSYCO course; and consent of Department. Specific projects may require additional prerequisites. Project and course information available at ROPP website or Department of Psychology. Prospective enrollees in PSYCO 299 must apply to the Department of Psychology. Note: Application does not guarantee an ROPP position. Credit may be obtained twice.

PSYCO 302 Special Topics in Psychological Research
3 (fi 6) (either term, 3-0-0). Review and discussion of special topics or methods in one or more of the areas of contemporary psychology such as experimental, perceptual, physiological, learning, memory, behavior, quantitative. Prerequisites: PSYCO 104 and 105 and one 200-level Psychology course. Students must check with the Department for the topics for the year and any additional prerequisites.

PSYCO 304 History of Modern Psychology
3 (fi 6) (either term, 3-0-0). An overview of the scientific discipline of psychology since the mid 19th century. The focus will be on theories methods, schools, and professions. Prerequisites: PSYCO 104 and 105; one 200-level PSYCO offered by the Faculty of Arts; one 200-level PSYCO offered by the Faculty of Science. Note: Not to be taken by students with credit in PSYCO 301.
PSYCO 309 Honors Seminar I
★3 (fi 6) (two term, 3-0-0). A range of conceptual and methodological issues in psychology are considered, and students receive intensive training and practice in both written and oral communications. The seminar meets once a week for the full Fall/Winter period. Restricted to, and required of, third-year students in the Science Honors Psychology program.

PSYCO 354 Foundations of Cognitive Science
★3 (fi 6) (either term, 3-0-0). An introduction to the theories and research practices of cognitive science by examining contributions of cognitive psychology, artificial intelligence, linguistics, and neuroscience to a variety of research areas. Prerequisites: STAT 141 or 151 and PSYCO 258.

PSYCO 356 Research Methods in Cognition
★3 (fi 6) (either term, 3-0-3). A detailed examination of some of the common methods used for investigating cognitive processes. Topics include response time methods, priming paradigms, tachistoscopic presentation techniques, reading time measurement, and the use of recognition and recall tests. The focus of the course will be on the application of these methods to current theories and issues in cognitive psychology. Laboratories will provide students with first-hand experience at applying these methods to research problems. Prerequisite: PSYCO 258.

PSYCO 365 Advanced Perception
★3 (fi 6) (either term, 3-0-0). Covers the origin and current status of several major problem areas within the study of perception. Topics may include the historical background and knowledge of recent theoretical and experimental contributions required to understand current conceptual schemes and disputes. Prerequisite: PSYCO 287.

PSYCO 371 The Neurobiology of Learning and Memory
★3 (fi 6) (either term, 3-0-0). The aim of this course is to provide students with an introduction to the neural basis of learning and memory. The course begins with a review of the historical background, experimental methods, and principles of neurobiology. Learning and memory are then analyzed at different levels of biological organization, including molecular, cellular, neural circuit, neural system, and behavioral levels. Prerequisite: PSYCO 275.

PSYCO 372 Behavior in Relation to Genetics
★3 (fi 6) (either term, 3-0-0). An examination of the influence of genetic variations on behavioral differences in intra-human and human populations. Prerequisites: PSYCO 104 and 105 and STAT 141 or 151 and BIOL 207.

PSYCO 377 Human Neuropsychology
★3 (fi 6) (either term, 3-0-0). Changes in mood, motivation, perception, attention, memory and language as revealed by studies of structural alterations in the human brain. Prerequisite: PSYCO 275.

PSYCO 381 Principles of Learning
★3 (fi 6) (either term, 3-0-0). Principles and processes of learning including a consideration of classical conditioning, instrumental learning, and memory. Research involving non-human animals will be emphasized. Prerequisites: STAT 141 or 151 and PSYCO 281.

PSYCO 385 Applications of Learning
★3 (fi 6) (either term, 3-0-0). An examination of the ways in which principles of conditioning and learning have been applied to areas of human concern. Biomedical and behavioral implications of learning principles will be examined in terms of the empirical foundations of the principles, and the successes or problems encountered in applying the principles to the understanding or treatment of human behavior. Prerequisite: PSYCO 381.

PSYCO 390 Honors Thesis I: Research Apprenticeship
★3 (fi 6) (two term, 0-0-6). Under the direction of a Faculty member, students pursue a topic of interest leading to the development of a thesis proposal and, during their fourth year, the thesis research. The work normally involves both directed readings and empirical research experience. Restricted to, and required of, third-year students in the Honors Psychology program.

PSYCO 402 Recent Advances in Experimental Psychology: Methods and Phenomena
★3 (fi 6) (either term, 3-0-2). Discussion and demonstration of the techniques and discoveries of selected fields within experimental psychology. The course will provide laboratories to experience with the empirical findings of these fields. Prerequisites: STAT 141 or 151 and a 300-level PSYCO course. Students must check with the Department for the topics for the year and any additional prerequisites.

PSYCO 403 Recent Advances in Experimental Psychology: Models and Theories
★3 (fi 6) (either term, 3-0-0). Discussion of advanced concepts and theories developed by selected fields within experimental psychology. The course will examine the relation between theory and data in these fields. Prerequisites: STAT 141 or 151 and a 300-level PSYCO course. Students must check with the Department for the topics for the year and any additional prerequisites.

PSYCO 409 Honors Seminar II
★3 (fi 6) (two term, 3-0-0). A continuation of PSYCO 309, with an emphasis on the development of professional skills. Topics include the new information technologies, the publication process, ethical issues, and the application of research findings to real-world problems. The seminar meets once a week for the full Fall/Winter period. Prerequisite: PSYCO 309. Restricted to, and required of, fourth-year students in the Science Honors Psychology program.

PSYCO 410 Industrial Internship Practicum
★3 (fi 6) (first term, 0-3s-0). Required by all students who have just completed the on-site portion of the Science Psychology Industrial Internship Program. The course will involve completion and defence of the practicum report and discussion of related issues. Prerequisites: WEXP 931, 932, and 933.

PSYCO 413 Design and Analysis of Experiments in Psychology
★3 (fi 6) (either term, 3-0-0). Provides the background necessary to design and analyze data in any area of experimental psychology and prepares students to conduct original research. Topics include sampling distributions and hypothesis testing; issues in and analysis of between-subjects, within-subjects, and mixed designs; trend analysis; planned and post hoc comparisons; fixed and random effects factors; and efficiency and power of various experimental designs. Prerequisite: STAT 141 or 151 and a 300-level PSYCO course.

PSYCO 414 Advanced Methods: Monte Carlo Techniques
★3 (fi 6) (either term, 3-0-3). A practical introduction to computer simulation based methods of data analysis, including methods for assessing statistical accuracy of measures, performance of statistical tests, and power comparisons. Prerequisites: STAT 141 or 151 and a 300-level PSYCO course.

PSYCO 452 Minds and Machines
★3 (fi 6) (either term, 3-0-2). Computational models are playing an increasingly important role in cognitive psychology. The purpose of this course is to provide students with the theoretical background for using such models, as well as some hands-on experience. Students will learn about the history of these models in cognitive psychology, how one might characterize good and bad models, and how cognitive psychologists attempt to experimentally validate their models. Prerequisite: PSYCO 354.

PSYCO 458 Advanced Topics in Cognition
★3 (fi 6) (either term, 3-0-0). In depth examination of one or more topics in cognitive psychology. Topics may include knowledge representation, visual cognition, memory, learning, decision making, language, reasoning and problem-solving. Prerequisites: one of PSYCO 350, 354, 356, 357, or 366.

PSYCO 459 Human Aging: Cognitive Processes
★3 (fi 6) (either term, 3-0-0). A survey of the sensory, perceptual, memory, and cognitive changes in normal aging. Topics may include the relationship of psychological, environmental, social and health factors to cognitive processes. Prerequisites: PSYCO 258 and a 300-level Psychology course.

PSYCO 475 Biological Bases of Behavior
★3 (fi 6) (first term, 0-0-0). Basic neuroanatomy and neuropsychology of sensory and motor systems. Prerequisite: PSYCO 371 or 377.

PSYCO 478 Behavior and Brain Chemistry
★3 (fi 6) (either term, 3-0-0). The influence of environmental and genetic factors on the relationship between chemistry of the brain and the behavior of humans and animals. Prerequisite: PSYCO 371 or 377.

PSYCO 485 Theory in Learning and Comparative Cognition
★3 (fi 6) (either term, 3-0-0). A theoretical analysis of topics such as Pavlovian conditioning, instrumental learning, working memory, timing, concept learning, and order and numerical competence. Also discussed will be the purposes and nature of theories and the historical development of theory in learning and comparative cognition. Prerequisite: PSYCO 381.

PSYCO 486 Advanced Topics in Learning
★3 (fi 6) (either term, 3-0-0). An in-depth review and analysis of research and issues on specific advanced topics in the area of learning. Prerequisite: PSYCO 381. Students must check with the Department for the topics for the year and any additional prerequisites.

PSYCO 494 Human Factors and Ergonomics
★3 (fi 6) (either term, 3-0-0). Scientific knowledge about human behaviours, abilities, limitations, and other characteristics applied to design and use are examined in a range of contexts, from the operation of everyday things to extraordinary systems failures. Prerequisites: A 300-level PSYCO course and consent of the Department.

PSYCO 496 Individual Research
★3 (fi 6) (either term, 0-3s-3). A course designed to allow the senior undergraduate student the opportunity to pursue a research topic in greater depth than the classroom structure permits. This pursuit may take the form of directed reading, library research, and/or laboratory experience. A formal paper, research proposal, research report, annotated bibliography, lab notes, and/or essay is required. Cannot be taken more than twice. Prerequisite: A 300-level psychology course and consent of the Department.

PSYCO 499 Honors Thesis II: Thesis Research
★3 (fi 6) (two term, 0-0-6). Under the direction of a faculty member, students conduct an empirical research project culminating in the Honors Thesis. Prerequisite:
Graduate Courses

PSYCO 390. Restricted to, and required of, fourth-year students in the Science Honors psychology program.

231.235.3 Faculty of Arts Courses

PSYCO 502 Professional and Ethical Issues ★2 (fi 6) (either term, 3-0-0).

PSYCO 541 Advanced Social Psychology ★3 (fi 6) (either term, 3-0-0).

PSYCO 600 Individual Studies ★3 (fi 6) (either term, 3-0-0).

PSYCO 620 Topics in Cognition ★3 (fi 6) (either term, 3-0-0).

PSYCO 622 Topics in Developmental Psychology ★3 (fi 6) (either term, 3-0-0).

231.233.4 Faculty of Science Courses

PSYCO 505 Conference Course in Psychology ★3 (fi 6) (either term, 3-0-3).

PSYCO 531 Design and Analysis in Psychological Research I ★3 (fi 6) (first term, 3-0-1).

PSYCO 532 Design and Analysis in Psychological Research II ★3 (fi 6) (second term, 3-0-1). Prerequisite: PSYCO 531 or equivalent.

PSYCO 560 Memory and Cognition ★3 (fi 6) (either term, 3-0-0).

PSYCO 561 Advanced Learning and Comparative Cognition ★3 (fi 6) (either term, 3-0-0).

PSYCO 567 Psychology of Development ★3 (fi 6) (either term, 3-0-0).

PSYCO 575 Advanced Physiological Psychology ★3 (fi 6) (either term, 3-0-0).

PSYCO 576 Cognitive Neuroscience ★3 (fi 6) (either term, 0-3s-0). Prerequisite: consent of Department.

PSYCO 590 First-Year Research Project ★6 (fi 12) (two term, 0-0-6).

PSYCO 610 Topics Learning and Comparative Cognition ★3 (fi 6) (either term, 3-0-0).

PSYCO 690 Second-Year Research Project ★6 (fi 12) (two term, 0-0-6).

231.234 Public Health Sciences, PHS

Department of Public Health Sciences

School of Public Health

Graduate Courses

PHS 500 Introduction to Health Systems and Health Policy ★3 (fi 6) (first term, 3-0-0). A review and development of the Canadian health and welfare system and its structure and functions. An analysis of selected issues in the delivery of health and welfare services.

PHS 505 Fundamentals of Public Health ★3 (fi 6) (first term, 3-0-0). This course provides an overview of the various disciplines making up and impacting on public health. Discussions will cover the Canadian health care system, infectious and chronic disease epidemiology and control, environmental health, occupational health, health care evaluation, disease prevention, health promotion, and disease and exposure assessment.


PHS 507 Emergency Preparedness, Planning and Response ★3 (fi 6) (either term, 0-3s-0). Examines fundamental concepts in emergency preparedness, planning and management practices. Topics disaster epidemiology, natural history of emergencies including weather, war, chemical, biological, radiation and nuclear, rapid epidemiologic assessment, strategy of emergency management including risk and vulnerability analysis, command and control systems, business continuity planning, integrated responses with agencies involved in response operations.

PHS 509 Field Practicum ★3 (fi 12) (Spring/Summer, 16 weeks). Prerequisite: Completion of first year course requirements.

PHS 510 Chemistry, Partitioning, and Transformation of Environmental Contaminants ★3 (fi 6) (either term, 3-0-0). Concepts of chemical and physical properties that determine the transport, partitioning, and degradation of contaminants in the environment will be learned and used to predict environmental fate. The influence of these processes on human and wildlife exposure scenarios will be explored and students will emerge with a broad understanding of the link between environmental chemistry and health.

PHS 511 Environmental Contaminant Exposure Assessment ★3 (fi 6) (either term, 3-0-0). Principles and practice of monitoring exposure to environmental contaminants, external and internal dose. Biomarkers for environmental contaminant dose estimation. Environmental and biological sampling. Routes of exposure, absorption, and distribution.

PHS 512 Environmental Risk Assessment and Management ★3 (fi 6) (either term, 3-0-0). Concepts of risk to health and environment, assessment, management and communication of risk, hazard identification, links to exposure assessment, toxicology and epidemiology, dose response assessment, risk characterization, regulatory and policy science.

PHS 513 Laboratory Research Methods ★3 (fi 6) (either term, 3-0-0). Theory and practice of laboratory research techniques and methods. Fundamentals and applications of quantitative analysis, separation, atomic spectroscopy, mass spectrometry, PCR and cloning with laboratory experiments. For students who will perform laboratory research.

PHS 520 Occupational and Environmental Diseases ★3 (fi 6) (either term, 0-3s-0). This course is designed to provide students with an overview of the pathophysiology and epidemiology of selected occupational and environmental diseases. Prerequisite: consent of Instructor.

PHS 521 Occupational Hygiene ★3 (fi 6) (either term, 3-0-0). This course is an introduction to occupational hygiene theory, principles, and practice. It covers the recognition, evaluation, and control of common occupational health hazards including chemicals, biological agents, physical agents, and ergonomic issues. The course is not designed to prepare hygienists for practice. Prerequisite: consent of Instructor.

PHS 522 Principles of Toxicology ★3 (fi 6) (either term, 3-0-0). This course is geared to health care professionals who need to understand the basic principles of toxicology, to appreciate the physiological and/or biochemical mechanisms underlying target organ toxicity, and to able to make initial qualitative risk assessments on the potential toxicity of agents. It will emphasize toxins in the work and home environment. Prerequisite: consent of Instructor.

PHS 530 Data Analysis in Public Health Sciences ★3 (fi 6) (either term, 3-0-1). Introduction to data management and analysis. Statistical software for data capture, editing and management; as a basis for the design of research including sample size and power; as well as data presentation, including graphics; to culminate in intermediate level ability to apply a range of statistical analytical techniques. No previous computer experience is needed. Prerequisite: Consent of instructor.

PHS 531 Statistical Methods in Health Research ★3 (fi 6) (second term, 3-0-1). Statistical methods used to analyze health research data including analysis of variance, multiple regression, analysis of covariance, analysis of contingency table, introduction to logistic regression, and non-parametric methods. Prerequisite: PHS 530 or consent of instructor.

PHS 540 Population Health Research Methods: Qualitative and Participatory Approaches ★3 (fi 6) (either term, 3-0-0). This course will provide the student with a theoretical understanding of qualitative research design. A range of techniques will be discussed, and examples of each examined for strengths, weaknesses and appropriateness. The student will become thoroughly familiar with community-based health research methods through a review of reports, articles and research documents.

PHS 541 Population Health I: Determinants of Health ★3 (fi 6) (either term, 3-0-0). The course will enable the student to understand, explain, and address through action the social determinants of health. The topics range from the effects on health of such proximal factors as the family, work situation, and the community environment, to the more pervasive and distal influences of social stratification, political economy and culture. We will examine population-based intervention strategies to address these determinants.
PHS 542 Case Studies in International Primary Health Care
3 (fi 6) (first term, 3–0–0). This introductory course helps students to understand the approaches used by various countries in solving their health and medical problems. Some of the current important issues in international health will be analyzed and discussed, using examples from selected developing countries. The relevance to countries in the developed world (or Canadian context) is also examined. This course introduces interventions to some of the major diseases and health problems in developing countries. Students also become familiar with the role of major international health organizations.

PHS 543 Health Ethics, Law and Policy
3 (fi 6) (either term, 0–3s–0). Students will understand the connections and distinctions among ethics, law and public policy in health contexts, and should be able to reason critically about legal and policy influences on public health and health care. Several different approaches to ethical analysis are studied, as are brief introductions to policy-making processes and legal principles and structures in Canada. Special attention is paid to justification (rather than mere opinion or imposition) and the limits of ethics, laws and policies to identify or enforce the best practices in health contexts. Several problem areas (e.g. health care system reform, health research, organization and management ethics, human rights and multiculturalism) are examined in light of the theoretical foundations in pursuit of effective and justified health policy.

PHS 545 Measurement in Global Health
3 (fi 6) (either term, 3–0–0). An introduction to different measurement methodologies used in Global Health settings including traditional epidemiological assessment, verbal autopsies, focus groups, semi-structured surveys, structured survey designs, and sampling methods.

PHS 550 Introduction to Health Care Finance
3 (fi 6) (either term, 3–0–0). Financial structure of the health care system, Introduction to managerial accounting with special emphasis on the management of health care agencies. Principles of costing, Multiproduct and case mix measures. Resource use decisions, budgeting and control, and pricing analysis for health care organizations.

PHS 570 Introduction to Health Care Economics
3 (fi 6) (either term, 3–0–0). A survey of health economic theory and empirical studies, topics and areas covered include: (1) demand, supply, and utilization; (2) production and costs (3) resource allocation in health care labor markets; (4) selected facets of health care planning; (5) benefit cost analysis. The empirical studies examined in the course require an understanding of simple and multiple regression techniques.

PHS 580 Management and Design of Health Care Organizations
3 (fi 6) (first term, 3–0–0). The purpose of this course is to prepare students to become effective managers and leaders in the health service organizations and health care systems. It facilitates this objective by providing a foundation for the acquisition of the knowledge of the managerial process through an analysis and understanding of the psychological, sociological and political basis of complex social systems, as well as providing a basis for acquiring conceptual and practical skills in the effective management and design of health service organizations and health care networks.

PHS 581 Basics of Public Health Leadership
3 (fi 6) (either term, 2–1s–0). This course is intended to provide students with an initial exploration of the processes and systems of public health and personal health. Part of this course, you will find yourself quickly developing an understanding of the processes of change, the reasons why there is such a range in the quality of change leadership, and your own personal approach to becoming a successful change leader.

PHS 582 Human Resources in Public Health
3 (fi 6) (either term, 3–0–0). Develops a basic understanding of human resource trends and issues in public health organizations. Examines topics such as: strategic health human resources; organizational effectiveness; healthy work environments; workforce planning and policy frameworks; human resources planning and recruitment; selection, orientation, training, mentoring and career development; performance management and discipline; compensation and benefits; labour relations and collective bargaining; regulated health professionals; and other health human resources policy issues and challenges. Prerequisite: PHS 580 or consent of Instructor.

PHS 583 Whole Systems Approaches to Organization Change
3 (fi 6) (either term, 3–0–0). This course examines the theoretical basis of the whole systems approach to organizational change and the advantages of this approach compared to traditional approaches. It overviews the range of whole systems methodologies available for organizational change initiatives. The course leads to an in-depth knowledge of a number of the whole systems methodologies that will prepare practitioners to make informed decisions regarding their appropriateness for application in specific organizations or organizational situations. It leads specifically to an in-depth, hands-on working knowledge (and experience level) with one of the most utilized whole systems methodologies in today’s organization development world, i.e., Appreciative Inquiry. Prerequisite: PHS 580 or PHS 581 or consent of Instructor.

PHS 593 Issues in Injury Control
3 (fi 6) (either term, 3–0–0). An introductory course that highlights injuries as a major and neglected public health problem. Leading causes of injuries, including motor vehicle, falls, fires, violence, drowning, occupational, and recreational will be addressed in informal lectures and class discussions. The biomechanics of injury and the structure of emergency medical systems will also be covered. Prevention strategies and evaluation of various interventions will be introduced. Prerequisite: consent of Instructor.

PHS 596 Epidemiology Methods I
3 (fi 6) (first term, 3–0–0). An introduction to the theory of epidemiology with an emphasis on study design. Topics include the nature of epidemiologic reasoning, indexes used to describe and measure health status, evaluation of statistical associations, causation, descriptive studies, analytic studies, intervention studies, bias, confounding, screening and ethics. Students cannot receive credit for both PHS 590 and 596.

PHS 598 Biostatistics I
3 (fi 6) (either term, 3–0–1). An introduction to elementary biostatistical methods used to analyze epidemiologic data. Topics will include analysis of 2 x 2 tables, nonparametric methods, linear regression, analysis of variance, direct and indirect standardization, and analysis of censored data. Prerequisite: Introductory statistics course or consent of Instructor.

PHS 600 Health Policy Development
3 (fi 6) (second term, 0–3s–0). An overview of the principles and methods underlying the analysis of health policy. Application of health policy principles to issues and problems in health policy. Prerequisite: PHS 500 or consent of instructor.

PHS 630 Health Care Research Methods
3 (fi 6) (either term, 3–0–0). An overview of research methods for the health and social sciences fields. Content includes both quantitative and qualitative approaches to theoretical foundations, reliability, validity, research design, sampling, data collection, and data processing. Discussions on survey research, measurement issues, statistical analyses, and current and relevant publications in public health sciences complete this course. Prerequisites: introductory statistics course and consent of Instructor.

PHS 631 Health Program Evaluation
3 (fi 6) (either term, 3–0–0). Deals with the application of program evaluation for the health and social sciences fields. Emphasis is on the theory of program evaluation using various models, research design, and the application of these concepts by performing a program evaluation. Discussions will be centred around the ethics, reliability, validity, process, outcomes, and implications of various program evaluation models. Current and relevant publications in public health sciences complete this course. Prerequisite: PHS 630 or consent of Instructor.

PHS 640 Introduction to Global Health
3 (fi 6) (first term, 3–0–0). The aim of this course is to enable students to increase their understanding of historical and current determinants of global health and of the interventions to reduce global health inequities.

PHS 641 Global Health Project Development
3 (fi 6) (first term, 3–0–0). This introductory course to global health project development familiarizes students with the logical frame planning approach. This planning method is a must by many international development agencies, e.g. the Canadian International Development Agency (CIDA), the World Bank and many others. Through various stages of project analysis, objective analysis and the development of the logical frame with planning indicators and assumptions, course participants learn how to apply this method in the context of a developing country. Pre-requisite: Permission of the Instructor.

PHS 671 The Economic Evaluation of Health Care
3 (fi 6) (either term, 3–0–0). The application of economic principles to the evaluation of health care practices. The use of various outcome measures. Cost effectiveness and cost benefit analyses.

PHS 673 Technology Assessment for Health Care
3 (fi 6) (first term, 3–0–0). An overview of the nature, science and practicalities of health technology assessment (HTA), which can then be used as the basis for further work and research. Issues covered will include health care technologies and their management, methods used for assessment, sources of information and application of HTA findings to policy and administrative decisions. Emphasis placed on assessments that have been undertaken by national and regional agencies in Canada and other countries to provide information to governments, health care providers and others. Diagnostic, screening, rehabilitation and information technologies will be considered.

PHS 680 Health Care Marketing and Planning
3 (fi 6) (second term, 3–0–0). Health care marketing and planning involves the analysis, evaluation, implementation and control of carefully formulated programs designed to bring about voluntary exchanges with a target audience.
for the purpose of achieving organizational objectives. The purpose of this course is to provide students with a general understanding of the contribution of marketing and strategic planning to the effective management of health care institutions and public health programs. The course facilitates this objective by providing a foundation for the acquisition of marketing concepts, terms, and skills relevant for understanding the role that marketing and planning play in health care institutions and health systems, the design of health care programs, and as a vehicle for social change.

PHS 685 Methods for the Assessment of Health-Related Quality of Life
3 (fi 6) (either term, 3-0-0). The primary objective is to provide students with the background knowledge and methodological skills to be discriminating and informed users of health-related quality of life measures and interpreters of HRQL evidence. Topics include uses of HRQL measures, various systems for classifying HRQL measures, ethnomethodologies for the assessment of reliability, validity, responsiveness, and interpretability, and conceptualization of major approaches for the development of HRQL measures (including psychometric, clinical, and economics and decision analytic approaches). Examples of different types of measures and their application in a wide variety of clinical areas are included.

PHS 692 Systematic Reviews
3 (fi 6) (second term, 3-0-0). The objective of this course is to provide students with the background knowledge and methodological skills to be discriminating and informed users of systematic reviews. Topics include developing a research question, literature searching, reference management, selection of studies, quality assessment, evidence synthesis (some statistical knowledge required), heterogeneity, and interpretation of the evidence. Students are expected to develop their own question and conduct a systematic review over the course of the term. Pre-requisites: PHS 530 and PHS 903, and permission of the Instructor.

PHS 693 Critical Appraisal of Health Science Literature in Epidemiology
3 (fi 6) (second term, 0-3s-0). Methods for efficiently and critically identifying, appraising, and applying the health sciences literature are learned in an interactive group setting. Topics include studies of prognosis, diagnosis, therapy, causation outcomes research, economic analysis, and systematic reviews. Prerequisite: PHS 590 or consent of Instructor.

PHS 695 Epidemiology of Injuries/Design and Evaluation of Injury Interventions
3 (fi 6) (either term, 3-0-0). An advanced course focused on the review of current epidemiologic knowledge of injuries relating to the leading causes of injury, morbidity, and mortality. Strategies for data acquisition and use in injury research will be introduced. Tools will be presented that will allow students to develop the practical skills needed to design, implement, and evaluate injury prevention programs. Prerequisite: PHS 593.

PHS 696 Epidemiology Methods II
3 (fi 6) (second term, 3-0-0). Epidemiologic methods related to specific study designs and general issues relating to the conduct of epidemiologic studies at an advanced level. Topics covered include confounding, interaction, misclassification, matching, ecologic studies, justification of the odds ratio in case-control studies, and age-period-cohort analysis. Prerequisite: PHS 596 and 598, or consent of Instructor.

PHS 697 Epidemiology and Control of Infectious Diseases
3 (fi 6) (second term, 3-2s/2-0). This course provides a broad introduction to the knowledge needed to investigate and control infectious diseases. It covers the description, causes and modeling of epidemic and endemic infections, as well as prevention strategies and control. Selected infectious diseases are used as case studies. These provide understanding of the natural history, evolution, invasion, epidemic potential, and control of diseases. Students are expected to develop their own question and conduct an epidemiologic study over the course of the term. Prerequisites: PHS 530 and PHS 903, and permission of the Instructor.

PHS 698 Biostatistics II
3 (fi 6) (either term, 3-0-0). Advanced biostatistical methods used to analyze epidemiologic data with an emphasis on multivariate regression. Topics include multiple regression, unconditional and conditional logistic regression, proportional hazards regression, and Poisson regression. Prerequisite: PHS 598 or consent of Instructor.

PHS 701 Project in Public Health Sciences
6 (fi 12) (two term, 0-3s-0).

PHS 709 Individual Directed Reading and Research in Health Services Administration
3 (fi 6) (either term, 0-3s-0).

PHS 719 Individual Directed Reading and Research in Environmental Health
3 (fi 6) (either term, 0-3s-0).

PHS 729 Individual Directed Reading and Research in Occupational Health
3 (fi 6) (either term, 0-3s-0).

PHS 749 Individual Directed Reading and Research in Population Health
3 (fi 6) (either term, 0-3s-0).

PHS 799 Individual Directed Reading and Research in Epidemiology
3 (fi 6) (either term, 0-3s-0).

231.235 Radiology and Diagnostic Imaging, RADDI
Department of Radiology and Diagnostic Imaging
Faculty of Medicine and Dentistry

Notes
(1) Undergraduate training in radiology is included in ANAT 411; MED 422, 423, 431; and NEURO 421.
(2) See also Oncological (ONCOL) listing.

Graduate Courses
RADDI 511 Physics of Diagnostic Imaging: Fundamentals
3 (fi 6) (two term, 2-0-0). This course is divided into two main sections: (1) Basic Radiation Physics which deals with nuclear and atomic structure using the Bohr model; Radiation Dose, Risk and Safety from low-level ionizing radiation to Diagnostic Radiology, Radiobiology; and (2) General Radiography: production and clinical use of X-rays; the radiographic image and image parameters; patient radiation/Imaging concepts. There will be also a lab component where the student will spend an average of one hour per week in a diagnostic procedure room completing specified imaging tasks/lessons. These labs will not be held at specific times, but will be arranged individually for each student. This course will be offered in alternate years to RADDI 512. Prerequisite or corequisite: PHYS 475/477 or consent of Department.

RADDI 512 Physics of Diagnostic Imaging: Imaging Modalities
3 (fi 6) (two term, 2-0-0). This course will build on the curriculum presented in RADDI 511 and will discuss in detail the physics involved in the following imaging modalities: Fluoroscopy, Conventional Tomography, Digital Techniques (DSA), Computed Tomography (CT), Mammography, Nuclear Medicine, Ultrasound, Magnetic Resonance Imaging (MRI). This course will be offered in alternate years to RADDI 511. Prerequisites or corequisites: RADDI 511, PHYS 475/477 or consent of Department.

RADDI 521 Physics of Nuclear Medicine Imaging
3 (fi 6) (two term, 2-0-0). This course investigates the physics involved in the field of clinical nuclear medicine imaging. Discussion of basic atomic theory (Bohr model), interaction of radiation with matter, radioactive decay, and production of radionuclides will be followed with assessment of radiation detection instrumentation (geiger counters, ionization detectors, gamma cameras). PET and SPECT performance and image quality parameters will be emphasized, along with NEMA standards for QA and AT. Calculation methodology for Internal Dosimetry will be presented, followed by a discussion of radiobiology. Prerequisite or Corequisites: Normally restricted to students in Radiology and Diagnostic Imaging. This course will also be offered to students, residents and fellows enrolled in the Faculty of Medicine and Dentistry. RADDI 511/512 or consent of the Department.

RADDI 600 Special Topics in Radiology Research
2 (fi 4) (second term, 0-2s-0). A seminar course for advanced students covering selected topics from the current literature in the fields of medical imaging, radiologic physics, radiation biology and radiation biophysics.

231.236 Recreation and Leisure Studies, RLS
Faculty of Physical Education and Recreation

Notes
(1) See also INT D listings for courses which are offered by more than one department or Faculty and which may be taken as options or as a course in this discipline.
(2) Priority will be given to recreation students in all recreation courses that are required for the BA (Recreation, Sport, and Tourism) degree program.
(3) All out-of-Faculty students are recommended to complete RLS 100 in order to take any other recreation course.
(4) Where an appropriate background can be demonstrated, prerequisites may be waived, with the consent of the Faculty.

Undergraduate Courses
RLS 100 Life, Leisure, and the Pursuit of Happiness
3 (fi 6) (either term, 3-0-0). Examination of the nature, characteristics, and
functions of leisure in modern Canada. Review of relationships between leisure and
time, play, work, family, education, ethnicity, gender, and environment. Discussion
of ideas about conventional leisure, serious leisure, and deviant leisure. Overview
of the structure of the Canadian recreation and tourism delivery systems.

RSL 122 Leadership in Recreation and Leisure Organizations
★3 (fi 6) (either term, 3–0–1.5). Introduction to leadership and fellowship as they
apply to recreation and leisure organizations. Emphasis is on the practical skills
including oral and written communication, group dynamics, conflict management, organizational
ethics and politics, and leadership styles. Note: Credit will be granted for only one of RLS 123 or 223.

RSL 123 Leadership and Human Behavior
★3 (fi 6) (either term, 3–0–0). A social psychological examination of leisure
experiences and leisure behaviors. Focus is on the individual in dynamic interactions
with other individuals, groups or cultures within a leisure context. Note: credit
will be granted for only one of RLS 123 or 223.

RSL 133 The Human-Nature Relationship in Leisure
★3 (fi 6) (either term, 3–0–1). This course will explore the relationship between
leisure/recreation and natural spaces. The topics will include perspectives by
nature writers, environmental audits of recreation facilities, and facets of outdoor
recreation (e.g., benefits of outdoor recreation, adventure therapy, and outdoor
leadership competencies).

RSL 216 Recreation and Leadership Scholarship
★3 (fi 6) (either term, 3–0–0). This course will examine systematic processes
of recreation and leadership scholarship. Topics may include the nature of inquiry,
paradigmatic questions, and qualitative methodologies, evaluation
and applied research, and other topics as relevant to the areas of recreation and
leadership. Prerequisite: RSL 100.

RSL 225 Program Planning for Leisure
★3 (fi 6) (either term, 3–0–0). This course involves an examination of the planning
process with a particular focus on programming for recreation, sport and tourism.
Consideration will be given to program planning for leisure in the context of the
not-for-profit, commercial and public sectors. Prerequisite: RLS 100.

RSL 230 Recreation and Community Development
★3 (fi 6) (either term, 2–0–1.5). Analysis of the social and political processes
through which groups and individuals work to mobilize resources and establish
relationships to fulfill community needs. Prerequisite: RSL 100.

RSL 232 Marketing for Recreation, Sport and Tourism
★3 (fi 6) (either term, 3–0–0). Marketing is examined from the unique perspectives
of recreation, sport and tourism. Emphasis is placed on marketing in the not-for-
profit sector although commercial perspectives are also considered. Major topics
include market positioning, research, segmentation, product, price, distribution,
and promotion. This course will normally include a practicum component.
Prerequisite: PERLS 105.

RSL 263 Principles of Tourism
★3 (fi 6) (either term, 3–0–0). This course presents an overview and explores the
basic principles of the tourism system (tourist, travel, destinations, and marketing),
underlying influences such as cultural, social, economic, and psychological aspects,
areas of major tourist activity such as natural spaces, constructed facilities, and
cultural events, and the impact of tourism upon the attraction, local communities,
and national arenas. NOTE: Field Trips are an integral and required component of
this course. Requires payment of additional student instructional support fees.
Refer to the Fees Payment Guide in the University Regulations and Information
for Students section of the Calendar.

RSL 331 Leisure Education
★3 (fi 6) (either term, 3–0–0). A total development process through which individuals
develop an understanding of self, leisure, and the relationship of leisure to their
own lifestyles and the fabric of society. Examination of determining the place and
significance leisure has in one’s life. Prerequisite: RLS 100.

RSL 400 Philosophies of Leisure
★3 (fi 6) (either term, 3–0–0). This course examines a critical analysis of leisure
philosophies related to leisure, recreation, work, play, and quality of life. The
course explores the philosophical implications for the leisure profession in
Canada and issues related to the future of leisure in Canadian society. Note: Credit
will be granted for only one of RLS 300 or 400.

RSL 441 Practicum Seminar
★3 (fi 6) (either term, 0–3s–0). A seminar, taken concurrently with RLS 449,
which seeks to relate the professional work experience to the academic
and professional preparation elements within the BA program. Students will not
be allowed to register in any other course in conjunction with RLS 441/449
unless approved by the Practicum Supervisor.

RSL 444 Issues in Recreation Practice
★3 (fi 6) (either term, 0–3s–0). A seminar for students in Recreation and
Leisure Studies centering upon issues relevant to the beginning professional.
The seminar seeks to provide a synthesis appropriate to the final-year student.
Note: Must be taken in the final term of the student’s program.

RSL 449 Professional Practicum
★12 (fi 24) (either term, 14 weeks). Fourteen weeks of professional practice
in a recreation and leisure setting, with opportunities to work in a variety of
settings such as recreation centers, parks, communities, and organizations.
Prerequisite: RLS 441.

RSL 452 Parks Planning, Management, and Maintenance
★3 (fi 6) (either term, 3–0–0). An examination of parks as recreation environments
together with an analysis of the relationship between park planning, design
and infrastructure. Prerequisite: RLS 225.

RSL 462 Outdoor Recreation Resources
★3 (fi 6) (either term, 3–0–0). An examination of the principles of resources
allocation and land use in a recreational context. Problems include the allocation
of public recreational lands and planning for recreation and land use within
public parks and other recreational settings. Prerequisite: RLS 225.

RSL 463 Issues in Tourism Development
★3 (fi 6) (either term, 3–0–0). Critical issues in tourism development will be examined
within the context of tourism transformation models and fundamental development
concepts such as commodification, authenticity, globalisation, sense
of place, economic impact, socio-cultural and environmental impact. Note:
Field Trips are an integral and required component of this course. Requires
payment of additional student instructional support fees. Refer to the Fees Payment
Guide in the University Regulations and Information for Students section of the Calendar.

RSL 465 Natural Area Tourism
★3 (fi 6) (either term, 3–0–0). This course examines different types of tourism
that can occur in natural areas (e.g. adventure, nature based, wildlife, ecotourism)
from the perspective of tourists, trip organizers and guides, planners and managers,
local residents, and indigenous people. Prerequisite: RLS 263.

RSL 473 Principles and Processes in Therapeutic Recreation
★3 (fi 6) (either term, 2–0–2). The therapeutic recreation programming process
is emphasized. Primary focus is on specialized programs in therapeutic recreation
settings. The relationship between therapeutic recreation services and recreation
and special populations is examined. Therapeutic recreation service methods
such as systems approach programming, activity analysis, leisure assessment
techniques and instruments, as well as treatment approaches and facilitation
strategies employed in therapeutic recreation settings are presented. Prerequisite:
Field Trips are an integral and required component of this course. Requires
payment of additional student instructional support fees. Refer to the Fees Payment
Guide in the University Regulations and Information for Students section of the Calendar.

RSL 497 Selected Topics in Recreation and Leisure
★3 (fi 6) (either term, variable). Topics of current interest in leisure and recreation.
These may vary from year to year. Prerequisite: consent of Faculty.

RSL 499 Directed Studies
★3 (fi 6) (either term, variable). A course designed to meet the needs of individual
students. Prerequisite: consent of Faculty.

Graduate Courses

RSL 510 Concepts and Theories of Leisure and Recreation
★3 (fi 6) (either term, 3–0–0).

RSL 531 Socio-Psychological Dimensions of Recreation Involvement
★3 (fi 6) (either term, 3–0–0).

RSL 541 Parks, Protected Areas, and Outdoor Recreation Environments: Planning and Management
★3 (fi 6) (either term, 3–0–0). An interdisciplinary perspective on policy, planning,
management issues associated with parks, protected areas, and
the stewardship of natural and cultural heritage resources within working landscapes.
The provision and management of outdoor recreation opportunities within these
different environments is also examined.

231.237 Rehabilitation Medicine, REHAB
Faculty of Rehabilitation Medicine

Note: Normally all REHAB courses are restricted to students in Rehabilitation Medicine. Students from other faculties require consent of the instructor offering the course.
**Undergraduate Courses**

**REHAB 350 Structural Human Anatomy**
3 (fi 6) (either term, 3-0-0). An in-depth study of the gross anatomy of the upper and lower extremities, trunk, head and neck.

**REHAB 383 Human Systems #1 Clinical Anatomy and Work Physiology**
5 (fi 10) (either term, 4-0-1). An integrative study of anatomy and work physiology as it relates to normal and selected pathological conditions and their impact on self-care and productivity.

**REHAB 454 Clinical Neurology**
5 (fi 10) (either term, 65 hours). An overview of neurological conditions encountered in rehabilitation. Prerequisite: REHAB 445, Corequisite: OCCTH 415 or 512. [Note: Corequisite applicable to Occupational Therapy students only.]

**REHAB 455 Human Systems #2 Neuroanatomy and Neuroscience for Rehabilitation**
3 (fi 6) (either term, 39 hours). Structures and functions of the human nervous system and the mechanisms of neural activity and signalling. Emphasis is on integration and function. Prerequisite: REHAB 383 or PTHER 459 and 516.

**REHAB 468 Research in Rehabilitation**
3 (fi 6) (either term). The theory and principles of scientific method and research design procedures, from both qualitative and quantitative perspectives. Application to rehabilitation in practice settings will be explored. Prerequisite: OCCTH 362.

**Graduate Courses**

**REHAB 500 Conducting Rehabilitation Research**
3 (fi 6) (either term, 0-3s-0). Preparation of a plan to conduct research including writing a proposal. Students will discuss critically various aspects, such as the selection of the problem, the review of the literature, the research hypothesis, the collection and analysis of the data, and the significance of the research.

**REHAB 510 Assistive Technologies in Rehabilitation**
3 (fi 6) (either term, 0-2s-1). A study of assistive technologies used to ameliorate the problems of persons who have disabilities. The integration of assistive technologies into rehabilitation practice is discussed. Assistive technologies for augmentative communication, computer access, sensory (auditory, visual and tactile) assistance, seating and positioning, mobility and manipulation are included. Case studies, interactive demonstrations and review of current literature are included. Prerequisites: A background in assistive technologies such as provided by OCCTH 312, PTHIR 486 or 490, or SPA 523 or equivalent is recommended. For students without this background, a set of self-study competency modules must be completed during the first few weeks of the term.

**REHAB 512 Issues in Rehabilitation Science**
3 (fi 6) (either term, 3-0-0). Structures and functions of the human nervous system and the mechanisms of neural activity and signalling. Emphasis is on integration and function.

**REHAB 555 Neuroanatomy and Neuroscience for Rehabilitation**
3 (fi 6) (either term, 3-0-0). Structures and functions of the human nervous system and the mechanisms of neural activity and signalling. Emphasis is on integration and function.

**REHAB 568 Statistical Analysis and Interpretation of Research**
3 (fi 6) (either term, 3-0-0). The theory and principles of quantitative and qualitative research design procedures and scientific method. Application to rehabilitation in practice settings will be explored.

**REHAB 599 Directed Individual Reading and Research**
3 (fi 6) (either term, 0-3s-0). May be repeated. Open to graduate students in Master's and PhD degree programs in the Faculty of Rehabilitation Medicine or any of the other health sciences Faculties who wish to pursue individual reading and research studies with an academic staff member within the Faculty of Rehabilitation Medicine. Prerequisites: consent of student's graduate supervisor and instructor of record.

**REHAB 600 Theory and Issues in Rehabilitation Science**
3 (fi 6) (either term, 0-3s-0). The course will provide an orientation to the theoretical base and application of Rehabilitation Science.

**REHAB 603 Seminars in Rehabilitation Science**
3 (fi 6) (two term, 0-1s-0). This seminar is designed to allow students in the doctoral program to learn more about the scope of research in rehabilitation science. Students attend a weekly seminar presented by staff and graduate students in the Faculty of Rehabilitation Medicine and other health science faculties. Students registered in the PhD program in Rehabilitation Science must enrol in this seminar within the first two years of their doctoral programs and must present at least one seminar during each of the terms in which they are enrolled.

**REHAB 899 Directed Individual Research**
3 (fi 6) (either term, 0-3s-0). May be repeated once. Restricted to students in the PhD program in Rehabilitation Science who did not write a master's thesis and for whom an in-lieu-of thesis experience is required in the plan of study. Prerequisite: Recommendation of PhD supervisor.

**231.238 Religious Studies, RELIG**
Office of Interdisciplinary Studies
Faculty of Arts

**Notes**

(1) Students who have completed RELIG 100 may substitute that course for RELIG 101 for prerequisite purposes.

(2) See the following sections for listings of other Office of Interdisciplinary programs. Comparative Literature (C LIT); Humanities Computing (HU CO); Interdisciplinary (INT D) Faculty of Arts Courses; Middle Eastern and African Studies (MEAS); Science, Technology and Society (STS).

**Undergraduate Courses**

**RELIG 101 Introduction to the Religions of the World**
3 (fi 12) (two term, 3-0-0). An introduction to the major religious traditions of the past and present. Note: Not open to students with credit in ET RE 102 or 103.

**RELIG 200 Introduction to Religious Studies**
3 (fi 6) (either term, 3-0-0). Survey of the history of Religious Studies; introduction to main disciplinary approaches. Required for Honors, Majors, and Minors.

**RELIG 201 Introduction to Biblical Hebrew**
3 (fi 12) (two term, 3-0-2). This is an introduction to Hebrew alphabet, grammar, vocabulary, and syntax. The goal is to enable the student to read parts of the Hebrew Bible/Old Testament. The course serves also as foundation for the study of Mishnaic, Medieval, and Modern Hebrew. Designed for students with no previous knowledge of Hebrew.

**RELIG 202 Introduction to Old Testament/Hebrew Bible**
3 (fi 6) (either term, 3-0-0). An introduction to the critical study of the Old Testament/Hebrew Bible.

**RELIG 205 Introduction to Judaism**
3 (fi 6) (either term, 3-0-0). An introduction to the varied world of Judaism: its ways of life, beliefs, history and thought.

**RELIG 209 Coptic Language and Literature**
3 (fi 6) (either term, 3-0-0). The coptic alphabet, grammar, syntax and vocabulary. The goal is to enable students to read parts of the early Christian (Sahidic) Coptic writings. Note: not open to students who have received credit in RELIG 297 Topics: Coptic Language and Literature.

**RELIG 211 Introduction to Early Christian Writings**
3 (fi 6) (either term, 3-0-0). Critical introduction to the New Testament and other early Christian Writings in their historical cultural context.

**RELIG 212 Christian Traditions**
3 (fi 6) (either term, 3-0-0). A survey of the Christian traditions in historical context. Note: Not open to students with credit in HIST 297 or ET RE 248.

**RELIG 215 Introduction to Community Action and Christianity**
3 (fi 6) (either term, 3-0-0). Explores the link between Christian traditions and community action and considers the latter as a significant expression of faith. In addition to normal academic requirements, there will be relevant field trips.

**RELIG 220 Introducing Islam, from Prophetic Origins to World Traditions**
3 (fi 6) (either term, 3-0-0). A survey of the main elements of the Muslim tradition and their role in the formation of Islamic culture. Note: Not open to students with credit in RELIG 221.

**RELIG 230 Introduction to Hinduism**
3 (fi 6) (either term, 3-0-0). A study of the major traditions of classical Hinduism, and of the religious thinking and experience formed through these traditions.

**RELIG 239 Introduction to Sanskrit I**
3 (fi 6) (either term, 3-0-2). Fundamentals of the Sanskrit language for reading...
and translation purposes. Designed for students with no previous knowledge of Sanskrit.

**RELIG 240 Introduction to Buddhism**
- 3 (fi 6) (either term, 3-0-0). A study of the emergence of Buddhism as a religion, its basic ideas, spirituality, and literature.

**RELIG 252 Introduction to Chinese Religions**
- 3 (fi 6) (either term, 3-0-0).

**RELIG 274 Studies in Witchcraft and the Occult**
- 3 (fi 6) (either term, 3-0-0).

**RELIG 277 Women and World Religions**
- 3 (fi 6) (either term, 3-0-0). Attitudes towards women in selected world religious traditions, specifically with respect to their participation in ritual and religious leadership.

**RELIG 297 Special Topics in Religious Studies**
- 3 (fi 6) (either term, 0-3s-0).

**RELIG 301 Readings in Hebrew Literature**
- 3 (fi 6) (either term, 3-0-0). Readings in Hebrew literature of religious character. Prerequisite: RELIG 201 or consent of Department. Note: Only one of RELIG 301 or CLIT 490 can be taken for credit.

**RELIG 303 Biblical Narrative**
- 3 (fi 6) (either term, 3-0-0). Narrative art in the Old Testament/Hebrew Bible.

**RELIG 304 Poets, Prophets, and Sages**
- 3 (fi 6) (either term, 3-0-0). Literary-critical reading of the poetic books of the Old Testament/Hebrew Bible.

**RELIG 305 Ancient Near East I**
- 3 (fi 6) (either term, 3-0-0). Religion, society and culture in Sumer, Babylon, Assyria and ancient Israel. Note: not open to students with credit in CLASS 376.

**RELIG 306 Ancient Near East II**
- 3 (fi 6) (either term, 3-0-0). Religion, society and culture in Egypt, the Hittite Empire and Phoenicia. Note: Not open to students with credit in CLASS 377.

**RELIG 307 The Kabbalah**
- 3 (fi 6) (either term, 3-0-0). Studies in Jewish mysticism from the earliest period to modern times. Note: Not open to students with credit in RELIG 340.

**RELIG 308 From Cyrus to Jesus**
- 3 (fi 6) (either term, 3-0-0). Religion, society and culture in Palestine from the Persian conquest to the time of Jesus. Note: Not open to students with credit in CLASS 380.

**RELIG 312 Eastern Orthodoxy**
- 3 (fi 6) (either term, 3-0-0). History, sacramal art, liturgy, spirituality and distinguishing points of doctrine.

**RELIG 313 Studies in Early Christian Writings**
- 3 (fi 6) (either term, 3-0-0). Social and literary study of select early Christian texts.

**RELIG 314 Jesus**
- 3 (fi 6) (either term, 3-0-0). A study of representations of Jesus in various historical and social contexts.

**RELIG 320 Qur’anic Studies**
- 3 (fi 6) (either term, 3-0-0). An examination of the style, structure, and doctrine of the Qur’an in the light of the Western critical evaluation of the text. Note: Not open to students with credit in RELIG 327.

**RELIG 322 Contemporary Movements in Islam**
- 3 (fi 6) (either term, 3-0-0). Recent developments in the philosophical, social, and religious life of Islam throughout the world. Note: Not open to students with credit in RELIG 328.

**RELIG 331 Devotional Hinduism (bhakti)**
- 3 (fi 6) (either term, 3-0-0). A study of the various strands of devotional and mystical Hinduism (such as Vishnuism, Shivaism, Shaktism).

**RELIG 337 Contemporary Hinduism**
- 3 (fi 6) (either term, 3-0-0). A critical examination of the responses of Hinduism to the challenges of colonialism, modernity, and religious pluralism, and of its ensuing transformation.

**RELIG 344 Buddhism in Tibet and in the Himalayas**
- 3 (fi 6) (either term, 3-0-0). A study of the dissemination of Buddhism in the Himalayas and in Tibet, its incorporation of local beliefs, the formation of monasticism, religious thought and literature.

**RELIG 376 Thanatology**
- 3 (fi 6) (either term, 3-0-0). A consideration of death and dying in the great religious traditions, with particular emphasis on the recent literature.

**RELIG 378 Shamanism**
- 3 (fi 6) (either term, 3-0-0). A study of shamanism in the history of religions with special attention to myths, rituals, symbols, and the ecstatic experience. Note: Not open to students with credit in RELIG 368.

**RELIG 379 The Religions of Aboriginal North-Americans**
- 3 (fi 6) (either term, 3-0-0). A critical analysis of native North-American beliefs of the past and present. Note: Not open to students with credit in RELIG 380.

**RELIG 390 Readings of Sacred Texts of Asia in the Original Language II**
- 3 (fi 6) (either term, 3-0-0). Intermediate readings of the sacred texts of Asia in any one of the sacred languages of Asian religions.

**RELIG 397 Special Topics in Religious Studies**
- 3 (fi 6) (either term, 0-3s-0).

**RELIG 401 Translating Religious Texts**
- 3 (fi 6) (either term, 3-0-0). Consent of Instructor.

**RELIG 402 Historical and Textual Studies in the Old Testament/Hebrew Bible**
- 3 (fi 6) (either term, 3-0-0). Detailed study of the individual books of the Old Testament/Hebrew Bible and related themes. Prerequisite: One course in the Old Testament/Hebrew Bible or consent of Program Coordinator.

**RELIG 403 Literary Studies in Old Testament/Hebrew Bible**
- 3 (fi 6) (either term, 3-0-0). Prerequisite: One course in Old Testament/Hebrew Bible or consent of Program Coordinator.

**RELIG 409 Midrash and Literature**
- 3 (fi 6) (either term, 3-0-0). Rabbinic Midrash (exposition of Scripture) in relation to contemporary literary theory and the construction of religious community, with textual examples. Prerequisite: one course in Judaism, Hebrew Bible, or consent of Program Coordinator.

**RELIG 415 Advanced Studies in Christianity**
- 3 (fi 6) (either term, 3-0-0). Prerequisite: one course in Christianity or consent of Program Coordinator.

**RELIG 442 Advanced Studies in Buddhism**
- 3 (fi 6) (either term, 3-0-0). Prerequisite: one course in Buddhism or consent of Program Coordinator.

**RELIG 460 Topics in Religion in Latin America**
- 3 (fi 6) (either term, 3-0-0).

**RELIG 475 Theories and Methods in Religious Studies**
- 3 (fi 6) (either term, 3-0-0). Theories and disciplinary approaches in the study of religion, religions, and religious practices. Required for Honors and Majors. Prerequisite: consent of Program Coordinator.

**RELIG 480 Directed Reading in Religious Studies**
- 3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Program Coordinator.

**RELIG 497 Special Topics in Religious Studies**
- 3 (fi 6) (either term, 0-3s-0).

**RELIG 499 Honors Essay in Religious Studies**
- 6 (either term, 0-3s-0). Preparation of the Honors essay. Formerly RELIG 501.

**Graduate Courses**

**RELIG 502 Historical and Textual Studies in the Old Testament/Hebrew Bible**
- 3 (fi 6) (either term, 3-0-0).

**RELIG 504 Literary Studies in the Old Testament/Hebrew Bible**
- 3 (fi 6) (either term, 3-0-0).

**RELIG 509 Advanced Studies in Midrash and Literature**
- 3 (fi 6) (either term, 3-0-0).

**RELIG 510 Selected Topics in Religious Studies**
- 3 (fi 6) (either term, 3-0-0).

**RELIG 516 Special Topics in Early Christianity**
- 3 (fi 6) (either term, 3-0-0).

**RELIG 560 Topics in Advanced Studies in Religion in Latin America**
- 3 (fi 6) (either term, 3-0-0).

**RELIG 575 Theories and Methods in Religious Studies**
- 3 (fi 6) (either term, 3-0-0).

**RELIG 580 Directed Reading Course I**
- 3 (fi 6) (either term, 0-3s-0). Prerequisite: consent of Department.

**RELIG 581 Directed Reading Course II**
- 3 (fi 6) (either term, 0-3s-0). Prerequisite: consent of Department.
Undergraduate Courses

L REN R 110 Natural Resource Measurement

This course provides students with an understanding of the principles and practices of measuring resources, including land, water, and air resources. Students will learn about the methods used to assess the value of natural resources and the factors that influence their availability and sustainability.

L REN R 120 Woody Plants I

This course covers the identification, classification, distribution, and basic biology of trees, shrubs, and herbs. Students will learn about the growth and physiology of various plant species, as well as the factors that influence their distribution and abundance.

L REN R 201 Introduction to Geomatic Techniques, in Natural Resource Management

This course introduces students to the principles and practices of geomatic techniques, including spatial data management, geographic information systems, and remote sensing. Students will learn how to use these techniques to analyze and interpret natural resource data.

L REN R 250 Water Resource Management

This course provides an overview of the principles and practices of water resource management, including the assessment of water resources, the development of water allocation plans, and the implementation of water conservation strategies.

L REN R 299 Environmental and Conservation Sciences and Forestry Field School

This course provides an opportunity for students to gain hands-on experience in environmental and conservation sciences and forestry. Students will conduct field studies and learn about the principles and practices of sustainable resource management.

L REN R 321 Tree Physiology

This course provides an in-depth study of the physiological processes that occur in trees. Students will learn about the mechanisms of photosynthesis, respiration, and transpiration, as well as the factors that influence these processes.

L REN R 327 The Mosses of Alberta: Conservation and Identification

This course provides an introduction to the study of mosses, including their morphology, distribution, and conservation status. Students will learn about the methods used to identify and classify mosses, as well as the factors that influence their distribution and abundance.

L REN R 350 Physical Hydrology

This course provides an introduction to the principles of physical hydrology, including the interaction of vegetation, soils, and storage processes with hydrological systems. Students will learn about the factors that influence the movement of water through the environment and the role of hydrology in sustainable resource management.

L REN R 401 Special Topics in Renewable Resources

This course provides an opportunity for students to explore special topics in renewable resources, including the assessment of renewable resources and the development of sustainable resource management practices.

L REN R 410 Principles of Remote Sensing

This course provides an introduction to the principles and practices of remote sensing, including the use of satellite and aerial imagery to assess the condition of natural resources. Students will learn about the factors that influence the accuracy of remote sensing data and the methods used to interpret these data.

L REN R 414 Agroforestry Systems

This course provides an introduction to the principles and practices of agroforestry, including the assessment of agroforestry systems and the development of sustainable agroforestry practices. Students will learn about the factors that influence the success of agroforestry systems and the methods used to assess their sustainability.

L REN R 421 Advanced Tree Physiology

This course provides an in-depth study of the physiological processes that occur in trees, including the mechanisms of stress action and stress resistance. Students will learn about the factors that influence the success of agroforestry systems and the methods used to assess their sustainability.

L REN R 426 Geographical Information Systems Applications in Renewable Resources

This course provides an introduction to the principles and practices of geographical information systems (GIS) and their application to renewable resource management. Students will learn about the methods used to map and analyze natural resource data using GIS software.

L REN R 430 Forest Resources Management

This course provides an introduction to the principles and practices of forest resources management, including the assessment of forest resources and the development of sustainable forest management practices. Students will learn about the factors that influence the success of forest management systems and the methods used to assess their sustainability.

L REN R 450 Environmentally Sustainable Agriculture

This course provides an introduction to the principles and practices of environmentally sustainable agriculture, including the assessment of agricultural practices and the development of sustainable agriculture systems. Students will learn about the factors that influence the success of sustainable agriculture systems and the methods used to assess their sustainability.

L REN R 452 Forest Watershed Management

This course provides an introduction to the principles and practices of forest watershed management, including the assessment of forest watersheds and the development of sustainable forest management practices. Students will learn about the factors that influence the success of forest watershed management systems and the methods used to assess their sustainability.

L REN R 468 Management and Conservation of Genetic Resources

This course provides an introduction to the principles and practices of genetic resource management, including the assessment of genetic resources and the development of sustainable genetic resource management practices. Students will learn about the factors that influence the success of genetic resource management systems and the methods used to assess their sustainability.
REN R 475 Revegetation
★3 (fi 6) (first term, 3-3s-0). Principles, practices, and philosophy of revegetation of disturbed lands. Topics include site preparation, seed mix design, planting methods, species selection, monitoring, determining success, plant community ecology and change, bioengineering, phyto remediation, vegetation reclamation, and restoration. Illustrated with case studies. Revegetation project plan required. Prerequisites: ★90 university credit including introductory courses in soil science, hydrology, and ecology; and ★5 in vegetation science at the 300- or 400-level (e.g. botany, forestry, plant ecology, plant resources, plant science, range science, weed science); and ★3 in soil science at the 300- or 400-level. Prerequisite or corequisite ENCS 307 or equivalent. ENCS 406 recommended. Note: Course not open to Land Reclamation majors, nor to anyone who has received credit for REN R 485.

REN R 477 Wildlife–Human Activities: Conflicts, Assessment and Mitigation
★3 (fi 6) (second term, 3-0-0). Behavioral and ecological responses of wildlife species to human activities, including forestry operations, oil and gas exploration, recreational developments and agriculture-related activities. Topics include harassment and disturbance, habitat loss, habituation, assessment of impacts and mitigation, and cumulative impacts. Identification of ecological and social issues associated with human activities. Prerequisite: fourth-year standing or consent of Instructor.

REN R 480 Experimental design and data analysis in the environmental sciences
★3 (fi 6) (first term, 3-0-3). Introduction to the scientific method; common research approaches and experimental designs in forestry, conservation and environmental sciences; probability and sampling distributions; concepts of variation and error; hypothesis testing; statistical power; basic univariate statistical tests for continuous and categorical data, brief overview of commonly-used multi-variate techniques. Prerequisite: a minimum of ★80 of university-level course work; ★3 introductory statistics recommended.

REN R 495 Land Reclamation and Revegetation
★6 (fi 12) (two term, 3-3s-0). Principles, practices, and philosophy of land reclamation and revegetation of disturbed lands. Topics include types of land disturbances and regulations governing their reclamation, site preparation, soil reclamation and remediation, seed mix design, planting methods, plant species selection, monitoring, determining success, plant community ecology and change, bioengineering, phyto remediation, vegetation reclamation, and restoration. Illustrated with case studies. Team based land reclamation project required. Should be taken in students’ last year as the Capstone Course for the Land Reclamation Major. Prerequisites: ★90 university credit including introductory courses in soil science, hydrology, ecology, and vegetation science; and ENCS 307 or equivalent; and ★3 in vegetation science at the 300- or 400-level (e.g. botany, forestry, plant ecology, plant resources, plant science, range science, weed science); and ★6 in soil science at the 300- or 400-level. Prerequisites or corequisites: ★3 in vegetation science at the 300- or 400-level; and ★3 in soil science at the 300- or 400-level; and ENCS 406 recommended. Note: This course is not open to anyone who has previously been awarded credit in REN R 475 or 485.

Note: 400- and 500-level courses listed under ENCS, FOR, INT D, REN R or SOILS and offered by the Department of Renewable Resources may be taken for graduate credit under certain circumstances. FOREC 445, 473, and INT D 421, 465 may also be taken for graduate credit under certain circumstances. (See 9174.1.1(1).)

Graduate Courses

REN R 501 Special Topics in Renewable Resources
★3-6 (variable) (either term, variable). Directed study in the multiple aspects of renewable resources. Open to fourth year or graduate students upon consent of instructor.

REN R 545 Small Watershed Hydrology
★3 (fi 6) (first term, 0-3s-0). An examination of land use and management practices affecting water quantity and quality in rural watersheds. Considerations of snowmelt hydrology. Current hydrologic models and their treatment of infiltration, runoff, and evapotranspiration. Model calibration and validation with field data. Prerequisite: A course in hydrology or water resources. Facility with computers an asset. Offered in alternate years.

REN R 561 Ecosystem Modelling
★3 (fi 6) (first term, 3-0-3). Ecosystem modeling now has a central role in large-scale research projects designed to study ecosystem function. Examines how scientific theory of carbon, water and nutrient cycling in terrestrial ecosystems is expressed in mathematical models, and how these models are tested against results from field experiments. Laboratory sessions provide practical experience in the operation of ecosystem models to study terrestrial ecosystem responses to changes in land use and climate.

REN R 580 Biometrical Techniques in Agri-food, Environmental and Forest Sciences
★3 (fi 6) (second term, 3-0-3). Application of biometrical techniques in agri-food, environmental, and forest sciences with emphasis on complex analysis of variance designs (i.e., mixed models, split-plot, nested designs, repeated measures, analysis of covariance), regression (linear, non-linear, Poisson); approaches to analysis of categorical data, non-parametric techniques. Prerequisite: a minimum of ★90 of university-level course work, REN R 480 (or equivalent), or consent of instructor. (Offered jointly by the Departments of Agricultural, Food and Nutritional Science and Renewable Resources.)

REN R 595 Advanced Land Reclamation
★3 (fi 6) (first term, 0-3s-0). An examination of current topics in reclamation, revegetation, reclamation and remediation of disturbed lands. Topics cover vegetation and soil responses to disturbance and development of reclaimed (eco)systems through anthropogenic and natural recovery. Prerequisite: consent of Instructor.

REN R 601 Forest Biology
★3 (fi 6) (first term, 0-3s-0). Seminar presentations and discussions by students on the biology and environment of forest ecosystems. The objective of this course is to develop a broader and greater holistic understanding of the biota and physical environments of forest ecosystems. Course team taught by Department of Renewable Resources and Renewable Management consent of Department.

REN R 602 Forest Resources Management
★3 (fi 6) (second term, 0-3s-0). Seminar presentations and discussions by students on the management of forest ecosystems for traditional and non-traditional values. The objective is to examine human, resource, economic, and policy problems of integrated forest management. Course team taught by Department of Renewable Resources staff. Prerequisite: consent of Department.

REN R 603 Graduate Research Skills
★1 (fi 2) (first term, 1.5-0s-0). Prepares graduate students to function in a research environment. Focuses on the development of communication and presentation skills, the publication process, and proposal preparation. The grade is credit/no credit.

REN R 604 Graduate Research Seminar
★1 (fi 2) (second term, 0-1.5s-0). Prepares graduate students to function in a research environment. Focus is applied communication of research. All students are required to present a seminar, present a research poster, and critique a seminar. Attendance at the seminars and poster session is required. If possible, REN R 604 should not be taken until the student has some research results to present. The grade is credit/no credit.

REN R 610 Seminar in Research Methods
★3 (fi 6) (second term, 3-2s-0). Use of the scientific method in research, formulation of hypotheses, design of experiments, interpretation of data. Prerequisite: consent of Instructor.

REN R 635 Computer-based Modeling for Forest Resources Management
★3 (fi 6) (second term, 3-0-0). Exploration of computer-based models as decision aids for forest resources management, in the contexts of landscape and integrated resources management. Topics include timber supply modeling, wildlife habitat supply modeling and trade-off analysis, in both simulation and optimization frameworks. The underlying assumptions and practical application of models will be emphasized. Prerequisite: consent of instructor. Credit may not be obtained in this course if previous credit has been obtained for REN R 535.

REN R 680 Advanced Biometrics
★3 (fi 6) (first term, 3-0-0). Designed to introduce students to some advanced, modern statistical methods useful for analyzing ecological/environmental data. Topics include multivariate analysis (principal component analysis, correspondence analysis, canonical correspondence analysis), general/generalized linear regression (multiple regression, logistic regression, Poisson regression), repeated measurement/time series analysis, nonparametric statistics, sampling techniques, Bayesian statistics, Monte Carlo simulation, meta-analysis, and risk/uncertainty assessment. Laboratory session involves using statistical software R for data analysis. Prerequisite: REN R 580 and consent of instructor.

REN R 690 Applied Multivariate and Spatial Statistics
★3 (fi 6) (second term, 3-0-3). This course introduces descriptive multivariate and spatial statistical techniques for analysis of biological and environmental data. The mathematical foundations of techniques are discussed, but the emphasis of this course is visualization, analysis, and interpretation of complex environmental data sets. Topics include: (1) database management, (2) vector and matrix operations, (3) principal multivariate techniques (i.e., distance-based ordinations, (4) principles of spatial statistics, (5) multivariate analysis of spatial data, and (7) ecological modeling applications. Students will conduct a course project based on their own data sets. Prerequisite: Consent of Instructor.

REN R 900 Research Project
★6 (fi 12) (variable, unassigned). Required of all Soils MAc candidates in their final year. It does not usually involve collection of original data but makes use of published or unpublished data from other sources. The report is to be defended before a committee of three staff members, one member being from outside the Department of Renewable Resources.
231.240 Research, RSCH
Faculty of Graduate Studies and Research

Graduate Courses

RSCH 900 Graduate Research
★3 (fi 1) (either term, unassigned). Restricted to Visiting Graduate Students at the University of Alberta who are only conducting research. Approval of the Department and the Faculty of Graduate Studies and Research required.

231.241 Rural Sociology, R SOC
Department of Rural Economy
Faculty of Agricultural, Life and Environmental Sciences

Note: See also Agricultural and Resource Economics (AREC), Environmental and Conservation Sciences (ENCS), Forest Economics (FOREC), Interdisciplinary Undergraduate Courses (INT D) listings for related courses.

Undergraduate Courses

R SOC 310 Women in Development
★3 (fi 6) (first term, 3-0-0). This course deals with development issues, such as work, health, environment, and human rights among women in developing countries. Prerequisite: consent of Department. Not available to students with credit in W ST 310.

R SOC 355 Principles of Rural Sociology
★3 (fi 6) (second term, 3-0-0). The historic and contemporary role of rural regions as extractive economies in the global marketplace is discussed from a macro-sociological perspective. Sociological concepts are applied to the study of the structural constraints and opportunities facing social and economic systems in rural regions. Prerequisite: ★30 or more of university level course work.

R SOC 365 Sociology of Environment and Development
★3 (fi 6) (first term, 3-0-0). Examines the relationship between development and environment at the local, regional, national and international levels. Critically discusses development strategies, the environmental and social forces promoting them, and the distribution of environmental and social impacts. Also examines alternative development strategies, sustainable development experiences and relevant international policy.

R SOC 400 Special Topics
★3 (fi 6) (either term, 0-3s-0). Individual study. Study of selected topic or problem requiring both written and oral reports. Prerequisite: consent of the Department Chair.

R SOC 441 Risk Communication
★3 (fi 6) (second term, 0-3s-0). Principles, concepts, processes and strategies for the communication of risks to human health posed by potentially hazardous agents or situations. Topics include communication and risk communication theory, the risk communication process, and the role of risk communication as part of an integrated risk management strategy. Prerequisites: ★75 or more.

R SOC 450 Environmental Sociology
★3 (fi 6) (second term, 3-0-0). Introduction to a field in sociological inquiry that addresses how individuals and groups influence, and are influenced by, natural resources and environmental conditions. Examination of individual-level influences, such as beliefs, attitudes, and behaviors, as well as broader social-level influences at the institutional and organizational level. Focus is on providing an understanding and appreciation for the interaction between human attitudes, behaviors, and organizations with other components of the ecosystem. Prerequisite: ★60 or more. An introductory Sociology course is strongly recommended.

Graduate Courses

Note: The following undergraduate courses may be taken for credit by graduate students in Rural Economy: R SOC 490, 495.

R SOC 500 Research Projects in Rural Sociology
★3 (fi 6) (either term, 0-3s-0). Individual study. Investigations of a special problem involving field or library study and preparation of written reports. Prerequisite: consent of the Department Chair.

R SOC 542 Risk Communication and Policy
★3 (fi 6) (second term, 0-3s-0). Advanced principles, concepts, processes and strategies for the communication of risks to human health posed by potentially hazardous agents or situations. Topics include communication and risk communication theory, the risk communication process, and the role of risk communication as part of an integrated risk management strategy, as well as in depth examination of empirical research methods and specific risk communication issues. Prerequisites: consent of Instructor.

R SOC 555 Natural Resource Sociology
★3 (fi 6) (second term, 3-0-0). Examines social problems and challenges in natural resource dependent regions. Covers social theories of development, public participation, social impacts, institutional arrangements, and social capacity for natural resource management and community development. Prerequisite: R SOC 450 or equivalent.

R SOC 558 The Sociology of Environmental Risk: Theory and Applications
★3 (fi 6) (either term, 0-3s-0). Theoretical and empirical research on the study of environmental risk in the social sciences, and their application in various institutional areas. Divergent theoretical perspectives on risk within the social sciences, directions taken by empirical researchers in the analysis of the construction and perception of environmental risk, as well as current institutional mechanisms for risk management and social impact assessment. Prerequisite: consent of Instructor.

R SOC 559 States, Social Movements and the Environment
★3 (fi 6) (either term, 3-0-0). Covers classic and contemporary theories of states and social movements and their application to environmental and ecological issues. Topics include the Environmental State; relationships among state and societal forces; sub-national, national, and international environmental politics; political distinctions among environmental and ecological issues; and the potential for sustainability governance. Prerequisite: consent of Instructor.

R SOC 600 Directed Studies
★3 (fi 6) (either term, 0-3s-0). Analysis of selected research problems and design of research projects in rural, resource, environmental and development sociology. Prerequisite: Consent of Department Chair.

R SOC 900 Directed Research Project
★3 (fi 6) (variable, unassigned).

231.242 Russian, RUSS
Department of Modern Languages and Cultural Studies
Faculty of Arts

Notes

(1) The Department reserves the right to place students in the language course appropriate to their level of language skill.

(2) Placement tests may be administered in order to assess prior background. Students with a Russian language background should consult a Department advisor. Such students may be granted advanced placement and directed to register in a more advanced course more suitable to their level of ability. Students seeking to fulfill their Language Other than English requirement may begin at any one appropriate level, but must take the full ★6 in one language.

(3) The Department will withhold credit from students completing courses for which prior background is deemed to make them ineligible. For example, 100-level courses are normally restricted to students with little or no prior knowledge in that language. Should a student with matriculation standing, or those possessing prior background (such as native speakers or those for whom it is their first language) register in the 100-level course, credit may be withheld.

(4) Students requiring information about program planning and course selections for the Dalhousie University-University of Alberta Russian Studies Program in the USSR (see Arts section) should consult an undergraduate advisor in the Department of Modern Languages and Cultural Studies.

(5) See also Modern Languages and Cultural Studies (MLCS) and Slavic and East European Studies (SLAV) listings and INT D courses offered by the Faculty of Arts.

Undergraduate Courses

RUSS 111 Beginners' Russian I
★3 (fi 6) (either term, 5-0-0). Essentials of grammar, reading, and pronunciation. Designed to give a working knowledge of the Russian language. Note: not to be taken by students with credit in RUSS 100, or with native or near native proficiency, or with Russian 30 or its equivalents in Canada and other countries.

RUSS 112 Beginners' Russian II
★3 (fi 6) (either term, 5-0-0). Prerequisite: RUSS 111 or consent of Department. Note: not to be taken by students with credit in RUSS 100, or with native or near native proficiency, or with Russian 30 or its equivalents in Canada and other countries.

RUSS 211 Second-Year Russian I
★3 (fi 6) (first term, 4-0-0). Russian grammar, composition, oral practice. Prerequisite: RUSS 112 or consent of Department. Note: not to be taken by students with credit in RUSS 201 or 202.
RUSS 212 Second-Year Russian II
★3 (fi 8) (second term, 4-0-0). This course is a continuation of RUSS 211. Prerequisite: RUSS 211 or consent of Department. Note: not to be taken by students with credit in RUSS 202.

RUSS 300 Russian: Learn it, Live it, Love it
★6 (fl 12) (either term, 3-0-0). Intensive six-week course in Russian culture and language taught in Russia. Prerequisite: RUSS 212 or consent of Department.

RUSS 303 Russian in Context I
★3 (fl 6) (either term, 3-0-0). The continued development of grammatical and conversational skills, with reading contemporary Russian and viewing and discussing films and television programs. Prerequisite: RUSS 212 or consent of Department. Note: not to be taken by students with credit in RUSS 401 or 402.

RUSS 310 Russian in Context II
★3 (fi 12) (either term, 3-0-0). Debates on topics selected by students. Prerequisite: RUSS 303 or consent of Department. Note: not to be taken by students with credit in RUSS 401 or 402.

RUSS 325 Readings in Russian I
★3 (fl 6) (either term, 3-0-0). Study of pre-20th century Russian literature in the original. Prerequisite: RUSS 212 or consent of Department. Note: not to be taken by students with credit in RUSS 215 or 216.

RUSS 326 Readings in Russian II
★3 (fl 6) (either term, 3-0-0). Reading and analysis of texts from 20th century Russian literature in the original. Prerequisite: RUSS 212 or consent of Department. Note: not to be taken by students with credit in RUSS 215 or 216.

RUSS 333 Saints and Sinners
★3 (fl 6) (either term, 3-0-0). Religious and anti-religious themes in Russian literature of the 19th and 20th centuries, highlighting the reflection of Russian Orthodox and popular culture in the texts. This course is taught in English and will not fulfill the Language other than English requirement.

RUSS 403 Russian Media and Internet
★3 (fl 6) (either term, 3-0-0). Emphasis on the enhancement of language skills in the context of life in today’s Russia. Contemporary textual genres of the popular media, including those of the Internet. Intensive reading, critical discussions, and creative writing. Prerequisite: RUSS 304 or consent of Department.

RUSS 404 Russian Language and Film
★3 (fl 6) (either term, 3-0-0). Use of contemporary Russian films and television to improve the practical language and literacy skills both orally and in writing. Prerequisite: RUSS 304 or consent of Department.

RUSS 408 Russian for Heritage Speakers
★3 (fl 6) (either term, 3-0-0). For native speakers of Russian who want to improve their writing skills. Introduction to different styles of writing and composition. Prerequisite: consent of Department.

RUSS 422 Russian Literature and the Arts
★3 (fl 6) (either term, 3-0-0). A study of the interrelationship between literature and other media: theatre, cinema, and the visual arts. The emphasis will vary from year to year. Russian majors will do a significant part of readings and assignments in Russian; others may do readings and assignments in English. Prerequisite for Russian majors: RUSS 304 or consent of Department.

RUSS 427 Themes and Variations in Russian Literature to 1917
★3 (fl 6) (either term, 3-0-0). The superfluous man, the alien, witches and devils, the fantastic and other themes in pre-revolutionary Russian literature. Russian majors will do a significant part of readings and assignments in Russian; others may do readings and assignments in English. Prerequisite for Russian majors: RUSS 304 or consent of Department.

RUSS 428 Tsardom to Empire: Topics in Russian Official Culture
★3 (fl 6) (either term, 3-0-0). Selections in English of representative authors from each of the major literary periods in Scandinavia with selections in English from the Old Norse sagas. The course will also include a brief overview of Scandinavian folklore. This course does not fulfill the language-other-than-English requirement of the BA degree.

RUSS 443 Russian-English Translation
★3 (fl 6) (either term, 3-0-0). Exercises in translation with emphasis on both literary and non-literary texts. Prerequisite: RUSS 304, or consent of Department. Not open to students with credit in RUSS 441 or 442.

RUSS 445 Business Russian
★3 (fl 6) (either term, 3-0-0). Advanced modern Russian with emphasis on the vocabulary and communication style of the Russian business world. Prerequisite: RUSS 304 or consent of Department.

RUSS 447 Russian for Scholarly Purposes
★3 (fl 6) (either term, 3-0-0). Develops reading skills in Russian through study of its grammatical and syntactic structures, and the analysis of sample texts. Prerequisite: RUSS 304 or consent of Department.

RUSS 461 Russian Critical Discourse in Transition
★3 (fl 6) (either term, 3-0-0). Introduction to the major trends and figures in the history of the Russian Humanities during the Soviet and the post-Soviet periods. Prerequisite: RUSS 304 or consent of Department.

RUSS 483 Brave New Word: Soviet and Post-Soviet Russian Literature and Culture
★3 (fl 6) (either term, 3-0-0). Thematic focus varies from year to year. Russian majors will do a significant part of readings and assignments in Russian; others may do readings and assignments in English. Prerequisite for Russian majors: RUSS 304 or consent of Department.

RUSS 495 Honors Thesis
★3 (fl 6) (either term, 0-3s-0).

RUSS 499 Special Topics
★3 (fl 6) (either term, 3-0-0).

Graduate Courses

RUSS 503 Russian Media and Internet
★3 (fl 6) (either term, 3-0-0). Prerequisite: consent of Department.

RUSS 504 Russian Language and Film
★3 (fl 6) (either term, 3-0-0). Prerequisite: consent of Department.

RUSS 522 Russian Literature and the Arts
★3 (fl 6) (either term, 3-0-0). Prerequisite: consent of Department.

RUSS 528 Tsardom to Empire: Topics in Russian Official Culture
★3 (fl 6) (either term, 3-0-0). Prerequisite: consent of Department.

RUSS 561 Russian Critical Discourse in Transition
★3 (fl 6) (either term, 3-0-0). Prerequisite: consent of Department.

RUSS 599 Directed Reading
★3 (fl 6) (either term, 3-0-0).

RUSS 641 Studies in Russian Poetry
★3 (fl 6) (either term, 3-0-0).

RUSS 698 Topics in Russian Linguistics
★3 (fl 6) (either term, 3-0-0).

RUSS 699 Topics in Russian Literature and Culture
★3 (fl 6) (either term, 3-0-0).

RUSS 900 Directed Research Project
★6 (fl 12) (variable, unassigned).

231.243 Scandinavian, SCAND

Faculty of Arts

Department of Modern Languages and Cultural Studies

SCAND 341 Old Norse Mythology and Legends
★3 (fl 6) (either term, 3-0-0). Survey of Old Scandinavian mythology from the earliest times to the end of the Viking Period. Readings in English from the Poetic and Prose Eddas, including the heroic legends and lays. Also included is a brief look at runic inscriptions and skaldic poetry. This course does not fulfill the language-other-than-English requirement of the BA degree.

SCAND 342 Vikings and Sagas
★3 (fl 6) (either term, 3-0-0). Survey of the cultural history of the Viking and Medieval periods in Scandinavia with selections in English from the Old Norse sagas. The course will also include a brief overview of Scandinavian folklore. This course does not fulfill the language-other-than-English requirement of the BA degree.

SCAND 345 Literature, Culture, and Civilization from the Reformation to the 20th Century
★3 (fl 6) (either term, 3-0-0). Selections in English of representative authors from each of the major literary periods, with special attention to the cultural and historical background. This course will not fulfill the language-other-than-English requirement of the BA degree.

SCAND 353 Henrik Ibsen
★3 (fl 6) (either term, 3-0-0). A selection of the dramas of Henrik Ibsen in English translation with background material on the life of the author and his times. Special emphasis on his social and symbolist plays, including their staging and presentation. This course will not fulfill the language-other-than-English requirement of the BA degree.

SCAND 354 August Strindberg
★3 (fl 6) (either term, 3-0-0). A selection of the works of August Strindberg in English translation with background material on the life of the author and his times. Special emphasis on his dramas, including their staging and presentation.
This course will not fulfill the language-other-than-English requirement of the BA degree.

SCAND 355 The Tales of Hans Christian Anderson
3 (fi 6) (either term, 3-0-0). This course takes a life-and-letters approach to the author and his times, with special emphasis on his tales (in English translation) and their relationship to the theory and practice of the genre. This course will not fulfill the language-other-than-English requirement of the BA degree.

SCAND 356 Women in Scandinavian Literature and Popular Culture
3 (fi 6) (either term, 3-0-0). Various media which reflect women's lives and voices in Denmark, Norway, Sweden, Finland, Iceland, and Samiland. Note: This course will be taught in English and will not fulfill the Language other than English requirement.

SCAND 410 Comparative Scandinavian Grammar and Stylistics
3 (fi 12) (two terms, 3-0-0). A comparative analysis of modern Norwegian, Swedish and Danish, with special concentration on advanced composition and stylistics in the student's target language. Prerequisite: DANSK 212, or NORW 212, or SWED 212, or consent of Department.

SCAND 420 The Scandinavian Immigrant Experience in Canada
3 (fi 6) (either term, 3-0-0). A survey of the history of Scandinavian immigration to Canada and its causes. The immigrant experience will be discussed as it is portrayed in works by authors such as Aksel Sandemose, Sven Délblanc, and Stephan G. Stephansson. Prerequisite: DANSK 212, or NORW 212, or SWED 212, or consent of Department.

SCAND 499 Special Topics
3 (fi 6) (either term, 3-0-0).

Graduate Courses

SCAND 551 Old Norse Grammar
3 (fi 6) (either term, 3-0-0). A survey of the grammar of Old Icelandic with readings of illustrative texts. This course does not fulfill the language other than English requirement for the BA.

SCAND 552 Readings in Old Norse, Runology and Paleography
3 (fi 6) (either term, 3-0-0). Readings of illustrative texts in Old Icelandic including a survey of runic writing and Old Norse manuscripts. Texts in modern Icelandic will also be examined. Prerequisite: SCAND 551 or consent of Department. This course does not fulfill the language other than English requirement for the BA.

231.244 Science politique, SC PO
Faculté Saint-Jean

Cours de 1er cycle

SC PO 101 Introduction au gouvernement
3 (fi 6) (premier semestre, 3-0-0). Une introduction aux institutions gouvernementales du Canada et d’ailleurs. Sujets étudiés: constitutions, assemblées législatives, organes exécutifs, fonction publique, cours de justice, gouvernement fédéral et d’autres sujets choisis. Note: Ce cours n’est pas accessible aux étudiants ayant ou postulant des crédits pour POL S 100.

SC PO 102 Introduction à la politique
3 (fi 6) (deuxième semestre, 3-0-0). Une introduction aux concepts et enjeux des phénomènes politiques. Sujets étudiés: pouvoir ou influence, démocratie, droits et libertés, idéologie politique, opinion publique, élections, partis politiques, groupes de pression et autres sujets choisis. Note: Ce cours n’est pas accessible aux étudiants ayant ou postulant des crédits pour POL S 100.

SC PO 220 Gouvernement et politique du Canada en tant que nation
6 (fi 12) (aux deux semestres, 3-0-0). Structures et fonctions du Gouvernement du Canada et en particulier les Communes, le Sénat, le Cabinet, la Fonction publique, les partis politiques. Note: ce cours n’est pas accessible aux étudiants ayant ou postulant des crédits pour POL S 221.

SC PO 261 Relations internationales I
3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Introduction au rôle de l’État au sein du système international ayant pour but de développer une connaissance des événements contemporains internationaux. Ce cours couvre la nature de la politique étrangère et la dynamique d’interaction entre les États.

SC PO 262 Relations internationales II
3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Introduction aux problèmes contemporains de relations internationales ayant pour but de développer une connaissance du système international. Ce cours porte sur le rôle des institutions internationales, des acteurs supranationaux et non-étatiques, ainsi que certains enjeux liés à la mondialisation.

SC PO 270 Politique comparée
3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Introduction à des thèmes de politique comparée.

SC PO 320 La politique du système de santé au Canada
3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Le développement du système de santé canadien, ses composantes législatives et philosophiques ainsi que son financement et son organisation; l’étude comparative des défis au système de santé canadien posés par les enjeux financiers, l’accès universel et les modes alternatifs. Notes: La priorité sera accordée aux étudiants du BSc(hl) (bilingue). Ce cours n’est pas accessible aux étudiants ayant ou postulant des crédits pour POL S 321 ou 322.

SC PO 423 Fédéralisme canadien

SC PO 428 Gouvernement et politique des provinces

Cours de 2e cycle

SC PO 499 Choix de sujets en science politique
3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Cours dont le contenu varie d’une année à l’autre. Les sujets sont annoncés avant la période d’inscription. Préalable(s): l’approbation du Vice-doyen aux affaires académiques.

231.245 Science, Technology, and Society, STS
Office of Interdisciplinary Studies
Faculty of Arts

Undergraduate Courses

STS 200 Introduction to Studies in Science, Technology and Society
3 (fi 6) (either term, 3-0-0). An examination of the interrelations of science, technology, society and environment, emphasizing an interdisciplinary humanities and social sciences perspective. Note: not to be taken by students with credit in INT D 200. [Faculty of Arts, Office for Interdisciplinary Studies]

STS 297 Special Topics in Science, Technology and Society
3 (fi 6) (either term, 3-0-0).

STS 397 Special Topics in Science, Technology and Society
3 (fi 6) (either term, 3-0-0).

STS 400 Advanced Topics in Science, Technology and Society
3 (fi 6) (either term, 0-3s-0). This capstone course for the major in Science, Technology, and Society will approach selected topics in an interdisciplinary manner, applying the approaches of the social sciences and humanities. Prerequisites: STS 200 and 30 credits from two of the following courses: ANTHR 230, HIST 294, PHIL 265, C LIT 342 or consent of Instructor. [Faculty of Arts, Office for Interdisciplinary Studies]

STS 498 Historiography of Science and Technology: Problems and Methods
3 (fi 6) (either term, 0-3s-0). Note: not to be taken by students with credit in INT D 498. [Faculty of Arts, Office for Interdisciplinary Studies]

231.246 Sciences de la Terre et de l’atmosphère, SCTA
Faculté Saint-Jean

Cours de 1er cycle

SCTA 100 La planète Terre


231.247 Sciences infirmières, SC INF

Faculty of Nursing

Undergraduate Courses


SC INF 218 Introduction à la pratique infirmière (6 (premier semestre, 0-0-1ac). Pratique infirmière novice dans la communauté francophone, les centres de soins de longue durée et les résidences assistées. L’accent est mis sur la promotion de la santé des client(e)s dans toutes les phases de la vie. Préalables: ANATE 140, PHYSE 152. Concomitants: SC INF 217, NURS 306, et MICRE 133. Note: Ce cours est réservé aux étudiant(e) ou du programme BSc inf. bilingue.

SC INF 301 Recherche en sciences infirmières (3 (premier semestre, 3-0-0). Introduction au processus de la recherche en sciences infirmières. Le cours comprend entre autre l’analyse comparative d’études choisies qui représentent différentes approches théoriques, méthodologiques, et analytiques. L’accent est mis sur la communication de la recherche, les besoins de l’utilisateur, et le développement des habiletés nécessaire à la critique de la recherche.

SC INF 406 Pratique infirmière en santé communautaire (6 (premier semestre, 0-0-16c). Les étudiant(e)s auront l’occasion de mettre en pratique les concepts de sciences infirmières en santé communautaire. La pratique comprendra l’évaluation de la santé et des interventions avec des familles en attente d’un nouveau-né. Les étudiant(e)s développeront des compétences en évaluation de la famille et de la communauté, en communication thérapeutique, et dans la planification, la prescription et l’évaluation des interventions infirmières en santé communautaire. Préalables: NURS 215, 307 et 308. Concomitants: SC INF 405. Note: Ce cours est réservé aux étudiant(e) du programme BSc inf. bilingue. Les étudiant(e) de ce programme ne doivent pas s’inscrire au cours NURS 406.

SC INF 499 Synthèse des connaissances en sciences infirmières (3 (deuxième semestre, 0-7s-3 in 4 weeks). Synthèse et emphase sur les connaissances et l’application de la recherche en sciences infirmières dans un champ de pratique infirmière. Afin de pouvoir s’inscrire à ce cours l’étudiant(e) doit avoir complété avec succès tous les autres cours de son programme, sauf le cours concomitant SC INF 495.

SC INF 499 Pratique infirmière VIII (9 (deuxième semestre, 0-3s-34c en 10 semaines). Approche exhaustive et consolidée à la pratique infirmière professionnelle. Concomitant: NURS 494. Ce cours est réservé aux étudiant(e) du programme BSc inf. bilingue. Les étudiant(e) de ce programme ne doivent pas s’inscrire au cours NURS 495.

231.248 Sciences sociales, SCSOC

Faculté Saint-Jean

Cours de 1er cycle

SCSOC 225 Méthodes de recherche en sciences sociales (3 (l’un ou l’autre semestre, 3-0-2). Initiation à quelques notions d’épistémologie concernant les sciences sociales et à quelques méthodes de recherche; principaux critères de la méthode scientifique et distinction avec les sciences exactes; construction des hypothèses et analyse conceptuelle; formalisation de la recherche et utilisation des documents; techniques de l’entrevue participante, de l’échantillonnage et de l’analyse de contenu. Note: Ce cours n’est pas accessible aux étudiants ayant ou postulant des crédits pour SCSOC 321 ou SOC 315.

SCSOC 311 Histoire de la pensée politique et sociale I (3 (l’un ou l’autre semestre, 3-0-0). Survol historique et critique du développement de la pensée politique et sociale, de l’Antiquité à la Renaissance, en utilisant des textes choisis de quelques philosophes pré-socratiques (Héraclite, Parménide), Platon, Aristote, Boèce, Abélard, Thomas d’Aquin, Machiavel, Erasme.


SCSOC 460 Recherche appliquée: les média (6 (aux deux semestres, 208 heures). Stage de recherche appliquée dans les média. Formation en écriture, recherche, technologie de la communication, et autres. Préalable(s): une moyenne de 3.0. Les stagiaires sont sélectionnés en fonction de la qualité de leur dossier et du nombre de places disponibles.

231.249 Sciences socio-politiques, SCSP

Faculté Saint-Jean

Cours de 1er cycle

SCSP 520 Mémoire de Sciences socio-politiques (6 (aux deux semestres, 0-3s-0). Préparation du mémoire requis en quatrième année du programme de spécialisation en Sciences socio-politiques.

231.250 Slavic and East European Studies, SLAV

Department of Modern Languages and Cultural Studies

Faculty of Arts

Notes

(1) None of these courses will fulfil the language-other-than-English requirement of the BA degree.

(2) For related courses see listings under Polish (POLSH), Russian (RUSS) and Ukrainian (UKR).

(3) For additional courses relating to the Soviet Union and its successor states, see also entries under Comparative Literature (C LIT), Eastern and Atmospheric Sciences (EAS), Economics (ECON), History (HIST), Modern Languages and Cultural Studies (MLCS), Political Science (POL S), and Sociology (SOC).

(4) See also INT D courses which are offered by the Faculty of Arts and which may be taken as options or as a course in this discipline.

Undergraduate Courses

SLAV 468 Nikolai Gogol/Mykola Hohol’ (6 (either term, 3-0-0). Gogol as a cultural icon in the history of Russian and Ukrainian literatures. His life and works against the background of Russian Imperial cultural developments and the political and social changes of nation building in the first half of the 19th century. English translations of texts available for those not majoring in Slavics.

SLAV 499 Special Topics (6 (either term, 3-0-0).
Graduate Courses

Note: See also INT D 543 and 544 for courses offered by more than one Department or Faculty and which may be taken as an option or as a course in this discipline.

SLAV 512 Old East Slavic Literature and Culture
3 (fi 6) (either term, 3-0-0). Reading and analysis of major literary monuments from the 10th to 14th centuries. Prerequisite: consent of Department.

SLAV 568 Nikolai Gogol/Mykola Hohol
3 (fi 6) (either term, 3-0-0). Gogol as a cultural icon in the history of Russian and Ukrainian literatures. His life and works against the background of Russian Imperial cultural developments and the processes of nation building in the first half of the 19th century. Prerequisite: consent of Department.

SLAV 697 Topics in Slavic Folklore
3 (fi 6) (either term, 3-0-0).

SLAV 698 Topics in Slavic Linguistics
3 (fi 6) (either term, 3-0-0).

SLAV 900 Directed Research Project
6 (fi 12) (variable, unassigned).

231.251 Sociologie, SOCIE
Faculté Saint-Jean

Cours de 1er cycle

O SOCIE 100 Introduction à la sociologie
3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Examen de la théorie, des méthodes et de la substance de la sociologie. Étude de la façon dont les sociétés comprennent la culture, la socialisation, la déviance, la stratification et les groupes. Le procès de transformation sociale par les mouvements sociaux, l’industrialisation, etc. Note: Les étudiants en 3e année ou plus avancés devraient prendre SOC 300 plutôt que SOCIE 100.

O SOCIE 225 Criminologie

O SOCIE 260 Inégalité et stratification sociales
3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Introduction à l’étude des inégalités sociales structurées et de la pauvreté; approches théoriques majeures; conclusions des études empiriques clés, en mettant l’accent sur le Canada. Préalable(s): SOCIE 100 ou SOC 300.

O SOCIE 301 Sociologie des rapports de sexes
3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Étude comparée des rapports entre les femmes et les hommes dans certaines sociétés, en mettant l’accent sur le Canada contemporain; étude des rôles spécifiques à chaque sexe, et des theories relatives à leurs origines; recherche sociologique récente sur l’importance de la division sexuelle de la société.

O SOCIE 348 Sociologie des médias et de l’information
3 (variable) (l’un ou l’autre semestre, 3-0-0). La place des médias et des nouvelles technologies de l’information dans la société contemporaine. Étude des théories qui s’y rattachent, avec l’accent sur les débats entourant la question de la postmodernité. Préalable(s): SOCIE 100. Cours à distance. Voir $200.

O SOCIE 368 Etude des minorités et des groupes ethniques
3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Analyse de processus sociaux qui permettent le développement et la compréhension du statut des minorités. Étude de cas des relations entre les groupes ethniques et minoritaires fondée sur les travaux réalisés à l’échelle nationale. Préalable(s): SOCIE 100 ou SOC 300.

L SOCIE 402 Choix de sujets en sociologie
3 (fi 6) (l’un ou l’autre semestre, 3-0-0). Le contenu varie d’une année à l’autre. Les sujets sont annoncés avant la période d’inscription. Préalable(s): SOCIE 101 ou SOC 300.

231.252 Sociology, SOC
Department of Sociology
Faculty of Arts

Note: See also INT D 393 and 394 for courses which are offered by more than one Department or Faculty and which may be taken as options or as a course in this discipline.

Undergraduate Courses

SOC 100 Introductory Sociology
3 (fi 6) (either term, 3-0-0). An examination of the theory, methods, and substance of Sociology. The study of how societies are shaped including economy, culture, socialization, deviance, stratification, and groups. The process of social change through social movements, industrialization, etc. Note: Not to be taken by students with credit in SOC 300.

SOC 101 Canadian Society
3 (fi 6) (either term, 3-0-0). Development of Canadian society; including such topics as French-English relations, regionalism, relations with the USA, native rights, Canadian mosaic, inequalities, and conflicts. Prerequisite: One of SOC 100 ou 300.

SOC 102 Social Problems
3 (fi 6) (either term, 3-0-0). The definition/development of social problems and an examination of selected structural issues in various societies, including inequality, population growth, environment, and human rights. Prerequisite: One of SOC 100 ou 300.

SOC 210 Introduction to Social Statistics
3 (fi 6) (either term, 3-0-2). Statistical reasoning and techniques used by sociologists to summarize data and test hypotheses. Topics include describing distributions, cross-tabulations, scaling, probability, correlation/regression and non-parametric tests. Prerequisite: One of SOC 100 ou 300. Note: This course is intended primarily for students concentrating in Sociology.

SOC 212 The Sociological Imagination
3 (fi 6) (either term, 3-0-0). What is society? What is sociology? An introduction to sociological theorizing. Prerequisite: One of SOC 100 ou 300.

SOC 224 Sociology of Deviance and Conformity
3 (fi 6) (either term, 3-0-0). Processes involved in defining behavior patterns as deviant; factors which influence conformity and change; examination of such behavior patterns as sexuality, alcoholism, drug use, and selected mental and physical disabilities; public reaction to such behavior. Prerequisite: One of SOC 100 ou 300.

SOC 225 Criminology
3 (fi 6) (either term, 3-0-0). Examination and attempted explanation of crime and juvenile delinquency, with an analysis of the social processes leading to criminal behavior. Prerequisite: One of SOC 100 ou 300.

SOC 231 Introduction to Theories of Society
3 (fi 6) (either term, 3-0-0). Classical and contemporary perspectives on society and human nature. Problems of comparing and assessing social theories, e.g. issues such as the individual versus society, idealism versus materialism, conflict versus consensus. Prerequisite: One of SOC 100 ou 300. Note: Not to be taken by students with credit in SOC 332 ou 333 ou 334. SOC 231 is not to be taken by Sociology majors, as they are required to take SOC 212 and one of 332 ou 333 ou 334.

SOC 241 Social Psychology
3 (fi 6) (either term, 3-0-0). An introduction to the study of individual and group behavior observed in social processes. Prerequisites: One of SOC 100 ou 300, ou PSYCO 104 ou 105. Note: SOC 241 et PSYCO 241 ne peuvent pas être pris pour crédit.

SOC 242 Biologically Coordinated Social Psychology
3 (fi 6) (either term, 3-0-0). A biologically consistent introduction to the study of individual and group behavior observed in social processes. Prerequisite: One of SOC 100 ou 300, PSYCO 104 ou 105, EDPY 200.

SOC 251 Population and Society
3 (fi 6) (either term, 3-0-0). Population trends, issues and concerns in Canada and international contexts; social and cultural factors underlying fertility, mortality, migration, urbanization; population change; population theory; and demographic analysis.

SOC 260 Inequality and Social Stratification
3 (fi 6) (either term, 3-0-0). Introduction to the study of structured social inequalities and poverty; major theoretical approaches; findings from key empirical studies, with emphasis on Canada. Prerequisite: One of SOC 100 ou 300.

SOC 269 Introductory Sociology of Globalization
3 (fi 6) (either term, 0-3-0-0). Introduces various aspects of globalization and its impact on our lives at local, national, and international levels. Prerequisite: One of SOC 100 ou 300.

SOC 271 Introduction to the Family
3 (fi 6) (either term, 3-0-0). An introduction to the study of family relationships and their variant forms with focus on mate selection, couple, kin, age, and gender dynamics, family dissolution or reconstitution and change. A comparative approach with emphasis on families in Canada. Prerequisite: One of SOC 100 ou 300.
SOC 301 Sociology of Gender
★3 (fi 6) (either term, 3-0-0). Comparative study of sex roles in selected societies with an emphasis upon contemporary Canada; sex-speciﬁc role behaviors and theories regarding their origin; recent sociological research on the social effects of sex roles. Prerequisite: One of SOC 100 or 300.

SOC 308 Honors Seminar
★3 (fi 6) (either term, 0-3s-0). Introduction to specialization areas in Sociology and Department members involved in teaching and research in these areas. Prerequisite: consent of the Honors Advisor. Note: Restricted to Sociology Honors students. Required ﬁrst term after entering Sociology Honors Program.

SOC 315 Introduction to Social Methodology
★3 (6 6) (either term, 3-0-2). Research design, data collection, and data processing strategies used by sociologists. Topics include research values and ethics, reliability and validity, experimentation, survey research techniques, historical methods, ﬁeld research, and content analysis. Prerequisite: SOC 210.

SOC 321 Youth, Crime and Society
★3 (fi 6) (either term, 3-0-0). A survey of the understanding and treatment of youth in the Canadian criminal justice system. Prerequisite: SOC 225.

SOC 327 Criminal Justice Administration in Canada
★3 (fi 6) (either term, 3-0-0). The evolution and evaluation of the theories of punishment; the law, the police and the courts; penal and reformatory institutions; probation and parole; experiments in reform and rehabilitation. Prerequisite: SOC 225.

SOC 332 Sociological Theorizing: Modernity
★3 (fi 6) (either term, 3-0-0). Using a range of classical and contemporary theories, examines what, if anything, is new in modern society. Prerequisite: SOC 212 or consent of Department.

SOC 333 Sociological Theorizing: The Subject
★3 (fi 6) (either term, 3-0-0). Using a range of classical and contemporary theories, examines the nature of social subjectivities (e.g. male/female, black/white, straight/gay etc.). Prerequisite: SOC 212 or consent of Department.

SOC 334 Sociological Theorizing: Power
★3 (fi 6) (either term, 3-0-0). Using a range of classical and contemporary theories, examines power in society. Prerequisite: SOC 212 or consent of Department.

SOC 342 Socialization
★3 (fi 6) (either term, 3-0-0). The processes of social development and how socio-cultural inﬂuences affect the individual from infancy to old age. Prerequisite: SOC 241 or PSYCO 241.

SOC 343 Collective Formations
★3 (fi 6) (either term, 3-0-0). Analyses of how people form loosely collective formations in relation to contested events and social concerns. Prerequisite: One of SOC 100, 300, 241, or PSYCO 241.

SOC 344 Media Culture and Society
★3 (fi 6) (either term, 3-0-0). Critical examination of the central issues and debates about the media-society relationship. Emphasis on the cultural, political and economic aspects of various media forms/genres, media theories, and audience considerations. Note: Not to be taken by students with credit in SOC 346 and not to be used as the prerequisite for SOC 444 or 477.

SOC 345 Cultural Studies
★3 (fi 6) (either term, 3-0-0). Introduction to theoretical paradigms, methodologies and fundamental concepts of postmodern sociology and cultural studies. Prerequisite: One of SOC 100 or 300.

SOC 346 Media and the Production of Culture
★3 (fi 6) (either term, 3-0-0). Study of the media as cultural industries that contribute to the construction of meaning in contemporary societies. Prerequisite: SOC 312 or 345 or consent of Instructor. Note: This is the prerequisite for SOC 444. SOC 346 may not be taken by students with credit in SOC 344.

SOC 352 Population, Social, and Economic Development
★3 (fi 6) (either term, 3-0-0). Principles of growth and development in their historical context with regard to developed countries, such as Canada, and in their contemporary context with regard to underdeveloped countries. The interrelationships of economic, social and demographic variables in the process of development. Problems of urbanization and industrialization; factors inﬂuencing social change in the modern West or Asia or Latin America or Africa. Prerequisite: One of SOC 100 or 300.

SOC 363 Sociology of Work and Industry
★3 (fi 6) (either term, 3-0-0). Sociological analysis of the changing nature and content of work, its diversity of industrial contexts and organizational forms, and its consequences for individuals and society, from Canadian and comparative perspectives. Prerequisite: One of SOC 100 or 300. Not open to students with credit in SOC 366.

SOC 366 People in Industry
★3 (fi 6) (either term, 3-0-0). Introduction to the sociological analysis of the attitudes and behavior of employees in work organizations, with emphasis on the contemporary Canadian situation. Note: Restricted to Engineering students only. Not open to students with credit in SOC 363.

SOC 367 Knowledge and Human Society
★3 (fi 6) (either term, 3-0-0). The nature and assessment of knowledge (e.g. values and belief systems manifest in art, science, technology) in the context of social systems; the connection between competing systems of knowledge and social change. Prerequisite: One of SOC 100 or 300.

SOC 369 Sociology of Globalization
★3 (fi 6) (either term, 0-3s-0). Critically examines various aspects of globalization from the perspective of world-system studies. Prerequisite: SOC 269.

SOC 370 Racism and Decolonization
★3 (fi 6) (either term, 0-3s-0). Examines decolonizing cultures with an emphasis on racism and its connection to other forms of social inequality, capitalism, multiculturalism and globalization. Prerequisite: SOC 212 or 269.

SOC 372 Sociology of Canadian Development
★3 (fi 6) (either term, 3-0-0). Approaches to understanding the dynamics of Canadian society such as staples, elites, social movements and political economy, and critical theory. Prerequisite: SOC 100.

SOC 375 Sociology of Aging
★3 (fi 6) (either term, 3-0-0). Aging as a socio-cultural phenomenon. Includes aging in relation to the self-concept, family, religion, politics, health, retirement and leisure, housing, attitudes toward death, with particular emphasis on Canadian society. Prerequisite: One of SOC 100 or 300.

SOC 376 Sociology of Religion
★3 (fi 6) (either term, 3-0-0). Religion as a social phenomenon: theories of religious behavior; religious authority and leadership; the individual’s religion and the interchange with other spheres of social life; the role of religion in relation to social change and social integration. Prerequisite: One of SOC 100 or 300.

SOC 377 Sociology of Youth
★3 (fi 6) (either term, 3-0-0). The comparative analysis of youth in various types of societies, with special emphasis on Canada including investigation of social structures and processes inﬂuencing behavior of young people.

SOC 382 Sociology of Health and Illness
★3 (fi 6) (either term, 3-0-0). The distribution of health and illness in human populations, the social psychology of health and illness, and the social organization of health care. Prerequisite: One of SOC 100 or 300.

SOC 389 Gender, Families and Policy
★3 (fi 6) (either term, 3-0-0). Theoretical and empirical dimensions of social policies related to gender and families. Prerequisite: SOC 271 or 301 or consent of Instructor.

SOC 399 Field Placement in Criminology
★3 (fi 6) (either term, 0-16s-0). Supervised work experience and seminar sessions. Note: Restricted to BA (Criminology) students.

SOC 401 Honors Individual Study
★3 (fi 6) (either term, 3-0-0). Individual study opportunity on topics for which no speciﬁc course is currently offered by the Department. Course may be taken once only. Prerequisites: consent of instructor and Honors Advisor. Note: Restricted to Sociology Honors students. Closed to web registration.

SOC 402 Selected Topics in Sociology
★3 (fi 6) (either term, 3-0-0). Content varies from year to year. Topics announced prior to registration period. Prerequisite: One of SOC 100 or 300.

SOC 403 Individual Study
★3 (fi 6) (either term, 3-0-0). Individual study opportunity on topics for which no speciﬁc course is currently offered by the Department. Prerequisite: Consent of Instructor and the Undergraduate Advisor.

SOC 407 Honors Essay I
★3 (fi 6) (either term, 3-0-0). Literature review and proposal stage of Honors Essay completed in SOC 408. Prerequisites: consent of instructor and Honors Advisor. Note: Restricted to Sociology Honors students. Closed to web registration.

SOC 408 Honors Essay II
★3 (fi 6) (either term, 3-0-0). Prerequisites: SOC 407 and consent of instructor and Honors Advisor. Note: Restricted to Sociology Honors students. Closed to web registration.

SOC 410 Multi-Variable Sociological Analysis
★3 (fi 6) (either term, 3-0-2). Further study of the use of multi-variable tabular analysis and multiple correlation/regression in social research. Special emphasis on different types of regression analysis and the causal analysis of social data. Prerequisites: SOC 210 and 315.
SOC 418 Qualitative Methods in Social Research

★(3 (fi 6)) (either term, 3-0-2). Further study of the design and evaluation of qualitative research strategies. Topics include participant observation, ethnomethodology, unobtrusive measures, and document analysis. Prerequisites: SOC 210 and 315.

SOC 420 Selected Topics in Criminal Justice

★(3 (fi 6)) (either term, 3-0-0). Topics may vary annually. Consult Department or instructor prior to registration. Prerequisites: SOC 225 and a 400-level Sociology course in Criminology.

SOC 421 Sociology of Punishment

★(3 (fi 6)) (either term, 3-0-0). Historical and contemporary social underpinnings of punishment in the criminal justice apparatus. Prerequisites: SOC 225 and 327.

SOC 422 Native People and the Canadian Criminal Justice System

★(3 (fi 6)) (either term, 3-0-0). Involvement of Native people as offenders and service-providers in the Canadian criminal justice system. Topics include antecedent conditions, policing, courts, corrections, victimization, crime prevention, and special offender groups. Prerequisite: SOC 327. Note: Not to be taken by students with credit in SOC 402 when dealing with native people and the Canadian criminal justice system.

SOC 423 Crime and Public Policy

★(3 (fi 6)) (either term, 3-0-0). Social responses to criminal behavior, including general public attitudes and government legislation. Topics include police strategies; sentencing options; prediction research, and social prevention. Prerequisites: SOC 225 and 327.

SOC 424 Social Structure and Crime

★(3 (fi 6)) (either term, 3-0-0). Theoretical and empirical analysis of the effects of such variables as urbanization, age, gender and class stratification, the community, and the economy on crime rates; consideration of cross-national differences. Prerequisite: SOC 225 and SOC 315.

SOC 426 Agencies of Social Control

★(3 (fi 6)) (either term, 3-0-0). The study of the way agencies of social control carry out their tasks, including the dynamics within and the interaction among the agencies themselves. Prerequisite: SOC 225.

SOC 428 Social Theory, Crime and Justice

★(3 (fi 6)) (either term, 3-0-0). Key social theories that describe, explain, challenge or deconstruct ‘crime’, and theoretical critiques of contemporary crime-control arrangements. Prerequisite: One of SOC 332, 333 or 334.

SOC 429 Sociology of Law

★(3 (fi 6)) (either term, 3-0-0). Conceptual and practical points of convergence between legal and social theory; processes by which legal rules are created, maintained and changed; law as an instrument of social control and change. Prerequisite: SOC 225.

SOC 430 Women and Crime

★(3 (fi 6)) (either term, 6-0-3). Key concepts, issues and debates with respect to women in the criminal justice system as offenders, defendants, prisoners, and victims. Prerequisite: SOC 225.

SOC 437 The Sociology of Knowledge

★(3 (fi 6)) (either term, 3-0-0). Study of the hypothesis that the forms of social life condition knowledge. Analysis of the versions of this thesis offered by such scholars as: Vico, Marx-Engels, Nietzsche, Scheler, Pareto, Durkheim, Mannheim, and more recent writers. Assessment of their proposed solutions to the social limitations imposed on knowing. Prerequisite: One of SOC 231, 332, 333, 367 or equivalent.

SOC 440 Theories in Social Psychology

★(3 (fi 6)) (either term, 3-0-0). Current theories and related research in social psychology. Prerequisite: SOC 241 or PSYCO 241.

SOC 441 Sociology of Religious Sects

★(3 (fi 6)) (either term, 3-0-0). Examination of conversion, membership maintenance, member disaffiliation, and resource acquisition strategies among religious sects. Emphasis on Canadian examples. Prerequisites: SOC 224 and SOC 376.

SOC 442 Reinforcement and Social Behavior

★(3 (fi 6)) (either term, 3-0-1). Operant principles applied to the fundamental processes of social behavior. An examination of critical studies utilizing a reinforcement perspective. Prerequisite: SOC 241 or PSYCO 241.

SOC 443 Ethnomethodology

★(3 (fi 6)) (either term, 3-0-0). Study of everyday life emphasizing the methods people use to construct a sense of order and meaning. Prerequisite: SOC 241.

SOC 444 Critical Media Studies

★(3 (fi 6)) (either term, 3-0-0). Analysis of media texts as social forms with emphasis on social forces, representation and emerging media technologies. Prerequisite: SOC 346.

SOC 445 Built Environments

★(3 (fi 6)) (either term, 0-3s-0). The significance of social spaces as constituted by architecture, design and artifacts of material culture. Prerequisite: SOC 345 or permission of the Instructor.

SOC 446 Social Psychology and Human Factors Research

★(3 (fi 6)) (either term, 3-0-0). Application of social psychological theories and methods to the investigation of sociological issues in human factors research. Topics include environmental, health care, legal, and organizational analysis. Prerequisites: SOC 241 and 315.

SOC 450 Techniques of Demographic Analysis

★(3 (fi 6)) (either term, 3-0-0). Methods of demographic analysis as applied to census, vital statistics, and surveys. Prerequisite: SOC 251 or consent of Instructor.

SOC 451 Sociology of Human Fertility

★(3 (fi 6)) (either term, 3-0-0). Emphasis on the social, social-psychological, and cultural correlates of human fertility in historical and contemporary contexts; reproductive health programs; prediction and control. Prerequisite: SOC 251 or consent of Instructor.

SOC 452 Mortality and Population Health

★(3 (fi 6)) (either term, 3-0-0). Analysis of variations, trends and patterns of human mortality and morbidity in historical and contemporary contexts; comparisons of the experiences of Canada, other industrialized nations and developing countries with respect to causes of death and illness; demographic aspects of aging and its relationship to morbidity and mortality health surveys and policies. Prerequisite: SOC 251.

SOC 453 The Urban Community

★(3 (fi 6)) (either term, 3-0-0). An examination of the urban community in Canada and other countries from the ecological, social psychological, and social organizational perspectives. Appraisal of community studies. Introduction to community research priorities and methodologies. Prerequisite: SOC 353.

SOC 455 Sociology of Human Migration

★(3 (fi 6)) (either term, 3-0-0). Internal and international migration and its relationship to resources, economic opportunities, societal organization, and urbanization in Canada and other countries; determinants and consequences of migration; adjustment of migrants and policy issues. Prerequisite: SOC 251 or consent of Instructor.

SOC 459 The Demography of Marriage and Family

★(3 (fi 6)) (either term, 3-0-0). Review and analysis of the demographic interrelationships of fertility, mortality, and migration with marriage and the family; a cross-cultural review of historical trends, contemporary patterns and future implications; emphasis on statistical measurement, family planning and policy in the Canadian setting. Prerequisite: SOC 271.

SOC 461 Sociology of Art

★(3 (fi 6)) (either term, 3-0-0). A sociological study of art forms including painting, literature, music, and architecture; cross-cultural analysis of the roles of the artist; the relationship of art forms and movements to different social conditions and social change. Prerequisite: One of SOC 100, or 300.

SOC 462 Science and Society

★(3 (fi 6)) (either term, 3-0-0). Factors in the development of the cognitive and organizational domain of science; interrelations between science and major societal institutions and culture; the future of science and the future of society. Prerequisite: One of SOC 231, 332, 333 or 367.

SOC 466 Selected Topics in Comparativ Societies

★(3 (fi 6)) (either term, 3-0-0). Comparative studies of various regions, cultures and societies. Topics may vary annually. Prerequisite: One of SOC 100 or 300.

SOC 469 Selected Topics in Globalization

★(3 (fi 6)) (either term, 0-3s-0). Topics may vary. Consult department prior to registration. Prerequisite: SOC 369 or consent of Instructor.

SOC 473 Sociology of Death and Dying

★(3 (fi 6)) (either term, 3-0-0). Comparative examination of death and dying in socio-cultural contexts, including theoretical and methodological issues. Prerequisite: SOC 241 or 375.

SOC 475 Advanced Sociology of Aging

★(3 (fi 6)) (either term, 3-0-0). In-depth examination of selected theoretical approaches, methodological issues, and topics of substantive concern in the study of aging and the aged. Prerequisite: SOC 375.

SOC 476 Religion and Societies

★(3 (fi 6)) (either term, 3-0-0). A comparative survey of the major world religions in interaction with the socioeconomic and political structures of various societies. Prerequisite: SOC 376.

SOC 477 Media and Cultural Globalization: Theory and Practice

★(3 (fi 6)) (either term, 0-3s-0). How global flows of people, information, popular entertainment and consumer culture contribute to collective social identities at the local level. Prerequisites: SOC 212 or 269 or 346 or consent of the instructor. Note: Not open to students with credit in SOC 365.
SOC 486 Sociology of Mental Illness
★3 (fi 6) (either term, 3-0-0). Sociological aspects of mental health and illness. Includes historical perspectives, diagnostic issues, and perspectives on causation and treatment. Prerequisite: SOC 22A or 382. Note: Not to be taken by students with credit in SOC 474.

SOC 489 Population and Social Policy
★3 (fi 6) (either term, 3-0-0). The relationship between population phenomena and social policy interventions. Prerequisite: SOC 251 or consent of Instructor.

SOC 490 Sociology and Public Policy
★3 (fi 6) (either term, 3-0-0). Past and present relationship among sociology, social research and social needs, including the impact of sociological research on public policy formation, program development and implementation and program assessment. Prerequisite: ★12 in Sociology.

SOC 491 Gender Studies
★3 (fi 6) (either term, 3-0-0). Advanced study of theoretical and methodological issues in the social stratification of gender roles and statuses. Prerequisite: SOC 301.

SOC 492 Queer-ing the Social
★3 (fi 6) (either term, 0-3s-0). Sex/gender/sexuality as a complex social constellation. Prerequisite: One of SOC 301, 332, 333, 334, W ST 201.

SOC 499 Advanced Field Placement in Criminology
★6 (either term, 0-16s-0). Supervised work experience and seminar sessions. Prerequisite: SOC 399. Note: Restricted to BA (Criminology) students.

Graduate Courses

Note: See also INT D 593 for a course which is offered by more than one Department or Faculty and which may be taken as an option or as a course in this discipline.

SOC 503 Conference Course in Sociology for Graduate Students
★3 (fi 6) (first term, 3-0-0).

SOC 504 Conference Course in Sociology for Graduate Students
★3 (fi 6) (second term, 3-0-0).

SOC 509 Multi-Variable Sociological Analysis
★3 (fi 6) (either term, 3-0-2). Prerequisites: SOC 210 and 315. Note: Not to be taken by students with credit in SOC 411 or 410.

SOC 515 Quantitative Methods in Social Research
★3 (fi 6) (either term, 3-0-2). Prerequisites: SOC 210 and 315 or equivalent. Note: Not to be taken by students with credit in SOC 412 or 417. Not available for credit for students with credit in R SOC 415.

SOC 518 Qualitative Methods in Social Research
★3 (fi 6) (either term, 3-0-2). Prerequisite: SOC 418 or equivalent or permission of Instructor.

SOC 519 Comparative and Historical Methods in Sociological Research
★3 (fi 6) (either term, 3-0-2). Prerequisites: SOC 210 and 315 or equivalent. Note: Not to be taken by students with credit in SOC 419.

SOC 523 Social Theory, Sovereignty and Law
★3 (fi 6) (either term, 0-3s-0).

SOC 524 Advanced Field Placement in Criminal Justice
★6 (fi 12) (either term, 0-40c-0). Prerequisite: consent of Department. Note: restricted to MA (Criminal Justice) students.

SOC 525 Seminar in Criminal Justice
★3 (fi 6) (either term, 0-3s-0).

SOC 526 Seminar in Criminological Theory
★3 (fi 6) (either term, 0-3s-0).

SOC 531 Seminar in the History of Sociological Thought
★3 (fi 6) (either term, 0-3s-0).

SOC 533 Research Design
★3 (fi 6) (second term, 0-3s-0).

SOC 535 Seminar in Contemporary Sociological Theory
★3 (fi 6) (either term, 0-3s-0). Prerequisite: SOC 333.

SOC 537 Seminar in the Sociology of Knowledge
★3 (fi 6) (either term, 0-3s-0).

SOC 540 Seminar in Social Psychology
★3 (fi 6) (either term, 0-3s-0). Prerequisite: SOC 241.

SOC 543 Culture and Communication
★3 (fi 6) (either term, 0-3s-0).

SOC 545 Biologically Coordinated Sociology
★3 (fi 6) (either term, 0-3s-0).

SOC 552 Mortality and Population Health
★3 (fi 6) (either term, 3-0-0). Prerequisite: SOC 251. Note: Not to be taken by students with credit in SOC 452.

SOC 554 Sociology of Human Migration
★3 (fi 6) (either term, 3-0-0). Prerequisite: SOC 251. Note: Not to be taken by students with credit in SOC 455.

SOC 557 Sociology of Human Fertility
★3 (fi 6) (either term, 3-0-0). Prerequisite: SOC 251. Note: Not to be taken by students with credit in SOC 451.

SOC 558 Techniques of Demographic Analysis
★3 (fi 6) (either term, 3-0-0). Prerequisite: SOC 251. Note: Not to be taken by students with credit in SOC 450.

SOC 559 Seminar in Demography of Marriage and the Family
★3 (fi 6) (either term, 0-3s-0).

SOC 565 Seminar in Work
★3 (fi 6) (either term, 0-3s-0).

SOC 568 Seminar in Ethnic and Minority Relations
★3 (fi 6) (either term, 0-3s-0).

SOC 569 Topics in Globalization
★3 (fi 6) (either term, 0-3s-0).

SOC 576 Seminar in Sociology of Religion
★3 (fi 6) (either term, 0-3s-0).

SOC 580 Colonialism, Post-colonialism and Globalization
★3 (fi 6) (either term, 0-3s-0).

SOC 603 Conference Course
★3 (fi 6) (first term, 3-0-0).

SOC 604 Conference Course
★3 (fi 6) (second term, 3-0-0).

SOC 605 Seminar in Teaching and Professional Skills
★0 (fi 1) (either term, unassigned).

SOC 606 Special Topics I
★1.5 (fi 3) (either term, 0-1.5s-0).

SOC 607 Special Topics II
★1.5 (fi 3) (either term, 0-1.5s-0).

SOC 609 Multivariate Analysis
★3 (fi 6) (first term, 3-0-0). Prerequisites: SOC 509 and 515 or 410 and 417 or equivalent. Note: Formerly SOC 510. Not to be taken by students with credit in SOC 511 or 510.

SOC 616 Structural Equation Modeling with LISREL
★3 (fi 6) (either term, 3-0-0). Prerequisite: SOC 609.

SOC 619 Advanced Methodological Issues
★1.5 (fi 3) (either term, 0-1.5s-0).

SOC 622 Topics in Criminology and Deviance
★3 (fi 6) (either term, 0-3s-0).

SOC 630 Psychoanalytic Social Theory
★3 (fi 6) (either term, 0-3s-0).

SOC 631 Seminar in Advanced Sociological Theory
★3 (fi 6) (either term, 0-3s-0).

SOC 632 Seminar in Theory Construction
★3 (fi 6) (either term, 0-3s-0).

SOC 634 Material and Virtual Culture
★3 (fi 6) (either term, 0-3s-0).

SOC 640 Social Policy
★3 (fi 6) (either term, 0-3s-0).

SOC 656 Topics in Environmental Sociology
★3 (fi 6) (either term, 0-3s-0).

SOC 670 Sociology of Gender and Family
★3 (fi 6) (either term, 0-3s-0).

SOC 672 Social Structure and Public Policy
★3 (fi 6) (either term, 0-3s-0).

SOC 675 Seminar in the Sociology of Aging
★3 (fi 6) (either term, 0-3s-0).

SOC 676 Globalization, Religion and Fundamentalisms
★3 (fi 6) (either term, 0-3s-0).

SOC 683 Seminar in the Sociology of Health and Illness
★3 (fi 6) (either term, 0-3s-0).

SOC 900 Directed Research Project
★3 (fi 6) (variable, unassigned).
Notes

Note: See also Environmental and Conservation Sciences (ENCS), Forest Science (FOR), Plant Science (PL SC), Renewable Resources (REN R), and Inter-disciplinary (INT D) Undergraduate Course listings for related courses.

The following courses were renumbered effective 1996-97:

Undergraduate Courses

**SOILS 210 Introduction to Soil Science and Soil Resources**

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<td>SOILS 425</td>
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<td>SOILS 545</td>
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**SOILS 420 Soil Formation and Landscape Processes**

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**SOILS 430 Soil Biogeochemistry**

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**SOILS 440 Soil Physics**

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**SOILS 450 Soil Environmental Chemistry**

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**SOILS 460 Soil Fertility**

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Graduate Courses

**Spanish, SPAN**

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Notes

(1) The Department reserves the right to place students in the language course appropriate to their level of language skill.
acquisition and to introduce students to aspects of Spanish American literature and culture. Prerequisite: SPAN 300 or 306 or consent of Department.

SPAN 322 Foundational Fictions of Spain

3 (fi 6) (either term, 3-0-0). Readings from selected texts to continue language acquisition and to introduce students to aspects of Spanish literature and culture. Prerequisite: SPAN 300 or 306 or consent of Department.

SPAN 325 Introduction to Cinema

3 (fi 6) (either term, 3-0-0). Some of the major works of film of Spain and/or Spanish America. Prerequisite: SPAN 300 or 306 or consent of Department.

SPAN 330 The Latino Experience Abroad

3 (fi 6) (either term, 3-0-0). Exile, immigration, identity, language, and other questions concerning relocation and cultural and social integration represented in the work of authors from Latin American and Caribbean communities in North America. Note: not to be taken by students with credit in LA ST 330. Does not fulfill any Faculty of Arts Language Other than English requirement. Taught in English.

SPAN 335 The Spanish Caribbean

3 (fi 6) (either term, 3-0-0). Literature and culture in Cuba, Puerto Rico and the Dominican Republic. Prerequisite: SPAN 300 or 306 or consent of Department.

SPAN 341 The ‘Roaring Twenties’ in Transatlantic Perspective

3 (fi 6) (either term, 3-0-0). Cultural production of Spanish America and Spain in the 1920’s. Prerequisite: SPAN 300 or 306 or consent of Department.

SPAN 342 Urban Poetics: The City and Modernity in the Spanish American Avant-gardes

3 (fi 6) (either term, 3-0-0). How avant-garde artists in Spanish America produced contrasting visions of the city. Prerequisite: SPAN 300 or 306 or consent of Department.

SPAN 343 Narrative Fiction and Dramatic Spectacle in Early Modern Spain

3 (fi 6) (either term, 3-0-0). The narrative prose and drama of Golden-Age Spain, incorporating cinematic adaptations of selected early modern works. Prerequisite: SPAN 300 or 306 or consent of Department.

SPAN 360 Latin America in its Literature (in English Translation)

3 (fi 6) (either term, 3-0-0). Relations among the literature, culture, history, and politics of Latin America through a selection of texts originally written in Spanish, Portuguese and/or an indigenous language. Prerequisite: 3 in any senior literature course, or consent of Department. Note: not to be taken by students with credit in LA ST 360 or C LIT 363.

SPAN 370 The Sounds of Spanish

3 (fi 6) (either term, 3-0-0). Sound system of Spanish: phonetics, phonology, evolution of the language. Special attention to the pronunciation differences from English. Prerequisite: SPAN 300 or 306 or consent of Department.

SPAN 371 Meaning and Form in Spanish

3 (fi 6) (either term, 3-0-0). Spanish syntax, semantics, lexical semantics, bilingualism, etc. Special emphasis on their relevance to applied linguistics. Prerequisite: SPAN 300 or 306 or consent of Department.

SPAN 372 History of the Spanish Language

3 (fi 6) (either term, 3-0-0). Focus on the history of Spanish and on different dialects spoken in the Americas. Students will broaden their knowledge of the development of Spanish phonology and grammar and the evolution of the language in the Americas. Prerequisite: SPAN 300 or 306 or consent of Department.

SPAN 399 Special Topics

3 (fi 6) (either term, 3-0-0). Prerequisite: SPAN 300 or 306 or consent of Department.

SPAN 405 Exercises in Translation: Spanish into English

3 (fi 6) (either term, 3-0-0). Prerequisite: 3 at the 300-level numbered above 306 or consent of Department. Note: This course can also be applied to the MLCS Certificate in Translation Studies.

SPAN 406 Exercises in Translation: English into Spanish

3 (fi 6) (either term, 3-0-0). Prerequisite: 3 at the 300-level numbered above 306 or consent of Department. Note: This course can also be applied to the MLCS Certificate in Translation Studies.

SPAN 407 Advanced Grammar and Composition

3 (fi 6) (either term, 3-0-0). Focus on the meanings expressed by different grammatical structures in Spanish, with reference to translation differences with English. Practice of different styles of writing. Prerequisite: SPAN 300 or 306, or consent of Department.

SPAN 409 Topics in Spanish Language

3 (fi 6) (either term, 3-0-0). Prerequisite: SPAN 300 or 306 or consent of Department.

SPAN 440 Topics in Spanish Peninsular Literature and Culture

3 (fi 6) (either term, 3-0-0). Prerequisites: SPAN 321 or 322 and an additional 3 in SPAN at the 300-level excluding 300 and 306, or consent of Department.

SPAN 441 Reading Colonial Culture

3 (fi 6) (either term, 3-0-0). Colonial identities, power and ideology, mobilized through various forms of representation. Prerequisites: SPAN 321 or 322 and an additional 3 in SPAN at the 300-level excluding 300 and 306 or consent of Department.

SPAN 445 The Culture of Democracy

3 (fi 6) (either term, 3-0-0). Cultural production and its interpretation in Spain since 1976. Prerequisites: SPAN 321 or 322 and an additional 3 in SPAN at the 300-level excluding 300 and 306, or consent of Department.

SPAN 455 Literature, War and Revolution in Spanish America

3 (fi 6) (either term, 3-0-0). From European conquest to the twentieth-century revolutions and liberation movements. Prerequisites: SPAN 321 or 322 and an additional 3 in SPAN at the 300-level excluding 300 and 306, or consent of Department.

SPAN 457 Post-dictatorship Culture in the Southern Cone

3 (fi 6) (either term, 3-0-0). Cultural production and consumption in Argentina, Chile and Uruguay since the mid-1980s. Prerequisites: SPAN 321 or 322 and an additional 3 in SPAN at the 300-level excluding 300 and 306, or consent of Department.

SPAN 460 Self Portraits in Writing

3 (fi 6) (either term, 3-0-0). Testimonial writing, biography and autobiography, memoirs, correspondence, diaries, interviews, and confessions. Prerequisites: SPAN 321 or 322 and an additional 3 in SPAN at the 300-level excluding 300 and 306, or consent of Department.

SPAN 475 Spanish in Society

3 (fi 6) (either term, 3-0-0). Language as a social phenomenon. Description of dialects in Spanish. Language shift, bilingualism, language attrition, code-switching and language attitudes. Prerequisite: 3 in SPAN at the 300-level excluding 300 and 306 or consent of Department.

SPAN 476 The Acquisition of Spanish

3 (fi 6) (either term, 3-0-0). Issues relating to the acquisition of Spanish as a second language, education and language policies, and language pedagogy in the literature and in practice. Prerequisite: 3 in SPAN at the 300-level excluding 300 and 306, or consent of Department.

SPAN 478 Issues in Teaching Spanish

3 (fi 6) (either term, 3-0-0). Issues relevant to teaching Spanish as a second language to adult learners. Prerequisite: 3 in SPAN at the 300-level excluding 300 and 306, or consent of Department.

SPAN 495 Honors Thesis

3 (fi 6) (either term, 0-3s-0).

SPAN 499 Special Topics

3 (fi 6) (either term, 3-0-0).

Graduate Courses

SPAN 524 Hispanic Theories of Cultural Studies

3 (fi 6) (either term, 0-3s-0). Prerequisite: consent of Department.

SPAN 530 Visual Arts and Literature

3 (fi 6) (either term, 0-3s-0). Prerequisite: consent of Department.

SPAN 535 Topics in Hispanic Culture

3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

SPAN 536 Visions of Post - Revolutionary Mexico

3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

SPAN 538 Nationalizing the Modern: Tensions in the Latin American Avant-gardes

3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

SPAN 539 Fashioning and Representing the Self in Early Modern Spain

3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

SPAN 541 Reading Colonial Culture

3 (fi 6) (either term, 3-0-0). Colonial identities, power and ideology, mobilized through various forms of representation. Prerequisites: SPAN 321 or 322 and an additional 3 in SPAN at the 300-level excluding 300 and 306, or consent of Department.

SPAN 544 The Culture of Democracy

3 (fi 6) (either term, 3-0-0). Cultural production and its interpretation in Spain since 1976. Prerequisites: SPAN 321 or 322 and an additional 3 in SPAN at the 300-level excluding 300 and 306, or consent of Department.

SPAN 545 Literature, War and Revolution in Spanish America

3 (fi 6) (either term, 3-0-0). From European conquest to the twentieth-century revolutions and liberation movements. Prerequisites: SPAN 321 or 322 and an additional 3 in SPAN at the 300-level excluding 300 and 306, or consent of Department.

SPAN 547 Post-dictatorship Culture in the Southern Cone

3 (fi 6) (either term, 3-0-0). Cultural production and consumption in Argentina, Chile and Uruguay since the mid-1980s. Prerequisites: SPAN 321 or 322 and an additional 3 in SPAN at the 300-level excluding 300 and 306, or consent of Department.

SPAN 560 Self Portraits in Writing

3 (fi 6) (either term, 3-0-0). Testimonial writing, biography and autobiography, memoirs, correspondence, diaries, interviews, and confessions. Prerequisites: SPAN 321 or 322 and an additional 3 in SPAN at the 300-level excluding 300 and 306, or consent of Department.

SPAN 575 Spanish in Society

3 (fi 6) (either term, 3-0-0). Language as a social phenomenon. Description of dialects in Spanish. Language shift, bilingualism, language attrition, code-switching and language attitudes. Prerequisite: 3 in SPAN at the 300-level excluding 300 and 306 or consent of Department.

SPAN 600 Directed Reading

3 (fi 6) (either term, 3-0-0).
231.255 Speech Pathology and Audiology, SPA
Department of Speech Pathology and Audiology
Faculty of Rehabilitation Medicine

Note: All SPA courses are open to SPA students only.

Graduate Courses

SPA 501 Clinical Research Methods
(3 (fi 6)) (either term, 3-0-0). Investigation of strategies for demonstrating scientifically the impact of clinical intervention programs, both for accountability and for contributing to the knowledge base regarding effective treatment. Students will be advised to approach staff members as resources for development of specific projects in anticipation of SPA 900. (Restricted to MsC/SLP students only.)

SPA 502 Anatomy and Physiology of the Speech Mechanism
(4 (fi 8)) (first term, 4-0-2). Lectures and demonstrations provide a systematic study of the gross anatomy and neuroanatomy of the respiratory, phonatory, resonatory, and articulatory subsystems and the physiology of respiration, phonation, and upper airway in speech production and swallowing. The embryological and post-natal development of these systems is considered. Review of the neural substrates underlying speech and language processing is included. Laboratories provide observational and simulated dissection experiences using computer video, anatomical models, and proscribed materials. (Restricted to MsC/SLP students only.)

SPA 504 Speech Science
(3 (fi 6)) (first term, 3-0-1). Study of theoretical and applied aspects of acoustic phonetics, speech perception and speech production, including theory and application of methods (physiological, acoustic and perceptual) to record and analyze speech behaviors. Provides students with basic knowledge for entry into the field of speech-language pathology. Pre- or corequisites: SPA 502 or equivalent, SPA 507 and 515. (Restricted to MsC/SLP students only.)

SPA 507 Phonological Disorders
(3 (fi 6)) (either term, 3-0-2). In-depth study of the nature, assessment and remediation of articulatory/phonological disorders according to various theoretical models. Emphasis will be placed on phonologically based clinical approaches including phonological process analysis and generative phonology. Practical experience in assessment and remediation will be provided through clinical observation and laboratory experiences. (Restricted to MsC/SLP students only.)

SPA 509 Motor Speech Disorders
(3 (fi 6)) (either term, 0-4L-1). Study of dyssarthria and dyspraxia (congenital and acquired) including the nature of their underlying neuropathologies, methods of instrumental and perceptual assessment, and systematic instrumental and behavioral management strategies. Students will develop their understanding of the course material via a series of clinical problem solving and treatment planning exercises. Prerequisites: SPA 502 or equivalent and SPA 505, 507, 511. Pre- or corequisite: SPA 520. (Restricted to MsC/SLP students only.)

SPA 511 Child Language Development and Assessment
(3 (fi 6)) (either term, 0-4L-1). A review of normal language development provides the basis for a comprehensive study of the assessment and identification of children with language disorders. Assessment procedures involve language test administration and interpretation. Discussion of research findings highlights disordered language behaviors associated with such problems as mental retardation, emotional problems, and learning disabilities. The laboratory provides experience in administering a variety of language tests. (Restricted to MsC/SLP students only.)

SPA 515 Hearing Science/Audiology
(3 (fi 6)) (first term, 3-0-1). Study of basic audiometry for speech-language pathologists. Includes anatomy and physiology of the auditory and vestibular systems, theories of hearing, the physics and measurement of sound (including psychophysical methods and psychoacoustics), symptoms, etiology and prognosis of hearing disorders, overview of assessment procedures and instrumentation used in diagnostic audiology, and application of audiometric results to speech-language pathology. Proficiency in hearing and tympanometry screening, including care and maintenance of equipment, is acquired in laboratory sessions. Prerequisites or corequisites: SPA 502. (Restricted to MsC/SLP students only.)

SPA 516 Diagnosis and Appraisal of Communication Disorders
(3 (fi 6)) (either term, 3-0-1). A study of the principles underlying the evaluative and management procedures in communication disorders. History taking, report writing, recording observations, analysis of tests relevant to the clinical process and test procedure administration will be covered. Corequisite: SPA 524. (Restricted to MsC/SLP students only.)

SPA 518 Remediation of Child Language Disorders
(3 (fi 6)) (either term, 0-4L-1). A study of the theoretical models of intervention and clinical application in remediating children’s disordered language patterns. Specific attention focused toward commercial and clinician-generated programs that serve these various theoretical frameworks. Discussion of language goals, intervention strategies and accountability measures that serve to guide the therapeutic process and determine treatment effectiveness. The laboratory provides opportunity to observe therapy and design sample language therapy units. Prerequisite: SPA 511. (Restricted to MsC/SLP students only.)

SPA 520 Adult Language Disorders I
(3 (fi 6)) (either term, 0-4L-0). Study of acquired aphasia including the nature of the underlying neuropathologies, methods of differential diagnosis and comprehensive assessment, and clinically-pertinent behavioral management strategies. Students will develop their understanding of the course material via a series of clinical problem solving and treatment planning exercises. Prerequisite: SPA 502 or equivalent. (Restricted to MsC/SLP students only.)

SPA 521 Dysphagia
(3 (fi 3)) (Spring/Summer, 0-3L-0). Students will understand bases of normal and abnormal feeding and swallowing in children and adults, etiological and conditions common to dysphagia, principles and procedures for diagnosis and treatment across age spans and conditions and complications associated with management; and be able to develop remediation plans and functional goals within an interdisciplinary team framework. Prerequisite: SPA 502 or equivalent. (Restricted to MsC/SLP students.)

SPA 523 Augmentative/Alternative Communication Systems
(1.5 (fi 6)) (either term, 0-2L-0). This course will provide a description of various augmentative/alternative communication systems, including microcomputers. It will address assessment questions and the intervention process for individual users with communication disorders. Prerequisite: SPA 518. (Restricted to MsC/SLP students only.)

SPA 524 Introduction to Clinical Practicum I
(7.5 (fi 15)) (two term, 0-8c-2). Credit. Practical application of clinical procedures under direct supervision. Normally, students will possess an academic background enabling them to assume direct treatment responsibilities with children and adults having disorders of articulation and/or language. A minimum of 48 direct contact hours as well as simulated and indirect contact hours will be accrued. Seminar content will include topics of clinical and/or professional significance such as ethics, health law, private practice, goal setting and data collection. Flexibility in seminar topics will accommodate new topics as they arise. Prerequisites: At least six MsC/SLP courses including SPA 507, 511, 518. Corequisite: SPA 516. (Restricted to MsC/SLP students only.)

SPA 525 Introduction to Clinical Practicum II
(2 (fi 4)) (either term, 0-2c-0). Credit. Continued practical application of clinical procedures under direct supervision. Normally students will acquire experience with alternative service delivery models such as group treatment. A minimum of 25 direct contact hours as well as simulated and indirect contact hours will be accrued. Prerequisite: SPA 524. (Restricted to MsC/SLP students only.)

SPA 526 Voice and Resonance Disorders
(3 (fi 6)) (either term, 3-0-1). A study of the causes, nature, clinical assessment, and management of voice and resonance disorders. Prerequisites: SPA 502 and SPA 505. (Restricted to MsC/SLP students only.)

SPA 527 Language and Literacy
(3 (fi 6)) (either term, 0-4L-0). Study of language development in school-age children and adolescents, with focus on the relationships among oral language, reading, and writing; linguistic tasks faced by these age groups in schools and elsewhere; and implications for language assessment and intervention. Prerequisites: SPA 511 and 518. (Restricted to MsC/SLP students only.)

SPA 528 Fluency
(3 (fi 6)) (either term, 3-0-1). A study of the development, nature and treatment of stuttering with particular emphasis on management strategies. Pre- or corequisite: SPA 501. (Restricted to MsC/SLP students only.)

SPA 529 Adult Language Disorders II
(3 (fi 6)) (either term, 0-4L-0). Study of conditions (other than aphasia) affecting language, social, and cognitive functioning in adults, including traumatic brain injury, dementia, and right hemisphere dysfunction, and issues related to the aging process. Nature of underlying neuropathologies and their implications for
differential diagnosis, assessment, and management will be addressed. Prerequisite: SPA 520. (Restricted to MScSLP students only.)

SPA 532 Advanced Clinical Practicum
★4.5 (fi 6) (either term, 0-12c-0). Credit. Full-time supervised clinical practice normally for a period of six weeks in an approved clinical service facility. Students will have completed all academic course work and will be prepared to work with a broad range of communication disorders under reduced supervision. A minimum of 75 direct contact hours as well as simulated and indirect contact hours will be accrued. Prerequisites: SPA 525 and all MScSLP academic courses. (Restricted to MScSLP students only.)

SPA 533 Advanced Clinical Practicum
★4.5 (fi 9) (either term, 0-12c-0). Credit. Full-time supervised clinical practice normally for a period of six weeks in an approved clinical service facility. Students will have completed all academic course work and will be prepared to work with a broad range of communication disorders under reduced supervision. A minimum of 75 direct contact hours as well as simulated and indirect contact hours will be accrued. Prerequisites: SPA 525 and all MScSLP academic courses. (Restricted to MScSLP students only.)

SPA 534 Aural (Re)habilitation
★3 (fi 6) (either term, 0-4L-0). Study of the diagnostic and treatment strategies for communication problems associated with childhood and adult onset hearing loss. Prerequisites: SPA 505, 507, 511 and 515. (Restricted to MScSLP students only.)

SPA 540 Advanced Clinical Practicum
★4.5 (fi 9) (either term, 0-12c-0). Credit. Full-time supervised clinical practice normally for a period of six weeks in an approved clinical service facility. Students will have completed all academic course work and will be prepared to work with a broad range of communication disorders under reduced supervision. A minimum of 75 direct contact hours as well as simulated and indirect contact hours will be accrued. Prerequisites: SPA 532 and 533. (Restricted to MScSLP students only.)

SPA 541 Advanced Clinical Practicum
★4.5 (fi 9) (either term, 0-12c-0). Credit. Full-time supervised clinical practice normally for a period of six weeks in an approved clinical service facility. Students will have completed all academic course work and will be prepared to work with a broad range of communication disorders under reduced supervision. A minimum of 75 direct contact hours as well as simulated and indirect contact hours will be accrued. Prerequisites: SPA 532 and 533. (Restricted to MScSLP students only.)

SPA 550 Linguistic and Cultural Plurality Issues in the Francophone Context
★3 (fi 6) (either term, 0-3L-0). A study of linguistic, social and cultural issues that affect treatment of children and adults in plural language (particularly French-English) contexts. Instruction will be in French. Prerequisite: FRANC 220 and 221 or equivalent, or consent of Department.

SPA 551 Speed of Development, Assessment, and Treatment Considerations in the Francophone Context
★3 (fi 6) (Spring/Summer, 3-0-0). A study of the characteristics of the French language. The course reviews appropriate assessment tools and treatment models for children and adults with speech disorders. A supervised clinical practicum (10 hours) with Francophone clients is included. Restricted to MSc-SLP degree and SLP Certificate students.

SPA 552 Language Development, Assessment and Treatment Considerations in the Francophone Context
★3 (fi 6) (either term, 0-3-0). A study of the characteristics of the French language. The course reviews appropriate assessment tools and treatment models for children and adults with language disorders. A supervised clinical practicum (10 hours) with Francophone clients is included. Restricted to MSc-SLP degree and SLP Certificate students.

SPA 597 Advanced Clinical Practicum
★1-4.5 (variable) (either term, variable). May be repeated. Credit. Full-time supervised clinical practice for a period varying from four to twelve weeks in an approved clinical service facility. Students will have completed all academic course work and will be prepared to work with a broad range of communication disorders under reduced supervision. Direct contact hours as well as simulated and indirect contact hours will be accrued. Prerequisite: SPA 516 and 524 and permission of the department. (Restricted to MScSLP students only.)

SPA 598 Directed Individual Reading and Research
★1-12 (variable) (either term, variable). May be repeated. Prerequisite: consent of Department. (MScSLP)

231.256 Statistics, STAT
Department of Mathematical and Statistical Sciences
Faculty of Science

Note: Statistical software packages will normally be used in courses that contain data analysis.

Undergraduate Courses

Q STAT 141 Introduction to Statistics
★3 (fi 6) (either term, 3-0-0). Random variables and frequency distributions. Averages and variance. The binomial and normal distribution. Sampling distributions and elementary inference. X2-test for contingency tables. Regression and correlation. Analysis of variance. Prerequisite: Pure Mathematics 30 or consent of Department. This course may not be taken for credit if credit has been obtained in any STAT course, or in PSYCO 211 or SOC 210.

Q STAT 151 Introduction to Applied Statistics I
★3 (fi 6) (either term, 3-0-1.5). Data collection and presentation, descriptive statistics. Probability distributions, sampling distributions and the central limit theorem. Point estimation and hypothesis testing. Correlation and regression analysis. Goodness of fit and contingency table. Prerequisite: Pure MATH 30. This course may not be taken for credit if credit has been obtained in any STAT course, or in PSYCO 211 or SOC 210.

STAT 211 Applied Probability
★3 (fi 6) (either term, 3-0-2). Probability models; distribution of one and two random variables; moment generating functions; specific distributions; uniform, binomial, geometric, Poisson, exponential, normal, etc. Markov chains and simple queues. Various applications are considered with emphasis on the analysis of computer systems; simulation techniques are used and the algorithmic approach is used throughout the course. Restricted to Honors and Specialization students in Computing Science and Specialization students in Computational Science (Mathematics). Prerequisites: MATH 115 or equivalent; pre- or corequisite: MATH 120 or 125 or equivalent. Credit may not be obtained for both STAT 221 and STAT 225.

STAT 222 Applied Statistics
★3 (fi 6) (either term, 3-0-2). Sampling distributions; estimation; hypothesis testing; linear regression. Poisson process; simple queues; models and applications which are primarily of interest to computing scientists. Prerequisite: STAT 221. Note: Credit may be obtained for at most one of STAT 222, 286 and 366.

STAT 225 Introductory Statistics for Engineering
★3.8 (fi 6) (either term or Spring/Summer, 3-0-1.5). Descriptive data analysis, Calculus of Probability. Binomial, multinomial, Poisson, normal, beta, exponential, gamma, hypergeometric, and Weibull distributions. Sampling distributions. Estimation, testing hypotheses, goodness-of-fit tests, and one-way analysis of variance. Linear correlation and regression. Sampling. Quality control. Use of a microcomputer software package for statistical analyses in engineering applications. Prerequisite: MATH 100. Corequisite: MATH 101. Credit may not be obtained in STAT 235 if credit has already been obtained in STAT 141, 151, 222, 265, 266; PSYCO 211 or SOC 210. Intended for Engineering students. Other students who take this course will receive ★3.0.

Q STAT 252 Introduction to Applied Statistics II
★3 (fi 6) (either term, 3-0-2). Methods in applied statistics including regression techniques, analysis of variance and covariance, and methods of data analysis. Applications are taken from Biological, Physical and Social Sciences, and Business. Credit may be received in at most one of STAT 252, 319, or 341. Prerequisite: STAT 141 or 151 or equivalent.

Q STAT 265 Elements of Probability and Statistical Theory I
★3 (fi 6) (either term, 3-0-1). Probability, probability distributions for discrete and continuous random variables. Expectations and moments. Linear combinations of independent random variables, Statistical models, parameters and Statistics, methods of estimation, bias and efficiency. Prerequisites: STAT 151 or equivalent or consent of department; MATH 115. Credit may not be obtained for both STAT 265 and STAT 221.

Q STAT 335 Statistical Quality Control and Industrial Statistics
★3 (fi 6) (either term, 3-0-0). Control charts for variables and attributes, Process capability analysis. Acceptance sampling: single and multiple attribute variable acceptance plans. Prerequisite: STAT 235 or 265.

Q STAT 337 Biostatistics
★3 (fi 6) (first term, 3-0-2). Methods of data analysis useful in Biostatistics including analysis of variance and covariance and nested designs, multiple regression, logistic regression and log-linear models. The concepts will be motivated by problems in the life sciences. Applications to real data will be emphasized through the use of a computer package. Prerequisite: STAT 151 and a 200-level Biological Science course. Note: This course may not be taken for credit if credit has already been obtained in STAT 252, 368 or 378.

Q STAT 353 Life Contingencies I
★3 (fi 6) (either term, 3-0-0). Time at death random variables, continuous and discrete insurances; endowments and varying annuities, net premiums and reserves. Prerequisites: MATH 253 and STAT 205. Corequisite: MATH 215. This course cannot be taken for credit if credit has already been obtained in Math 353.

Q STAT 354 Life Contingencies II
★3 (fi 6) (either term, 3-0-0). Analysis of benefits reserves, multiple life functions, multiple decrement models, applications of multiple decrement theory. Prerequisite:
Course Listings

STAT 353 or MATH 353. May be offered in alternate years. This course cannot be taken for credit if credit has already been obtained in Math 354.

STAT 355 Casualty Insurance
(3 (fi 6) (either term, 3-0-0). Utility theory, insurability of risk, the economics of insurance, the ratemaking process, IBNR and chain ladder method, property/casualty loss reserving techniques. Prerequisite: MATH 215, 253, and STAT 265. May be offered in alternate years.

STAT 361 Sampling Techniques
(3 (fi 6) (either term, 3-0-0). Simple random sampling from finite populations, stratified sampling, regression estimators, cluster sampling. Note: This course may only be offered in alternate years. Prerequisite: STAT 265.

STAT 366 Elements of Probability and Statistical Theory II
(3 (fi 6) (either term, 3-0-1). Bivariate and multivariate probability distributions. Functions of random variables. Sampling distributions and the Central Limit Theorem. Point estimation; consistency; sufficiency; UMVU. Confidence intervals and large sample tests. Prerequisites: STAT 265, MATH 215 and MATH 225. Credit may not be obtained for both STAT 366 and either of STAT 222 or 266.

STAT 368 Introduction to Design and Analysis of Experiments
(3 (fi 6) (either term, 3-0-0). Basic principles of experimental design, completely randomized design-one way ANOVA and ANCOVA, randomized block design, Latin square design, Multiple comparisons. Nested designs. Factorial experiments. Prerequisites: STAT 265 and a course in Linear Algebra; MATH 225 recommended.

STAT 378 Applied Regression Analysis
(3 (fi 6) (either term, 3-0-0). Simple linear regression analysis, inference on regression parameters, residual analysis, prediction intervals, weighted least squares. Multiple regression analysis, inference about regression parameters, multicollinearity and its effects, indicator variables, selection of independent variables. Non-linear regression. Prerequisites: STAT 265 and a course in Linear Algebra; MATH 225 recommended.

STAT 400 Industrial Internship Practicum
(3 (first term, 0-3s-0). Required by all students who have just completed a Mathematical Sciences Industrial Internship Program and who are in an Honors or Specialization degree in Statistics. Must be completed during the first academic term following return to full-time studies. Note: A grade of F to A+ will be determined by the student’s job performance as evaluated by the employer, by the student’s performance in the completion of an internship practicum report, and by the student’s ability to learn from the experiences of the Internship as demonstrated in an oral presentation. Prerequisite: WKEXP 953.

STAT 432 Survival Analysis
(3 (fi 6) (either term, 3-0-0). Survival models, model estimation from complete and incomplete data samples, parametric survival models with concomitant variables, estimation of life tables from general population data. Prerequisite: STAT 366.

STAT 441 Applied Statistical Methods for Data Mining
(3 (fi 6) (either term, 2-1s-1). Principles of statistical model building and analysis applied in linear and generalized linear models and illustrated through multivariate methods such as repeated measures, principal components, and supervised and unsupervised classification. Prerequisites: MATH 120 or 125 or equivalent, STAT 252 or 337 or MG TSC 312 or equivalent, and a 300-level course in an area of application.

STAT 453 Risk Theory
(3 (fi 6) (either term, 3-0-0). Classical ruin theory, individual risk models, collective risk models, models for loss severity: parametric models, tail behavior, models for loss frequency, mixed Poisson models; compound Poisson models, convolutions and recursive methods, probability and moment generating functions. Prerequisite: STAT 366.

STAT 454 Topics in Actuarial Science
(3 (fi 6) (either term, 3-0-0). Topics in actuarial mathematics, as selected by the instructor. Prerequisite: STAT 353 or MATH 353. This course may be offered in alternate years.

STAT 455 Loss Model and Credibility Theory
(3 (fi 6) (either term, 3-0-0). Credibility theory: limited fluctuation; Bayesian; Buhlmann, Buhlmann-Straub; empirical Bayes parameter estimation; statistical inference for loss models; maximum likelihood estimation; effect of policy modifications; model selection. Prerequisite: STAT 453. This course may be offered in alternate years.

STAT 471 Probability I

STAT 472 Probability II
(3 (fi 6) (second term, 3-0-0). Sequences of Bernoulli trials, laws of large numbers, normal approximations. Generating functions, recurrent events, random walks. Introduction to Markov chains. Special topics. Prerequisite: STAT 471.

STAT 479 Time Series Analysis
(3 (fi 6) (either term, 3-0-0). Stationary series, spectral analysis, models in time series: autoregressive, moving average, ARMA and ARIMA. Smoothing series, computational techniques and computer packages for time series. Note: This course may be offered only in alternate years. Prerequisite: STAT 366 or consent of Instructor.

Graduate Courses

STAT 501 Directed Study I
(3 (fi 6) (either term, 3-0-2). Basic principles of experimental design, completely randomized design-one way ANOVA and ANCOVA. Randomized block design, Latin square design, Multiple comparisons. Nested designs. Factorial experiments. Each student will give a written report and seminar presentation highlighting statistical methods used in a research project. Prerequisites: STAT 252 or 337 or equivalent and a course in linear algebra. Note: Not open to graduate students in the Department of Mathematical and Statistical Sciences.

STAT 502 Directed Study II
(3 (fi 6) (either term, 3-0-2). Simple linear regression analysis, inference on regression parameters, residual analysis, prediction intervals, weighted least squares. Multiple regression analysis, inference about regression parameters, multicollinearity and its effects, indicator variables, selection of independent variables. Non-linear regression. Each student will give a written report and seminar presentation highlighting statistical methods used in a research project. Prerequisite: STAT 337 or equivalent and a course in linear algebra. Note: Not open to graduate students in the Department of Mathematical and Statistical Sciences.

STAT 503 Directed Study III
(3 (fi 6) (either term, 3-0-2). Theory and applications of time series modelling, stationarity, autocorrelation. Spectral properties, filtering, Box-Jenkins models, seasonality. Each student will give a written report and seminar presentation highlighting statistical methods used in a research project. Prerequisite: STAT 366 or consent of Instructor.

STAT 510 Techniques of Mathematics for Statistics
(3 (fi 6) (either term, 3-0-0). Introduction to mathematical techniques commonly used in theoretical Statistics, with applications. Applications of diagonalization results for real symmetric matrices, and of continuity, differentiation, Riemann-Stieltjes integration and multivariable calculus to the theory of Statistics including least squares estimation, generating functions, distribution theory. Prerequisite: consent of Department.

STAT 512 Topics in Actuarial Science
(3 (fi 6) (either term, 3-0-0). Topics in actuarial mathematics, as selected by the instructor. Prerequisite: Consent of the Department.

STAT 515 Topics in Actuarial Science
(3 (fi 6) (either term, 3-0-0). Topics in actuarial mathematics, as selected by the instructor. Prerequisite: Consent of the Department.

STAT 517 Risk Theory
(3 (fi 6) (either term, 3-0-0). Classical ruin theory, individual risk models, collective risk models, models for loss severity: parametric models, tail behavior, models for loss frequency, mixed Poisson models; compound Poisson models, convolutions and recursive methods, probability and moment generating functions. Prerequisite: Consent of the Department.

STAT 544 Topics in Actuarial Science
(3 (fi 6) (either term, 3-0-0). Topics in actuarial mathematics, as selected by the instructor. Prerequisite: STAT 353 or MATH 353. This course may be offered in alternate years.

STAT 555 Loss Model and Credibility Theory
(3 (fi 6) (either term, 3-0-0). Credibility theory: limited fluctuation; Bayesian; Buhlmann, Buhlmann-Straub; empirical Bayes parameter estimation; statistical inference for loss models; maximum likelihood estimation; effect of policy modifications; model selection. Prerequisite: Consent of the Department.

STAT 559 Techniques of Statistical Analysis II
(3 (fi 6) (either term, 3-0-0). The contents will be selected each year from applied topics. Prerequisite: consent of Department.

STAT 561 Sample Survey Methodology

STAT 562 Discrete Data Analysis
and closeness of fit; practical aspects. Chi-square tests for categorical data from complex surveys. Prerequisite: STAT 366 or 471.

**STAT 566 Methods of Statistical Inference**


**STAT 571 Probability and Measure**

3 (fi 6) (either term, 3-0-0). Measure and integration, Laws of Large Numbers, convergence of probability measures. Conditional expectation as time permits. Prerequisites: STAT 471 and STAT 512 or their equivalents.

**STAT 575 Multivariate Analysis**

3 (fi 6) (either term, 3-0-0). The multivariate normal distribution, multivariate regression and analysis of variance, classification, canonical correlation, principal components, factor analysis. Prerequisite: consent of Department.

**STAT 578 Regression Analysis**

3 (fi 6) (either term, 3-0-0). Multiple linear regression, ordinary and generalized least squares, partial and multiple correlation. Regression diagnostics, collinearity, model building. Nonlinear regression. Selected topics: robust and nonparametric regression, measurement error models. Prerequisites: STAT 378 and a 400-level statistics course.

**STAT 580 Stochastic Processes**


**STAT 590 Statistical Consulting**

3 (fi 6) (first term, 3-0-0). Data analysis, problem solving, oral communication with clients, issues in planning experiments and collecting data; practical aspects of consulting and report writing. Prerequisite: STAT 588, 578 or their equivalents.

**STAT 600 Reading in Statistics**

3 (fi 6) (either term, 3-0-0). Students will be supervised by an individual staff member to participate in areas of research interest of that staff member. Students can register only with the permission of the Chair of the Department in special circumstances. Will not be counted toward the minimum course requirement for graduate credits.

**STAT 664 Advanced Statistical Inference**


**STAT 665 Asymptotic Methods in Statistical Inference**

3 (fi 6) (either term, 3-0-0). Approximation techniques and asymptotic methods in statistics. Topics may include second and higher order expansions, asymptotics of likelihood based estimation and testing. Edgeworth expansions, exponential tilting, asymptotic relative efficiency, U-, M-, L-, and R-estimation. Prerequisites: STAT 566 or 664 and 512 or the equivalent.

**STAT 671 Probability Theory I**

3 (fi 6) (either term, 3-0-0). Zero-one laws, sums of independent random variables, three-series criterion, laws of iterated logarithm, laws of large numbers, convergence in distribution, characteristic functions. Bochner’s theorem, central limit theorems, discrete tiny martingales. Prerequisite: STAT 571 or MATH 563 or equivalent.

**STAT 672 Probability Theory II**

3 (fi 6) (either term, 3-0-0). Martingales and martingale inequalities, stopping theorems, local martingales, quadratic variation. Wiener and Poisson processes, stochastic integration. Itô’s formula, semimartingales, Girsanov’s theorem, introduction to stochastic differential equations, Markov processes, diffusion. Prerequisite: STAT 671 or equivalent.

**STAT 679 Time Series Analysis**

3 (fi 6) (either term, 3-0-0). The autocorrelation function and spectrum and their estimates. Linear stationary models; autoregressive, moving average, and mixed models. Linear nonstationary models; autoregressive integrated moving average models. Forecasting. Model identification and estimation. Spectral analysis. Prerequisite: STAT 479 or equivalent.

**STAT 766 Topics in Statistics I**

3 (fi 6) (either term, 3-0-0).

**STAT 880 Directed Research Project**

3 (fi 6) (variable, unassigned). Open only to students taking the MSc non-thesis option in statistics.

### 231.257 Statistique, STATQ

**Cours de 1er cycle**

- **STATQ 151 Introduction à la statistique appliquée I**

### 231.258 Strategic Management and Organization, SMO

**Undergraduate Courses**

- **SMO 200 Introduction to Management for Non-Business Students**
  - 3 (fi 6) (either term, 3-0-0). Provides an understanding of the behavior of individuals and groups within the context of the business organization. Topics covered include organizational structure, culture, individual differences, personality, motivation, leadership, groups, decision making, power, politics, conflict, careers, stress, and organizational change. Not for credit in the Bachelor of Commerce program. Not to be taken by students with credit in SMO 101, 201 or 301.

- **SMO 201 Introduction to Management**
  - 3 (fi 6) (either term, 3-0-0). Introduces students to the behavioral, political and organizational dynamics of managerial practice. Topics include management theory, social responsibility, ethics, motivation, decision making, leadership, organizational structure, and strategy.

- **SMO 301 Behavior in Organizations**
  - 3 (fi 6) (either term, 3-0-0). Provides an understanding of the behavior of individuals in organizations. Draws from psychology, sociology, organization theory and covers topics such as personality, motivation, leadership, communication, conflict, and group dynamics. Prerequisite: Not open to students in the Faculty of Business. Open only to students from other faculties where the course is a requirement.

- **SMO 311 HRM: Managing the Work Force in Canada**
  - 3 (fi 6) (either term, 3-0-0). This course is a general overview of human resource management issues in organizations. It focuses on reward systems, the design of work, legal issues, union-management relationships, staffing, and training and development. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

- **SMO 321 Introduction to Strategic Management and Organization Design**
  - 3 (fi 6) (either term, 3-0-0). Explores why organizations such as McDonalds, Northern Telecom, Benetto, Wal-Mart and the University of Alberta use different patterns of organization. Examines the political and behavioral dynamics of management decision making. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

- **SMO 322 Theory of Organizational Behaviour**
  - 3 (fi 6) (either term, 3-0-0). Students who have taken introductory courses in the area will study in greater depth and detail theories of how people work in organizations. These include theories of motivation, leadership, communication, decision making, groups, conflict, change, and others selected by the instructor to cover new ways of thinking about people and organizations. Lecture, case study, and group work will normally be used. Prerequisite: SMO 201 or 301.

- **SMO 402 Management Skills for Supervisors and Leaders**
  - 3 (fi 6) (either term, 3-0-0). The purpose of this course is to increase understanding of leadership roles and skill in exercising those roles. These include team building, managing conflict, delegating, managing participative decision making, creative problem solving, and time and stress management. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.
SMO 404 Interpersonal Communication and Team Management
(3 fi 6) (either term, 3-0-0). This course provides an understanding of interpersonal (or face-to-face) communication process and presents opportunities for personal skill development. Students should expect to engage in role play and to receive feedback on their personal style of communication. Topics include team communication, supervisory-subordinate relationships, influence and persuasion, conflict management, and performance appraisal. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

SMO 405 Gender Issues in Organizations
(3 fi 6) (either term, 3-0-0). This course examines the ways in which gender, personal characteristics and organizational practices interact in influencing women's and men's experiences in work settings. Among the issues discussed are gender differences in career motivation, leadership skills and ability, and conflicts between professional and personal responsibilities. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

SMO 406 Ethical Issues in Business
(3 fi 6) (either term, 3-0-0). This course assists students in developing and refining their personal ethical frameworks by examining issues commonly facing members of business and government organizations. A wide range of issues will be explored including discrimination, product and worker safety, environmental impacts, insider trading, and employee privacy and rights. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

SMO 407 Effective Team Management
(3 fi 6) (either term, 3-0-0). Modern organizations are increasingly seeing their ability to succeed as tied to their ability to better utilize human potential for innovation and creativity, primarily through the increased use of teams and small groups. Teamwork skills are required with increasing frequency, and the ability to build high performing teams is a key management competency. This includes work teams, project teams, and virtual teams. This course will focus on the factors required to transform a group of people into a high performing team. The course will integrate theory and practical skills. Students will learn how to identify healthy and unhealthy team dynamics, and explore team development activities and interventions to improve team performance. Course topics will include: effective team communication, team building, leadership and social influence, decision making processes in teams, conflict management, motivating and teams, virtual teams, and group processes. Students will be encouraged to demonstrate practical skills as well as active learning. Students should be prepared to contribute to role plays, case studies, class presentations, virtual group experiences, and personal style assessments. Prerequisite: SMO 201 or equivalent.

SMO 411 Alternative Dispute Resolution
(3 fi 6) (either term, 3-0-0). Conflict is a part of life which we all encounter. Disagreements occur naturally between friends, co-workers, spouses, employer and employees, organizations, and nations. Conflict is both natural and positive if handled well, but can be destructive if handled badly. This course provides detailed hands-on practical experience with various methods of conflict resolution, especially mediation (third-party assistance) and negotiation. The course concentrates as well on the interpersonal communication skills, including assertiveness, which make effective conflict resolution possible. Prerequisite: SMO 201 or 301.

SMO 412 Effective Negotiations
(3 fi 6) (either term, 3-0-0). This is a comprehensive study of negotiation theory and practice. A negotiation simulation is conducted to provide an understanding of how theory translates into practice. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

SMO 413 Rights in the Work Place
(3 fi 6) (either term, 3-0-0). This is a comprehensive study of rights in the work place. It examines principles of human resource management as guided by statutes and case law by courts and administrative tribunals. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

SMO 414 Work Force Planning
(3 fi 6) (either term, 3-0-0). This Human Resource Management course examines how a company interacts with the labor market to ensure that it has the right number and skill mix of employees. Part of the course involves a field research project in which students critique the work force plan of a local company. Pre- or corequisite: SMO 311. Open to third- and fourth-year students.

SMO 415 Staffing
(3 fi 6) (either term, 3-0-0). This Human Resource Management course is focused on the philosophy and procedures used in obtaining and maintaining an efficient work force. Topics include recruitment, selection and training. Pre- or corequisite: SMO 311. Open to third- and fourth-year students.

SMO 416 Performance Management and Rewards
(3 fi 6) (either term, 3-0-0). This Human Resource Management course focuses on how organizations create and operate a performance management system. It presents an overview of current issues in the field, such as performance evaluation, compensation planning, internal consistency, external competitiveness, individual equity, and benefits. Pre- or corequisite: SMO 311. Open to third- and fourth-year students.

SMO 417 Managing the Work Force: International Perspectives
(3 fi 6) (either term, 3-0-0). This course comparatively explores different techniques of human resource management (HRM) used in Canada, the USA, Japan, Sweden, Germany, and France. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

SMO 418 Public Sector Employee Relations
(3 fi 6) (either term, 3-0-0). This Human Resource Management course examines public sector employee relations in the context of governments, public service commissions, trade unions, and administrative tribunals. It highlights public sector/private sector differences and includes a simulation of public sector labor contract negotiations. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

SMO 423 Power and Organization
(3 fi 6) (either term, 3-0-0). An introduction to aspects of organizational life often omitted in business courses - the role of humor, gossip, emotion and sex; the organization of time and space; the nature of the body and the construction of organizational identities - and consider their significance for understanding contemporary organizational and human resources practices. Prerequisite: Open to third- and fourth-year students only.

SMO 427 Advising Family Business
(3 fi 6) (second term, 3-0-0). In this applied course, students will gain in-depth technical knowledge of the processes, practices and plans that professionals use when advising members of family enterprises. Illustrative topics related to governance include: family councils, family constitutions and family foundations; advisory boards and family offices; delegation and management of professional service firms; family business agreements. Illustrative topics related to the intergenerational transfer of ownership and wealth include taxation issues, wills and estates, freezes, and family trusts. The consulting process itself will also be covered. Prerequisite: SMO 428.

SMO 428 Managing Family Enterprise
(3 fi 6) (either term, 3-0-0). Designed to improve managerial knowledge and practice through improved recognition and understanding of the significance of family firms and of the unique challenges they face. The course is designed primarily for individuals who (a) are members of a family with established business interests; (b) might find themselves working for family controlled firms; c) might find themselves working in a professional capacity with family controlled firms in roles such as accountant, lawyer, banker or consultant. Prerequisite: SMO 201 or 301.

SMO 430 Introduction to Small Business Management
(3 fi 6) (either term, 3-0-0). Focus is specifically on issues related to the establishment of small business enterprises and particular issues related to managing them. This course employs the knowledge already acquired in the Undergraduate Program disciplines (OA, Marketing, Finance, Accounting, etc.) and applies it to case analysis and to the study of existing small businesses in Alberta. Students should be prepared to visit small business sites and to prepare case analyses of their management systems. Prerequisites: SMO 201 or 301. Open to third- and fourth-year students.

SMO 431 New Venture Creation and Organization
(3 fi 6) (either term, 3-0-0). This course explores how small businesses are created and operated. Topics include the entrepreneurial process, opportunity recognition, business planning, mobilizing resources and organization creation. Prerequisite: FIN 301, and SMO 201 or 301.

SMO 432 Managing for Quality
(3 fi 6) (either term, 3-0-0). This course examines what quality management is, how it is used to improve performance, and how an organization can transform itself to a quality management orientation. In addition the history of management thought related to quality management including that of prominent figures such as Taylor, Deming, and Juran is explored. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

SMO 433 Managing Organizational Change
(3 fi 6) (either term, 3-0-0). This course explores how organizations make transitions from one state to another. There is a focus on understanding how management goes about changing corporate culture, organization structure and management systems. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

SMO 434 Managing Professional Service Firms
(3 fi 6) (either term, 3-0-0). This course examines the managerial practices of professional service firms, with particular reference to accounting, law, engineering, and management consultancy firms. The course explores the distinctive governance and governance structures of professional service firms and how these influence the strategic and functional (e.g. marketing, human resource management, quality control) areas of management behavior. Particular attention is given to the problem of innovation and creativity of management practice. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

SMO 435 Managing International Business
(3 fi 6) (either term, 3-0-0). This course explores issues related to managing businesses that operate in an international context. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.
SMO 437 Managing Culture
3 (fi 6) (either term, 3-0-0). This course has two aims: 1) to explore how organizational and work group cultures affect the management of an organization; and 2) to explore how national culture impacts management practice and ‘doing business’ in foreign settings. Prerequisite: SMO 201 or 301. Open to third- and fourth-year students.

SMO 438 Managing Public, Not-for-Profit Organizations
3 (fi 6) (either term, 3-0-0). Many management ideas and practices are derived from private, for-profit organizations. This course examines some of the issues confronting management in the public, voluntary and not-for-profit sectors, for example, health, education, charities, churches, cultural organization and the arts, community groups, aid agencies, etc. It addresses the issues of to what extent and how management in these types of organizations is different from the dominant private sector view of management; the extent to which practices from one sector may be adopted by another, and pressures which lead in this direction, through, for example, funding agencies. Specific issues such as the management of volunteers will also be considered. Prerequisite: SMO 201 or 301.

SMO 441 Business Strategy
3 (fi 6) (either term, 3-0-0). This course examines top management decisions and emphasizes the development of business and corporate strategy. It integrates the management principles studied in the business core using a series of business cases. Guest Faculty members and executives will participate. Prerequisites: FIN 301; MARK 301; and SMO 201.

SMO 442 International Family Enterprise
3 (fi 6) (either term, 3-0-0). International Family Enterprise provides an opportunity for students to investigate issues related to family enterprise in international contexts. Using a combination of theoretical information, written case studies, and presentations from guest speakers the course studies family firms from the perspective of family, ownership and business. The course allows students the opportunity to investigate how non-family businesses can best deal with family influences in their organization. The course looks at family firms operating outside Canada and the US, as well as Canadian family firms with international operations.

SMO 450 Internet Strategy for Small Business
3 (fi 6) (either term, 3-0-0). This course focuses on how consultants prepare client organizations (especially small businesses and not-for-profit, volunteer organizations) for a decision as to how to include the Internet as part of their business strategy. In the initial part of the course students will familiarize themselves with the Internet as it pertains to e-business and not-for-use purposes. In the second part, the course will look at family firms operating outside Canada and the US, as well as Canadian family firms with international operations. Basic Internet skills (e-mail, browsers, using search engines, creating simple web pages) are important although tutorials will be offered for students lacking these skills. Prerequisite: MIS 311 or permission of Instructor.

SMO 488 Selected Topics in Organization Theory
3 (fi 6) (either term, 3-0-0). Normally restricted to third- and fourth-year Business students. Prerequisites: SMO 201, 301 or consent of Department. Additional prerequisites may be required.

SMO 490 Organizational Analysis Competition Part I
1.5 (fi 3) (either term, 0-1.5s-0). Preparation for Student Competition in Organizational Analysis. Prerequisite: consent of Instructor.

SMO 495 Individual Research Project I
3 (fi 6) (either term, 3-0-0). Special study for advanced undergraduates. Prerequisites: consent of Instructor and Assistant Dean, Undergraduate Program.

SMO 496 Individual Research Project II
3 (fi 6) (either term, 3-0-0). Special Study for advanced undergraduates. Prerequisites: SMO 495, consent of the Instructor and Assistant Dean, Undergraduate Program.

SMO 497 Individual Research Project III
3 (fi 6) (either term, 3-0-0). Special Study for advanced undergraduates. Prerequisites: SMO 496, consent of the Instructor and Assistant Dean, Undergraduate Program.

Graduate Courses

SMO 500 Managing People
3 (fi 6) (either term, 3-0-0). Introduces students to organizational behavior (OB) and human resource management (HRM), and how to generate energy and commitment in employees. Examines options relevant to staffing, performance management, reward systems, leadership, motivation, decision making, communication, labor relations, and current issues in the field of management. Credit will not be given for SMO 500 when either SMO 503 or 504 have been completed.

SMO 502 Organization Strategy/Managing Organizations
3 (fi 6) (either term, 3-0-0). The first part of this course examines the formation of business strategy. It recognizes the complexities and messiness of strategy formation and explores how organizations actually develop strategies. The second part examines the evolution, determinants, and relevance of alternative ways of organizing. Contemporary ideas (e.g. re-engineering, the learning organization, virtual organizations) are critically reviewed. Not open to students who have completed SMO 501. Prerequisite: SMO 500.

SMO 543 Business Ethics
1.5 (fi 3) (either term, 18 hours). This course will address ethical aspects of business situations and relationships. It will be emphasized that virtually all business decisions have significant ethical content.

SMO 586 Selected Topics in Organizational Analysis
1.5 (fi 3) (either term, 3-0-0). Topics in this seminar may vary from year to year and are chosen at the discretion of the Instructor.

SMO 612 Effective Negotiations
3 (fi 6) (either term, 3-0-0). This Human Resource Management course is a comprehensive study of negotiation theory and practice. A negotiation simulation is conducted to provide an understanding of how theory translates into practice.

SMO 617 Managing the Work Force: International Perspectives
3 (fi 6) (either term, 3-0-0). This Human Resource Management course comparatively examines different systems of human resources management (HRM) that are used in Canada, the USA, Japan, Sweden, Germany, and France, and their implications for firm competitiveness. Throughout the course, the North American experience serves as the backdrop or frame of reference for analytical discussions.

SMO 628 Managing Family Enterprise
3 (fi 6) (either term, 3-0-0). Designed to improve managerial knowledge and practice through improved recognition and understanding of the significance of family firms and of the unique challenges they face. Designed primarily for individuals who a) are members of a family with established business interests; b) might find themselves working for family controlled firms; c) might find themselves working in a professional capacity with family controlled firms in roles such as accountant, lawyer, banker or consultant.

SMO 631 New Venture Creation and Organization
3 (fi 6) (either term, 3-0-0). This course concentrates on the development of a new enterprise and the management of an existing small business. Casework and projects enable students to assess the opportunities, risks, and capabilities necessary for entrepreneurial success. The course emphasizes the development of skills necessary to start and manage an existing small business.

SMO 632 Managing for Quality
3 (fi 6) (either term, 3-0-0). This course examines what quality management is, how it is used to improve performance, and how an organization can transform itself to a quality management orientation. In addition, the history of management thought related to quality will be studied including that of prominent figures such as Taylor, Deming, and Juran is explored.

SMO 633 Managing Organizational Change
3 (fi 6) (either term, 3-0-0). This course examines organization change, e.g. how organizations make transitions from one state to another. There is also a focus on understanding how management goes about changing corporate culture, organization structure and management systems.

SMO 634 Managing Professional Service Firms
3 (fi 6) (either term, 3-0-0). The course examines the managerial practices of professional service firms, with particular reference to accounting, law, engineering, and management consultancy firms. The course explores the distinctive tasks and governance structures of professional service firms and how these influence the strategic and functional (e.g. marketing; human resource management; quality control) areas of management behavior. Particular attention is given to the problem of innovation and creativity of management practice.

SMO 635 Managing International Business
3 (fi 6) (either term, 3-0-0). This course examines selected topics in managing an international business. It provides an overview of the primary issues. Additional selected topics will be chosen in consultation with the students.

SMO 639 The Process of Making Public Policy
3 (fi 6) (either term, 3-0-0). Emphasizes a systematic and comprehensive approach to the study of developing and implementing public policy within the context of Canadian society. This course explores both the decision-making process, and such factors as the separation of powers between levels of government, electoral politics, interest groups, media and government bureaucracy as they influence the making of public policy.

SMO 640 Implementing Public Policy
3 (fi 6) (either term, 3-0-0). Examines how public policy is implemented in organizations. Topic areas will include: using new knowledge to develop policy; influencing policy; and the role of managers in effectively implementing policy. There will be a strong focus on how public sector managers can effectively design and implement change strategies that take into consideration the organizational structure, systems, leadership, culture and politics. Combines classroom discussion of theoretical concepts with practical applications in organization settings.

SMO 641 Business Strategy
3 (fi 6) (either term, 3-0-0). This course examines top management decisions and emphasizes the development of business and corporate strategy. It integrates the management principles studied in the business core using a series of business
cases. Guest Faculty members and executives will participate. Prerequisite: All required Year one MBA core courses.

SMO 642 International Family Enterprise

International Family Enterprise provides an opportunity for students to investigate issues related to family enterprise in international contexts. Using a combination of theoretical information, written case studies, and presentations from guest speakers, the course studies family firms from the perspective of family, ownership and business. As well, since family business is a prevalent organizational form throughout the world, the course allows students the opportunity to investigate how non-family businesses can best deal with family firms in other countries. The course looks at family firms operating outside Canada and the US, as well as Canadian family firms with international operations and addresses the following general questions: What are the key organizational and strategic issues for family businesses in other countries? How can we best understand the combination of family, ownership and business issues in international family firms? How can Canadian family firms best organize in order to compete internationally?

SMO 643 Strategic Management in the Public Sector

Strategic management in the public sector comprises defining public value, building consensus and support, making decisions, deploying organizational capacity to implement, and managing performance to achieve the desired mission and goals. Addresses the unique complexities, ambiguities and messiness of strategic management in the public sector.

SMO 650 Internet Strategy for Small Business

Focuses on how consultants prepare client organizations (especially small businesses and not-for-profit, volunteer organizations) for a decision as to how to include the internet as part of their business strategy. In the initial part of the course students will familiarize themselves with the internet as it pertains to e-business and not-for-profit uses. In the second part, students will prepare advisory reports for a real business or a not-for-profit organization. Basic internet skills (e-mail, browsers, using search engines, creating simple web pages) are important although tutorials will be offered for students lacking these skills.

SMO 652 Leadership Skills

The purpose of this course is to increase the student's understanding of leadership roles and skill in exercising those roles. These include team building, mentoring, managing conflict, delegating, managing participative decision making, creative problem solving, and time and stress management.

SMO 657 Interpersonal Communication and Team Management

This course provides the understanding of interpersonal (or face-to-face) communication process and presents opportunities for personal skill development. Students should expect to engage in role plays and to receive feedback on their personal style of communication. Topics include team communication supervisory-subordinate relationships, influence and persuasion, conflict management, and performance appraisal.

SMO 658 Technology Commercialization, Knowledge and Organizations

This course will provide students with a broad overview of social scientific research on the organizational contexts, processes and outcomes of technology commercialization. By focusing on knowledge and organization, we will pay particular attention to how the commercialization of technology involves the transformation and transfer of more fundamental knowledge into commercial application. This movement covers a wide array of actors, processes and circumstances development can occur through formal channels within an organization, between organizations, or across organizational fields such as through knowledge spillovers. The course is intended for students interested in gaining a deeper understanding of technology commercialization issues and processes. It will be organized as a seminar where students will be expected to play a key role in sharing the task of presenting and discussing the assigned readings with the professor.

SMO 659 The Strategic Management of Technological Innovation and Commercialization

Provides an overview of key elements and processes related to technological innovation and commercialization. Topics covered include the management of technological innovation in a variety of organizational settings, intellectual property issues, and challenges associated with commercializing new technologies. In addition, students will be introduced to problems related to the identification and evaluation of technology opportunities. The course aims to provide students with tools that can be used to successfully manage technology development from idea generation to market exploitation. This is a required course for MBA students specializing in technology commercialization but is relevant for all students interested in the strategic management of technology.

SMO 660 Introduction to Intellectual Property and New Technology Commercialization

This course provides an understanding of intellectual property in the context of technology transfer and commercialization. Key topics include intellectual property, product development, valuation of technology, capturing value, and securing the deal. It also examines how exploitation of intellectual property is a corporate strategy.

SMO 688 Selected Topics in Behavioral Sciences

Undergraduate Courses

SURG 546 Surgery Student Internship

Student internship for students registered in the MD program.

SURG 556 Surgery Student Internship

Student internship for students registered in the MD Program.

Graduate Courses

SURG 510 Gene Transfection and Expression

This course will prepare graduate students for carrying out projects requiring molecular biology techniques. Topics to be covered include: preparation of competent bacteria; bacterial transformation with gene of interest; growing transformed bacteria in a large scale; isolation of plasmid DNA containing gene of interest; isolation of DNA insert by electrophoresis method to be used as a probe; gene transfection of human mammalian cells such as dermal fibroblasts; preparation of total RNA from transfected and untransfected cells; separation of RNA by gel electrophoresis; RNA blotting and hybridization with probe of interest; DNA labelling; analysis of corresponding protein as a gene product in transfected cells using a variety of techniques including ELISA, Western blot analysis, immunohistochemistry or receptor assay. It will provide students with an understanding of the basic science on which these techniques will be based. This course is intended for Surgical Residents and Fellows working in experimental surgery. Prerequisite: consent of Department.

SURG 520 Directed Reading in Biomedical Research

Lecture series on research techniques in the biomedical sciences intended for students with an advanced medical background. Prerequisite: consent of Department.

SURG 530 Directed Reading in Biology and Medicine

Reading and study of topics in biomedical research of relevance to the student's interest under direction of one or more faculty members.

SURG 555 Microvascular Surgery

The course reviews the fundamentals of microvascular surgery, and then allows supervised instruction in techniques including dissection, vascular anastomosis, mobilization of free flaps of vascularized tissue, transplantation and vein grafts. This course is intended for individuals with an extensive background in the theory and practice of surgery such as Surgery Residents and experienced researchers in the field. Prerequisite: consent of Department.

SURG 570 From Basic to Clinical Immunology

This course will begin with the fundamentals of basic immunology to provide the basis for understanding subsequent clinical immunology lectures. Invited basic science and clinical professionals will also give a lecture on the application of immunology in clinical fields such as transplantation, immunodeficiency, and cancer, followed by a full class discussion. Topics will include: innate and acquired immunity, autoimmunity, transplantation immunology, immunodeficiency, hypersensitivity, tumor immunity, immunology and vaccines. Common and new techniques used in Basic and Clinical Immunology research will also be covered. Intended for students with an advanced medical background. Prerequisite: consent of the Department.

SURG 600 Research Seminar

A weekly series of seminars on current research is held during Fall and Winter Terms. Graduate students must attend and make two presentations in this series.

231.260 Swahili, SWAH

Department of Modern Languages and Cultural Studies

Notes

(1) The Department reserves the right to place students in the language course appropriate to their level of language skill.
Undergraduate Courses

**SWAH 111 Beginners’ Swahili I**
- **3 (fi 6)** (either term, 5-0-0). Introduction to Swahili language and culture. Not to be taken by students with native or near native proficiency, or SWAH 35 or its equivalents in Canada and other countries.

**SWAH 112 Beginners’ Swahili II**
- **3 (fi 6)** (either term, 5-0-0). Continuation of SWAH 111. Prerequisite: SWAH 111 or consent of Department. Not to be taken by students with native or near native proficiency, or SWAH 35 or its equivalents in Canada and other countries.

**SWAH 211 Intermediate Swahili I**
- **3 (fi 6)** (either term, 4-0-0). Intended to consolidate a basic understanding of Swahili language and culture through building upon basic language skills acquired in SWAH 111/112; emphasizing oral proficiency and aural comprehension; writing skills beyond the basic level; introduction to Swahili texts and systematic review of grammar. Prerequisite: SWAH 112 or consent of Department.

**SWAH 212 Intermediate Swahili II**
- **3 (fi 6)** (either term, 4-0-0). Continuation of SWAH 211 and cultural interactive activities with native Swahili speakers through integrating Community Service Learning component. Prerequisite: SWAH 211 or consent of Department.

231.261 Swedish, SWED
Department of Modern Languages and Cultural Studies
Faculty of Arts

Notes
1. The Department reserves the right to place students in the language course appropriate to their level of language skill.
2. Placement tests may be administered in order to assess prior background. Students with a Swedish language background should consult a Department advisor. Such students may be granted advanced placement and directed to register in a more advanced course suitable to their level of ability. Students seeking to fulfill their Language Other than English requirement may begin at any one appropriate level, but must take the full **6** in one language.
3. The Department will withhold credit from students completing courses for which prior background is deemed to make them ineligible. For example, 100-level courses are normally restricted to students with little or no prior knowledge in that language. Should students with matriculation standing or those possessing background (such as native speakers or those for whom it is their first language) register in the 100-level course, credit may be withheld.
4. See also listings under Modern Languages and Cultural Studies (MLCS) and Scandinavian (SCAND).

Undergraduate Courses

**SWED 111 Beginners’ Swedish I**
- **3 (fi 6)** (either term, 5-0-0). Designed to give basic practical skill in everyday spoken and written Swedish. The oral approach, using the laboratory, is followed. Note: not to be taken by students with credit in SWED 100, or with native or near native proficiency, or with Swedish 30 or its equivalents in Canada and other countries.

**SWED 112 Beginners’ Swedish II**
- **3 (fi 6)** (either term, 5-0-0). Prerequisite: SWED 111 or consent of Department. Note: not to be taken by students with credit in SWED 100, or with native or near native proficiency, or with Swedish 30 or its equivalents in Canada and other countries.

**SWED 211 Second-Year Swedish I**
- **3 (fi 6)** (either term, 4-0-0). Reading and study of selected texts in Swedish literature and culture. Conversation and composition. Prerequisite: Swedish 30 (or equivalent) or SWED 112 or consent of Department. Note: not to be taken by students with credit in SWED 200.

**SWED 212 Second-Year Swedish II**
- **3 (fi 6)** (either term, 4-0-0). Prerequisite: SWED 211 or consent of Department. Note: not to be taken by students with credit in SWED 200.
Course Listings

T DES 376 Design Assistantship I
☆★ (fi 6) (two term, 0–6L-0). Practical experience in assisting the designer. Corequisite: T DES 370. Note: A single-term course offered over two terms. Restricted to BFA Drama (Design) students. Not to be taken by students with credit in DRAMA 473 or 493.

T DES 377 Production Design I
☆★ (fi 6) (two term, 0–6L-0). Practical experience in designing an element or elements of a production. Note: A single-term course offered over two terms. Restricted to BFA Drama (Design) students. Not to be taken by students with credit in DRAMA 476.

T DES 378 Drawing II
☆★ (fi 6) (two term, 0–3L-0). Further development and application of drawing techniques with emphasis on drawing for the theatre. Note: A single-term course offered over two terms. Restricted to BFA Drama (Design) students.

T DES 470 Theatre Design III
★☆ (fi 6) (two term, 0–6L-0). A specialized course for advanced students, designed to meet the needs of the individual. Prerequisite: T DES 370. Note: Restricted to BFA Drama (Design) students. Not to be taken by students with credit in DRAMA 570.

T DES 471 Portfolio
★☆ (fi 2) (two term, 0–6L-0). Portfolio assessment. Note: Not to be taken by students with credit in DRAMA 571.

T DES 472 Production Techniques: Costume
☆★ (fi 6) (first term, 0–6L-0). Theory and techniques of stage costume. Note: Restricted to BFA Drama (Design) and (Technical Theatre) students, or consent of department. Not to be taken by students with credit in DRAMA 472 or 484.

T DES 474 Production Techniques: Advanced Costume
☆★ (fi 6) (second term, 0–6L-0). Prerequisite: T DES 473. Note: Restricted to BFA Drama (Design) and (Technical Theatre) students or consent of department. Not to be taken by students with credit in DRAMA 472 or 485.

T DES 475 Topics in the History of Theatre Design
☆★ (fi 6) (either term, 3–0–0). History of design and scenography for the theatre.

T DES 476 Design Assistantship II
★☆ (fi 6) (two term, 0–6L-0). Practical experience in assistant designing. Corequisite T DES 470. Note: Restricted to BFA Drama (Design) students.

T DES 477 Production Design II
☆★ (fi 6) (two term, 0–6L-0). Practical experience in designing an element or elements of a production. Restricted to BFA Drama (Design) students. A single-term course offered over two terms. Not to be taken by students with credit in DRAMA 576.

T DES 479 Practicum
★☆ (fi 6) (two term, 0–9L-0). A practical extension of the production techniques courses, involving the student in the production process of main stage shows. Pre or corequisite: T DES 273, 373, or 473. Note: Not to be taken by students with credit in DRAMA 579.

Graduate Courses

T DES 570 Advanced Theatre Design I
★☆ (fi 6) (two term, 0–6L-0). Note: Restricted to MFA Drama (Design) students.

T DES 571 Advanced Studio Techniques for Theatre Design
☆★ (fi 6) (two term, 0–4L-0). Study and practice of the studio techniques employed in theatre design. Note: A single-term course offered over two terms. Restricted to MFA Drama (Design) students.

T DES 572 Advanced Technical Drawing for Theatre Design
☆★ (fi 6) (either term, 2–0–1). Studies in drafting and perspective drawing for the stage. Note: Restricted to MFA Drama (Design) students.

T DES 573 Advanced Scene Painting
☆★ (fi 6) (two term, 0–6L-0). Note: A single-term course offered over two terms. Restricted to MFA Drama (Design) students.

T DES 575 History of Dress and Decor I
★☆ (fi 6) (either term, 3–0–0). A survey of style in western civilization from the ancients to the Renaissance. Offered in alternate years.

T DES 576 Design Assistantship III
★☆ (fi 6) (two term, 0–6L-0). Practical experience in assistant designing. Note: A single-term course offered over two terms. Restricted to MFA Drama (Design) students.

T DES 577 Production Design III
★☆ (fi 6) (two term, 0–6L-0). Practical experience in designing an element or elements of a production. Note: A single-term course offered over two terms. Restricted to MFA Drama (Design) students.

T DES 578 Advanced Drawing
★☆ (fi 6) (two term, 0–3–0). Development and application of drawing techniques with emphasis on drawing for the theatre. Note: A single-term course offered over two terms. Restricted to MFA Drama (Design) students.

T DES 579 Practicum
☆★ (fi 6) (two term, 0–9L-0). A practical extension of the production techniques courses, involving the student in the production process of main stage shows. Pre or corequisite: T DES 573, 673, or 773. Note: A single-term course offered over two terms. Restricted to MFA Drama (Design) students.

T DES 580 Design for Directors
☆★ (fi 6) (either term, 0–3L-0). Corequisites: DRAMA 660, 661, 680 or 681. Note: Restricted to MFA Drama (Directing) students and MA Drama students (with consent of department). Not to be taken by students with credit in DRAMA 672.

T DES 670 Advanced Theatre Design II
★☆ (fi 6) (two term, 0–8L-0). Note: Restricted to MFA Drama (Design) students.

T DES 671 Advanced Computer Graphics for Theatre Design
☆★ (fi 6) (either term, 2–0–2). Study in practice of computer graphic techniques employed in theatre design. Note: Restricted to MFA Drama (Design) students.

T DES 672 Advanced CAD for the Theatre
☆★ (fi 6) (either term, 2–0–2). Computer aided design for the theatre designer and technician. Note: Restricted to MFA Drama (Design) students.

T DES 673 Advanced Lighting Design
☆★ (fi 6) (two term, 0–6L-0). Note: A single-term course offered over two terms. Restricted to MFA Drama (Design) students.

T DES 675 History of Dress and Decor II
☆★ (fi 6) (either term, 3–0–0). A survey of style in western civilization from the Renaissance to the present. Offered in alternate years.

T DES 676 Design Assistantship IV
☆★ (fi 6) (two term, 0–6L-0). Practical experience in assistant designing. Note: A single-term course offered over two terms. Restricted to MFA Drama (Design) students.

T DES 677 Production Design IV
☆★ (fi 6) (two term, 0–6L-0). Practical experience in designing an element or elements of a production. Note: A single-term course offered over two terms. Restricted to MFA Drama (Design) students.

T DES 770 Advanced Theatre Design III
★☆ (fi 6) (two term, 0–6L-0). Note: Restricted to MFA Drama (Design) students.

T DES 772 Advanced 3D CAD for the Theatre
★☆ (fi 6) (either term, 2–0–2). Exploration, practice and experimentation with 3D CAD for theatrical application. Note: Restricted to MFA Drama (Design) students. Offered in alternate years.

T DES 773 Advanced Costume Techniques
☆★ (fi 6) (two term, 0–6L-0). Note: A single-term course offered over two terms. Restricted to MFA Drama (Design) students.

T DES 775 Advanced Topics in the History of Theatre Design
☆★ (fi 6) (either term, 3–0–0). History of design and scenography for the theatre.

231.263 Thesis, THES
Faculty of Graduate Studies and Research

Graduate Courses

THES 901 Thesis Research
★☆ (fi 2) (either term, unassigned). Represents research activity equivalent to ★1 for registration status and fee assessment purposes. Approval of the Faculty of Graduate Studies and Research required.

THES 902 Thesis Research
★☆ (fi 4) (either term, unassigned). Represents research activity equivalent to ★2 for registration status and fee assessment purposes. Approval of Faculty of Graduate Studies and Research required.

THES 903 Thesis Research
★☆ (fi 6) (either term, unassigned). Represents research activity equivalent to ★3 for registration status and fee assessment purposes.

THES 904 Thesis Research
★☆ (fi 8) (either term, unassigned). Represents research activity equivalent to ★4 for registration status and fee assessment purposes.
UKR 111 Beginners’ Ukrainian I
3 (fi 6) (either term, 5-0-0). For students with little or no background in Ukrainian, the course emphasizes oral communication while developing basic listening, reading and writing skills. Cultural practices are taught as an integral part of the language. Note: not to be taken by students with credit in UKR 100, or with native or near native proficiency, or with Ukrainian 30 or its equivalents in Canada and other countries.

UKR 112 Beginners’ Ukrainian II
3 (fi 6) (either term, 5-0-0). Prerequisite: UKR 111 or consent of Department. Note: not to be taken by students with credit in UKR 100, or with native or near native proficiency, or with Ukrainian 30 or its equivalents in Canada and other countries.

UKR 211 The Ukrainian-speaking World I
3 (fi 6) (either term, 4-0-0). Contemporary language and culture through newspapers, magazines, TV and the Internet. Prerequisite: Ukrainian 30 or equivalent matriculation standing), or UKR 112, or consent of Department. Note: not to be taken by students with credit in UKR 150, 201, 202, 203, 204.

UKR 212 The Ukrainian-speaking World II
3 (fi 6) (either term, 4-0-0). Focus on elementary conversation and composition. Prerequisite: UKR 211 or consent of Department. Note: not to be taken by students with credit in UKR 150, 202, 204.

UKR 300 Ukrainian through its Living Culture I
6 (fi 12) (either term, 3-0-0). Practical language skills with a direct experience of Ukrainian life and culture in the Liviv environment. The language of instruction is Ukrainian. Prerequisite: UKR 204 or consent of Department.

UKR 303 Ukrainian in Context I
3 (fi 6) (either term, 3-0-0). Conversation and writing through films, news items, short stories and plays. Prerequisite: UKR 204 (formerly 150, 202), or consent of Department. Note: not to be taken by students with credit in UKR 401 or 402.

UKR 304 Ukrainian in Context II
3 (fi 6) (either term, 3-0-0). Prerequisite: UKR 303 (formerly 401) or consent of Department. Note: not to be taken by students with credit in UKR 402.

UKR 324 Ukrainian Culture I
3 (fi 6) (either term, 3-0-0). Comparison among contemporary life in Ukraine today, Ukrainian Canadian culture, and traditional village life in the past. Focus is on everyday life and spiritual culture. Language of instruction is English. This course does not fulfill the language other than English requirement of the BA.

UKR 325 Ukrainian Culture II
3 (fi 6) (either term, 3-0-0). Comparison among contemporary life in Ukraine today, Ukrainian Canadian culture, and traditional village life in the past. Focus is on community relationships, arts, recreation, cultural representation and change. This course does not fulfill the language other than English requirement of the BA.

UKR 327 Early Ukrainian-Canadian Culture
3 (fi 6) (either term, 3-0-0). Immigration, settlement, traditions and material culture of Ukrainians in Alberta to 1930, with special reference to activities at the Ukrainian Cultural Heritage Village. Note: This course is given in Spring/Summer only. Language of instruction is English. This course will not fulfill the Language other than English requirement of the BA degree.

UKR 333 Introduction to Ukrainian Fiction
3 (fi 6) (either term, 3-0-0). A beginner’s-friendly course that uses annotated and parallel Ukrainian-English texts to guide students through the basics of reading and analyzing Ukrainian prose in the original. A variety of authors and themes are explored from the 19th to the 21st centuries, providing a perspective on the development of modern Ukrainian identity and culture, while building the student’s Ukrainian reading vocabulary. Prerequisite: UKR 212 or consent of Department.

UKR 400 Ukrainian through its Living Culture II
1 (fi 6) (either term, 3-0-0). Improves students’ language and cultural proficiency through direct experience of contemporary Ukrainian life in Lviv. Prerequisite: UKR 304 or consent of Department.

UKR 403 Ukrainian in the Media and Internet
3 (fi 6) (either term, 3-0-0). Practical language skills in the context of life in Ukraine through traditional and contemporary media. Debates, interviews and opinion polls. Basic discourse analysis. Prerequisite: UKR 304 (formerly 402), or consent of Department.

UKR 404 Ukrainian on TV and in Film
3 (fi 6) (either term, 3-0-0). Advanced language course with creative writing, critiques and discussions. Prerequisite: UKR 304 (formerly 402), or consent of Department.

UKR 405 Children’s Literature in Ukrainian
3 (fi 6) (either term, 3-0-0). Advanced language skills for the future teacher through a survey of poetry, tales, legends and riddles adapted for the young reader. Prerequisite: UKR 304 (formerly 402), or consent of Department.

UKR 406 Business Ukrainian
3 (fi 6) (either term, 3-0-0). Advanced modern Ukrainian with emphasis on the vocabulary and communication style of the Ukrainian business world. Prerequisite: UKR 304 (formerly 402), or consent of Department.

UKR 407 Translating Literature: Ukrainian to English
3 (fi 6) (either term, 3-0-0). Evaluation and comparison of existing translations, and extensive practical exercises. Prerequisite: UKR 304 (formerly 402), or consent of Department.

UKR 411 The Style and Structure of Contemporary Ukrainian
3 (fi 6) (either term, 3-0-0). Ukrainian and its various styles including dialects, jargon and slang. Prerequisite or corequisite: UKR 304 (formerly 402), or consent of Department.

UKR 413 Translation in the Global Economy: Ukrainian-English-Ukrainian
3 (fi 6) (either term, 3-0-0). Ukrainian-English and English-Ukrainian translation with focus on non-literary texts, e.g., journalistic, business, legal, and scientific purposes.

UKR 415 Women in Culture: Fictional Characters/Feminist Writers
3 (fi 6) (either term, 3-0-0). The course delves into the role and representation of women in 19th- and 20th-century Ukraine. It traces the evolution of female characters from Romanticism to Postmodernism and explores contributions by women to the Ukrainian literary and cultural canon. Social issues and sexual politics are examined in the light of women’s biographies as well as their fictional worlds. Note: Readings are available in English for students not taking Ukrainian as a major or minor.

UKR 422 Ukrainian Folk Songs
3 (fi 6) (either term, 3-0-0). A survey of the folk song genres, with analysis of
texts in the original. Some field work. Pre- or corequisite: UKR 303 or consent of Instructor.

**UKR 423 Ukrainian Folk Prose**
\*3 (fi 6) (either term, 3-0-0). A survey of the prose and minor verbal genres, with analysis of texts in the original. Some field work. Prerequisite: UKR 303 or consent of Instructor.

**UKR 424 Ukrainian Folk Belief**
\*3 (fi 6) (either term, 3-0-0). Examination of traditional attitudes toward the supernatural. Focus on folk medicine, the causes of illness, and traditional cures. Prerequisite: UKR 303 or consent of Instructor.

**UKR 425 Ukrainian Rites of Passage**
\*3 (fi 6) (either term, 3-0-0). Examines rites of passage for birth, marriage and death. Some field work. Pre- or corequisite UKR 303 or consent of Instructor.

**UKR 426 Ukrainian Calendar Customs**
\*3 (fi 6) (either term, 3-0-0). Examines seasonal folk customs, including winter, spring, summer and autumn rites. Some field work. Prerequisite: UKR 303 or consent of Instructor.

**UKR 427 Ukrainian Material Culture and Folk Art**
\*3 (fi 6) (either term, 3-0-0). The form, meaning and context of folk art and craft.

**UKR 469 Civilisation and Culture in Ukraine: 988-1794**
\*3 (fi 6) (either term, 3-0-0). Major trends in thought of pre-secular Ukraine. The literary, iconographic and musical legacy of Kyian and Galician-Volhynian Rus’ and its transformation during the Ruthenian renaissance. Lectures in English. Readings available in English for students not taking Ukrainian as a major or minor. Otherwise modern Ukrainian translations will be assigned.

**UKR 471 Ukrainian Romanticism**
\*3 (fi 6) (either term, 3-0-0). Introduces the major themes and genres of Ukrainian Romanticism against the background of early 19th century interest in folklore and history. Readings range from I Kotliarevsky, L Borovykovsky, A Metytsky, and M Kostomarov to P Kulish, with special emphasis on T Shevchenko. Prerequisite: UKR 301; or corequisite: UKR 303 or 304 or consent of Department.

**UKR 472 Ukrainian Realism**
\*3 (fi 6) (either term, 3-0-0). Realist trends in the short story, novel, and drama from the second-half of the 19th-century to the 1920s. Populism, psychology, and class conflict are some of the issues addressed. Prerequisite: UKR 301; or corequisite UKR 303 or 304 or consent of Department.

**UKR 473 Ukrainian Modernism and Avant-Garde**
\*3 (fi 6) (either term, 3-0-0). The dramatic revolt against 19th-century aesthetics from the 1890s to 1930. Selected poetry, short prose, drama, and manifestoes highlight the philosophical and formal innovations introduced by such movements as symbolism, futurism, and constructivism. Analogies are drawn to the visual arts. Prerequisite: UKR 301; or corequisite UKR 303 or 304 or consent of Department.

**UKR 474 Ukrainian Literature: Diaspora and Dissent**
\*3 (fi 6) (either term, 3-0-0). Works in the diaspora (1940s – 1980s) are compared and contrasted with Soviet Ukraine’s official and dissident literature. The focus is on the New York Group and the writers of the Sixties, with emphasis on their contributions to the development of Ukrainian literature in the United States. Some field work. Prerequisite: consent of Instructor. Note: Readings are available in English for students not taking Ukrainian as a major or minor.

**UKR 475 Ukrainian Literature Today**
\*3 (fi 6) (either term, 3-0-0). The course begins with developments on the eve of Ukrainian independence (1991). The dramatic transformation of literature is surveyed against the background of the collapse of communism and socialist realism. Emphasis is on the youngest and most radical generation of writers and critics, their styles, themes, and ideologies. Prerequisite: consent of Department. Note: Readings are available in English for students not taking Ukrainian as a major or minor.

**UKR 495 Honors Thesis**
\*3 (fi 6) (either term, 0-3e-0).

**UKR 499 Special Topics**
\*3 (fi 6) (either term, 3-0-0).

### Graduate Courses

**UKR 503 Ukrainian in the Media and Internet**
\*3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

**UKR 504 Ukrainian on TV and in Film**
\*3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

**UKR 515 Early-Modern Ukrainian Poetry and Drama (1550s-1780s)**
\*3 (fi 6) (either term, 3-0-0). The impact of humanistic theory on the linguistic and formal features of occasional verse, religious lyric, school drama, and political dialogue. Course also considers the alternative poetics of the love lyric, the puppet theatre, and the oral epic. Authors include H Sмотрицький, K Sakovskyh, L Baronovych, I Velychkowsky, S lavonky, T Prokopovych, M Dovhalevsky, and H Skovoroda. Reading knowledge of Middle Ukrainian (i.e., Ruthenian) or Polish or Latin desirable. Prerequisite: consent of Department.

**UKR 516 Early-Modern Ukrainian Prose (1550s-1780s)**
\*3 (fi 6) (either term, 3-0-0). A study of the impact of humanistic rhetoric on polemical prose, religious oratory, diaries, philosophical tracts, and colloquies. The radical transformation of discourse is illustrated by selections drawn from the Cossack Chronicles. Authors include Z Kopyystersky, I Vysmensky, and H Skovoroda; I Galiatovsky, D Tuptalo and A Radvylovska; P Drlyk, H Hrabianka, and S Velychko. Reading knowledge of Middle Ukrainian (i.e., Ruthenian) or Polish or Latin desirable. Prerequisite: consent of Department.

**UKR 522 Ukrainian Folk Songs**
\*3 (fi 6) (either term, 3-0-0). A survey of the folk song genres, with analysis of texts in the original. Some field work. Prerequisite: consent of Department.

**UKR 523 Ukrainian Folk Prose**
\*3 (fi 6) (either term, 3-0-0). A survey of the prose and minor verbal genres, with analysis of texts in the original. Some field work. Prerequisite: consent of Department.

**UKR 524 Ukrainian Folk Belief**
\*3 (fi 6) (either term, 3-0-0). Examination of the traditional attitudes towards the supernatural. Focus on folk medicine, the causes of illness, and traditional cures. Prerequisite: consent of Department.

**UKR 525 Ukrainian Rites of Passage**
\*3 (fi 6) (either term, 3-0-0). Examines rites of passage for birth, marriage and death. Some field work. Prerequisite: consent of Department.

**UKR 526 Ukrainian Calendar Customs**
\*3 (fi 6) (either term, 3-0-0). Examines seasonal folk customs, including winter, spring, summer and autumn rites. Some field work. Prerequisite: consent of Department.

**UKR 527 Ukrainian Material Culture and Folk Art**
\*3 (fi 6) (either term, 3-0-0). The form, meaning and context of folk art and craft. Prerequisite: consent of Department.

**UKR 531 History of Ukrainian Folklore Studies**
\*3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

**UKR 532 Ukrainian Folklore in Canada**
\*3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

**UKR 565 Women in Culture: Fictional Characters/Feminist Writers**
\*3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

**UKR 569 Civilisation and Culture in Ukraine: 988-1794**
\*3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

**UKR 571 Ukrainian Romanticism**
\*3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

**UKR 572 Ukrainian Realism**
\*3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

**UKR 573 Ukrainian Modernism and Avant-Garde**
\*3 (fi 6) (either term, 3-0-0). Prerequisite: consent of Department.

**UKR 574 Ukrainian Literature: Diaspora and Dissent**
\*3 (fi 6) (either term, 3-0-0). Focus on theories of exile and the literature of displacement. Prerequisite: consent of Department.

**UKR 575 Ukrainian Literature Today**
\*3 (fi 6) (either term, 3-0-0). Focus on post-colonial theories of art. Prerequisite: consent of Department.

**UKR 631 Ukrainian Folklore Theory Studies**
\*3 (fi 6) (either term, 3-0-0).

**UKR 632 Ukrainian Folklore Research Methods**
\*3 (fi 6) (either term, 3-0-0).

**UKR 645 Studies in Ukrainian Literary Criticism**
\*3 (fi 6) (either term, 3-0-0). Detailed study of major critical texts from the 19th and 20th centuries.

**UKR 697 Topics in Ukrainian Folklore**
\*3 (fi 6) (either term, 3-0-0).

**UKR 698 Topics in Ukrainian Linguistics**
\*3 (fi 6) (either term, 3-0-0).

**UKR 699 Topics in Ukrainian Literature and Culture**
\*3 (fi 6) (either term, 3-0-0).

**UKR 900 Directed Research Project**
\*3 (fi 12) (variable, unassigned).
231.265 University, UNIV  
Faculty of Agricultural, Life and Environmental Sciences

**Undergraduate Courses**

**UNIV 101 First-Year Experience I**  
★2 (fi 4) (either term, 0-3s-0). Topics relevant to successful academic performance including study skills, use of campus resources, stress management, and career planning. Intended for students in the Transitional Year Program. (Native Student Services.) Students in other programs will be assessed four units of fee index (fi 4).

**UNIV 102 First-Year Experience II**  
★2 (fi 4) (second term, 0-3s-0). Exploration and application of university regulations, faculty expectations, pathways to academic excellence, and practical methods for surviving the challenges of first year on campus. Intended for students in the Transitional Year Program. (Native Student Services.) Students in other programs will be assessed four units of fee index (fi 4).

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**231.266 Women’s Studies, W ST**

Women’s Studies Program  
Faculty of Arts

**Undergraduate Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>W ST 201</td>
<td>Introduction to Women's Studies</td>
<td>3 (fi 6)</td>
</tr>
<tr>
<td>W ST 202</td>
<td>Current Issues in Women’s Studies</td>
<td>3 (fi 6)</td>
</tr>
<tr>
<td>W ST 301</td>
<td>History of Feminist Thought</td>
<td>3 (fi 6)</td>
</tr>
<tr>
<td>W ST 302</td>
<td>Feminist Research and Methodologies</td>
<td>3 (fi 6)</td>
</tr>
<tr>
<td>W ST 305</td>
<td>Women and Work</td>
<td>3 (fi 6)</td>
</tr>
<tr>
<td>W ST 310</td>
<td>Gender, Development, and Beyond</td>
<td>3 (fi 6)</td>
</tr>
<tr>
<td>W ST 320</td>
<td>Popular Culture/Feminist Culture</td>
<td>3 (fi 6)</td>
</tr>
<tr>
<td>W ST 332</td>
<td>Contemporary Feminist Theory</td>
<td>3 (fi 6)</td>
</tr>
<tr>
<td>W ST 350</td>
<td>Women and Science</td>
<td>3 (fi 6)</td>
</tr>
<tr>
<td>W ST 360</td>
<td>Race, Class and Gender in Canada</td>
<td>3 (fi 6)</td>
</tr>
</tbody>
</table>

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231.267 Work Experience, WKEXP  
Undergraduate Courses

**231.267.1 Faculty of Agricultural, Life and Environmental Sciences Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>WKEXP 981</td>
<td>Agricultural, Life and Environmental Sciences Work Experience I</td>
<td>3 (fi 9)</td>
</tr>
<tr>
<td>WKEXP 982</td>
<td>Agricultural, Life and Environmental Sciences Work Experience II</td>
<td>3 (fi 9)</td>
</tr>
<tr>
<td>WKEXP 983</td>
<td>Agricultural, Life and Environmental Sciences Work Experience III</td>
<td>3 (fi 9)</td>
</tr>
</tbody>
</table>

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Notes: The courses listed above are part of the University of Alberta's program offerings in the Faculty of Agricultural, Life and Environmental Sciences and the Women’s Studies Program. These courses cover a wide range of topics from feminist research and methodologies to the history of feminist thought and contemporary feminist theory. They also delve into practical aspects of women’s work and the impact of globalization on women's roles. The course WKEXP 981, for example, involves a four-month work placement for students interested in agricultural, life, and environmental sciences. This experiential learning opportunity is designed to provide students with practical experience and exposure to the real-world application of their academic studies.
application of their specialization and the general work environment. Evaluation is based on appraisal of employer and mentor.

**231.267.2 Faculty of Arts Courses**

**WKEXP 801 Arts Work Experience I**

(5 (either term, unassigned). A four-month work placement for Faculty of Arts students participating in the Cooperative Education route. The focus of the work experience will be for the student to gain an appreciation of the work environment related to their discipline. Prerequisite: consent of the Department in which the student is majoring.

**WKEXP 802 Arts Work Experience II**

(5 (either term, unassigned). A four-month work placement for Faculty of Arts students participating in the Cooperative Education route. The focus of the work experience will be for the student to gain an appreciation of the work environment related to their discipline. Prerequisite: WKEXP 801 and consent of the Department in which the student is majoring.

**WKEXP 803 Arts Work Experience III**

(5 (either term, unassigned). A four-month work placement for Faculty of Arts students participating in the Cooperative Education route. The focus of the work experience will be for the student to gain an appreciation of the work environment related to their discipline. Prerequisite: WKEXP 802 and consent of the Department in which the student is majoring.

**WKEXP 962 Psychology Work Experience I**

(5 (either term, unassigned). A four-month work placement for Psychology students in the Faculty of Arts in the Psychology Cooperative Program. The focus of the work experience will be for the student to gain an appreciation of the work environment. Prerequisite: consent of Department.

**WKEXP 963 Psychology Work Experience II**

(5 (either term, unassigned). A four-month work placement for Psychology students in the Faculty of Arts in the Psychology Cooperative Program. The focus of the work experience is to further the student's knowledge of the working world. Prerequisite: WKEXP 962.

**WKEXP 970 Honors Work Term**

(5 (either term, unassigned). Prerequisites: Department and Faculty approval.

**WKEXP 971 Honors Work Assignment**

(5 (either term, unassigned). Prerequisites: Department and Faculty approval.

**231.267.3 Faculty of Business Courses**

**WKEXP 911 Business Work Experience I**

(5 (either term, unassigned). A four-month work placement for Business students admitted into the cooperative education option. The focus of the work experience will be for the student to gain an appreciation of the work environment. Evaluation will be based on the employer’s performance appraisal, the cooperative education coordinator’s site evaluation report, and the student’s performance on the work-term report.

**WKEXP 912 Business Work Experience II**

(5 (either term, unassigned). A four-month work placement for Business students admitted into the cooperative education option. The focus of the work experience will be for the student to perform work directly related to their specialization. Evaluation will be based on the employer’s performance appraisal, the cooperative education coordinator’s site evaluation report, and the student’s performance on the work-term report. Prerequisite: WKEXP 911.

**WKEXP 913 Business Work Experience III**

(5 (either term, unassigned). A four-month work placement for Business students admitted into the cooperative education option. The focus of the work experience will be for the student to perform work directly related to their specialization. Evaluation will be based on the employer’s performance appraisal, the cooperative education coordinator’s site evaluation report, and the student’s performance on the work-term report. Prerequisite: WKEXP 912.

**WKEXP 914 Business Work Experience IV**

(5 (either term, unassigned). An optional fourth four-month work placement for Business students admitted into the cooperative education option. The focus of the work experience will be for the student to perform work directly related to their specialization. Evaluation will be based on the employer’s performance appraisal, the cooperative education coordinator’s site evaluation report, and the student’s performance on the work-term report. Prerequisite: WKEXP 913 and permission of the Business Co-operative Education Office.

**231.267.4 Faculty of Engineering Courses**

**WKEXP 901 Engineering Work Experience I**

(0.5 (either term or Spring/Summer, unassigned). A four-month work placement for Engineering students registered in the Cooperative Education Program. This work experience will provide the student with exposure to the practical application of engineering and the general work environment. Evaluation will be based on the employer’s performance appraisal, the student’s work term report, and the student’s ability to learn from the experiences of the work term. Prerequisite: ENGG 299.

**WKEXP 902 Engineering Work Experience II**

(0.5 (either term or Spring/Summer, unassigned). A four-month work placement for Engineering students registered in the Cooperative Education Program. This work experience will provide the student with exposure to the practical application of engineering and the general work environment. Evaluation will be based on the employer’s performance appraisal, the student’s work term report, and the student’s ability to learn from the experiences of the work term. Prerequisite: WKEXP 901.

**WKEXP 903 Engineering Work Experience III**

(0.5 (either term or Spring/Summer, unassigned). A four-month work placement for Engineering students registered in the Cooperative Education Program. This work experience will provide students with personal involvement in the practice of their engineering discipline commensurate with their level of academic preparation. Evaluation will be based on the employer’s performance appraisal, the student’s work term report, and the student’s ability to learn from the experiences of the work term. Prerequisite: WKEXP 902.

**WKEXP 904 Engineering Work Experience IV**

(0.5 (either term or Spring/Summer, unassigned). A four-month work placement for Engineering students registered in the Cooperative Education Program. This work experience will provide students with personal involvement in the practice of their engineering discipline commensurate with their level of academic preparation. Evaluation will be based on the employer’s performance appraisal, the student’s work term report, and the student’s ability to learn from the experiences of the work term. Prerequisite: WKEXP 903.

**WKEXP 905 Engineering Work Experience V**

(3 (either term or Spring/Summer, unassigned). A four-month work placement for Engineering students registered in the Cooperative Education Program. This work experience will provide students with personal involvement in the practice of their engineering discipline commensurate with their level of academic preparation. Evaluation will be based on the employer’s performance appraisal, the student’s work term report, and the student’s ability to learn from the experiences of the work term. Prerequisite: WKEXP 904.

**WKEXP 906 Engineering Work Experience VI**

(3 (either term or Spring/Summer, unassigned). A four-month work placement for students registered in the Chemical Engineering Biomedical Option or Materials Engineering Biomedical Option. This work experience will provide students with personal involvement in the practice of the biomedical engineering discipline. The work experience plan requires the approval from the Department of Chemical and Materials Engineering prior to registration. At the completion of the four-month work term, student is required to submit a formal research report which will be assessed for credit. Prerequisite: completion of Term 4 in the Chemical Engineering Biomedical Option or Materials Engineering Biomedical Option.

**231.267.5 Faculty of Medicine and Dentistry Courses**

**WKEXP 990 Pharmacology Work Experience I**

(5 (either term or Spring/Summer, unassigned). A required four-month work experience placement for Pharmacology Specialization or Honors students admitted into the Industrial Internship Program. This work experience will expose the student to the practical application of Pharmacology and the general work environment.

**WKEXP 991 Pharmacology Work Experience II**

(5 (either term or Spring/Summer, unassigned). A required four-month work experience placement for Pharmacology Specialization or Honors students admitted into the Industrial Internship Program. This work experience will expose the student to the practical application of Pharmacology and the general work environment.

**231.267.6 Faculty of Physical Education and Recreation Courses**

**WKEXP 399 Professional Experience in Athletic Therapy/Training**

(0 (two term, unassigned). Required for all BPE students enrolled in the Collaborative Specialization in Athletic Therapy program as well as those students who wish to work with Varsity Teams in an Athletic Therapy/Training capacity. The Head Athletic Therapist (Professional Experience Coordinator), who is CATA-certified, will supervise all students. All supervised hours will be eligible for CATA
certification. Prerequisite: consent of Faculty. Note: a significant commitment of outside-class time is required.

231.267 Faculty of Science Courses

WKEXP 401 Chemistry Work Experience
★0 (fi 9) (first term, unassigned). A four-month work placement for Chemistry students admitted to the Industrial Internship program.

WKEXP 402 Chemistry Work Experience
★0 (fi 9) (first term, unassigned). A four-month work placement for Chemistry students admitted to the Industrial Internship program.

WKEXP 411 EAS Work Experience
★0 (f/i 9) (either term or Spring/Summer, unassigned). A four-month work placement for Earth and Atmospheric Sciences students admitted to the Industrial Internship Program. Work Experience course registrations must be contiguous. Prerequisite: WKEXP 411.

WKEXP 412 EAS Work Experience
★0 (fi 9) (either term or Spring/Summer, unassigned). A four-month work placement for Earth and Atmospheric Sciences students admitted to the Industrial Internship Program. Work Experience course registrations must be contiguous. Prerequisite: WKEXP 412.

WKEXP 413 EAS Work Experience
★0 (fi 9) (either term or Spring/Summer, unassigned). A four-month work placement for Earth and Atmospheric Sciences students admitted to the Industrial Internship Program. Work Experience course registrations must be contiguous. Prerequisite: WKEXP 412.

WKEXP 421 Physics and Environmental Physical Sciences Work Experience
★0 (fi 9) (first term, unassigned). A four-month work placement for Physics and Environmental Physical Sciences students admitted to the Industrial Internship Program.

WKEXP 422 Physics and Environmental Physical Sciences Work Experience
★0 (fi 9) (second term, unassigned). A four-month work placement for Physics and Environmental Physical Sciences students admitted to the Industrial Internship Program.

WKEXP 423 Physics and Environmental Physical Sciences Work Experience
★0 (fi 9) (Spring/Summer, unassigned). A four-month work placement for Physics and Environmental Physical Sciences students admitted to the Industrial Internship Program.

WKEXP 921 Computing Science Introductory Work Experience
★0 (fi 9) (either term, unassigned). A required four-month work experience placement for Computing Science Honors or Specialization students admitted into the Industrial Internship Program. The focus of the work experience will be for the student to gain an in-depth appreciation of the computing profession. Prerequisite: WKEXP 921.

WKEXP 931 Psychology Work Experience I
★0 (fi 9) (either term, unassigned). A four-month work placement for Psychology students in the Faculty of Science in the Psychology Industrial Internship Program. The focus of the work experience will be for the student to gain an appreciation of the work environment. Prerequisite: consent of Department. Prerequisite: WKEXP 931.

WKEXP 932 Psychology Work Experience II
★0 (fi 9) (second term, unassigned). A four-month work placement for Psychology students in the Faculty of Science in the Psychology Industrial Internship Program. The focus of the work experience will be for the student to gain further knowledge of the work environment. Prerequisite: WKEXP 931.

WKEXP 933 Psychology Work Experience III
★0 (fi 9) (either term, unassigned). A four-month work placement for Psychology students in the Faculty of Science in the Psychology Industrial Internship Program. The focus of the work experience is to further the student's knowledge of the working world. Prerequisite: WKEXP 932.

WKEXP 941 Biological Sciences Work Experience I
★0 (fi 9) (either term, unassigned). A four-month work placement for Biological Sciences students admitted into the Industrial Internship Program.

WKEXP 942 Biological Sciences Work Experience II
★0 (fi 9) (either term, unassigned). A four-month work placement for Biological Sciences students admitted into the Industrial Internship Program. Prerequisite: WKEXP 941.

WKEXP 951 Mathematical Sciences Work Experience I
★0 (fi 9) (first term, unassigned). A four-month work placement for Honors and Specialization students in the Mathematical Sciences Industrial Internship Program. The focus of the work experience will be for the student to gain an appreciation of the work environment. Prerequisite: consent of Department.

WKEXP 952 Mathematical Sciences Work Experience II
★0 (fi 9) (second term, unassigned). A four-month work placement for Honors and Specialization students in the Mathematical Sciences Industrial Internship Program. The focus of the work experience will be for the student to gain further knowledge of the work environment. Prerequisite: WKEXP 951.

WKEXP 953 Mathematical Sciences Work Experience III
★0 (fi 9) (Spring/Summer, unassigned). A four-month work placement for Honors and Specialization students in the Mathematical Sciences Industrial Internship Program. The focus of the work experience is to further the student's knowledge of the working world. Prerequisite: WKEXP 952.

231.268 Writing, WRITE

Undergraduate Courses

WRITE 294 Introduction to Writing Poetry
★3 (fi 9) (either term, 3-0-0). Lectures and workshops in which the student will be required to write poetry. Prerequisites: ★6 of junior English (or equivalent), and consent of Instructor(s) based on a portfolio (see Instructor for deadline).

WRITE 295 Introduction to Writing Fiction
★3 (fi 9) (either term, 3-0-0). Lectures and workshops in which the student will be required to write prose. Prerequisites: ★6 of junior English (or equivalent), and consent of Instructor(s) based on a portfolio (see Instructor for deadline).

WRITE 298 Introduction to Writing Nonfiction
★6 (fi 12) (two term, 3-0-0). To increase the student’s ability to write clear nonfiction prose. Models of prose style will be central, combined with frequent practice in writing on the basis of such models. Prerequisite: ★6 of junior English (or equivalent).

WRITE 392 Intermediate Poetry
★3 (fi 12) (either term, 3-0-0). Lectures and workshops focusing on selected poetic technique and form. Prerequisite: WRITE 294 unless waived by Instructor. Consult Instructor for portfolio deadline

WRITE 393 Intermediate Fiction
★3 (fi 6) (either term, 3-0-0). Lectures and workshops focusing on selected fiction techniques and form. Prerequisite: WRITE 294 unless waived by Instructor. Consult Instructor for portfolio deadline

WRITE 394 Intermediate Creative Writing: Poetry
★6 (fi 12) (two term, 3-0-0). Lectures and workshops focusing on selected poetic techniques and forms. Prerequisite: WRITE 294 unless waived by Instructor. Consult Instructor for portfolio deadline

WRITE 395 Intermediate Creative Writing: Fiction
★6 (fi 12) (two term, 3-0-0). Lectures and workshops focusing on selected fiction techniques and form. Prerequisite: WRITE 294 unless waived by Instructor. Consult Instructor for portfolio deadline.

WRITE 397 Intermediate Nonfiction
★3 (fi 6) (either term, 3-0-0). Lectures and workshops focusing on selected elements of nonfiction technique and form. Prerequisite: WRITE 294 unless waived by Instructor. Consult Instructor for portfolio deadline.

WRITE 398 Intermediate Creative Writing: Nonfiction
★6 (fi 12) (two term, 3-0-0). Prerequisite: WRITE 298 unless waived by Instructor.

WRITE 399 Projects in Genre
★3 (fi 9) (either term, 3-0-0). Lectures and workshops emphasizing innovations across genres and/or specialized writing forms. Note: variable content course which may be repeated. Prerequisite: 200-level WRITE course unless waived by Instructor. Consult Instructor for portfolio deadline.

WRITE 494 Advanced Creative Writing: Poetry
★3 (fi 6) (either term, 3-0-0). Prerequisite: WRITE 394 unless waived by Instructor. Consult Instructor for portfolio deadline.

WRITE 495 Advanced Creative Writing: Fiction
★3 (fi 6) (either term, 3-0-0). Prerequisite: WRITE 395 unless waived by Instructor. Consult Instructor for portfolio deadline.

WRITE 498 Advanced Creative Writing: Nonfiction
★3 (fi 6) (either term, 3-0-0). Prerequisite: WRITE 398 unless waived by Instructor.

WRITE 532 Tutorial: Fourth-Year Combined Honors Creative Writing
★3-6 (variable) (variable, variable). In the third year of the Combined Honors in
231.269 Writing Studies, WRS
Faculty of Arts

Undergraduate Courses

WRS 101 Exploring Writing
3 (fi 6) (either term, 0-3s-0). This workshop course focuses on both the theory and practice of the writing process to help students experience firsthand how university writers enter into rich ongoing conversations by engaging with the words and ideas of others.

231.270 Zoology (Biological Sciences), ZOOL
Department of Biological Sciences
Faculty of Science

Notes

(1) See the following sections for listings of other Biological Sciences courses: Bioinformatics (BIOM); Biology (BIOL); Botany (BOT); Entomology (ENT); Genetics (GENET); Microbiology (MICR).
(2) See the following sections for listings of other relevant courses: Interdisciplinary Studies (INT D); Immunology and Infection (IMIN); Marine Science (MA SC); Paleontology (PALEO).

Undergraduate Courses

ZOOL 224 Vertebrate Diversity
3 (fi 6) (first term, 3-0-3). A comparative survey of vertebrates, focusing on their morphology, classification, and phylogeny. Prerequisite: BIOL 108.

ZOOL 241 Animal Physiology I: Homeostasis
3 (fi 6) (first term, 3-1s-0). Survey of physiological systems that regulate levels of gases, food, energy, temperature, water, and ions. Examples from invertebrates and vertebrates. Students with credit in PHYSYL 210 may not obtain credit in ZOOL 241. Prerequisite: BIOL 107.

ZOOL 242 Animal Physiology II: Intercellular Communication
3 (fi 6) (second term, 3-1s-0). Endocrinology, immunology and neural, sensory, motor, and reproductive physiology. Examples from invertebrates and vertebrates. Students with credit in PHYSYL 210 may not obtain credit in ZOOL 242. Prerequisite: BIOL 107.

ZOOL 250 Survey of the Invertebrates
3 (fi 6) (second term, 3-0-3). The functional anatomy and life cycles of the major invertebrate taxa are emphasized. Prerequisite: BIOL 108.

ZOOL 300 Animal Developmental Biology
3 (fi 6) (first term, 3-0-3). An introduction to basic principles in animal development both in vertebrates and invertebrates. This course examines how the molecular, cellular and comparative approaches are integrated to explain the development of the egg into the embryo, and the cellular interactions that culminate in the development of organ systems. Prerequisite: BIOL 201 or CELL 201. Credit may be obtained in only one of ENT 202, ZOOL 202 and ZOOL 303.

ZOOL 325 Comparative Anatomy of the Vertebrates
3 (fi 6) (second term, 3-0-3). A comparative survey of form and function in vertebrate animals. Lectures focus on patterns of evolution and adaptation. Laboratories offer detailed examinations of major organ systems in representative species. Prerequisite: a 200-level ZOOL course; ZOOL 224 strongly recommended. May not be taken for credit if credit already obtained in ZOOL 225.

ZOOL 340 Comparative Environmental Physiology
3 (fi 6) (second term, 3-0-3). A comparative examination of the integrated responses of animals to environmental changes. This course focuses on both the acute physiological and long-term adaptations to dealing with environmental challenges. Focus is on biochemical and physiological responses to extreme environments. Prerequisite: ZOOL 241 or PHYSYL 210 or 211.

ZOOL 342 Neurobiology
3 (fi 6) (second term, 3-0-0). Nerve cells, nervous systems and neuromuscular systems from molecular, physiological, behavioral, and developmental perspectives. Examples from both invertebrates and vertebrates are given. Prerequisite: ZOOL 242 or PHYSYL 210.

ZOOL 343 Comparative Endocrinology
3 (fi 6) (second term, 3-0-0). Endocrine systems and actions of hormones in vertebrates and invertebrates. Prerequisite: ZOOL 242.

ZOOL 344 Laboratory Exercises in Animal Physiology
3 (fi 6) (first term, 1-0-4). Physiological topics are reinforced in experimental lab exercises. Labs include computer simulations, artificial tissue models and animal models. Prerequisite: ZOOL 241 or ZOOL 242 or PHYSYL 210.

ZOOL 351 Freshwater Invertebrate Diversity
3 (fi 6) (first term, 3-0-3). Emphasis is on an identified collection of invertebrates found in Alberta's lakes and streams. Lecture material pertains mainly to ecological features of the various fresh water groups. Prerequisite: ZOOL 250. Offered in alternate years.

ZOOL 352 Principles of Parasitism
3 (fi 6) (first term, 3-3s-0). An introduction to protozoan, helminth and arthropod parasites of animals; principles of host and parasite adaptations, host defense, pathology, epidemiology, and ecology, and control of parasitic infections. World wide web-based laboratory tutorials emphasize morphology, life cycles, behavior, systematics and life history of parasites. Prerequisite: a 200-level Biological Sciences course (ZOO 250 and IMIN 200 recommended).

ZOOL 354 Wildlife Disease
3 (fi 6) (second term, 3-0-3). Occurrence, principles, concepts, causes and significance of disease in wildlife. Laboratory exercises emphasize methods for the study of parasites of wild hosts. Prerequisite: one of BIOL 208, ENCS 376, ZOOL 250.

ZOOL 370 Ethological Mechanisms
3 (fi 6) (first term, 3-0-3). Animal behavior from an ethological perspective, with emphasis on the mechanisms underlying a variety of behaviors. The material is intended to complement that of ZOOL 371. Prerequisite or corequisite: ZOOL 241 or 242. Offered in alternate years.

ZOOL 371 Behavioral Ecology
3 (fi 6) (first term, 3-0-3). Animal behavior from an ecological and evolutionary perspective, with emphasis on social behavior. The material is intended to complement that of ZOOL 370. Prerequisite: BIOL 208.

ZOOL 402 Current Topics in Developmental Biology
3 (fi 6) (second term, 0-3s-0). Discussion of selected topics in animal developmental biology from a molecular and cellular perspective. Evaluation of the primary literature and communication skills are emphasized. Prerequisite: ENT 302, or ZOOL 362 or 363. Credit for this course may be obtained more than once. Offered in alternate years.

ZOOL 405 Biology of Fishes
3 (fi 6) (first term, 3-0-3). A survey of fish diversity focussing on the morphology, systematics, behavior, and ecology of the major groups. Laboratories feature extensive use of departmental collections, with an emphasis on Alberta species. Prerequisites: ZOOL 224 or 225, and a 300-level Biological Sciences course. Offered in alternate years.

ZOOL 407 Biology of Birds
3 (fi 6) (either term, 3-0-3). A survey of bird diversity focussing on the morphology, systematics, behaviour, and ecology of the major groups. Laboratories feature extensive use of departmental collections, with an emphasis on Alberta species. Prerequisites: ZOOL 224 or 225, and a 300-level Biological Sciences course.

ZOOL 408 Biology of Mammals
3 (fi 6) (second term, 3-0-3). A survey of mammal diversity focussing on the morphology, systematics, behavior, and ecology of the major groups. Laboratories feature extensive use of departmental collections, with an emphasis on Alberta species. Prerequisites: ZOOL 224 or 225, and a 300-level Biological Sciences course.

ZOOL 434 Field Course in Animal Ecology
3 (fi 6) (first term, 0-0-6). Design, execution, analysis, and presentation of field problems in behavioral, population, and community ecology in both terrestrial and aquatic habitats. Field problems and independent projects will take place during the two weeks preceding the Fall term at a field station off the main campus. Presentation of results take place during four weeks of class time in September. Prerequisites: BIOL 331 or 332 or ZOOL 371; a statistics course or BIOL 430. Requires payment of additional student instructional support fees. Refer to the Fees Payment Guide in the University Regulations and Information for Students section of the Calendar.

ZOOL 441 Current Topics on Homeostasis
3 (fi 6) (second term, 3-0-3). Discussion of selected topics in cardiac, gut, renal, respiratory, temperature, and metabolic physiology. Evaluation of the primary literature and communication skills are emphasized. Prerequisite: ZOOL 340 or 341. Credit for this course may be obtained more than once. Offered in alternate years.

ZOOL 442 Current Topics in Interccellular Communication
3 (fi 6) (first term, 0-3s-0). Discussion of selected topics in endocrinology, immunology, and neurobiology from molecular, cellular, and whole-animal
perspectives. Evaluation of the primary literature and communication skills are emphasized. Prerequisite: ZOOL 342 or 343 or 352 or PMCOL 371. Credit for this course may be obtained more than once. Offered in alternate years.

**Z O O L 4 5 2** Experimental Parasitology
★3 (fi 6) (second term, 3-0-3). Experimental approaches to the study of parasitism, including topics on ecology, biochemistry, cell biology, genetics, molecular biology, pathology and immunology of host-parasite relationships. Laboratory exercises cover experimental design, methods of collecting and processing host and parasite samples, and evaluation of parasitic infections in hosts. The emphasis is on parasites of laboratory hosts. Prerequisite: ZOOL 352 or MMI 426 or consent of Department.

**Z O O L 4 6 5** Wildlife Population Dynamics
★3 (fi 6) (first term, 3-0-3). Principles and concepts of wildlife population dynamics, and applications for management, harvesting and conservation. Credit cannot be obtained for ZOOL 465 by students who already have credit for BIOL 467. Prerequisite: BIOL 331 or 332.

**Z O O L 4 7 2** Current Problems in Behavioral Ecology
★3 (fi 6) (either term, 3-0-0). Discussion of behavioral problems with ecological implications. Prerequisite: ZOOL 370 or 371 or consent of Department. Offered in alternate years.

**Graduate Courses**

**Notes**

(1) All 300- and 400-level courses in the Department of Biological Sciences may be taken for credit (except for BIOL 490, 498 and 499) by graduate students with approval of the student’s supervisor or supervisory committee.

(2) The following courses may be taken as an option in graduate programs in the Department of Biological Sciences with approval of the student’s supervisor or supervisory committee: BIOCH 510, 520, 530, 541, 550, 555, 560; CHEM 361, 363, 461; CELL 300, 301; IMIN 371, 372, 452; INT D 421; MA SC 400, 401, 402, 410, 412, 420, 425, 430, 437, 440, 445, 470, 480; MMI 405, 415, 520; NEURO 472; NU FS 363; PALEO 418, 419; PHARM 601.

**Z O O L 5 5 2** Advanced Parasitology
★3 (fi 6) (second term, 2-1s-3). Formal lectures, seminars and individual projects emphasize the use of parasites as model systems for the study of fundamental questions in biology. Prerequisites: ZOOL 352 and 452 or consent of Department.