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## 2002-2003 Course Listings

# Course Numbering System

Course numbers are prefixed by the letter code representing the course discipline, as shown below. For reference purposes, the former two-digit numerical prefixes used prior to September 2002 follow the discipline name.

## Prefix Discipline and former numerical prefix

ACUL	Art and Culture (08)
AERO	Aerospace Engineering (87)
ANTH	Anthropology (40)
ARCC	Architecture (77)
ARCH	Architecture (76)
ARCN	Architecture (79)
ARCU	Architecture (78)
ARTH	Art History (11)
BIOC	Biochemistry (63)
BIOL	Biology (61)
BUSI	Business (42)
CDNS	Canadian Studies (12)
CGSC	Cognitive Science (07)
CHEM	Chemistry (65)
CHST	Child Studies (04)
CGSC	Cognitive Science (7)
CIVE	Civil and Environmental Engineering (82)
CLCV	Classical Civilization (13)
CLST	Comparative Literary Studies (17)
CMPS	Computational Sciences (68)
COMP	Computer Science (95)
CRCJ	Criminology and Criminal Justice (48)
DIST	Directed Interdisciplinary Studies (04)
ECON	Economics (41)
ELEC	Electronics (97)
ENGL	English (18)
ESLA	English as a Second Language (21)
ENSC	Environmental Science (62)
ENST	Environmental Studies (57)
ENVE	Environmental Engineering (81)
EURR	European and Russian Studies (55)
FILM	Film Studies (19)
FREN	French (20)
FYSM	First-Year Seminars (01)
GEOG	Geography (45)
GEOL	Geology/Earth Sciences (67)
GERM	German (22)
GREK	Greek (15)

HIST	History (24)
HUMS	Humanities (02)
IDES	Industrial Design (85)
IASS	Interdisciplinary Arts and Social Sciences (04)
INAF	International Affairs (46)
ISCI	Interdisciplinary Science (60)
ISCS	Integrated Science (64)
ISSC	Interdisciplinary Studies - Social Sciences (03)
ITAL	Italian (26)
JAPA	Japanese (23)
JOUR	Journalism and Communication (28)
LALS	Linguistics and Applied Language Studies (29)
LATN	Latin (16)
LAWS	Law (51)
MAAE	Mechanical and Aerospace Engineering (86)
MATH	Mathematics and Statistics (70)
MCOM	Mass Communication (27)
MECH	Mechanical Engineering (88)
MUSI	Music (30)
NSCI	Natural Science (66)
PADM	Public Policy and Administration (50)
PAPM	Public Affairs and Policy Management (58)
PHIL	Philosophy (32)
PHYS	Physics (75)
PSCI	Political Science (47)
PSYC	Psychology (49)
RELI	Religion (34)
SOAN	Sociology-Anthropology (56)
SOCI	Sociology (53)
SOWK	Social Work (52)
SPAN	Spanish (38)
STAT	Statistics (70)
SYSC	Systems and Computer Engineering (94)
TSES	Technology, Society, Environment Studies (59)
WOMN	Women's Studies (44)

## Course Numbering Pattern

The course numbering pattern is as follows:

0001-0099	Courses usually taken in Qualifying University year
1000-1999	Courses usually taken in first year
2000-2999	Courses usually taken in second year
3000-3999	Courses usually taken in third year
4000-4999	Courses usually taken in fourth year
5000-5999	Courses ordinarily taken by graduate students
6000-6999	Courses ordinarily taken by graduate students

# Course Listings

Carleton's course designation has been restructured. The first entry of each course description is the new alphanumeric Carleton course code, followed by its credit value in brackets. The old Carleton course number (in parentheses) is included for reference, where applicable.

Not all courses are offered in a given year. For an up-to-date statement of course offerings for 2002-03 and to determine the term of offering, consult the *Registration Instructions and Class Schedule* booklet, published in the summer and also available online at [www.carleton.ca/cu/programs/sched\\_dates/](http://www.carleton.ca/cu/programs/sched_dates/).

Aerospace Engineering	History
Anthropology	Humanities
Applied Language Studies (AIMESL)	Integrated Science
Architecture	Industrial Design
Art and Culture	Interdisciplinary Arts and Social Sciences
Art History	Interdisciplinary Science
Biochemistry	Interdisciplinary Studies - Social Sciences
Biology	International Affairs
Business	Italian
Canadian Studies	Japanese
Chemistry	Journalism and Communication
Child Studies	Latin
Civil Engineering	Law
Classical Civilization	Linguistics
Cognitive Science	Mass Communication
Comparative Literary Studies	Mathematics
Computational Sciences	Mechanical Engineering
Computer Science	Mechanical and Aerospace Engineering
Criminology and Criminal Justice	Music
Directed Interdisciplinary Studies	Natural Sciences
Earth Sciences (See Geology)	Philosophy
Economics	Physics
Electronics	Political Science
Engineering Core Courses	Psychology
English	Public Affairs and Policy Management
English as a Second Language	Public Policy and Administration
Environmental Engineering	Religion
Environmental Science	Russian
Environmental Studies	Social Work
European and Russian Studies	Sociology
Film Studies	Sociology-Anthropology
First-Year Seminars	Spanish
French	Statistics
Geography (including Geographic Information Processing)	Systems and Computer Engineering
Geology	Technology, Society, Environment Studies
German	Women's Studies
Greek	

## Aerospace Engineering (AERO)

Department of Mechanical and Aerospace  
Engineering  
Faculty of Engineering

AERO 3002 [0.5 credit] (formerly 87.302\*)

### Aerospace Design and Practice

Design approach and phases. Design integration. Influence of mission and other requirements on vehicle configuration. Trade-off studies, sizing and configuration layout. Flight vehicle loads, velocity-load factor diagram. Structural design: overall philosophy, role in design process, methods. Prerequisites: MAAE 2001 and third-year registration. Lectures three hours a week, problem analysis three hours a week.

AERO 3101 [0.5 credit] (formerly 87.311\*)

### Lightweight Structures

Structural concepts; theory of elasticity; bending, torsion and shear in thin-walled beams having single or multi-cell sections; work and energy principles; deformation and force analysis of advanced structures, including stiffened thin-wall panels; finite element methods. Stability and buckling of thin-walled structures.

Prerequisite: MAAE 3202.

Lectures three hours a week; problem analysis and laboratories one hour a week.

AERO 3700 [0.5 credit] (formerly 87.370\*)

### Aerospace Materials

Properties, behaviour and manufacturing methods for metals, polymers and ceramics used in aerospace applications. Specialty alloys for gas turbines. Properties and manufacture of aerospace composites. Behaviour of materials in space.

Prerequisite: MAAE 2700.

Lectures three hours a week; problem analysis and laboratories one hour a week.

AERO 4003 [0.5 credit] (formerly 87.403\*)

### Aerospace Systems Design

Stress and deflection analysis; fatigue, safe life, damage tolerant design. Propulsion systems integration; landing gear; control and other subsystems. Mechanical component design. Airworthiness regulations and certification procedures. Weight and cost estimation and control. System reliability. Design studies of aircraft or spacecraft components.

Prerequisite: MAAE 3202 and AERO 3002.

Lectures three hours a week, problem analysis three hours a week.

AERO 4300 [0.5 credit] (formerly 87.430\*)

### Acoustics and Noise Control

Behaviour of compressible fluids, sound waves and properties of sound sources; measurement of sound; human perception of sound; prediction methods based on energy considerations; sound propagation in realistic environments: outdoors, rooms, ducts; absorption and transmission loss, noise control; case studies.

Prerequisite: MATH 3705 and fourth-year registration.

Lectures three hours a week.

AERO 4302 [0.5 credit] (formerly 87.432\*)

### Aerodynamics & Heat Transfer

Differential equations of motion. Viscous and inviscid regions. Potential flow: superposition; thin airfoils; finite wings; compressibility corrections. Viscous flow: thin shear layer approximation; laminar layers; transition; turbulence modeling. Convective heat transfer: free versus forced convection; energy and energy integral equations; turbulent diffusion. Also offered at the graduate level, with additional or different requirements, as MECH 5000, for which additional credit is precluded.

Prerequisite: MAAE 3300.

Lectures three hours a week.

AERO 4304 [0.5 credit] (formerly 87.434\*)

### Computational Fluid Dynamics

Differential equations of motion. Numerical integration of ordinary differential equations. Potential flows: panel methods; direct solution; vortex-lattice methods. Finite-difference formulations: explicit versus implicit methods; stability. Parabolized and full Navier-Stokes equations; conservation form. Transonic and supersonic flows: upwind differencing. Grid transformations. Computer-based assignments.

Prerequisite: AERO 4302.

Lectures three hours a week.

AERO 4306 [0.5 credit] (formerly 87.436\*)

### Aerospace Vehicle Performance

Morphology of aircraft and spacecraft. Performance analysis of fixed wing aircraft: drag estimation, propulsion, take-off, climb and landing, endurance, payload/range, manoeuvres; operational economics. Performance analysis of rotor craft: rotor-blade motion, hovering and vertical ascent, forward flight, and autorotation. Rocket propulsion; escape velocity; orbital dynamics.

Prerequisite: MAAE 3300.

Lectures three hours a week.

AERO 4308 [0.5 credit] (formerly 87.438\*)

### Aircraft Stability & Control

Static stability and control: equilibrium requirements; longitudinal stability requirements; neutral points; manoeuvring flight; control forces and control requirements; flight envelope diagram. Lateral stability requirements. Introduction to dynamic stability: axis systems; remarks on governing equations; phugoid and short period modes; lateral dynamic modes. Closed-loop control. Also offered at the graduate level, with additional or different requirements, as MECH 5101, for which additional credit is precluded.

Prerequisites: MAAE 3300 and MAAE 4500 or MAAE 3502 (taken before 1999-2000).

Lectures three hours a week.

AERO 4402 [0.5 credit] (formerly 87.442\*)

### Aerospace Propulsion

Propulsion requirements, effects of Mach Number, altitude, and application; basic propeller theory; propeller, turboshaft, turbojet, turbofan and rocket; cycle analysis and optimization for gas turbine power plant; inter-relations between thermodynamic, aerodynamic and mechanical designs; rocket propulsion; selection of aeroengines.

Precludes additional credit for MECH 4401.

Prerequisites: MAAE 2400 and MAAE 3300.

Lectures three hours a week.

AERO 4602 [0.5 credit] (formerly 87.462\*)

### Introductory Aeroelasticity

Review of structural behaviour of lifting surface elements; structural dynamics, Laplace Transforms, dynamic stability; modal analysis; flutter, Theodorsen's theory; flutter of a typical section; wing flutter, T-tail flutter, propeller whirl flutter; gust response; buffeting, limit cycle flutter.

Prerequisites: MAAE 3004, MAAE 3300 and SYSC 3600.

Lectures three hours a week.

AERO 4608 [0.5 credit] (formerly 87.468\*)

### Composite Materials

Reinforcing mechanisms in composite materials; material properties. Strength and elastic constants of unidirectional composites; failure criteria. Analysis of laminated plates; bending and eigenvalue problems. Environmental effects and durability. Damage tolerance. Design of composite structures.

Prerequisite: MAAE 3202.

Lectures three hours a week.

AERO 4801 [0.5 credit] (formerly 87.481\*)

### Spacecraft Design

Types of spacecraft; mission requirements. Systems design considerations: configuration control during design; planning and scheduling. Environmental considerations: thermal, effect of vacuum, debris impact. Design implementation: mechanical, thermal, and electrical/electronic aspects. Spacecraft testing:

vibrational, acoustic, vacuum, and thermal testing. Component testing. Simulation.

Prerequisites: AERO 3002 or MECH 3002.  
Lectures three hours a week.

AERO 4907 [1.0 credit] (formerly 87.497)

#### **Aerospace Engineering Project**

Participation in team projects dealing with design and development of an aerospace vehicle or system. One or more such projects will be undertaken each year. Opportunities to exercise initiative, engineering judgment, self-reliance and creativity, in a team environment similar to industry. Oral presentations and reports.

Prerequisites: Completion of or concurrent registration in AERO 4003; and fourth-year registration in the Aerospace program.

## **Anthropology (ANTH)**

Department of Sociology and Anthropology  
Faculty of Arts and Social Sciences

ANTH 1000 [1.0 credit] (formerly 54.100)

#### **Introduction to Anthropology**

Introduction to the nature and evolution of human cultural systems and forms of adaptation from hunting and gathering to farming and stratified state formations. Attention is given to institutions such as the family, economics, politics and religion. Precludes additional credit for SOAN 1000.

Students in any Sociology and/or Anthropology program should consult that program section of this Calendar.

Lectures three hours a week.

ANTH 2003 [1.0 credit] (formerly 54.203)

#### **Introduction to Anthropological Research**

Introduction to general theoretical and methodological issues in anthropological research. Topics include the relation between theory and observation, problems of research design, fundamental techniques of data collection, the actual experience of fieldwork, and problems in the ethics of research. Precludes additional credit for SOCI 2003.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.  
Lectures and workshop three hours a week.

ANTH 2006 [0.5 credit] (formerly 54.206\*)

#### **Ecology and Culture**

Cultural adaptations to the environment are set within globalization processes. New ecologies – symbolic, historical and political – arise out of the hubris of classical models. The advocacy role of applied ecological anthropology and the consequences of Western cultures' adaptive capacities will be examined. (Also listed as TSES 2006.)

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.  
Lectures three hours a week.

ANTH 2007 [0.5 credit] (formerly 54.207\*)

#### **The Anthropology of Conquest**

What happens to non-Western societies in contact with colonial or industrial nation-states. Specific topics include forced labour, acculturation and ethnocentrism, wars of extermination, treaty-making and land policies, revitalization movements and other aboriginal responses to conquest.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.  
Lectures three hours a week.

ANTH 2201 [0.5 credit] (formerly 54.221\*)

#### **Phonetics**

Recognition, description, transcription and production of speech sounds; systems of transcription; the nature of the speech-producing mechanism; the acoustics of speech sounds. (Also listed as LALS 2001.)

Precludes additional credit for ANTH 3001 and LALS 3001.  
Prerequisite: LALS 1000.  
Lectures three hours a week.

ANTH 2203 [0.5 credit] (formerly 54.223\*)

#### **Language Analysis**

Direction and practice in the analysis of grammatical material, including morphology and syntax. Models for the description of grammatical regularities. Course work consists principally of practical exercises. (Also listed as LALS 2003.)

Precludes additional credit for ANTH 3003 and LALS 3003.

Prerequisite: LALS 1000.

Lectures three hours a week.

ANTH 2205 [1.0 credit] (formerly 54.225)

#### **Prehistoric Anthropology, Cultural and Biological Evolution of Humans**

An examination, from an evolutionary point of view, of the physical anthropology and archaeology of early humans, their origins, the development of technology and of complex institutions, and the nature of racial differences.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

ANTH 2301 [0.5 credit] (formerly 54.231\*)

#### **Writing About Culture**

The development of anthropological theory and methods through the in-depth exploration of ethnographic texts. Explores the development of inter-cultural research through reading works that have shaped the discipline and contemporary issues through the study of recent publications. Precludes additional credit for ANTH 2300.

Prerequisite: one of SOCI 1000, ANTH 1000 or SOAN 1000 or equivalent or permission of the Department.

Lecture and discussion three hours a week.

ANTH 2408 [0.5 credit] (formerly 54.248\*)

#### **The Anthropology of Women**

Examination of male and female roles and status in relation to societal factors such as economics, decision-making, and ideology. Emphasis is on the study of women in traditional, and changing, non-Western pre-industrial societies.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

ANTH 2409 [0.5 credit] (formerly 54.249\*)

#### **Development, Dependency and Gender**

Examination of anthropological and feminist analyses of the changing gendered division of labour in the Third and Fourth Worlds. Emphasis on case studies that illustrate the impact of "development" or "underdevelopment" on gender roles and gender inequality.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

ANTH 2705 [0.5 credit] (formerly 54.275\*)

#### **Technology, Mind and Culture**

Anthropological perspective on technology, how it evolved and how it has influenced the human experience and adaptation. Role of technology in the evolution of consciousness and culture. Precludes additional credit for SOAN 2805 (if taken in 1993 - fall term 1994).

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

ANTH 2804 [0.5 credit] (formerly 54.284\*)

#### **Language and Culture**

Study of language in anthropology. Topics include: evolution of the brain and language, communication among non-human primates, historical linguistics, hermeneutics, non-verbal communication, gender and language, language change and developmental linguistics.

Precludes additional credit for ANTH 3701 (taken prior to 1983-84) and for SOAN 2805 and SOAN 3206 (taken with the same topic.)

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or LALS 1000, or permission of the Department.

Lectures and workshop three hours a week.



ANTH 3002 [0.5 credit] (formerly 54.302\*)

**Phonology**

The sound-systems of languages; methods for the analysis and description of phonological structure. The course concentrates on generative theory with comparisons to other theories. (Also listed as LALS 3002.)

Prerequisite: LALS 2001 or ANTH 2201.

ANTH 3004 [0.5 credit] (formerly 54.304\*)

**Grammatical Theory**

Comparison of major current schools of linguistics. Theories of grammatical structure. The testing of grammatical hypotheses, grammatical structure and meaning. Course work consists principally of lectures and readings. (Also listed as LALS 3004.)

Prerequisite: LALS 2003 or ANTH 2203.

ANTH 3100 [1.0 credit] (formerly 54.310)

**Theory and Methodology in Anthropology**

Theory and methods in anthropology. Some attention to early developments in anthropological theory. Emphasis on the contemporary formulations of functionalism, exchange theory, cultural ecology, structuralism, Marxism, feminism, and critical theory.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

ANTH 3107 [0.5 credit] (formerly 54.317\*)

**Visual Anthropology**

Examination of the anthropological experience as reflected in film. A number of problems are considered, including selectivity, bias, the effect of the observer's presence, and problems in reconstructing past events in film.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

ANTH 3108 [0.5 credit] (formerly 54.318\*)

**Archaeology in Canada**

Archaeological practice in North America, with particular emphasis on Canada. Topics include: human settlement of the Americas; archaeological perspectives on the cultural histories of Native American peoples; the construction of Native peoples' culture histories and European contact.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

ANTH 3109 [0.5 credit] (formerly 54.319\*)

**Issues in Canadian Native Studies**

Anthropological examination of issues and policies concerning Canadian Indian, Inuit and Métis peoples. The course explores controversies surrounding social change, native rights, cultural autonomy and women's status.

Precludes additional credit for ANTH 2109.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

ANTH 3304 [0.5 credit] (formerly 54.334\*)

**Cultures and Symbols**

The representation and construction of culture through symbols. Reviews of models and methodologies with a focus on mythology as the ground for symbolism of different kinds to arise. Topics may include masks, rituals, archetypes, shamanism, sacred dance, and the making of modern myths.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

ANTH 3305 [0.5 credit] (formerly 54.335\*)

**The Prehistory of Human Settlement**

Examination of how human societies use space. Archaeological data are used to compare the settlement patterns of hunting

and gathering peoples with those of more settled village and urban dwellers.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

ANTH 3306 [0.5 credit] (formerly 54.336\*)

**Medical Anthropology**

Cross-cultural study of approaches, institutions and techniques of healing; cultural and biological factors in the causation, diagnosis, treatment and meaning of disease. Cross-cultural epidemiology, ritual and symbolic healing, transcultural psychiatry, ethno-pharmacology, midwifery.

Precludes additional credit for Sociology-Anthropology 56.325\* (if taken in fall 1987).

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

ANTH 3802 [0.5 credit] (formerly 54.382\*)

**Anthropology and Science Fiction**

Examination of anthropological issues through the medium of science fiction. Topics include: language and culture, gender and identity, the evolution of brain and consciousness, religions and symbolic systems, the exploration of space, the future of human societies.

Precludes additional credit for SOAN 2805 (if taken with the topic Anthropology through Science Fiction).

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

ANTH 4000 [0.5 credit] (formerly 54.400\*)

**Field Placement in Anthropology**

Students spend up to one day a week participating in a research organization, and prepare a report on their placement experience. Consult the Honours Anthropology Co-ordinator.

Prerequisites: fourth-year Honours Anthropology standing and permission of the Department.

ANTH 4009 [0.5 credit] (formerly 54.409\*)

**The Ethnographic Enterprise**

Examination of premises underlying particular cases of empirical work in anthropology. The value of various anthropological paradigms for the solution of standard ethnographic problems.

Precludes additional credit for ANTH 4100.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

**Note**

The following courses, ANTH 4700 - ANTH 4706, are workshops organized either around a specific research topic or around some policy or interventionist issue. The content is expected to vary from year to year reflecting the current research interests of the instructor. When a workshop is offered, a detailed description will be available. In general, specific area workshops are unlikely to be offered more than once in any two-year period.

ANTH 4700 [0.5 credit] (formerly 54.470\*)

**Workshop in North American Aboriginal Studies**

Cultural persistence, cultural or social change, contemporary conditions and struggles, the position of Indians, Inuit and Métis in Canadian society, and conceptions of aboriginality.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

ANTH 4705 [0.5 credit] (formerly 54.475\*)

**Workshop in Signs and Symbols**

Study of one or more of: psychoanalysis, structuralism, post-structuralism, post-modernism, feminism, critical theory, historical anthropology, neuroanthropology, phenomenology.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

ANTH 4706 [0.5 credit] (formerly 54.476\*)

**Workshop in Development and Underdevelopment**

Research-oriented seminar that, depending on the interests of the instructor, may focus on one or more of the following topics: domestic economies, peasant production, forced labour, capital-dominated markets, and theories of underdevelopment and colonialism.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

ANTH 4901 [0.5 credit] (formerly 54.491\*)

**Tutorial in Anthropology**

Consult the Department for information.

ANTH 4902 [0.5 credit] (formerly 54.492\*)

**Tutorial in Anthropology**

Consult the Department for information.

ANTH 4905 [1.0 credit] (formerly 54.495)

**Honours Practicum**

At the end of their final year, Honours candidates are required to present a major research essay. Students present their essay proposals for discussion and criticism to fellow students and faculty, and report periodically upon the paper's progress. Common problems of conceptualization, research design, analysis and interpretation are taken up for consideration.

Prerequisite: fourth-year Honours standing.

## Applied Language Studies/Asian, Indigenous, Middle Eastern and Sign Language Unit (AIMESL) (ALSS)

School of Linguistics and

Applied Language Studies

Faculty of Arts and Social Sciences

ALSS 1000 [0.5 credit] (formerly 23.100\*)

**Communication Skills for Engineering Students**

Development of students' competence in written and oral communication in engineering. Focus on professional written documents (process descriptions, proposals, reports, engineering literature reviews and responses); written responses to engineering communications; related oral work.

Precludes additional credit and weight for ECOR 2000.

Open to students in the Faculty of Engineering and Design only.

Lectures and tutorials three hours a week.

ALSS 2000 [0.5 credit] (formerly 23.200\*)

**Communication Skills for Computer Science Students**

Development of students' competence in written and oral communication in computer science. Focus on professional written documents (reports, technical descriptions, manuals, proposals, memos, letters) and related oral work (oral communication in university and workplace settings).

Open to students in the School of Computer Science only.

Lectures and tutorials three hours a week.

ALSS 1100 [2.0 credits] (formerly 23.110)

**Intensive Introductory Mandarin (2.0 credits)**

For students with little or no knowledge of Mandarin. Oral skills; basic reading and writing skills. Placement test for non-literate speakers of other Chinese languages. Not open to students already literate in any Chinese language.

Eight hours a week.

ALSS 1205 [2.0 credits] (formerly 23.125)

**Intensive Introductory Korean**

For students with no knowledge of Korean. Oral skills; basic reading and writing skills.

Precludes additional credit for ALSS 1206.

Eight hours a week.

ALSS 1206 [1.0 credit] (formerly 23.126)

**Low Intermediate Korean**

Continuation of the study of Korean to reach by the end of the

year a comparable level of proficiency to students who complete ALSS 1205. All skills; emphasis on the development of reading and writing.

Precludes additional credit for ALSS 1205.

Prerequisite: at least one year of high school Korean, or equivalent ability.

Four hours a week in two terms, or eight hours a week in one term.

ALSS 1300 [2.0 credits] (formerly 23.130)

**Intensive Introductory Arabic**

For students with little or no knowledge of Arabic. Intermediate spoken proficiency in one dialect of Modern Standard Arabic. Writing and composition.

Eight hours a week.

ALSS 1900 [1.0 credit] (formerly 23.190)

**Introductory Study of an Indigenous Language**

An introduction to the study of an Indigenous language. Language for 2002-2003: Inuktitut.

Four hours a week.

ALSS 1901 [1.0 credit] (formerly 23.191)

**Introduction to American Sign Language**

For students with little or no knowledge of the language or culture of deaf people. Basic communicative competence in American Sign Language. Anthropological, sociolinguistic, and sociocultural aspects of deaf culture.

Three hours a week.

## Architecture (ARCH, ARCC, ARCN, ARCS)

School of Architecture

Theory/History (ARCH)

Technical (ARCC)

ARCH 1000 [0.5 credit] (formerly 76.100\*)

**Intro. to Architecture**

Architecture in the matrix of human conditions: linkages among architecture, fine arts, humanities, social sciences, physical sciences, mathematics and philosophy. Architectural ideas will be introduced through a discussion of cities, buildings and landscapes. (Core Course)

Lectures three hours a week.

First offered 1998-1999.

ARCH 1005 [0.5 credit] (formerly 76.105\*)

**Contemporary Society**

The relationship of architecture, architectural thought and the architectural profession to the societies in which they exist (and which they must serve). Topics are selected to emphasize key issues. (Elective Course)

Lectures and seminars, three hours a week.

ARCH 2006 [0.5 credit] (formerly 76.206\*)

**Intro. to Industrial Design**

Theoretical overview including: definitions and dimensions of design and industrial design, its nature and historical evolution; quality; quality aspects in synthetic objects; formal qualities as determinants for categories of design; design methods; design management in industry; professional industrial design and its promotion. Practising industrial designers are invited to present case studies of their activities. (Elective Course) (Also listed as IDES 1000.)

Lectures three hours a week.

ARCH 2101 [0.5 credit] (formerly 76.211\*)

**Industrial Design Analysis**

Analysis of various industrial design problems, including: relationship with principal techniques and mass-production technology; uniformity and variety; speciality and versatility in production; tolerances; ergonomics and anthropometrics; industrial design and environment; future industrial design approaches to pollution and resource conservation; adaptation of value-analyses to industrial design. (Elective Course) (Also listed as IDES 1001.)

Prerequisite: ARCH 2006 or IDES 1000.

Lectures three hours a week.

ARCH 2300 [0.5 credit] (formerly 76.230\*)

**Intro. to Modern Architecture**

Architectural and urban ideals of modernism with special emphasis upon the development of the avant-garde in the early twentieth century. The phenomenon of modern architecture within the broader framework of the development of western thought. (Core Course)

Precludes additional credit for ARCH 3009.

Prerequisites: ARTH 1100 and ARTH 1101, or permission of the School.

Lectures three hours a week.

First offered 1999-2000.

ARCH 3208 [0.5 credit] (formerly 76.328\*)

**Urban Space Architecture**

Design explorations that are directed towards the search for aesthetic form and meaning in urban space, with particular application to the Canadian context. Project-oriented. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCH 3902 [0.5 credit] (formerly 76.392\*)

**Theory of Architecture**

Workshop focuses on one specific aspect of architecture in the area of theory and history. Workshop offerings change from year to year. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCH 4002 [0.5 credit] (formerly 76.402\*)

**Canadian Architecture**

Canadian architecture from the seventeenth century to the present day, covering both stylistic and technological developments. Building styles, methods, and materials in the context of social and economic conditions and construction techniques. (Theory/History Elective) (Also listed as ARTH 3002.)

Precludes additional credit for ARCH 3002.

Prerequisite: ARCH 2300 or permission of the School.

Lectures, seminars three hours a week.

ARCH 4004 [0.5 credit] (formerly 76.404\*)

**Architectural Theory**

An exploration of architectural intentions in the early period of Western history, with special emphasis on Renaissance treatises and ideas. Architectural intentions in relation to shifting world-views, as a basis of historical interpretation. (Theory/History Elective)

Precludes additional credit for ARCH 3007.

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4006 [0.5 credit] (formerly 76.406\*)

**Origins of Modernism**

Exploration of architectural theories with special emphasis on the European context from the seventeenth century to the late nineteenth century. (Theory/History Elective)

Precludes additional credit for ARCH 3008.

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4008 [0.5 credit] (formerly 76.408\*)

**Foundations of Modernism**

Major critical perspectives as applied to architecture as a fine art. The debate between classicism and romanticism with consideration of its cultural roots. (Theory/History Elective)

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4009 [0.5 credit] (formerly 76.409\*)

**Theory of the Avant-Garde**

Exploration of architectural theories with special emphasis on the development of the avant-garde in the early twentieth century, looking at the avant-garde within the larger framework of modernism. (Theory/History Elective)

Precludes additional credit for ARCH 3009.

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4100 [0.5 credit] (formerly 76.410\*)

**The Morphology of the City**

Description and comparative analysis of the physical morphology of cities. Primary structural, spatial and formal organization and elements that characterize the morphology of cities studied in terms of their historical and contemporary significance for architecture and urban design. (Theory/History Course)

Precludes additional credit for ARCH 2004 and ARCH 3100.

Prerequisite: ARCH 1006, ARCH 1100 (ARTH 1200), ARCH 2200 (ARTH 1201) or permission of the School.

Lectures three hours a week.

ARCH 4105 [0.5 credit] (formerly 76.415\*)

**Theories of Landscape Design**

Introduction to landscape architecture as the organization of outdoor space. Historical, cultural, economic and political factors as a basis for interpreting spatial organization in urban and rural areas of human settlement. Emphasis on the period from the fifteenth to the nineteenth century. (Theory/History Elective)

Precludes additional credit for ARCH 3105.

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4203 [0.5 credit] (formerly 76.423\*)

**Society and Shelter**

Buildings and shelter as human and social products Topics such as the perception and cognition of the built environment and its impact on social processes; the design, construction and use of buildings as social processes; the design professions; shelter and social stratification. (Theory/History Elective) (Also listed as SOCI 3309.)

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours, seminars three hours a week.

ARCH 4204 [0.5 credit] (formerly 76.424\*)

**The Design Professions**

Architecture and design professions in relation to traditional professions and to occupations in art and design. Professions in the development of culture and society; education, career and work; knowledge in the design professions; and the nature of design practice. (Elective Course) (Also listed as SOCI 4204.)

Prerequisite: third-year standing in the B.A.S. program; fourth-year standing in Sociology; fourth-year standing in the B.A. Honours Architecture/Art History program; or permission of the School.

Seminar three hours a week.

ARCH 4205 [0.5 credit] (formerly 76.425\*)

**User-Building Synopsis**

Projects to develop skills in the analysis of building performance. Examination of occupancy analysis, safety and risk assessment, post-occupancy evaluation, and social impact assessment. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCH 4300 [0.5 credit] (formerly 76.430\*)

**Neo-Classical Architecture**

Eighteenth- and nineteenth-century architecture and urban form in Western Europe. Emphasis on the cultural and philosophical framework of rising modernity to illuminate architectural production and theory as well as the development of urban form. (Theory/History Elective)

Precludes additional credit for ARCH 1201 and ARCH 2200.

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4301 [0.5 credit] (formerly 76.431\*)

**The Post-War Architecture**

Architectural thought and practice in the post-avant-garde period in Western Europe and America in light of the development of the modern metropolis and its suburb. (Theory/History Elective)

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.



ARCH 4301

**Post-War Architecture**

This course examines the theoretical, ideological and artistic debates that have influenced the development of world architecture since 1950. (Theory/History Elective) (Also listed as ARTH 4604.)

Prerequisite: ARCH 2300 or ARTH 3609 or permission of the instructor.

Lecture or seminar three hours per week.

ARCH 4302 [0.5 credit] (formerly 76.432\*)

**Pre-Columbian Architecture**

Monumental temples of the ancient Mesoamericans are compared with other world traditions at similar levels of cultural development. Selected examples considered in terms of morphology, technology, iconography, social/political context, world view and general architectural theory. (Theory/History Elective)

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4303 [0.5 credit] (formerly 76.433\*)

**Greek Architecture**

Architecture of Greek antiquity and its relationship to its philosophical, artistic, and mythical contexts. The development of the idea of the city; the presence of architecture within its symbolic landscape. (Theory/History Elective)

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4304 [0.5 credit] (formerly 76.434\*)

**The Architecture of Rome**

Rome in its classical to late-antique periods. Its founding mythologies and landscape. In-depth analysis of Rome, with special attention to its public buildings. Early Christian architecture within the Roman context. (Theory/History Elective)

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4305 [0.5 credit] (formerly 76.435\*)

**Medieval Architecture**

Gothic architecture and its relation to its philosophic and artistic predecessors. Special attention to the coexistence of the monastic tradition, late Romanesque building, and new experiments in gothic during this period, marked by intellectual and political ferment. (Theory/History Elective)

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4306 [0.5 credit] (formerly 76.436\*)

**Renaissance Theory**

The rise of architectural theory within the context of the Italian Renaissance. Canon texts explored and compared in the context of the architectural developments of the period. (Theory/History Elective)

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4307 [0.5 credit] (formerly 76.437\*)

**Muslim Architecture**

Historical and theoretical discussions about the architecture of Muslim cultures. Selected sites and monuments from eighth to eighteenth century, covering the vast geography from North Africa to Southeast Asia. (Theory/History Elective)

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4308 [0.5 credit] (formerly 76.438\*)

**Asian Architecture**

Anthropological history of the architecture of the Near and Far East. The architecture and urban form of Ancient Egypt, Anatolia, Sumer and Persia. The architecture and cities of Ancient China and India. (Theory/History Elective)

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4309 [0.5 credit] (formerly 76.439\*)

**Mesoamerican Architecture**

Selected works of Mesoamerican architecture in terms of iconography, morphology, technology, function, historical development, and concept. Mesoamerican architectural features compared with other world traditions. Emphasis on design. (Theory/History Elective)

Prerequisite: ARCH 2300 or permission of the School.

Lectures three hours a week.

ARCH 4400 [0.5 credit] (formerly 76.440\*)

**Theory**

A survey of the architectural and urban history of a specific culture. These discussions address the present reality of a country, region or city being visited by the fourth year of the program. (Elective Course)

Prerequisite: clear standing to fourth year and permission of the School.

Lectures three hours a week.

ARCH 4502 [0.5 credit] (formerly 76.452\*)

**Research and Criticism**

Preparation for the independent research and design work. Work related to the nature of research and criticism in architecture, with an emphasis on issues of current concern. (Elective)

Lectures and seminars three hours a week.

ARCH 4505 [0.5 credit] (formerly 76.455\*)

**Seminar in Theory and History**

History and theory of architecture. Topics will vary from year to year. Limited enrolment. (Elective Course)

Prerequisite: fourth-year standing in the B.A.S. or B.A. (Honours) Architecture/Art History programs, or permission of the School.

Lectures three hours a week.

ARCH 4801 [0.5 credit] (formerly 76.481\*)

**Theory of Architecture**

An aspect of architecture in the area of theory and history. Topics vary from year to year. (Theory/History Elective)

Prerequisite: ARCH 2300 or permission of the School. Lectures three hours a week.

ARCH 4808 [0.5 credit] (formerly 76.488\*)

**Independent Study**

(Elective Course)

Technical

ARCC 1305 [0.5 credit] (formerly 77.135\*)

**The Behaviour of Materials**

An introduction to organizational patterns, forms and properties of materials such as cohesion, elasticity, strain energy, work of fracture, crack stopping, and the general theory of strength; a survey of the metallic and non-metallic traditions, plastics, composites, and materials of the future. (Elective Course)

Lectures three hours a week.

ARCC 2001 [0.5 credit] (formerly 77.201\*)

**Structures in Architecture**

A survey of structural planning, including a historical survey of structural systems, details and the study of the factors involved in the synthesis of a suitable structural scheme. The course is intended as a survey of the science and the structural properties of materials. (Elective Course)

Precludes additional credit for ARCC 1103.

Lectures three hours a week, laboratory is block scheduled.

ARCC 2202 [0.5 credit] (formerly 77.222\*)

**Architectural Technology 1**

Case studies of vernacular buildings from different climatic regions: issues of human comfort, construction, and materials. Site orientation, foundations, structure and envelope in terms of their response to local climate: sun (light and heat), wind, moisture. (Core Course)

Prerequisite: CIVE 1005 or permission of the School

Lectures three hours a week.

First offered 1999-2000.

ARCC 2203 [0.5 credit] (formerly 77.223\*)

**Architectural Technology 2**

Wood frame, post and beam and load bearing masonry construction. Implications of the structural system on building envelope, mechanical and electrical systems are explored. Emphasis on architectural detailing. (Core Course)  
Prerequisite: ARCC 2202 [0.5 credit or permission of the School].  
Lectures three hours a week.  
First offered 1999-2000.

ARCC 3004 [0.5 credit] (formerly 77.304\*)

**Workshop: Energy and Form**

Relationship between environmental factors, energy and architectural form. Explorations into ways in which buildings and building elements can be planned and designed to take advantage of natural cycles in order to minimize the need for supportive energy inputs. (Workshop)  
Prerequisite: permission of the School.  
Lecture, seminar, lab or field work six hours a week.

ARCC 3104 [0.5 credit] (formerly 77.314\*)

**Structural Analysis II**

Review of basic structural concepts. Betti's law and applications. Matrix flexibility method; flexibility influence coefficients. Development of stiffness influence coefficients. Stiffness method of analysis; beams; plane trusses and frames; space trusses and frames. Introduction to the finite element method. (Elective course) (Also listed as CIVE 4200).  
Prerequisite: CIVE 3203.  
Lectures three hours a week, problem analysis three hours alternate weeks.

ARCC 3106 [0.5 credit] (formerly 77.316\*)

**Steel Design I**

Introduction to CAN/CSA-S16.1, design and behaviour concepts; shear lag, block shear, local plate buckling, lateral torsional buckling, instantaneous centre, inelastic strength and stability. Design of tension members, axially loaded columns, beams, beam-columns, simple bolted and welded connections. (Elective Course) (Also listed as CIVE 3205).  
Prerequisites: CIVE 2200 and CIVE 3204.  
Lectures three hours a week, problem analysis three hours alternate weeks.

ARCC 3202 [0.5 credit] (formerly 77.322\*)

**Architectural Technology 3**

Small to medium-scale steel and concrete structured buildings as case studies to explore different approaches to building envelope (curtain wall, rain screen wall, etc.), HVAC and lighting systems (exposed, concealed), interior planning (room acoustics, acoustic isolation, fire protection, finish materials etc.). (Core Course)  
Prerequisite: ARCC 2202 [0.5 credit] (formerly 77.222\*) or permission of the School.  
Lectures three hours a week.  
First offered 2000-2001.

ARCC 3305 [0.5 credit] (formerly 77.335\*)

**Materials Application**

Application of building materials, including the forming of building parts and the design of joints for performance and assembly. Practical constructions using new technology are emphasized. (Workshop)  
Prerequisite: permission of the School.  
Lecture, seminar, lab or field work six hours a week.

ARCC 3902 [0.5 credit] (formerly 77.392\*)

**Architectural Technology**

A specific aspect of architecture in the area of architectural technology. Offerings vary from year to year. (Workshop)  
Prerequisite: permission of the School.  
Lecture, seminar, lab or field work six hours a week.

ARCC 4100 [0.5 credit] (formerly 77.410\*)

**Lighting for Architecture**

A study of daylighting and electric lighting design techniques. Emphasis will be placed on day-lighting models and computer light-modeling software as tools to explore lighting design. (Elective Course)  
Precludes additional credit for ARCC 3000.

Prerequisite: ARCC 2203 or permission of the School.

Lectures three hours a week.

ARCC 4102 [0.5 credit] (formerly 77.412\*)

**Acoustics in Architecture**

Sound in enclosures, including interior design of auditoria and special applications. Sound reproduction and reinforcement systems. Acoustic privacy and protection, sound control in buildings, materials for noise control, community noise, industrial noise. Acoustic measurements and instrumentation. (Elective Course)  
Precludes additional credit for ARCC 3002.  
Lectures two hours, laboratory two hours a week.

ARCC 4103 [0.5 credit] (formerly 77.413\*)

**Energy and Form**

Energy as a criterion in decision-making for architectural design. Conventional energy resources and state-of-the-art alternative energy resource systems with respect to building shape, size, materials, openings, orientation, siting, and use. (Elective Course)  
Precludes additional credit for ARCC 3003.  
Lectures three hours a week.

ARCC 4200 [0.5 credit] (formerly 77.420\*)

**Structural Morphology**

Concepts and models bridging geometric morphology and architecture. Hierarchies of dimensional spaces. Planar and spatial orders. Form aggregation and space subdivision within the laws of geometric compatibility and formal rigidity. Size, similitude and isomorphism. (Elective Course)  
Lectures three hours a week.

ARCC 4202 [0.5 credit] (formerly 77.422\*)

**Wood Engineering**

Introduction to structural design in timber. Properties, anatomy of wood, wood products, factors affecting strength and behaviour, strength evaluation and testing. Design of columns, beams and beam-columns. Design of trusses, frames, glulam structures, plywood components, formwork, foundations, connections and connectors. Inspection, maintenance and repair. (Elective Course) (Also listed as CIVE 4202)  
Prerequisite: fourth-year registration or permission of the School.  
Lectures three hours a week, problem analysis three hours alternate weeks.

ARCC 4208 [0.5 credit] (formerly 77.428\*)

**Workshop: Structure and Form**

Study of structural nature of non-conventional space enclosure systems like cable structures, membranes, shells, submerged structures, excavated structural forms and lunar structures. (Workshop)  
Prerequisite: ARCC 4200 or permission of the School.  
Lecture, seminar, lab or field work six hours a week.

ARCC 4300 [0.5 credit] (formerly 77.430\*)

**Building Materials**

Materials available for building, with emphasis on their structure, properties, application and sustained performance over the life of a building. (Elective Course)  
Precludes additional credit for ARCC 3300.  
Laboratories, lectures, field trips four hours a week.

ARCC 4400 [0.5 credit] (formerly 77.440\*)

**Design for Construction**

Design in relation to materials and building construction including the effects of building codes, zoning bylaws, approvals, processes and legislation, the organization of the building industry, and cost estimating control. (Elective Course)  
Prerequisite: ARCC 3300 or permission of the School.  
Lectures, seminars, field work three hours a week.

ARCC 4500 [0.5 credit] (formerly 77.450\*)

**Design Economics**

Principles of building economics. Determinants of building costs and their prediction. Uncertainty and investment economics. Systems and techniques of creative cost control for buildings during schematic design, design development, construction document preparation and construction. Economic evaluation during all phases of design process. (Core Course)

Precludes additional credit for ARCC 3500.  
Prerequisite: fourth-year standing in the B.A.S. program or permission of the School.  
Three hours a week.

ARCC 4801 [0.5 credit] (formerly 77.481\*)

### **Architectural Technology**

A specific aspect of architecture in the area of architectural technology. Topics vary from year to year. (Elective Course)  
Prerequisite: permission of the School.

ARCC 4808 [0.5 credit] (formerly 77.488\*)

### **Independent Study** (Elective Course)

Urban

ARCU 3203 [0.5 credit] (formerly 78.323\*)

### **Landscape Architecture**

Practical significance of landscape elements as they relate to built-form by integrating structure and site. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCU 3405 [0.5 credit] (formerly 78.345\*)

### **Urban Design**

Project-based workshop investigating current design attitudes and solutions affecting the physical morphology of cities. Formally sophisticated urban design projects. Various procedures and basic urban design ideas. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCU 3409 [0.5 credit] (formerly 78.349\*)

### **City Organization and Planning Processes**

Interdisciplinary investigation, analysis and synthesis of the institutions, processes, environments and demography of Canadian cities. Guest lecturers. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCU 3902 [0.5 credit] (formerly 78.392\*)

### **Urban Studies**

A specific aspect of architecture in the area of urban studies. Topics vary from year to year. (Workshop) (Also listed as BUSI 4801.)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCU 4400 [0.5 credit] (formerly 78.440\*)

### **City Organization and Planning**

Structure, form and functioning of cities. Infra-structure, facilities and networks, ecosystems, demographic and social organization, government, quality of life, goals and perceptions, urban management, development, regulation and codes, design, planning and policy-making. (Elective Course)

Precludes additional credit for ARCU 3400.

Three hours a week.

ARCU 4500 [0.5 credit] (formerly 78.450\*)

### **Human Shelter**

Background factors pertaining to housing in both industrial and Third-World countries; traditional and contemporary housing approaches; social housing; and people's right to adequate housing. Guest lecturers. (Elective Course)

Precludes additional credit for ARCU 3500.

Three hours a week.

ARCU 4808 [0.5 credit] (formerly 78.488\*)

### **Independent Study**

(Elective Course)

Techniques

ARCN 1001 [0.5 credit] (formerly 79.101\*)

### **Work Term 1**

Prerequisites: registration in the Co-op Option of the Bachelor of Architectural Studies Program

ARCN 2001 [0.5 credit] (formerly 79.201\*)

### **Work Term 2**

Prerequisites: registration in the Co-op Option of the Bachelor of Architectural Studies Program

ARCN 2105 [0.5 credit] (formerly 79.215\*)

### **Computer Modeling of Form**

Computer modeling as a medium of architectural analysis, documentation, and presentation. Principles and techniques of 2D drawing and 3D modeling. Extensive practical work using appropriate applications. (Core Course)

Precludes additional credit for ARCN 1101.

Prerequisite: second-year B.A.S. standing or permission of the School.

Lectures three hours a week.

First offered 1999-2000.

ARCN 3001 [0.5 credit] (formerly 79.301\*)

### **Work Term 3**

Prerequisites: registration in the Co-op Option of the Bachelor of Architectural Studies Program.

ARCN 3003 [0.5 credit] (formerly 79.303\*)

### **Theatre Production**

Design and fabrication of theatre productions, one of which is staged on campus. Visiting directors, designers, technical consultants and others. Visits to theatres and production facilities. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3206 [0.5 credit] (formerly 79.326\*)

### **Computer Applications**

Application of existing software and programming techniques to various architectural problems. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3302 [0.5 credit] (formerly 79.332\*)

### **The Anatomy of Architecture**

The architectural anatomy of selected contemporary buildings. Use of graphic techniques of analysis to develop an understanding of their basic compositional principles and language. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3303 [0.5 credit] (formerly 79.333\*)

### **Architecture as Painting**

Analysis of architecture for its elemental, formal and narrative properties. These relationships "re-represented" through the medium of painting. Architecture as analogy to painting. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3400 [0.5 credit] (formerly 79.340\*)

### **Visual Design**

Development of the capacity to visualize and communicate in several graphic media. Development of sensitivity to form, structure, space, texture and colour. May involve historical investigation. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3401 [0.5 credit] (formerly 79.341\*)

### **Photography**

Traditional and alternative techniques for image making and manipulation. Basic image formation techniques, advanced darkroom manipulations, past-darkroom imaging, and digital imaging within a theoretical overview of current photographic processes and techniques. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 3901 [0.5 credit] (formerly 79.391\*)

### **Architectural Techniques**

A specific aspect of architecture in the area of architectural techniques. Topics vary from year to year. (Elective Course)

Prerequisite: permission of the School.

ARCN 3902 [0.5 credit] (formerly 79.392\*)

### **Architectural Techniques**

A specific aspect of architecture in the area of architectural techniques and cooperative problem solving. Topics vary from



## Course Listings

year to year. (Workshop)

Prerequisite: permission of the School.

Lecture, seminar, lab or field work six hours a week.

ARCN 4001 [0.5 credit] (formerly 79.401\*)

### **Work Term 4**

Prerequisites: Registration in the Co-op Option of the Bachelor of Architectural Studies Program.

ARCN 4102 [0.5 credit] (formerly 79.412\*)

### **Problems in Computing**

Various types of non-numeric data, their representation within primary and secondary storage, and the manipulation of various representations. Comparative evaluation of languages for non-numeric problems. (Elective Course)

Precludes additional credit for ARCN 3102.

Prerequisite: permission of the School.

Lectures two hours a week, laboratory two hours a week.

ARCN 4808 [0.5 credit] (formerly 79.488\*)

### **Independent Study**

(Elective Course)

ARCN 4901 [0.5 credit] (formerly 79.491\*)

### **Work Term 5**

Prerequisites: Registration in the Co-op Option of the Bachelor of Architectural Studies Program

## Design Studios/Design Thesis/Research

ARCS 1005 [0.5 credit] (formerly 80.105\*)

### **Drawing**

Free-hand drawing as a way of observing and understanding the world. Various media and techniques introduced through a wide range of studio and outdoor exercises. (Core Course)

Prerequisite: registration in the B.A.S. program.

Six hours a week.

First offered 1998-99.

ARCS 1105 [1.0 credit] (formerly 80.115)

### **Studio 1**

Spatial and temporal experience of architecture through various drawings and modeling exercises. Observation of existing and imagination of possible architectural environments. On location at selected sites. (Core Course)

Prerequisite: registration in the B.A.S. program.

Studio eight hours a week.

First offered 1998-99.

ARCS 2105 [1.5 credits] (formerly 80.215)

### **Studio 2**

Development of cultural imagination within the field of architecture. Inhabitation and spatial definition are explored through analysis and design of small-scale environments. Representational skills developed, including the conventions of architectural drawing and modeling. (Core Course)

Prerequisite: ARCS 1105.

Twelve hours studio, plus one hour lecture per week.

First offered 1999-2000.

ARCS 2106 [1.5 credits] (formerly 80.216)

### **Studio 3**

Small-scale building projects explore architectural design as a form of cultural expression. Consideration of site, program, and the materials of building as the means for shaping architecture. (Core Course)

Prerequisite: ARCS 2105.

Twelve hours studio, plus one hour lecture per week.

First offered 1999-2000.

ARCS 3105 [1.5 credits] (formerly 80.315)

### **Studio 4**

Sensory components of architecture: their use, effect, and symbolic potential. Light and lighting, sound, the sensation of heat and cold, and related phenomena studied in modest building proposals. Social considerations of architecture. The conventions of architectural drawing. (Core Course)

Prerequisite: ARCS 2106.

Twelve hours studio, plus one hour lecture per week.

First offered 2000-2001.

ARCS 3106 [1.5 credits] (formerly 80.316)

### **Studio 5**

Building materials and practices within the context of increasingly complex building programs. Social context of architecture in relation to material expression. Modeling is stressed. (Core Course)

Prerequisite: ARCS 3105.

Twelve hours studio, plus one hour lecture per week.

First offered 2000-2001.

ARCS 4105 [1.5 credits] (formerly 80.415)

### **Studio 6**

Issues of program and site as the culturally defining aspects of architectural practice within complex urban and social situations, using difficult sites and hybrid programs. Projects brought to a high degree of formal and graphic resolution. (Core Course)

Prerequisite: ARCS 3106.

Twelve hours studio, plus one hour lecture per week.

First offered 2001-2002.

ARCS 4106 [1.5 credits] (formerly 80.416)

### **Studio 7**

The role of architecture in culture, stressing site and program with respect to their historic, social, and ecological implications. Synthesis of issues, methods and techniques of the undergraduate studio program. (Core Course)

Prerequisite: ARCS 4105.

Twelve hours studio, plus one hour lecture per week.

First offered 2001-2002.

ARCS 4600 [2.5 credits] (formerly 80.460)

### **Research Thesis 5.1**

Opportunity for scholarly research in topics related to architecture. Thesis proposal requires approval by the Thesis Committee. The final submission must be within a prescribed format. (Core Course for B.Arch. students)

Prerequisites: fifth-year standing and approved thesis proposal.

Last offered 2002-2003.

ARCS 4601 [2.5 credits] (formerly 80.461)

### **Research Thesis 5.2**

Opportunity for scholarly research in topics related to architecture. Thesis proposal requires approval by the Thesis Committee. The final submission must be within a prescribed format. In exceptional cases the Thesis Committee may allow this to be a continuation of ARCS 4600. (Core Course for B.Arch. students)

Prerequisites: fifth-year standing and approved thesis proposal.

Last offered 2002-2003.

ARCS 4606 [2.5 credits] (formerly 80.466)

### **Design Thesis 5.1**

Opportunity for in-depth exploration of an architectural idea or issue. The thesis proposal requires approval by the Thesis Committee. (Core Course for B.Arch. students)

Prerequisites: fifth-year standing and approved thesis proposal.

Last offered 2002-2003.

ARCS 4607 [2.5 credits] (formerly 80.467)

### **Design Thesis 5.2**

Opportunity for in-depth exploration of an architectural idea or issue. The thesis proposal requires approval by the Thesis Committee. In exceptional cases the Thesis Committee may allow this to be a continuation of ARCS 4606. (Core Course for B.Arch. students)

Prerequisites: fifth-year standing and approved thesis proposal.

Last offered 2002-2003.

ARCS 4700 [2.5 credits] (formerly 80.470)

### **Selected Topics Studio**

In-depth exploration of an architectural idea or issue, including a directed studies component, given by the studio professor, that reinforces the explorations in the studio. (Core Course for B.Arch. students.)

Prerequisites: fifth-year standing and permission of the School.

Last offered 2002-2003.



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## Studies in Art and Culture: Art History, Film Studies, Music (ACUL)

School for Studies in Art and Culture  
Faculty of Arts and Social Sciences

ACUL 1105 [1.0 credit] (formerly 08.115)

**Introduction to Media and Technology in Art and Culture**  
Introduction to the technological innovations which have had significant impact on the course of twentieth-century cultural and artistic practices. This introduction is achieved through a combination of academic and practical studio work.

Prerequisite: Enrolment in one of the programs of the School for Studies in Art and Culture or the School of Journalism and Communication, or in the Arts Canterbury program, and permission of the School.

Lectures and studio demonstrations three hours a week.

ACUL 2000 [1.0 credit] (formerly 08.200)

### Theories of Art and Culture

Major writings on art and culture in historical Western traditions with particular reference to the contents and concerns of the three disciplines of the School.

Prerequisite: second-year standing in the Program or permission of the School.

Lecture three hours a week.

ACUL 2105 [1.0 credit] (formerly 08.215)

### Survey of Computer Applications/Programming in Music

Introduction to various programming languages and systemic processes commonly used in sonic computer applications.

Prerequisite: Enrolment in one of the programs of the School for Studies in Art and Culture.

Lectures and studio demonstrations three hours a week.

ACUL 3905 [1.0 credit] (formerly 08.395)

### Visual and Performing Arts in the Twentieth Century

This interdisciplinary course is designed to examine selected aspects of the creation, distribution and reception of the arts in this century. The focus of the course is on the interplay of aesthetics, ideology and technology in music, theatre, film, art and architecture.

Prerequisite: third-year standing and permission of the School.

Lectures three hours a week.

ACUL 4000 [0.5 credit] (formerly 08.400\*)

### Topics in Cultural Studies

Selected topics in the development of cultural studies as an interrelated series of intellectual trajectories originating in England during the late 1950s. Topics may change from year to year.

Prerequisite: fourth-year standing in the Program or permission of the School.

Seminar three hours a week.

ACUL 4001 [0.5 credit] (formerly 08.401\*)

### Aspects of Modernism in Art and Culture

Selected aspects of modernist theory and practice in art and culture. Topics may change from year to year and may include the arts and European colonialism; 'primitivism'; practices and theories of the avant-garde; surrealism; expressionism; art and the popular; modernism and myth.

Prerequisite: fourth-year standing in the Program or permission of the School.

Seminar three hours a week.

ACUL 4002 [0.5 credit] (formerly 08.402\*)

### Topics in Audiovisual Cultures

Selected aspects of the audio-visual cultures of the late nineteenth and twentieth centuries. (Also listed as FILM 4002.)

Prerequisite: fourth-year standing in the Program or permission of the School.

Seminar three hours a week.

ACUL 4003 [0.5 credit] (formerly 08.403\*)

### Cultural Theory in Canadian Contexts

Established and contemporary theories of cultures developed within Canadian contexts.

Prerequisite: fourth-year standing in the Program or permission of the School.

Lectures three hours a week.

ACUL 4900 [0.5 credit] (formerly 08.490\*)

### Special Topic in the Study of Art and Culture

This course is designed specifically for Honours students in the School interested in interdisciplinary aspects of their course of study. The course offerings change from year to year.

Prerequisite: fourth-year standing in one of the School's degree programs or permission of the School.

Lectures and seminars three hours a week.

ACUL 4901 [0.5 credit] (formerly 08.491\*)

### Special Topic in the Study of Art and Culture

This course is designed specifically for Honours students in the School interested in interdisciplinary aspects of their course of study. The course offerings change from year to year.

Prerequisite: fourth-year standing in one of the School's degree programs or permission of the School.

Lectures and seminars three hours a week.

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## Art History (ARTH)

School for Studies in Art and Culture  
Faculty of Arts and Social Sciences

ARTH 1100 [0.5 credit] (formerly 11.110\*)

### Art and Society: Prehistory to the Renaissance

A survey of art, architecture and artifacts from prehistory to the Renaissance. The course explores ways of understanding visual culture through this span of history.

Precludes additional credit for ARTH 1000.

Lectures two hours a week, tutorial one hour a week.

ARTH 1101 [0.5 credit] (formerly 11.111\*)

### Art and Society: Renaissance to the Present

A survey of art, architecture and related visual forms in their expanding contexts from the Renaissance to the present. The course explores ways of understanding visual culture through this span of history.

Precludes additional credit for ARTH 1000.

Lectures two hours a week, tutorial one hour a week.

ARTH 1105 [0.5 credit] (formerly 11.115\*)

### Art as Visual Communication

A variety of visual material is organized topically to examine the elements of art (line, shape, value, colour, texture, space), the principles of pictorial organization, the materials and techniques of art, and recurrent tendencies in artistic styles and outlooks. Lectures three hours a week.

ARTH 1200 [0.5 credit] (formerly 11.120\*)

### Introduction to Architectural History

A survey of architecture including principles of structure and form, vernacular traditions and the architecture of high culture in Asia and the West up to 1600.

Lectures two hours a week, tutorial one hour a week.

ARTH 2002 [0.5 credit] (formerly 11.202\*)

### Canadian Historical Art

This course surveys historical Canadian art, examining issues such as the intersections between craft and fine art, amateur and professional artists, art training, gender, nationalism, regionalism and ethnicity. Local and national collections in Ottawa may be drawn on extensively.

Prerequisite: second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2003 [0.5 credit] (formerly 11.203\*)

### Canadian Twentieth-Century and Contemporary Art

This course surveys twentieth-century and contemporary Canadian art in a variety of media within social, political and cultural contexts. Issues such as regionalism, multiculturalism, nationalism, gender, race and identity will be considered in relation to local and national collections in Ottawa.

Prerequisite: second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2005 [0.5 credit] (formerly 11.205\*)

**Arts of the First Peoples: The Woodlands, the Plains and the Subarctic**

This course is an introduction to the visual arts of Aboriginal peoples of the eastern and central regions of North America. A post-colonial perspective will be used to consider selected examples of creative production from time immemorial to the present.

Prerequisite: second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2006 [0.5 credit] (formerly 11.206\*)

**Arts of the First Peoples: The Southwest, the West Coast and the Arctic**

This course is an introduction to the visual arts of Aboriginal peoples of the western and northern regions of North America. A post-colonial perspective will be used to consider selected examples of visual materials from time immemorial to the present.

Prerequisite: second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2100 [0.5 credit] (formerly 11.210\*)

**Greek and Roman Art and Archaeology**

The art, architecture and archaeology of Greece and Rome. Vase painting, sculpture, Greek and Roman architecture, town planning and analogous arts are studied. (Also listed as CLCV 2302.)

Prerequisite: second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2202 [0.5 credit] (formerly 11.222\*)

**Medieval Art**

This course examines medieval art from the earliest Christian production through the late Gothic period. Reference will be made to both Western and Byzantine artistic monuments.

Prerequisite: second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2300 [0.5 credit] (formerly 11.230\*)

**Italian Renaissance Art**

An examination of major works of art and architecture, issues and themes in the Italian Renaissance. The course concentrates on the fifteenth and sixteenth centuries, with a look at roots in the fourteenth.

Prerequisite: second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2403 [0.5 credit] (formerly 11.243\*)

**European Art from 1600-1750**

This course examines painting, sculpture and architecture in Europe from 1600-1750.

Prerequisite: second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2502 [0.5 credit] (formerly 11.252\*)

**European Art from 1750-1900**

This course examines major artistic movements in Europe from about 1750-1900. Class lectures emphasize Neo-Classicism, Romanticism and Realism.

Prerequisite: second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2600 [0.5 credit] (formerly 11.260\*)

**Modern European Art 1900-1945**

This course examines major artistic movements in Europe from about 1900 to 1945.

Prerequisite: second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2601 [0.5 credit] (formerly 11.261\*)

**Introduction to the History of Photography**

Issues, themes, movements in photography and individual photographers from the origins of the medium to the present.

Prerequisite: second-year standing or permission of the Discipline.

Lectures three hours a week.

ARTH 2608 [0.5 credit] (formerly 11.268\*)

**History and Theory of Architecture**

This course examines selected examples of world architecture from c. 1600 to the present day. Included are theories and methodological approaches to architectural history and criticism.

Prerequisite: second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 2806 [0.5 credit] (formerly 11.286\*)

**Art and Ideas: From Ancient Greece to the Twentieth Century**

A survey of theories that have shaped the Western approach to art and art criticism, including Plato, Aquinas, Kant, Hegel and Nietzsche. (Also listed as PHIL 2806.)

Lectures three hours a week.

ARTH 2807 [0.5 credit] (formerly 11.287\*)

**Art and Ideas: The Twentieth Century**

A survey of theories that have shaped the Western approach to art and art criticism including formalist, psychological, sociological, phenomenological, semiotic, poststructural and aesthetic approaches and including such thinkers as Fry, Greenberg, Freud, Arnheim, Hauser, Heidegger and Derrida. (Also listed as PHIL 2807.)

Lectures three hours a week.

ARTH 3000 [0.5 credit] (formerly 11.300\*)

**Themes in Canadian Historical Art**

This course examines selected aspects of historical Canadian art in a variety of media. Local and national collections in Ottawa may be drawn on extensively.

Prerequisite: ARTH 2002 or ARTH 2003 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3001 [0.5 credit] (formerly 11.301\*)

**Canadian Art: Issues in Contemporary Art Practice**

This course examines a wide range of contemporary art practice such as photography, new media, painting, sculpture and installation in light of such current issues as gender, race, identity, new genre public art, regionalism and nationalism. Emphasis will be placed on local and national collections in Ottawa.

Prerequisite: ARTH 2003 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3002 [0.5 credit] (formerly 11.302\*)

**Canadian Architecture**

Canadian architecture from the seventeenth century to the present day, covering both stylistic and technological developments. Building styles, methods, and materials in the context of social and economic conditions and construction techniques. (Also listed as ARCH 4002.)

Prerequisites: ARTH 1100 and ARTH 1101, or ARTH 1200 and ARTH 1201, or ARCH 1002 and ARCH 1201, and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3005 [0.5 credit] (formerly 11.305\*)

**American Architecture**

This course studies the cultural history of the United States as expressed through its architectural heritage. Selected buildings and complexes from the earliest settlements through the early twentieth century are examined.

Prerequisite: ARTH 1201 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3006 [0.5 credit] (formerly 11.306\*)

**American Painting and Sculpture**

This course studies the evolution of painting and sculpture in

the United States from colonial times to the early twentieth century.  
Prerequisite: ARTH 1101 and second-year standing or higher, or permission of the Discipline.  
Lectures three hours a week.

ARTH 3101 [0.5 credit] (formerly 11.311\*)

**Studies in Greek and Roman Art and Archaeology**

Period or theme in the art and archaeology of Ancient Greece and Rome. Topics may vary from year to year. (Also listed as CLCV 3305.)

Prerequisite: second-year standing or higher, or permission of the Discipline.  
Lectures three hours a week.

ARTH 3103 [0.5 credit] (formerly 11.313\*)

**Post-Colonial Theory in Art, Art History, and Curatorial Practice**

This course will examine specific examples of post-colonial theory as it intersects with visual arts, art history and curatorial practice.

Prerequisite: second-year standing or higher, or permission of the Discipline.  
Lectures three hours a week.

ARTH 3104 [0.5 credit] (formerly 11.314\*)

**Inuit Art**

This course presents a survey of visual art produced by Canadian Inuit from the circumpolar area.

Prerequisite: second-year standing or higher, or permission of the Discipline.  
Lectures three hours a week.

ARTH 3106 [1.0 credit] (formerly 11.316)

**History and Methods of Art History**

The study of the history of art history and the methodologies and research tools employed by art historians.

Prerequisites: third-year Honours standing or higher in Art History, or permission of the Discipline.  
Seminar three hours a week.

ARTH 3201 [0.5 credit] (formerly 11.321\*)

**Issues in Medieval Art and Architecture**

This course explores issues and themes in the arts and architecture of the medieval period.

Prerequisite: ARTH 1100 or ARTH 2202 and second-year standing or higher, or permission of the Discipline.  
Lectures three hours a week.

ARTH 3301 [0.5 credit] (formerly 11.331\*)

**Visuality, Image and Identity in pre-Modern Europe**

An exploration of such themes as art and the spectator, visual modes, gender, image and identity, art of civic life, narrative and space, and regionalism. Topics vary. Concentration on the fourteenth to sixteenth centuries, although periods discussed may span antiquity to the seventeenth century.

Prerequisite: ARTH 2300 and second-year standing or higher, or permission of the Discipline.  
Lectures three hours a week.

ARTH 3505 [0.5 credit] (formerly 11.355\*)

**French Impressionism: Art, Leisure and Society**

This course treats selected Impressionist and Neo-Impressionist artists, such as Manet, Monet, Degas, Caillebotte, Cézanne and Seurat. Considerable emphasis is placed on social context, including issues of class, gender and modernity.

Lectures three hours a week.

ARTH 3506 [0.5 credit] (formerly 11.356\*)

**Myth, Religion and the Occult in Art: 1850-1914**

This course examines how artists, ranging in style from Pre-Raphaelites to pioneers of abstraction, shared an Idealism that they expressed by iconography drawn from myth, legend, religions, Theosophy, mysticism and the occult. The course content serves as a basis for understanding and applying iconological methodology. Lecture three hours a week.

ARTH 3507 [0.5 credit] (formerly 11.357\*)

**The Artist in Context**

An examination of one artist's or group of artists' life and work. Relevant artistic, intellectual, social, political and theoretical contexts are considered. The topic for 2002-03 is Vincent van Gogh.

Prerequisite: ARTH 1101 or ARTH 2502 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3600 [0.5 credit] (formerly 11.360\*)

**Art Since 1945**

This course treats major artists and artistic movements from 1945 to the present. Emphasis is placed on the United States.  
Prerequisite: ARTH 2600 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3601 [0.5 credit] (formerly 11.361\*)

**Women, Art and Society**

The work by women artists in Western Europe and North America will be examined with emphasis on the social, economic and political contexts for women's artistic production.

Prerequisite: second-year standing or higher or permission of the Discipline.

Lectures three hours a week.

ARTH 3602 [0.5 credit] (formerly 11.362\*)

**The History of Photography in Canada**

Issues, themes, movements in photography and individual photographers from the arrival of the medium in Canada to the present.

Prerequisite: ARTH 2601 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3603 [0.5 credit] (formerly 11.363\*)

**Visual Art and Popular Culture Since 1900**

This course will survey the ways in which popular (visual) culture (advertising, mass circulation magazines, television, the web) and fine art have been mutually influential since 1900. The course will engage diverse methodological approaches in the study of a variety of visual forms.

Prerequisite: second-year standing or higher.

Lectures three hours a week.

ARTH 3609 [0.5 credit] (formerly 11.369\*)

**Twentieth-Century Architecture**

An examination of developments in architectural form and culture through the course of the twentieth century. Emphasis will be placed on the formation and subsequent critique of the Modern Movement.

Precludes additional credit for ARCH 3009.

Prerequisites: ARTH 1200 or ARTH 1201 and second-year standing or higher, or permission of the Discipline.

Lectures three hours a week.

ARTH 3705 [0.5 credit] (formerly 11.375\*)

**Selected Museum Exhibition**

This seminar complements a major exhibition held at a local museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.

Prerequisite: second-year standing or higher or permission of the Discipline.

Seminar and/or lectures three hours a week.

ARTH 3900 [0.5 credit] (formerly 11.390\*)

**Practicum in Art History**

Practical experience gained by working on specific projects under the supervision of the staff of one of the museums and cultural institutions in the Ottawa area. A maximum of 1.0 credit of practicum may be offered in fulfilment of Art History requirements.  
Prerequisite: B.A. or B.A. (Honours) Art History registration with third-year standing or higher and a GPA of 9.00 or better in Art History courses, or permission of the Discipline.

ARTH 3901 [0.5 credit] (formerly 11.391\*)

**Practicum in Art History**

Practical experience gained by working on specific projects under the supervision of the staff of one of the museums and cultural institutions in the Ottawa area. A maximum of 1.0 credit of practicum may be offered in fulfilment of Art History requirements.  
Prerequisite: B.A. or B.A. (Honours) Art History registration with third-year standing or higher and a GPA of 9.00 or better in Art History courses, or permission of the Discipline.



ARTH 3902 [0.5 credit] (formerly 11.392\*)

**Practicum in Art History**

Practical experience gained by working on specific projects under the supervision of the staff of one of the museums and cultural institutions in the Ottawa area. A maximum of 1.0 credit of practicum may be offered in fulfilment of Art History requirements. Prerequisite: B.A. or B.A. (Honours) Art History registration with third-year standing or higher and a GPA of 9.00 or better in Art History courses, or permission of the Discipline.

ARTH 4000 [0.5 credit] (formerly 11.400\*)

**Topics in Historical Canadian Art**

This seminar examines selected topics in historical Canadian art, such as colonialism, national identity, race, gender, class, cultural policy and public art. Local and national collections in Ottawa may be drawn on extensively.

Prerequisite: one of ARTH 2002, ARTH 2003, ARTH 3000 and third-year standing or higher, or permission of the Discipline.

Seminars three hours a week.

ARTH 4001 [0.5 credit] (formerly 11.401\*)

**Aspects of Modern and Contemporary Art Practice in Canada**

This course will examine a selected issue/theme in modern and contemporary Canadian art. Focus on works in public collections in Ottawa with particular emphasis on current exhibitions in the National Capital region.

Prerequisite: ARTH 3001 and third-year standing or higher, or permission of the Discipline.

Seminar three hours a week.

ARTH 4005 [0.5 credit] (formerly 11.405\*)

**Topics in Contemporary Aboriginal Art**

This course will utilize critical theory to examine aspects of contemporary visual art created by the Inuit and First Peoples in North America.

Prerequisites: ARTH 2005 or ARTH 2006 or ARTH 3001 or ARTH 3103 and third-year standing or permission of the Discipline.

Seminar three hours a week.

ARTH 4202 [0.5 credit] (formerly 11.422\*)

**Topics in Medieval Art and Architecture**

This course examines selected aspects of Medieval Art and Architecture.

Seminar three hours a week.

ARTH 4305 [0.5 credit] (formerly 11.435\*)

**Topics in Renaissance Art**

This seminar deals with selected aspects of Renaissance art and society.

Prerequisite: ARTH 2300 and third-year standing or higher, or permission of the Discipline.

Seminar three hours a week.

ARTH 4505 [0.5 credit] (formerly 11.455\*)

**Topics in Nineteenth-Century European Art**

This course examines selected aspects of nineteenth-century European art. The topic for 2002-2003 is Paul Gauguin.

Prerequisite: ARTH 2502 or ARTH 3505 and third-year standing or higher, or permission of the Discipline.

Lectures and/or seminar three hours a week.

ARTH 4600 [0.5 credit] (formerly 11.460\*)

**Women and Modernism**

This course will examine the work of twentieth-century women artists in Europe and North America in light of economic, social, political and artistic contexts. Painting, sculpture, photography as well as applied art, printmaking and design will be included. Precludes additional credit for ARTH 4601 (with the same topic).

Prerequisite: ARTH 2600 or ARTH 3601 and third-year standing or higher, or permission of the Discipline.

Seminar three hours a week.

ARTH 4602 [0.5 credit] (formerly 11.462\*)

**Issues in the Theory and History of Photography**

Relates the themes of selected theoretical texts on photography to specific examples of photographic practice.

Prerequisite: ARTH 2601 and third-year standing or higher, or permission of the Discipline.

Seminar three hours a week.

ARTH 4603 [0.5 credit] (formerly 11.463\*)

**Contemporary Environmental Art**

This course examines contemporary inflections of "land-art", from 1960s Earthworks to more recent "Eco-Art" with overt ecological meaning or function. Reference is made to historical and prehistoric antecedents.

Precludes additional credit for ARTH 4601 (with the same topic).

Prerequisite: ARTH 3600, or third-year standing or higher, or permission of the Discipline.

Lectures and/or seminar three hours a week.

ARTH 4604 [0.5 credit] (formerly 11.464\*)

**Architecture in the Post-War Period**

This course examines the theoretical, ideological and artistic debates which have influenced the development of world architecture since 1950. (Also listed as ARCH 4301.)

Prerequisite: ARTH 3609 or ARCH 2300 or permission of the Discipline.

Lectures or seminars three hours a week.

ARTH 4700 [0.5 credit] (formerly 11.470\*)

**Being Digital: Art, Art History, and the Art Museum in the Critical Space of the WWW**

An introduction to the use of WWW as a research resource, to art museums' uses of the WWW, and to contemporary artists' WWW projects. Students will "publish" their own WWW projects, including a virtual exhibition of artworks from Carleton University Art Gallery.

Prerequisites: ARTH 3106, fourth-year standing in Art History, and permission of the Discipline.

Seminars three hours a week.

ARTH 4705 [0.5 credit] (formerly 11.475\*)

**Seminar: Selected Museum Exhibition**

Studies a major exhibition held at a local museum. Students enrolled in this course are expected to bear all travel and other costs arising from required visits to the museum.

Prerequisites: fourth-year Honours standing in Art History and permission of the Discipline.

Lectures and/or seminar three hours a week.

ARTH 4800 [0.5 credit] (formerly 11.480\*)

**Topics in Architectural History**

This course examines selected aspects of architectural history from ancient times to the present.

Prerequisite: third-year standing or higher, or permission of the Discipline.

Seminar three hours a week.

ARTH 4807 [0.5 credit] (formerly 11.487\*)

**Topics in Art Criticism**

This course introduces major problems and theories in art criticism with particular attention to whether the theories can be accepted.

Prerequisite: third-year standing or higher, or permission of the Discipline.

Seminar three hours a week.

ARTH 4809 [0.5 credit] (formerly 11.489\*)

**Topics in Art History**

Selected aspects of art history from ancient times to the present. Prerequisite: third-year standing or higher, or permission of the Discipline.

Seminar three hours a week.

ARTH 4900 [0.5 credit] (formerly 11.490\*)

**Directed Readings and Research**

Supervised readings and research projects. Guidelines must be obtained from the Supervisor of Undergraduate Studies prior to registration. A written project outline, approved by the supervising Art History faculty member, must be submitted to the Supervisor of Undergraduate Studies by the last day for course changes.

Prerequisites: fourth-year Honours standing in Art History and permission of the Discipline.

ARTH 4901 [0.5 credit] (formerly 11.491\*)

**Directed Readings and Research**

Supervised readings and research projects. Guidelines must



be obtained from the Supervisor of Undergraduate Studies prior to registration. A written project outline, approved by the supervising Art History faculty member, must be submitted to the Supervisor of Undergraduate Studies by the last day for course changes.

Prerequisites: fourth-year Honours standing in Art History and permission of the Discipline.

ARTH 4902 [0.5 credit] (formerly 11.492\*)

#### **Directed Readings and Research**

Supervised readings and research projects. Guidelines must be obtained from the Supervisor of Undergraduate Studies prior to registration. A written project outline, approved by the supervising Art History faculty member, must be submitted to the Supervisor of Undergraduate Studies by the last day for course changes.

Prerequisites: fourth-year Honours standing in Art History and permission of the Discipline.

ARTH 4909 [1.0 credit] (formerly 11.499)

#### **Honours Research Essay**

An essay of approximately 10,000 words, resulting from independent research, supervised by Art History faculty.

Prerequisites: fourth-year Honours standing in Art History with a GPA of 9.00 or better calculated over all courses in Art History; and permission of the Discipline.

## **Biochemistry (BIOC)**

Institute of Biochemistry  
Faculty of Science

BIOC 2200 [0.5 credit] (formerly 63.220\*)

#### **Cell Physiology and Biochemistry**

A lecture and laboratory course on cellular functions and their inter-relationships. It introduces topics including thermodynamics, membrane structure and function, transport mechanisms, basic metabolic pathways, energy production and utilization, communications between cells. (Also listed as BIOL 2200.)

Precludes additional credit for BIOL 2200. Credit will not normally be given for BIOC 2200 or equivalent taken after BIOC 3100.

Prerequisites: BIOL 1003 and or equivalent, CHEM 1000 or permission of the Institute.

Lectures three hours a week, laboratory four hours a week.

BIOC 2909 [0.5 credit] (formerly 63.299\*)

#### **Co-operative Work Term Report 1**

This course provides practical experience for students enrolled in the co-operative option. To receive course credit, students must receive a satisfactory evaluation from their work term employer; and present a written report describing their work term project. Graded Sat/Uns.

Prerequisites: registration in the Biochemistry co-operative option and permission of the Institute.

Four-month work term.

BIOC 3005 [0.5 credit] (formerly 63.305\*)

#### **Practical Biochemistry**

A laboratory and tutorial course introducing the basics of experimental biochemistry and illustrating the theory and concepts dealt with in BIOC 3100.

Prerequisites: CHEM 2200 or CHEM 2203 and CHEM 2204; CHEM 2100 or CHEM 2101 or BIOC 2200/BIOL 2200 with a grade of C- or better, or permission of the Institute. BIOC 3100 or equivalent is recommended as a co-requisite.

Laboratory four hours a week plus biweekly assignments.

BIOC 3100 [1.0 credit] (formerly 63.310)

#### **General Biochemistry**

Chemistry and metabolism of proteins, lipids, carbohydrates and nucleic acids. Mechanism of action of enzymes. Metabolic control mechanisms and inter-relations. Biological oxidation. Biosynthesis of structural, storage and informational compounds. Prerequisites: CHEM 2200 or CHEM 2203 and CHEM 2204; CHEM 2100 or CHEM 2101 or BIOC 2200/BIOL 2200 with a grade of C- or better, or permission of the Institute. A course in genetics is strongly recommended.

Lectures three hours a week.

BIOC 3909 [0.5 credit] (formerly 63.399\*)

#### **Co-operative Work Term Report 2**

This course provides practical experience for students enrolled in the co-operative option. To receive course credit, students must receive a satisfactory evaluation from their work term employer; and present a written report describing their work term project. Graded Sat/Uns.

Prerequisites: registration in the Biochemistry co-operative option and permission of the Institute.

Four-month work term.

BIOC 4001 [0.5 credit] (formerly 63.401\*)

#### **Methods in Biochemistry**

The course deals with the principles and applications of modern biochemical methodology, including use of radioisotope tracers, ultracentrifugation, electrophoresis and ion-exchange chromatography.

Prerequisite: BIOC 3005 or permission of the Institute.

Lectures and discussion two hours, laboratory six hours a week.

BIOC 4002 [0.5 credit] (formerly 63.402\*)

#### **Biomacromolecules**

Biochemistry of polysaccharides, proteins and nucleic acids. Discussion of experimental approaches to purification and conformational studies of biomacromolecules, their interaction in solutions, function and regulation of enzymes. Workshop sessions include discussion of experimental design and interpretation, and solving of related numerical problems.

Prerequisite: BIOC 3100 or permission of the Institute.

Lectures two hours, workshop two hours a week.

BIOC 4004 [0.5 credit] (formerly 63.404\*)

#### **Industrial Biochemistry**

A course illustrating the application of biochemistry to the production of biological compounds useful in nutrition, medicine, and the food and chemical industries. The course also reviews the general strategies for efficient production of these compounds by controlling the activities of living cells or enzymes.

Prerequisite: BIOC 3100 or permission of the Institute.

Lectures three hours a week.

BIOC 4005 [0.5 credit] (formerly 63.405\*)

#### **Biochemical Regulation**

A half-credit in biochemical regulation. Topics include regulation at the transcriptional, translational and metabolic level. Regulation of cell and subcellular organelle function and other timely topics may also be included. A detailed course outline is available from the instructor in any given year.

Precludes additional credit for BIOC 4003.

Prerequisite: BIOC 3100.

Lectures three hours a week.

BIOC 4006 [0.5 credit] (formerly 63.406\*)

#### **Bioinformatics**

The use of computers to solve biochemical problems. Topics may include data and software acquisition, sequence analyses, genomics, biomolecular interaction and kinetics, metabolic simulation, molecular modeling of biomolecules and biodiversity.

Prerequisites: BIOC 3100, or permission of the Institute.

Lecture one hour a week, computer workshop three hours a week.

BIOC 4007 [0.5 credit] (formerly 63.407\*)

#### **Membrane Biochemistry**

Biochemical and biophysical aspects of biomembrane structure and function. Topics may include: membrane lipids and proteins, lipid polymorphism, model membranes, liposomes, membrane biogenesis, the membrane cytoskeleton, membrane trafficking, membrane fusion, exocytosis and signal transduction across membranes.

Prerequisite: BIOL 2200 or BIOC 2200 or BIOC 3100 (taken concurrently), or permission of the Institute.

Lectures two hours a week and workshop two hours a week.

BIOC 4202 [0.5 credit] (formerly 63.422\*)

#### **Mutagenesis and DNA Repair**

A mechanistic study of mutagenesis and DNA repair. Topics will include DNA structure perturbations, spontaneous and induced mutagenesis, the genetics and biochemistry of DNA repair and recombination, and the role of mutations in the

development of genetic disease and cancer. (Also listed as BIOL 4202).

Prerequisites: BIOL 2200 or BIOC 2200 or BIOC 3100 (taken concurrently); BIOL 3104, or permission of the Institute. Lectures two hours a week and workshop two hours a week.

BIOC 4302 [0.5 credit] (formerly 63.432\*)

#### **Immunology**

The organization and function of the immune system. The anatomy of the immune system, and the molecular and genetic bases of the immune response. The laboratory teaches applications of animal cell culture in studies of immune cells and their products. (Also listed as BIOL 4302.)

Prerequisite: BIOL 2201 or BIOL 3201, or permission of the Institute.

Lectures three hours a week, laboratories four hours a week.

BIOC 4400 [0.5 credit] (formerly 63.440\*)

#### **The Cell Cycle**

A course on the molecular cell biology of the eukaryotic cell cycle. Topics will include regulation of cell proliferation and cell death, and the molecular basis for morphological remodeling during cell division and death. (Also listed as BIOL 4400.)

Prerequisites: BIOL 3201, or BIOC 2200 and BIOC 3100.

BIOC 4708 [0.5 credit] (formerly 63.478\*)

#### **Principles of Toxicology**

This course identifies the basic theorems of toxicology with examples of current research problems. Toxic risk is defined as the product of intensive hazard and extensive exposure. Each factor is assessed in scientific and social contexts and illustrated with many types of experimental material. Also offered at the graduate level, with additional or different requirements, as BIOL 6402 and CHEM 5708, for which additional credit is precluded.

Prerequisite: BIOC 3100 or permission of the Institute.

Lectures three hours a week.

BIOC 4901 [0.5 credit] (formerly 63.491\*)

#### **Selected Topics in Biochemistry**

Selected topics of current interest in biochemistry are offered upon approval by the Director in consultation with members of the Institute.

BIOC 4907 [1.0 credit] (formerly 63.497)

#### **Honours Essay and Research Proposal**

An independent research study using library resources. The candidate will prepare a critical review of a topic approved by a faculty adviser. Evaluation will be based on a report and an oral defence of the report.

Precludes additional credit for BIOC 4908.

Prerequisite: fourth-year standing in an Honours Biochemistry program and permission of the Institute.

BIOC 4908 [1.0 credit] (formerly 63.498)

#### **Research Project**

Students carry out a research project approved by the Director, under the supervision of a faculty member of the Institute, in either the Biology or Chemistry departments. A report must be submitted to the supervisor by the last day of classes, and will be examined by committee.

Precludes additional credit for BIOC 4907.

Prerequisites: BIOC 3005 and BIOC 3100 or equivalent, and eligibility to continue in Honours Biochemistry or in Biochemistry and Biotechnology.

Lectures and associated work average at least eight hours a week.

BIOC 4909 [0.5 credit] (formerly 63.499\*)

#### **Co-operative Work Term Report 3**

This course provides practical experience for students enrolled in the co-operative option. To receive course credit, students must receive a satisfactory evaluation from their work term employer; and present a written report describing their work term project. Graded Sat/Uns.

Prerequisites: registration in the Biochemistry co-operative option and permission of the Institute.

Four-month work term.

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## **Biology (BIOL)**

Faculty of Science

Faculty of Arts and Social Sciences

#### **Notes:**

More detailed information regarding Biology courses taken in second and later years, and topics for Honours research projects (BIOL 4908), may be obtained from *Outlines of Advanced Biology and Biochemistry courses to be offered in the fall/winter session 2002-2003* and *Suggested Topics for BIOL 4908 Research Projects 2002-2003*. These information booklets may be obtained from the College of Natural Sciences Administrative Office. All students are strongly advised to consult these information booklets when planning their future course patterns.

Students should note that BIOL 1003 and BIOL 1004 are intended primarily for students wishing to major in Biology or take a Science degree. Other students who wish to take Biology courses should consider BIOL 1902, BIOL 1903 and/or BIOL 2106.

BIOL 1003 [0.5 credit] (formerly 61.103)

#### **Introductory Biology I**

A lecture and laboratory course focusing on the cell. The course emphasizes the organization of cells, cellular metabolism, classical and molecular genetics and the reproduction of cells and organisms. Precludes additional credit for BIOL 1000, BIOL 1002, or the combination of BIOL 2009 and BIOL 2300.

Prerequisite: OAC Biology (or equivalent), or OAC Chemistry (or equivalent), or CHEM 0100.

Lectures three hours a week, laboratory and/or tutorial three hours a week.

BIOL 1004 [0.5 credit] (formerly 61.104)

#### **Introductory Biology II**

A lecture and laboratory course focusing on organisms and populations. The course emphasizes diversity of life forms, evolution and ecology.

Precludes additional credit for BIOL 1000, BIOL 1002, or the combination of BIOL 2009 and BIOL 2300.

Prerequisite: BIOL 1003 or equivalent.

Lectures three hours a week, laboratory and/or tutorial three hours a week.

BIOL 1902 [0.5 credit] (formerly 61.192)

#### **Natural History**

A course designed primarily for students in non-Biology programs to investigate the natural history of plants and animals, and the communities in which they occur. Particular attention is paid to the Ottawa region, but appropriate examples from other locales are also included. This course is acceptable only as a Free Elective in all Science programs and B.A. Biology programs.

Lectures three hours a week.

BIOL 1903 [0.5 credit] (formerly 61.193)

#### **The Natural History of Ontario**

A study of Ontario's biodiversity. In addition to examining the makeup of the different communities of plants and animals found in Ontario, the course explores their adaptations to the forces that influence their distribution. This course is acceptable only as a Free Elective in all Science programs and B.A. Biology programs.

Prerequisite: BIOL 1902.

Lectures three hours a week.

BIOL 2001 [0.5 credit] (formerly 61.201)

#### **Animals: Form and Function**

An investigation of invertebrates and vertebrates to relate their structure, function, behaviour and interactions with plants.

Precludes additional credit for BIOL 2000.

Prerequisites: BIOL 1003 and BIOL 1004 or permission of the Department.

Lectures three hours a week, laboratory four hours a week.

BIOL 2002 [0.5 credit] (formerly 61.202)

#### **Plants: Form and Function**

An introduction to the structure and development of higher plants (at molecular, cellular and organism levels) discussed in

relation to their function.  
 Precludes additional credit for BIOL 2000.  
 Prerequisites: BIOL 1003 and BIOL 1004 or permission of the Department.  
 Lectures three hours a week, laboratory and/or tutorial three hours a week.

BIOL 2104 [0.5 credit] (formerly 61.214)

#### **Introductory Genetics**

A lecture and laboratory course on the mechanisms of inheritance and the nature of gene structure, composition and function. It introduces both classical Mendelian genetics and modern molecular genetics.

Precludes additional credit for BIOL 2105. Credit for BIOL 2106 will only be given if taken before BIOL 2104.

Prerequisites: BIOL 1003 and BIOL 1004 or permission of the Department.

Lectures three hours a week, laboratory and/or tutorial three hours a week.

It is strongly recommended that this course be taken by Biology Majors in their second year of study.

BIOL 2106 [0.5 credit] (formerly 61.216)

#### **Human Genetics and Evolution**

Designed for students interested in learning about the genetic mechanisms involved in human development (embryogenesis, reproduction and aging), diseases, cancer, behaviour. Environmental adaptation and evolution.

Not a Science continuation course. Available to students in a Biology or other Science program only as free elective, but credit will be given for BIOL 2106 only if taken before BIOL 2104 or BIOL 2105.

Prerequisite: a general biology course at the OAC level or equivalent.

Lectures three hours a week.

BIOL 2200 [0.5 credit] (formerly 61.220)

#### **Cell Physiology and Biochemistry**

A lecture and laboratory course on cellular functions and their inter-relationships. It introduces topics including thermodynamics, membrane structure and function, transport mechanisms, basic metabolic pathways, energy production and utilization, communications between cells. (Listed as BIOC 2200 for students enrolled in the Biochemistry and Biochemistry/Biotechnology programs.)

Prerequisites: BIOL 1003 and BIOL 1004, CHEM 1000 or permission of the Department.

Lectures three hours a week, laboratory four hours a week.

It is strongly recommended that Biology Majors and Honours students take this course in their second year of study.

BIOL 2303 [0.5 credit] (formerly 61.233)

#### **Microbiology**

The biology of the bacteria, Archaea, Viruses and Protozoans, from the fundamentals of cell chemistry, molecular biology, structure and function, to their involvement in ecological and industrial processes and human disease.

Precludes additional credit for BIOL 3301.

Prerequisite: BIOL 1003 or CHEM 1000 or CHEM 1101.

Lectures three hours a week.

BIOL 2600 [0.5 credit] (formerly 61.260)

#### **Introduction to Ecology**

How the physical and biotic environments affect the distribution, abundance and evolution of life, and the importance of ecological ideas in improving understanding of our impact on the environment. The laboratory includes field and computer exercises.

Precludes additional credit for BIOL 3600 and BIOL 2601.

Prerequisites: BIOL 1003 and BIOL 1004 or BIOL 1000, or permission of the Department.

Lectures three hours a week, laboratory and/or tutorial four hours a week.

BIOL 2909 [0.5 credit] (formerly 61.299)

#### **Co-operative Work Term Report**

Practical experience for students enrolled in the Co-operative Option. To receive course credit students must receive satisfactory evaluations from their work term employer. Written

reports describing the work term project will be required. Graded Sat or Uns.

Prerequisites: registration in the Biology Co-operative Option and permission of the Department.

Four-month work term.

BIOL 3004 [0.5 credit] (formerly 61.304)

#### **Insect Diversity**

An introductory field, laboratory, seminar and lecture course on sampling, identification, diversity and biology of insects. Designed for anyone who will use insects in any teaching, research or natural history capacity.

Precludes additional credit for BIOL 4601.

Prerequisites: BIOL 2001.

Lectures two hours a week, laboratory four hours a week.

BIOL 3101 [0.5 credit] (formerly 61.311)

#### **Mycology**

The morphology, evolution and biological importance of the fungi.

Prerequisites: BIOL 1003 and BIOL 1004.

Lectures two hours a week, laboratory four hours a week.

BIOL 3104 [0.5 credit] (formerly 61.314)

#### **Molecular Genetics**

A lecture course dealing with modern advances in molecular genetics.

Precludes additional credit for BIOL 2105.

Prerequisite: BIOL 2104 or permission of the Department.

Lectures three hours a week.

BIOL 3201 [0.5 credit] (formerly 61.321)

#### **Cell Biology**

A lecture and laboratory course on the structure, composition, function and development of eukaryotic cells and their organelles.

Precludes additional credit for BIOL 2201.

Prerequisites: BIOL 2104, BIOL 2200, BIOL 3104, or permission of the Department.

Lectures three hours a week, laboratory four hours a week.

BIOL 3205 [0.5 credit] (formerly 61.325)

#### **Plant Biochemistry and Physiology**

A lecture and laboratory course consisting of selected topics in metabolism and physiology of plants, including photosynthesis, nutrient uptake and transport, intermediary and secondary metabolism, germination, growth and development.

Prerequisites: BIOL 2002 and either BIOL 2200 or CHEM 2200, or permission of the Department.

Lectures three hours a week, laboratory four hours a week.

BIOL 3303 [0.5 credit] (formerly 61.333)

#### **Experimental Microbiology**

Intensive training in laboratory techniques in microbiology, using bacteria and other microorganisms to demonstrate processes of cell growth, metabolism, gene expression, rapid evolution, gene transfer, microbial community dynamics and interactions with other organisms.

Precludes additional credit for BIOL 3301.

Prerequisites: BIOL 2200 and BIOL 2303, or permission of the Department.

Laboratory five hours a week.

BIOL 3305 [0.5 credit] (formerly 61.335)

#### **Animal Physiology**

The properties of physiological systems and components of animals with emphasis on their physico-chemical bases.

Prerequisites: BIOL 2200 and BIOL 2001.

Lectures three hours a week, laboratory four hours a week.

BIOL 3501 [0.5 credit] (formerly 61.351)

#### **The Biophysics of Animal Movement**

Topics include the properties of muscles, tendons, bones, joints and the co-ordinated use of these structures. Human locomotion and fitness, bird flight, especially the soaring of the vulture and the albatross, and animal migration are covered in detail.

Prerequisites: BIOL 2200 or CHEM 2101 and PHYS 1001 and PHYS 1002 or PHYS 1003 and PHYS 1004 or PHYS 1007 and PHYS 1008 or permission of the Department.

Lectures three hours a week, tutorial or seminar one hour a week.



BIOL 3601 [0.5 credit] (formerly 61.361)

**Ecosystem Ecology**

A course utilizing the concepts presented in BIOL 2600 and selected ecological experiments to analyze ecosystem types and the major factors that characterize them.

Prerequisite: BIOL 2600.

Lectures three hours a week, laboratory four hours a week.

BIOL 3602 [0.5 credit] (formerly 61.362)

**Conservation Biology**

The science of biology as applied to the problem of maintaining species diversity. Topics include: history of conservation biology, valuation of species, indices of biodiversity, extinction, conservation genetics, conservation planning in parks and reserves, landscape ecology and case studies of conservation problems.

Prerequisite: BIOL 2600 or permission of the Department.

Lectures three hours a week and laboratory/workshop three hours a week.

BIOL 3604 [0.5 credit] (formerly 61.364)

**Analysis of Ecological Relationships**

Introduction to the analysis of ecological data. Students analyze real ecological data sets in weekly laboratory sessions. Methods introduced include simple linear, polynomial, and multiple regression analysis, analysis of variance, nonparametric tests, tests of independence and logistic regression analysis.

Prerequisites: BIOL 2600 and STAT 2507. For students in the Environmental Engineering program, ENVE 2002, ENVE 3002, and STAT 3502, which may be taken concurrently.

Lectures one and one-half hours and laboratory two and one-half hours a week.

BIOL 3605 [0.5 credit] (formerly 61.365)

**Field Course I**

An intensive study of living organisms under natural conditions. Credit is based on two weeks of full-time fieldwork with attendant assignments. A wide range of modules is available. Transportation and room and board costs are borne by the student. (Also listed as PSYC 3203, for animal behaviour modules only.)

Students make take both BIOL 3605 and BIOL 3606 for credit, but neither may be used to repeat a particular module.

Prerequisites: at least one course in Biology beyond the 1000-level and written permission of the Department.

All day, approximately six days a week.

BIOL 3606 [0.5 credit] (formerly 61.366)

**Field Course II**

An intensive study of living organisms under natural conditions. Credit is based on two weeks of full-time fieldwork with attendant assignments. A wide range of modules is available. Transportation and room and board costs are borne by the student. Students may take both BIOL 3605 and BIOL 3606 for credit, but neither can be used to repeat a particular module.

Prerequisites: at least one course in Biology beyond the 1000-level and written permission of the Department.

All day, approximately six days a week.

BIOL 3608 [0.5 credit]

**Principles of Biogeography**

Contemporary and past controls on distribution of plants and animals at global, regional and local scales; significance of these distributions. This course is also listed as GEOG 3240.

Prerequisite: GEOG 2100, GEOG 2101, or permission of the Department.

BIOL 3609 [0.5 credit]

**Evolutionary Concepts**

Evolution as related to gene pools, isolation, speciation, natural selection, competition, dominance, and distributional patterns; examples from North American biota are emphasized. Formerly listed as BIOL 4609 (61.469). Precludes additional credit for BIOL 4609.

Prerequisites: BIOL 2600 or permission of the Department. Lectures two hours a week, laboratory four hours a week.

BIOL 3801

**Plants and Herbivores**

This course explores the chemical, physiological, ecological and evolutionary interactions that underlie the relationship between plants and their insect herbivores.

Prerequisites: BIOL 2001 and BIOL 2002.

Lectures/seminars three hours a week.

BIOL 3802 [0.5 credit] (formerly 61.382)

**Animal Behaviour**

Advanced study of animal behaviour. Topics such as predator-prey interactions, mating behaviour, migration, mother-young interactions and social behaviour interpreted in an ecological context.

Precludes additional credit for BIOL 4801.

Prerequisites: BIOL 2001, and BIOL 2600 (may be taken concurrently), or permission of the Department.

Lectures two hours a week, laboratory four hours a week.

BIOL 3909 [0.5 credit] (formerly 61.399)

**Co-operative Work Term Report**

Practical experience for students enrolled in the Co-operative Option. To receive course credit students must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.

Prerequisites: registration in the Biology Co-operative Option and permission of the Department.

Four-month work term.

BIOL 4008 [0.5 credit] (formerly 61.408)

**Plant Development**

A lecture course dealing with recent advances in our understanding of plant development.

Precludes additional credit for BIOL 4100.

Prerequisite: BIOL 2002 or permission of the Department.

Lectures and seminars, three hours a week.

BIOL 4009 [0.5 credit] (formerly 61.409)

**Techniques for the Experimental Study of Plant Structure**

A practical course in which students have the opportunity to learn and evaluate modern techniques used in the study of plant structure by optical microscopy.

Precludes additional credit for BIOL 4100.

Prerequisite: BIOL 2002 or permission of the Department.

Laboratory five hours a week.

BIOL 4102 [0.5 credit] (formerly 61.412)

**Molecular Ecology**

The interface of molecular biology, ecology and population biology. Topics include experimental design and a survey and critique of molecular genetic methods to study ecology.

Prerequisite: BIOL 2104 and BIOL 2600; BIOL 3104 or one of BIOL 3601, BIOL 3602 (may be taken concurrently), or permission of the Department.

BIOL 4103 [0.5 credit] (formerly 61.413)

**Population Genetics**

Basic ideas of population structure, equilibrium, selection mutation, genetic drift.

Precludes additional credit for BIOL 4108.

Prerequisite: BIOL 2104 and BIOL 3609 or permission of the Department. A course in statistics is highly recommended.

Lectures and seminars three hours a week.

BIOL 4104 [0.5 credit] (formerly 61.414)

**Evolutionary Genetics**

A continuation of BIOL 4103 dealing with molecular evidence of evolution, speciation as well as the analysis of biometrical traits.

Precludes additional credit for BIOL 4108.

Prerequisite: BIOL 4103 and BIOL 3609 or permission of the Department. A course in statistics is highly recommended.

Lectures and seminars three hours a week.

BIOL 4106 [0.5 credit] (formerly 61.416)

**Methods in Molecular Genetics**

This course reviews the use of current techniques in molecular genetics and examines some innovative new approaches to



problems in molecular and cellular biology and biochemistry. Prerequisites: BIOL 2104 and BIOL 3104 or BIOL 2105 and BIOL 2303.

Lectures and seminars three hours a week.

BIOL 4109 [0.5 credit] (formerly 61.419)

**Laboratory Techniques in Molecular Genetics**

This laboratory course is complementary to BIOL 4106. It is designed to give the student some practical familiarity with methodology in molecular genetic techniques. The laboratory is suitable for students with a developing interest in problems of molecular and cellular biology and biochemistry.

Precludes additional credit for BIOL 4107.

Prerequisites: BIOL 2303 or BIOL 3301 and BIOL 4106 or equivalent and a course in Biochemistry or permission of the Department. Enrolment limited.

Lecture/laboratory six hours a week in two sessions.

BIOL 4202 [0.5 credit] (formerly 61.422)

**Mutagenesis and DNA Repair**

A molecular study of mutagenesis and DNA repair. Topics will include DNA structure perturbations, spontaneous and induced mutagenesis, the genetics and biochemistry of DNA repair and recombination, and the role of mutagens in the development of genetic disease and cancer. (Also listed as BIOC 4202.)

Prerequisites: BIOL 2200 (or BIOC 3100 taken concurrently) or BIOL 3104, or permission of the Department.

Lectures two hours a week and workshop two hours a week.

BIOL 4204 [0.5 credit] (formerly 61.424)

**Plant Physiological Ecology**

Physiological mechanisms for the acquisition of carbon, water and nutrients in plants adapted to a variety of environments. Particular emphasis on studying mechanisms for acclimation/adaptation to variation in environmental conditions.

Prerequisites: BIOL 2002, BIOL 3205, or permission of the Department.

Lectures and seminars three hours a week.

BIOL 4209 [0.5 credit] (formerly 61.429)

**Advanced Plant Physiology**

An advanced course dealing with recent developments in selected topics of plant physiology.

Precludes additional credit for BIOL 4205.

Prerequisites: BIOL 3205 and CHEM 2203, CHEM 2204 or permission of the Department.

Lectures/discussion three hours a week.

BIOL 4300 [0.5 credit] (formerly 61.430)

**Applied and Environmental Microbiology**

Studies of microbial ecology, physiology, biochemistry and genetics as they apply to microorganisms and microbial communities functioning in natural, agricultural and industrial environments.

Prerequisites: BIOL 2303 or BIOL 3301 or BIOC 3100, or permission of the Department.

Lectures and tutorial three hours a week.

BIOL 4301 [0.5 credit] (formerly 61.431)

**Current Topics in Biotechnology**

Explorations of developing biotechnologies in areas such as microbial products, protein engineering, plant genetic engineering, environmental remediation, pharmaceuticals production and medical diagnostics and therapy.

Prerequisites: BIOL 2303 or BIOL 3301 or BIOC 3100 or permission of the Department.

Lectures and tutorials three hours a week.

BIOL 4302 [0.5 credit] (formerly 61.432)

**Immunology**

The organization and function of the immune system. The anatomy of the immune system, and the molecular and genetic bases of the immune response. The laboratory deals with applications of animal cell culture in studies of immune cells and their products. (Also listed as BIOC 4302.)

Prerequisites: BIOL 2201 or BIOL 3201, or permission of the Department.

Lectures three hours a week, laboratory four hours a week.

BIOL 4306 [0.5 credit] (formerly 61.436)

**Animal Physiology**

A course dealing with recent advances made in particular areas of animal physiology.

Precludes additional credit for BIOL 4305.

Prerequisites: BIOL 3305, CHEM 2203 and CHEM 2204, and PHYS 1007 and PHYS 1008, or PHYS 1001 and PHYS 1002, or permission of the Department.

Lectures two hours a week, workshops or laboratory four hours a week.

BIOL 4400 [0.5 credit] (formerly 61.440)

**The Cell Cycle**

A course on the molecular cell biology of the eukaryotic cell cycle. Topics will include regulation of cell proliferation and cell death, and the molecular basis for morphological remodeling during cell division and death. (Also listed as BIOC 4400.)

Prerequisites: BIOL 3201, or both BIOC 2200 and BIOC 3100.

BIOL 4603 [0.5 credit] (formerly 61.463)

**Insect Evolution and Biology**

Major questions on the origin, evolution and adaptation of structures and physiology of terrestrial arthropods, especially insects.

Precludes additional credit for BIOL 4600.

Prerequisite: BIOL 3004, or permission of the Department.

Lectures two hours a week, laboratory four hours a week.

BIOL 4604 [0.5 credit] (formerly 61.464)

**Landscape Ecology**

In this course, students learn how landscape structure affects ecological processes, and the abundance and distribution of organisms. Applications in forestry, agriculture, and species conservation are discussed. Computer laboratory exercises assess influences of land-use decisions on landscape structure, and the resulting effects on ecological processes.

Prerequisites: BIOL 2600 or equivalent, BIOL 3601 or BIOL 3602 or equivalent, and honours standing in Biology, Geography, or Environmental Sciences.

Lecture and/or computer laboratory three hours a week.

BIOL 4608 [0.5 credit]

**Evolutionary Ecology**

The term "adaptation" is meaningful only with respect to a particular ecological context. This course considers ecological conditions as well as their evolutionary consequences. Such consequences include diverse mating systems, senescence, sexual dimorphism, geographic variation, phenotypic plasticity, migration, and particular combinations of life history traits.

Prerequisite: BIOL 3609 or permission of the Department.

Lectures three hours a week, laboratory two hours a week.

BIOL 4802 [0.5 credit] (formerly 61.482)

**Advanced Animal Behavior**

Contemporary issues in behavioral ecology. Issues could include the relevance of behavioral ecology to conservation biology, to new insights into human social behavior, and will be selected through consultation between professor and students.

Prerequisites: BIOL 3802 or permission of the Department.

Lectures two hours a week, laboratory four hours a week.

BIOL 4900 [1.0 credit] (formerly 61.490)

**Directed Special Studies and Seminar**

Prerequisite: permission of the Department.

BIOL 4901 [0.5 credit] (formerly 61.491)

**Directed Special Studies**

Independent or group study, open to third- and fourth-year students to explore a particular topic, in consultation with a Faculty supervisor. May include directed reading, written assignments, tutorials, laboratory or field work.

Prerequisite: permission of the Department. Students normally may not offer more than 1.0 credit of Directed Special Studies in their program.

BIOL 4907 [1.0 credit] (formerly 61.497)

**Honours Essay and Research Proposal**

An independent research study using library resources. The candidate prepares a critical review and research proposal of

a topic approved in consultation with a Faculty adviser. Evaluation will be based on these written submissions and an oral defence.

Precludes additional credit for BIOL 4908.

Prerequisite: fourth-year standing in an Honours Biology program and permission of the Department.

BIOL 4908 [1.0 credit] (formerly 61.498)

### **Honours Research Thesis**

An independent research project undertaken in the field and/or the laboratory, under the direct supervision of a Faculty adviser. The candidate prepares a written thesis and is orally examined by a faculty committee after the thesis has been presented for examination.

Precludes additional credit for BIOL 4907.

Prerequisites: BIOL 4901 (may be taken concurrently), and permission of the Department. Open only to B.Sc. Honours students, and B.A. Biology Honours students (depending on their laboratory experience and with permission from the Chair of the Department, in their fourth year.

BIOL 4909 [1.0 credit] (formerly 61.499)

### **Co-operative Work Term Report**

Practical experience for students enrolled in the Co-operative Option To receive course credit students must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.

Prerequisites: Registration in the Biology Co-operative Option and permission of the Department.

Four-month work term.

## **Business (BUSI)**

Eric Sprott School of Business

Faculty of Public Affairs and Management

### **Note**

B.Com. and B.I.B. students should use Business (BUSI) prefix for registering in courses that are cross-listed with other Carleton units.

BUSI 1001 [0.5 credit] (formerly 42.101\*)

### **Principles of Financial Accounting**

Discussion of the concepts of asset valuation and income measurement underlying the preparations and interpretation of financial statements.

Precludes additional credit for BUSI 1000, BUSI 1004 and BUSI 2700.

Lectures three hours and tutorials one hour a week.

BUSI 1002 [0.5 credit] (formerly 42.102\*)

### **Management Accounting**

An introduction to the problems of the use of accounting data for the purposes of planning and control of operations.

Precludes additional credit for BUSI 1000, BUSI 1005 and BUSI 2700.

Prerequisite: BUSI 1001.

Lectures three hours and tutorials one hour a week.

BUSI 1004 [0.5 credit] (formerly 42.104\*)

### **Integrated Accounting I**

An integrated approach to the basic concepts of both financial and managerial accounting. The users and uses of accounting information. Accounting issues involving income and cash flows. Precludes additional credit for BUSI 1000, BUSI 1001 and BUSI 2700.

Prerequisite: Restricted to students registered in the B.Com. program.

Lectures three hours and tutorials one hour a week.

BUSI 1005 [0.5 credit] (formerly 42.105\*)

### **Integrated Accounting II**

Accounting issues related to the management and use of economic resources and capital. Additional financial and managerial accounting topics are introduced along with related concepts in auditing, taxation and information technology. Precludes additional credit for BUSI 1000, BUSI 1002 and BUSI 2700.

Prerequisite: BUSI 1004 (with a grade of C- or better). Restricted

to students registered in the B.Com. program.

Lectures three hours and tutorials one hour a week.

BUSI 1402 [0.5 credit] (formerly 42.142\*)

### **Programming for Business Students I**

Basic control structures of sequence, selection, and iteration. Focus on problem solving in the context of programming for Business. Structured and visual languages may be taught.

Prerequisite: Restricted to students registered in the B. Comm., B. I. B., and Minor in Business programs.

BUSI 1701 [0.5 credit] (formerly 42.171\*)

### **Introduction to International Business**

An introduction to the principles and practices of international business. Topics include political and cultural differences, trade theory, global marketing, global human resource management and global strategy.

Prerequisite: Enrolment in the B.I.B. program.

Lectures three hours a week.

BUSI 1703 [1.0 credit] (formerly 42.173)

### **Quantitative Methods in Business**

Quantitative tools employed in business and economics. Aspects of differential and integral calculus, finite series, linear algebra, and matrix theory.

Precludes additional credit for MATH 0007.

Prerequisite: Enrolment is restricted to students in the B.I.B. program.

Lectures three hours and tutorials one hour a week.

BUSI 1704 [0.5 credit] (formerly 42.174\*)

### **Quantitative Methods in Business I**

Quantitative tools used in business and economics. Basic review of required concepts. Financial mathematics; linear algebra, linear optimization with applications and matrix algebra with business applications. Basic preparation for the study of calculus.

Prerequisite: Enrolment is restricted to students in the B.I.B. program.

Lectures three hours and tutorials one hour a week.

BUSI 1705 [0.5 credit] (formerly 42.175\*)

### **Quantitative Methods in Business II**

Differential calculus with applications. Introduction to integral calculus and differential equations with business applications. Notions of probability with application to decision analysis.

Prerequisite: Enrolment is restricted to students in the B.I.B. program.

Lectures three hours and tutorials one hour a week.

BUSI 2001 [0.5 credit] (formerly 42.201\*)

### **Intermediate Accounting I**

An examination of accounting and reporting issues related primarily to asset valuation and revenue recognition. Precludes additional credit for BUSI 2000.

Prerequisites: BUSI 1001 and BUSI 1002; or BUSI 1004 and BUSI 1005 (with a grade of C- or better in each).

Lectures three hours and tutorials one hour a week.

BUSI 2002 [0.5 credit] (formerly 42.202\*)

### **Intermediate Accounting II**

An examination of accounting and reporting issues related primarily to liabilities and equities.

Precludes additional credit for BUSI 2000.

Prerequisite: BUSI 2001 (with a grade of C- or better).

Lectures three hours and tutorials one hour a week.

BUSI 2101 [0.5 credit] (formerly 42.211\*)

### **Introduction to Organizational Behaviour**

Models of individual and small group behaviour in organizations. Topics include motivation, communication, job design, leadership and group dynamics to provide systematic explanations of employee and managerial behaviour in organizations. Precludes additional credit for BUSI 3101.

Lectures three hours a week.

BUSI 2204 [0.5 credit] (formerly 42.224\*)

### **Basic Marketing**

Basic problems and practices in marketing for students with no background in accounting and business. Marketing strategy,

planning, packaging, branding and promotion at the level of the individual firm.

Precludes additional credit for BUSI 2208.

Prerequisite: registration in B.I.D., B.I.B., B. P.A.P.M., Minor in Business or the Management Concentration in Engineering.  
Lectures three hours a week.

BUSI 2208 [0.5 credit] (formerly 42.228\*)

### **Introduction to Marketing**

Overview of the marketing function within the firm. Promotion, product design, pricing and distribution channels are examined. Consumer buyer behaviour, trends in retailing, wholesaling, sales force management and marketing research are also reviewed. Case studies are used.

Precludes additional credit for BUSI 2204.

Prerequisites: BUSI 1001 and BUSI 1002, or BUSI 1004 and BUSI 1005, ECON 1000 and one of PSYCH 1001 and PSYCH 1002, or SOCI 1000 (with a grade of C- or better in each).

Lectures three hours a week.

BUSI 2300 [0.5 credit] (formerly 42.230\*)

### **Introduction to Management Science**

Introduction to management science techniques that are routinely used as decision aids in government and industry. The course examines linear programming techniques, decision analysis and simulation. Students are introduced to quantitative models for decision making.

Precludes additional credit for ECON 4004 and SYSC 3200.

Prerequisites: BUSI 1402; MATH 1009 and MATH 1109.

Lectures three hours a week.

BUSI 2400 [0.5 credit] (formerly 42.240\*)

### **Introduction to Information Systems**

Management issues associated with information systems in organizations. Definition, description, fundamental technologies impacts and development of information systems, and associated ethical issues.

Prerequisite: second-year standing.

Lectures three hours and tutorials one hour a week.

BUSI 2402 [0.5 credit] (formerly 42.242\*)

### **Programming for Business Students II**

Introduction to the Object-Oriented Paradigm. Fundamentals of object-oriented programming using C++. Objects, abstraction and inheritance. Event-driven programming. Advanced concepts of iteration, sequence and selection. Algorithms for searching, sorting, string processing and numerical analysis. Development of Business applications in C++.

Precludes additional credit for COMP 1002.

Prerequisite: BUSI 1402 (with a grade of C- or better).

Lectures three hours a week, tutorials one hour a week

BUSI 2504 [0.5 credit] (formerly 42.254\*)

### **Essentials of Business Finance**

Business firms' financing, capital investment, and dividend policy decisions, cost of capital and short-term asset management problems (Also listed as ECON 2504.)

Precludes additional credit for BUSI 2500.

Prerequisites: BUSI 1005 or BUSI 1002 or BUSI 2700 (with a grade of C- or better).

Lectures two hours and tutorials one hour a week.

BUSI 2505 [0.5 credit] (formerly 42.255\*)

### **Business Finance**

Capital investment and financing decisions in the context of risk and return tradeoffs. Primary and derivative securities, and their role in risk management. Mergers, corporate restructuring, the theory of principal-agent relationships, and financial planning, forecasting, and control. (Also listed as ECON 2505.)

Precludes additional credit for BUSI 2500.

Prerequisites: BUSI 2504, ECON 1000, or ECOR 3800, BUSI 1703 or MATH 1009 and MATH 1109.

Lectures three hours a week.

BUSI 2601 [0.5 credit] (formerly 42.261\*)

### **Business Law I**

The legal system and legal ordering as they affect those engaged in business activities. Emphasis on the law of tort, law of contract, agency and bailment, business associations

(partnerships/proprietorships/corporations) and real estate.

Precludes additional credit for LAWS 2301.

Prerequisite: For students registered in the B.Com., B.I.B. or Minor in Business only.

Note: Students in Law programs cannot include BUSI 2601 towards the fulfilment of their degree requirements, even as an option, nor can they claim credit for it toward their Minor in Business certification.

Lectures three hours a week.

BUSI 2602 [0.5 credit] (formerly 42.262\*)

### **Business Law II**

Legal topics of importance to those involved in business relationships. These topics include forms of business organization, property law and specialized contractual relationships such as sale of goods, negotiable instruments, personal property security, insurance, bailment and agency.

Precludes additional credit for LAWS 2302.

Prerequisite: BUSI 2601 or LAWS 2301 (with a grade of C- or better).

Note: Students in Law programs cannot include BUSI 2602 towards the fulfilment of their degree requirements, even as an option, neither can they claim credit for it toward their Minor in Business certification.

Lectures three hours a week.

BUSI 2700 [0.5 credit] (formerly 42.270\*)

### **Accounting Fundamentals**

Financial and managerial accounting from the perspective of a user of accounting data. Tools necessary to understand and perform analysis of financial statements. Both North American and international accounting principles and practices. Product costing and the use of accounting data for management decision making and control.

Precludes additional credit for BUSI 1001, BUSI 1002, BUSI 1004 and BUSI 1005.

Prerequisite: Enrolment in the B.I.B. or in the Management Concentration in Engineering program.

Lectures three hours a week.

BUSI 2702 [0.5 credit] (formerly 42.272\*)

### **Introduction to International Management**

Implications of international business for individual and organizational behavior, including the strategy of international business and its effects on organizational structure. Introduces concepts of cross-cultural communication.

Prerequisites: second year standing; BUSI 1701

Precludes additional credit for BUSI 3703

BUSI 3001 [0.5 credit] (formerly 42.301\*)

### **Accounting for Business Combinations**

Accounting problems associated with business combinations, with attention to the preparation of consolidated financial statements. Discussion may extend to financial reporting and diversified companies, reorganizations, etc. Selection of some topics may vary from year to year.

Prerequisite: BUSI 2002 (with a grade of C- or better).

Lectures three hours and tutorials one hour a week.

BUSI 3005 [0.5 credit] (formerly 42.305\*)

### **Taxation 1: Introduction to Federal Income Tax**

Federal income tax laws and regulations and their impact on an individual's financial and business decisions. Problems, issues and planning associated with the Income Tax Act and concerned with the computation of taxable income and taxes payable by an individual are discussed.

Prerequisite: BUSI 2002 (with a grade of C- or better).

Lectures three hours and tutorials one hour a week.

BUSI 3008 [0.5 credit] (formerly 42.308\*)

### **Cost Accounting**

The use of accounting information for cost control and performance evaluation. Emphasis is on cost accumulation systems, performance evaluation, control models and analytical tools.

Prerequisites: One of BUSI 1002 or BUSI 1005 and ECON 2200 or STAT 2607 (with a grade of C- or better in each).

Lectures three hours and tutorials one hour a week.



BUSI 3102 [0.5 credit] (formerly 42.312\*)

**Introduction to Human Resources Management**

Human Resource Management function in large formal organizations. Topics include human resources planning, recruitment, selection, performance evaluation, career development and training, compensation and benefits and the role of the professional personnel manager.

Prerequisite: BUSI 2101 or BUSI 3101 (with a grade of C- or better).

Lectures three hours a week.

BUSI 3103 [0.5 credit] (formerly 42.313\*)

**Introduction to Organization Theory**

Macro-organization theory. Structuring of organizations in a complex global economy. Effects of the external environment, technology, culture and organizational goals on the structure, processes and effectiveness of the organization.

Precludes additional credit for BUSI 2100.

Prerequisites: second-year standing and BUSI 2101 or BUSI 2702 (with a grade of C- or better)

Lectures three hours a week.

BUSI 3107 [0.5 credit] (formerly 42.317\*)

**Introduction to Industrial Relations**

Industrial relations covering such topics as industrial relations systems, the functioning of trade unions, collective bargaining in Canada and Canadian public policy in industrial relations.

Precludes additional credit for 43.357.

Prerequisites: BUSI 2101 and ECON 1000.

Lectures three hours a week.

BUSI 3204 [0.5 credit] (formerly 42.324\*)

**Marketing: New Tools and Approaches**

Introduction and assessment of key new marketing tools and approaches, including internet marketing, relationship marketing, direct marketing; effective adoption and implementation of these tools and approaches across industries and organizations.

Prerequisite: third-year standing and BUSI 2204 or BUSI 2208 (with a grade of C- or better)

Lectures three hours a week.

BUSI 3205 [0.5 credit] (formerly 42.325\*)

**Marketing Communications**

Promotion as a communication process and marketing management tool. Effective integration of advertising, direct/ internet marketing, sales promotion, public relations, and personal selling through a strategic planning process involving budgeting, research, creative and media strategy and execution, and campaign evaluation.

Prerequisite: BUSI 2208 or BUSI 2204 (with a grade of C- or better).

Lectures three hours a week.

BUSI 3207 [0.5 credit] (formerly 42.327\*)

**Marketing Research**

Research design, questionnaire design, scales, sources of information and error, sampling techniques, basic statistical measures, measures of association, regression, and an overview of multivariate methods. Pragmatic implications of marketing research are stressed, with use of case studies and data analysis.

Prerequisites: BUSI 2204 or BUSI 2208 and one of ECON 2200 or STAT 2606 and STAT 2607 (with a grade of C- or better in each).

Lectures three hours a week.

BUSI 3208 [0.5 credit] (formerly 42.328\*)

**Business-to-Business Marketing**

Theories and practice of marketing in business-to-business markets with emphasis on high technology businesses, including strategic marketing management, buyer behaviour and competitive analysis, sales management, new product management, and international issues.

Prerequisite: third-year standing and BUSI 2204 or BUSI 2208 (with a grade of C- or better)

Lectures three hours a week.

BUSI 3300 [0.5 credit] (formerly 42.330\*)

**Introduction to Operations Management**

Mostly managerial activities in selecting, designing, operating,

controlling and updating production systems.

Precludes additional credit for BUSI 3307.

Prerequisites: BUSI 1704 and BUSI 1705 or BUSI 2300, one of ECON 2200 or STAT 2606 (with a grade of C- or better in each). Lectures three hours a week.

BUSI 3302 [0.5 credit] (formerly 42.332\*)

**Management of Quality**

Quality in manufacturing and service systems, quality management philosophies, total quality management, quality in product and process design, continuous improvement, reengineering, benchmarking, quality management assessment, and quality assurance, management of quality in the global enterprise.

Prerequisite: BUSI 3300 or BUSI 3307 (with a grade of C- or better).

Lectures three hours a week.

BUSI 3303 [0.5 credit] (formerly 42.333\*)

**Supply Chain Management**

Controlling the flows of material in supplier/manufacturing/ distribution systems. Material and capacity requirements planning, manufacturing resource planning, master production scheduling, Just-in-Time, implementation issues, and supply chain management in global enterprises.

Prerequisite: BUSI 3300 or BUSI 3307 (with a grade of C- or better).

Lectures three hours a week.

BUSI 3304 [0.5 credit] (formerly 42.334\*) (ADM 3307)

**Business Forecasting**

Concepts, techniques and methods used in the private and public sectors to prepare short-term and long-term forecasts. Methods used include time series analysis, econometric models in forecasting, economic indicators, growth models, opinion polling and technology forecasting.

Prerequisites: Enrolment in B.Com. Technology and Operations

Management concentration; and BUSI 3300 or BUSI 3307 (with a grade of C- or better).

BUSI 3308 [0.5 credit] (formerly 42.338\*)

**Simulation Methods in Business**

Computer-based simulation. Specific topics will include generating random observations, problem formulation, simulation model design, implementation using a computer language, and interpretation of simulation output.

Prerequisites: BUSI 1402 and BUSI 2300; ECON 2200 or STAT 2607 (with a grade of C- or better in each).

Lectures three hours a week.

BUSI 3400 [0.5 credit] (formerly 42.340\*)

**Database Analysis and Design**

Information management, database administration, Entity-Relationship Model, database development life cycle: planning, analysis, design, implementation, and maintenance of database management systems. Construction of a database. Introduction to SQL, distributed databases, object-oriented databases, and data warehousing.

Precludes additional credit for COMP 3005.

Prerequisites: BUSI 1402 and BUSI 2400 (with a grade of C- or better in each).

Lectures three hours a week, tutorials one hour a week.

BUSI 3403 [0.5 credit] (formerly 42.343\*)

**Information Systems Analysis**

Methods of analysis of computer-based information systems. Requirements analysis; the systems development life cycle; object-oriented analysis; analysis of real-time systems; data analysis.

Precludes additional credit for BUSI 3402 and SYSC 3100.

Prerequisites: BUSI 1002 or BUSI 1005; BUSI 2402 or COMP 2004 (with a grade of C- or better in each).

Lectures three hours a week, tutorials one hour a week.

BUSI 3404 [0.5 credit] (formerly 42.344\*)

**Information Systems Design**

Continuation of BUSI 3403. Techniques to transform analysis into design. User interface design, object-oriented design,



hardware, software and application design, integration and implementation.

Precludes additional credit for BUSI 3402.

Prerequisites: BUSI 3400 and BUSI 3403 (with a grade of C- or better in each).

Lectures three hours a week, tutorials one hour a week.

BUSI 3500 [0.5 credit] (formerly 42.350\*)

#### **Corporate Finance**

An examination of the major issues in corporate finance and applied financial management. Topics include: introduction to portfolio theory, the capital asset pricing model, cost of capital, capital structure and dividend policy, lease financing, capital budgeting under uncertainty, mergers and consolidations. (Also listed as ECON 3500.)

Prerequisites: BUSI 2500 or BUSI 2505, ECON 2002 and one of ECON 2200 or STAT 2607.

Lectures three hours a week.

BUSI 3502 [0.5 credit] (formerly 42.352\*)

#### **Principles of Investments**

Procedures and methods of investment analysis. Stock and bond markets. Government regulation of securities markets. Valuation of common stocks and fixed income securities. Options, warrants, convertibles and commodities. (Also listed as ECON 3501.)

Prerequisites: BUSI 2500 or BUSI 2505 and ECON 2200 or STAT 2607.

Lectures three hours a week.

BUSI 3504 [0.5 credit] (formerly 42.354\*)

#### **International Finance**

Management of corporate finance as it is affected by the requirements of international business. Issues related to international acquisitions, global investments, volatile exchange rates and hedging techniques. Role of international markets in financing corporate activity.

Prerequisite: BUSI 2500 or BUSI 2505 (with a grade of C- or better).

Lectures three hours a week.

BUSI 3600 [0.5 credit] (formerly 42.360\*)

#### **Small Business Management**

Socio-economic functions and activities of the owner-manager entrepreneur and examines the operations and nature of small businesses. Methods and models that are useful in the analysis of a small business enterprise.

Prerequisites: BUSI 2204 or BUSI 2208; BUSI 2500 or BUSI 2504 (with a grade of C- or better in each).

Lectures three hours a week.

BUSI 3601 [0.5 credit] (formerly 42.361\*)

#### **Business and its Environment**

Dynamic conditions influencing Canadian business, its organization, management and operations: consumerism and other social groups, technological developments, economic conditions, politico-governmental actions and legislation and contemporary issues such as ecology and pollution.

Prerequisites: ECON 1000 and BUSI 2101 (with a grade of C- or better in each).

Lectures three hours a week.

BUSI 3602 [0.5 credit] (formerly 42.362\*)

#### **Designing Organizational Systems: An Overview**

Key models and theories of organizational strategy, structure, processes, effectiveness, and individual and group behavior in organizations. Organizational structure, goals, and effectiveness; leadership, motivation and job design.

Precludes additional credit for BUSI 2101 or BUSI 3103. For the purposes of a Minor in Business this course will fulfil the requirement of BUSI 2101.

Prerequisite: third-year standing in the B.P.A.P.M. program.

BUSI 3700 [0.5 credit] (formerly 42.370\*)

#### **Cross-cultural Communication**

Principles of communication across cultural boundaries are applied to both interpersonal and commercial interactions. Critical incidents and commentary are analyzed. Students submit periodic reports, evaluated by the instructor at Carleton.

Prerequisites: Enrolment is restricted to Business students who are participating in an academic exchange of at least one semester.

BUSI 3703 [0.5 credit] (formerly 42.373\*)

#### **International and Comparative Management**

Focus on managing large organizations spanning national boundaries, including both domestic firms with international markets and multinational corporations. Difficulties of maintaining communication and control in international operations in disparate cultural settings.

Precludes additional credit for BUSI 4603.

Prerequisites: second-year standing; BUSI 1701 or BUSI 2101 (with a grade of C- or better)

Lectures three hours a week.

BUSI 3704 [0.5 credit] (formerly 42.374\*)

#### **The Environment of International Business**

Theories linking environmental factors and business strategy as a basis for study of some major factors and institutions shaping international business strategy. International trade patterns, regionalization, shifts in international finance, research and development and transnational data flows.

Prerequisites: third-year standing; BUSI 1701 or BUSI 2101 and ECON 1000 (with a grade of C- or better in each).

Lectures three hours a week.

BUSI 3901 [0.5 credit] (formerly 42.391\*)

#### **Co-operative Work Term Report 1**

A comprehensive report is due on the lessons learned in the first work term.

Prerequisites: Registration in the Co-op Education Option of the Bachelor of Commerce program and permission of the School.

BUSI 3902 [0.5 credit] (formerly 42.392\*)

#### **Co-operative Work Term Report 2**

A comprehensive report is due on the lessons learned in the second work term.

Prerequisites: Registration in the Co-op Education Option of the Bachelor of Commerce program, successful completion of BUSI 3901 and permission of the School.

BUSI 3903 [0.5 credit] (formerly 42.393\*)

#### **Co-operative Work Term Report 3**

A comprehensive report is due on the lessons learned in the third work term.

Prerequisites: Registration in the Co-op Education Option of the Bachelor of Commerce program, successful completion of BUSI 3902 and permission of the School.

BUSI 3904 [0.5 credit] (formerly 42.394\*)

#### **Co-operative Work Term Report 4**

A comprehensive report is due on the lessons learned in the fourth work term.

Prerequisites: Registration in the Co-op Education Option of the Bachelor of Commerce program, successful completion of BUSI 3903 and permission of the School.

BUSI 4000 [0.5 credit] (formerly 42.400\*)

#### **Accounting Theory**

Evolution of accounting theory with emphasis on concepts of income and current issues.

Prerequisites: BUSI 2002, BUSI 2500 or BUSI 2504; ECON 2200 or STAT 2607 (with a grade of C- or better in each).

Lectures three hours a week.

BUSI 4002 [0.5 credit] (formerly 42.402\*)

#### **Advanced Accounting Problems**

Discussion, analysis, and integration of accounting, auditing, and income tax issues and problems encountered in professional practice. This course builds upon and integrates the knowledge and skills developed in preceding courses.

Precludes additional credit for BUSI 3002.

Prerequisite: BUSI 2002 (with a grade of C- or better).

Lectures three hours a week.

BUSI 4005 [0.5 credit] (formerly 42.405\*)

#### **Taxation 2: Corporate Tax Management**

An intensive review of federal income tax laws and regulations as significant elements in the planning and decision making process of taxable Canadian corporations. Emphasis on the tax planning function of corporate management and the associated accounting and reporting aspects.

This course builds upon BUSI 3005.

Prerequisite: BUSI 3005 (with a grade of C- or better).

Lectures three hours a week.

BUSI 4007 [0.5 credit] (formerly 42.407\*)

**Auditing I**

Auditing theory, methodology and application.  
Prerequisite: BUSI 2002 (with a grade of C- or better).  
Lectures three hours a week.

BUSI 4008 [0.5 credit] (formerly 42.408\*)

**Cost Management Systems**

The role of accounting, performance evaluation and product costing. Significant changes in the manufacturing environment and the reporting problems arising therefrom.  
Precludes additional credit for BUSI 3009.  
Prerequisite: BUSI 3008 (with a grade of C- or better).  
Lectures three hours a week.

BUSI 4009 [0.5 credit] (formerly 42.409\*)

**Auditing II**

The audit of advanced EDP systems, computer-assisted audit techniques and applications of sampling theory to auditing. Current topics will be discussed.  
Prerequisites: BUSI 2400 or COMP 1008 ; BUSI 4007 (with a grade of C- or better in each).  
Lectures three hours a week.

BUSI 4103 [0.5 credit] (formerly 42.413\*)

**Organization Design and Restructuring**

Effective structuring of business organizations in competitive environment. Evaluation of design alternatives and analysis of success factors. Application of the theories in the context of the management process.  
Prerequisites: BUSI 2100 or BUSI 3103; BUSI 2101 or BUSI 3101 (with a grade of C- or better in each).  
Lectures three hours a week.

BUSI 4104 [0.5 credit] (formerly 42.414\*)

**Strategic Human Resources Management**

A strategic approach to human resources management designed to enhance the organization's sustaining competitive advantages, innovativeness, core competencies and capabilities, and productivity within a complex and dynamic business environment. Current topics are discussed within the context of the organization's overall vision and corporate strategy.  
Prerequisites: BUSI 3102; BUSI 2100 or BUSI 3103 (with a grade of C- or better in each).  
Lectures three hours a week.

BUSI 4105 [0.5 credit] (formerly 42.415\*)

**Organization Development and Change Management**

Process and structural theories and methods of organizational development. Issues of organizational renewal and personnel development. Various theories and methods of individual and organizational diagnosis and intervention.  
Prerequisites: third-year standing; BUSI 2100 or BUSI 3103; BUSI 2101 or BUSI 3101 (with a grade of C- or better in each).  
Lectures three hours a week.

BUSI 4106 [0.5 credit] (formerly 42.416\*)

**Practicum in Interpersonal and Team Skills**

Skills of supervising and working with other people including such topics as negotiating, dealing with conflict, setting goals, working with groups, and communication. Extensive use of experiential learning.  
Prerequisites: third-year standing in B.Com program; BUSI 2100 or BUSI 3103; BUSI 2101 or BUSI 3101 (with a grade of C- or better in each).  
Lectures, seminars, and laboratory tutorials three hours a week.

BUSI 4107 [0.5 credit] (formerly 42.417\*)

**Managing Workforce Diversity**

Issues confronting managers of a diverse workforce. Gender, ethnic diversity, disability, and sexual orientation. Practices which can help organizations to accommodate and benefit from workforce diversity.  
Prerequisites: BUSI 3103  
Lectures three hours a week.

BUSI 4108 [0.5 credit] (formerly 42.418\*)

**Organizational Learning**

Contemporary training and development challenges facing individuals, organizations, and communities and the role of information technology in enhancing individual and collective skills development, capabilities, core competencies, intellectual capital and competitiveness.  
Prerequisites: BUSI 3102; BUSI 2100 or BUSI 3103 (with a grade of C- or better in each).  
Lectures three hours a week.

BUSI 4203 [0.5 credit] (formerly 42.423\*)

**Marketing In Not-for-Profit Organizations**

Theories and practices of marketing in not-for-profit organizations including government. Similarities and differences between marketing in not-for-profit and for-profit organizations and the key issues faced by marketers in developing marketing strategies in not-for-profit organizations will be examined.  
Prerequisite: third-year standing and BUSI 2204 or BUSI 2208 (with a grade of C- or better)  
Lectures three hours a week.

BUSI 4205 [0.5 credit] (formerly 42.425\*)

**International Marketing**

The marketing function in international markets from a managerial perspective. Environments of foreign markets in relation to the marketing management functions of product, price, distribution and communication strategy and marketing research. International expansion methods, joint ventures and other business alliances, and international marketing.  
Prerequisites: third-year standing; BUSI 2204 or BUSI 2208 (with a grade of C- or better)  
Lectures three hours a week.

BUSI 4206 [1.0 credit] (formerly 42.426)

**Consumer Behaviour**

Traditional socio-psychological theories of consumer behaviour. Current literature and the fundamental theories and concepts from various disciplines. Motivation, personality, perception, learning, communication of innovations, attitude theory, role theory, lifestyle analysis, consumerism.  
Prerequisites: third-year standing, and BUSI 2204 or BUSI 2208 (with a grade of C- or better).  
Lectures three hours a week.

BUSI 4208 [0.5 credit] (formerly 42.428\*)

**Marketing Management**

"Managerial" aspects of marketing. Market segmentation, social and regulatory aspects in marketing, channels of distribution, industrial marketing, sales force management and other current topics are discussed in detail.  
Prerequisite: one of BUSI 3205 or BUSI 3207 (with a grade of C- or better).  
Lectures three hours a week.

BUSI 4305 [0.5 credit] (formerly 42.435\*)

**Operations Research II**

Dynamic programming, inventory models, queuing, simulation, non-linear programming. (Also listed as ECON 4005.)  
Prerequisites: third-year standing; BUSI 2300 or ECON 4004 or MATH 3801; ECON 2200 or STAT 2607 (with a grade of C- or better in each).  
Lectures three hours a week.

BUSI 4306 [0.5 credit] (formerly 42.436\*)

**Introduction to Statistical Decision Theory**

Examination of Bayesian approaches to decision-making under uncertainty for individuals and firms.  
Precludes additional credit for BUSI 4309 and ECON 4007.  
Prerequisites: ECON 2002; and ECON 2200 or STAT 2607 (with a grade of C- or better in each).  
Lectures three hours a week.

BUSI 4307 [0.5 credit] (formerly 42.437\*)

**Applications of Statistical Decision Theory in Business**

Statistical Decision Theory-based approach to the Theory of Information Systems and other applications of Statistical Decision Theory to Business decision making.  
Prerequisite: BUSI 4306 (with a grade of C- or better).  
Lectures three hours a week.

BUSI 4308 [0.5 credit] (formerly 42.438\*)

**Construction/Project Management**

Systems approach to project planning and control. Analysis of alternative network planning methods: CPM, precedence and PERT; planning procedure; computer techniques and estimating; physical, economic and financial feasibility; implementation feedback and control; case studies. (Also listed as CIVE 4400.)

Prerequisite: fourth-year standing.

Lectures three hours a week, problem analysis three hours alternate weeks.

BUSI 4400 [0.5 credit] (formerly 42.440\*)

**Management of Information Systems**

Comprehensive treatment of current trends and management issues associated with information systems within organizations of local, national and international scope. Issues and techniques of information systems planning, administration, resource management and new technology adoption. Case studies are used.

Prerequisites: fourth-year standing, BUSI 2100 or BUSI 3103 and BUSI 2400 (with a grade of C- or better in each).

Lectures three hours a week.

BUSI 4402 [0.5 credit] (formerly 42.442\*)

**Information Systems Analysis and Design Practicum**

Students form teams to design and implement a typical business information system. Projects are drawn from actual problems suggested by local business and institutions.

Prerequisites: BUSI 3403 and BUSI 3404 (with a grade of B- or better in each), or BUSI 3403 and COMP 3008 (with a grade of B- or better in each).

Lectures three hours a week.

BUSI 4404 [0.5 credit] (formerly 42.444\*)

**Telecommunications: A Management Perspective**

Challenges and issues managers face in coordinating telecommunications and data networking services delivery to their organizations. Technical and managerial aspects of data communications, local, widearea, and wireless networks, network protocols, Internet/intranets, client/server computing, network security and management.

Prerequisites: third-year standing and BUSI 2400 (with a grade of C- or better).

Lectures three hours a week.

BUSI 4406 [0.5 credit] (formerly 42.446\*)

**Decision Making and Support Systems**

Framework, processes and technology components for building decision support systems. Planning and organizing for DSS, system design and integrating DSS into the organization. Group support systems, expert systems and artificial intelligence, data warehousing and mining. High-level Modeling languages are used.

Prerequisites: BUSI 3403 and BUSI 3404 (with a grade of C- or better in each), or BUSI 3403 and COMP 3008 (with a grade of C- or better in each).

Lectures three hours a week.

BUSI 4407 [0.5 credit] (formerly 42.447\*)

**Technology Project Management**

Organizational, managerial and technical issues of information system and technology industry projects. Defining and setting up successful projects. Characteristics of successful project managers. Tracking and monitoring. Estimation techniques. Risk analysis. Learning from projects. Examples and case studies.

Prerequisites: BUSI 3300 or BUSI 3307; BUSI 2400 (with a grade of C- or better in each).

Lectures three hours a week.

BUSI 4500 [0.5 credit] (formerly 42.450\*)

**Advanced Corporate Finance**

An in-depth examination of some of the major theoretical issues in corporate finance. This course requires analyses and presentations of both articles from the finance literature and case studies. (Also listed as ECON 4008.)

Prerequisite: BUSI 3500 (with a grade of C- or better).

Lectures three hours a week.

BUSI 4502 [0.5 credit] (formerly 42.452\*)

**Investment Management**

Analysis of investment requirements for individuals and institutional investors: liquidity, risk and return; portfolio design, construction, management and control; performance measurement; capital market theory. (Also listed as ECON 4101.)

Prerequisite: BUSI 3502 (with a grade of C- or better).

Lectures three hours a week.

BUSI 4601 [0.5 credit] (formerly 42.461\*)

**Business Ethics**

Use of ethical reasoning to analyze business decisions. The ethical content of these decisions. The role of ethics in business situations. Practice in ethical reasoning. Major ethical systems.

Prerequisite: fourth-year standing in B.Com. or B.I.B. program.

Seminars three hours a week.

BUSI 4602 [0.5 credit] (formerly 42.462\*)

**Women in Management**

Organizational and personal challenges arising from changing gender roles and the increased participation of women in management and professional organizational roles.

Prerequisites: third-year standing; BUSI 2101 or BUSI 3101; BUSI 2100 or BUSI 3103 or WOMN 1808 (with a grade of C- or better in each).

Lectures three hours a week.

BUSI 4604 [0.5 credit] (formerly 42.464\*)

**The Business Environment in East/Central Europe and the Soviet Successor States**

Economic and legal environment in which new businesses are emerging in the region and practical problems that face business ventures. Regulatory structures, patterns of foreign trade, market characteristics, scientific and technological base and business culture. (Also listed as EURR 4006.)

Prerequisites: BUSI 3601 or ECON 3700, or permission of the School.

Seminar three hours a week.

BUSI 4607 [0.5 credit] (formerly 42.467\*)

**Management of Technology and Innovation**

Integration of technology and strategy; design of technological strategy; development of new business around new technology; and management of corporate research and development, including pre-competitive consortia.

Prerequisites: third-year standing; BUSI 2204 or BUSI 2208; BUSI 3101 or BUSI 3103 (with a grade of C- or better in each).

Lectures three hours a week.

BUSI 4608 [0.5 credit] (formerly 42.468\*)

**History of Business in Canada 1850-1980**

The place of business in Canadian society, economics and politics. The internal dynamics of Canadian business, and its external implications. Students apply a historical perspective to issues and problems in the contemporary business environment. (Also listed as History 24.325.)

Prerequisite: fourth-year standing in B.Com. or B.I.B.

BUSI 4609 [0.5 credit] (formerly 42.469\*)

**Strategic Management**

Analysis and evaluation of the organization's corporate and business strategies; integration and synthesis of knowledge acquired in the program by application of acquired functional skills to strategic decisionmaking.

Precludes additional credit for BUSI 4709.

Prerequisite: fourth-year standing in B.Com.

Lectures three hours a week.

BUSI 4701 [0.5 credit] (formerly 42.471\*)

**Cross-Cultural Communication**

Focus on effective cross-cultural communication. Readings, discussions, and activities build on experiential learning from the student's year of study abroad.

Prerequisite: fourth-year standing in the B.I.B. program.

Workshop and discussion three hours a week.



BUSI 4704 [0.5 credit] (formerly 42.474\*)

**Workshop on International Management and Global Business**

A particular managerial field from an international perspective. Possible topics include personnel management in the global firm, international information systems, international logistics, and international research and development.

Prerequisite: third-year standing in B.Com. or B.I.B. program. Lectures three hours a week.

BUSI 4705 [0.5 credit]

**Cross-cultural Interaction and Ethics**

Perceptions and behaviors that characterize interactions among individuals from various cultural backgrounds, with emphasis on ethical issues that may arise when business crosses cultural boundaries. Various systems, both organizational and individual, for dealing with contrasting expectations are discussed.

Prerequisite: BUSI 2702 or BUSI 3703 and fourth-year standing.

BUSI 4706 [0.5 credit] (formerly 42.476\*)

**International Human Resource Management**

Theoretical and process issues in the recruitment, selection, training, evaluation and repatriation of personnel in multi-country organizations. Issues are examined from the perspective of organizations, expatriates and local employees of multinational firms.

Prerequisite: third-year standing in B.Com. or B.I.B. program. Precludes additional credit for BUSI 4704 and BUSI 4601.

BUSI 4709 [0.5 credit] (formerly 42.479\*)

**Strategic Management for International Business**

Analysis and evaluation of the organization's global and national strategies. Emphasis on firms' market-entry strategies and on the unique problems of managing in distant and different cultures. Precludes additional credit for BUSI 4609.

Prerequisites: fourth-year standing in B.I.B. or B.Com., International Business Concentration. Lectures three hours a week.

BUSI 4800 [0.5 credit] (formerly 42.480\*)

**Business Case Analysis**

Analysis, solution, and presentation of business cases in a competitive environment focusing on a specific functional area, choosing from a number of functional areas. Participation in the Annual (Canadian) Inter-Collegiate Business Competition. Prerequisites: Enrolment in B.Com. or B.I.B. program; and permission of the School.

Flexibly scheduled meetings and workshops with faculty.

BUSI 4801 [0.5 credit] (formerly 42.481\*)

**Selected Topics: Workshop in Urban Studies**

Study of one specific aspect of architecture in the area of urban studies. Workshop offerings change from year to year. (Also listed as ARCU 3902.)

Prerequisite: fourth-year B.Com. or B.I.B. Workshop six hours a week.

BUSI 4900 [0.5 credit] (formerly 42.490\*)

**Auditing III**

The fundamental role of auditing and the issues and challenges facing the profession such as comprehensive auditing and auditing small businesses and non-profit organizations. Integration of topics from this course and its prerequisites is accomplished primarily through applications problems.

Prerequisite: BUSI 4007 (with a grade of C- or better).

BUSI 4901 [0.5 credit] (formerly 42.491\*)

**Topics in Management Studies I**

A selected topics course may be offered. (The topic is announced when resources become available to address needs that may arise.) Eligibility for this course to serve as an option for specific concentrations is to be established by the School. Prerequisite: permission of the School.

BUSI 4902 [0.5 credit] (formerly 42.492\*)

**Topics in Management Studies II**

A selected topics course in a concentration area that may be offered. Eligibility for this course to serve as an option for a specific concentration is to be established by the School. Prerequisite: permission of the School.

BUSI 4904 [1.0 credit] (formerly 42.494)

**Directed Studies I**

This course is intended to provide qualified students with the opportunity of carrying out a major research project under the supervision of a faculty member. Students should inquire about procedures for Directed Studies, and about the possibility of counting this credit toward a specified concentration's requirements, in advance of the term in which they intend to register for the course.

Prerequisites: GPA of 10.00 or better and permission of the School.

BUSI 4905 [0.5 credit] (formerly 42.495\*)

**Directed Studies II (Term Paper)**

This course provides qualified students with the opportunity of carrying out a minor (one-term) research project under the supervision of a faculty member. Students should inquire about procedures for Directed Studies, and about the possibility of counting this credit toward a specified concentration's requirements, in advance of the term in which they intend to register for the course.

Prerequisites: GPA of 10.00 or better and permission of the School.

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## Canadian Studies (CDNS)

School of Canadian Studies

Faculty of Arts and Social Sciences

CDNS 1000 [1.0 credit] (formerly 12.100)

**Introduction to Canadian Studies**

Introduction to interdisciplinary Canadian Studies. Issues from Canada's past and present. Topics may include: Aboriginal peoples, language and ethnicity, communications and technology, immigration, arts and culture, economics, environmentalism, regionalism, gender, Quebec and English Canada, and international relations.

Two-hour lecture and one hour discussion group a week.

CDNS 2100 [0.5 credit] (formerly 12.210\*)

**Framing Contemporary Aboriginal Issues**

Pressing issues such as governance, health, education, cultural survival and economic development are examined from Aboriginal and non-Aboriginal perspectives.

Prerequisite: CDNS 1000 or permission of the instructor or the School of Canadian Studies.

CDNS 2102 [0.5 credit] (formerly 12.212\*)

**Landforms and Mindscapes: Canadian Regional Diversity**

This interdisciplinary course applies a cultural studies approach to a selected Canadian region in order to identify its distinctive regional identity as reflected in its literature, art, folklore, popular culture, film and social and intellectual history.

Precludes additional credit for CDNS 2000.

Prerequisite: CDNS 1000 or a Canadian Studies First Year Seminar.

Two-hour lecture, one-hour discussion group each week.

CDNS 2200 [0.5 credit] (formerly 12.220\*)

**Landforms and Mindscapes: Canadian Regional Diversity**

This interdisciplinary course examines the role played by Canadian literature, art, cinema, folklore, popular culture, and social and intellectual history in the formation of diverse cultural identities at national, regional and local levels in Canada.

Precludes additional credit for CDNS 2102.

Prerequisite: CDNS 1000 or a Canadian Studies First Year Seminar.

Two-hour lecture, one-hour discussion group a week.

CDNS 2300 [0.5 credit] (formerly 12.230\*)

**Critical Nationalism**

This course questions whether a national identity is possible or even desirable within an increasingly diverse and complex Canada. Examination of the construction of Canadian identities, competing nationalisms within Canadian borders and critical evaluation of the role of nationalism.

Prerequisite: CDNS 1000 or First Year Seminar in Canadian Studies or permission of the instructor or the School of Canadian Studies. Two-hour lecture, one hour discussion group a week

CDNS 2808 [1.0 credit] (formerly 12.288)

**Contemporary English-Canadian and French-Canadian Literature**

This course, which is offered by faculty members from the Departments of French, and English Language and Literature, provides a general introduction to and comparison of the two major literatures of Canada. Lectures are given in both English and French. (Also listed as ENGL 2808.)

Prerequisites: a basic reading knowledge of French, and second-year standing. Three hours a week.

CDNS 3000 [0.5 credit] (formerly 12.300\*)

**Interdisciplinarity and Canadian Studies Theory and Methods**

An overview of the development of Canadian Studies. Study of the main debates in the field. Emphasis on interdisciplinarity research ethics and methodologies. Students will develop a research design as their major project.

Prerequisite: third-year standing or permission of the instructor or the School of Canadian Studies. Seminar three hours a week.

CDNS 3100 [0.5 credit] (formerly 12.310\*)

**Canada in a Post-Industrial World**

The changing nature of Canadian culture and identity in the face of a vastly accelerated flow of people, goods and information within and across our national borders.

Prerequisites: CDNS 3002 and CDNS 3500, and CDNS 4002 (if taken before fall 1997).

Prerequisite: third-year standing or permission of the School. Seminar three hours a week.

CDNS 3101 [0.5 credit] (formerly 12.311\*)

**Being Canadian in a Post-Industrial World**

How the shift from an industrial to a post-industrial economy has altered the character of work, the role of the state, the future of cultural policy making and so on in the Canadian context. Prerequisites: CDNS 3002 and CDNS 3500, and CDNS 4002 (if taken before fall 1997).

Prerequisite: third-year standing or permission of the School. Seminar three hours a week.

CDNS 3104 [0.5 credit] (formerly 12.314\*)

**Aboriginal Peoples and the Knowledge Economy**

The dislocation of Aboriginal knowledge from its original context and its relocation within the knowledge economy.

Prerequisite: CDNS 2100 or permission of the instructor or the School of Canadian Studies. Seminar three hours a week

CDNS 3102 [0.5 credit] (formerly 12.312\*)

**Cultural Landscape and Cultural Identity**

Cultural landscape as an organizing theme to look at experience and identity in Canada. Artifacts and rituals that shape the physical and mental landscape: issues of shared, contested, and overlapping understandings of the built and natural environment.

Prerequisite: third-year standing or permission of the School. Seminar three hours a week.

CDNS 3200 [0.5 credit] (formerly 12.320\*)

**Cultural Landscape and Cultural Identity**

Cultural landscape as an organizing theme to look at experience and identity in Canada. Artifacts and rituals that shape the physical and mental landscape: issues of shared, contested, and overlapping understandings of the built and natural environment. Prerequisites: CDNS 3102.

Prerequisite: CDNS 2200 or permission of the instructor or the School of Canadian Studies. Seminar three hours a week.

CDNS 3300 [0.5 credit] (formerly 12.330\*)

**Globally Wired Canada: Critical Issues**

Historical and contemporary aspects of digital multimedia and corporate globalization. Drawing on key Canadian thinkers (including Marshall McLuhan, Ursula Franklin and John Ralston Saul) seminar discussions will critically examine the new

economy and governance, identity and community in on-line culture, biotechnology and the environment.

Prerequisites: CDNS 1000 or permission of the instructor or the School of Canadian Studies.

Prerequisite: CDNS 1000 or permission of the instructor or the School of Canadian Studies. Seminar three hours a week

CDNS 3301 [0.5 credit] (formerly 12.331\*)

**Canada in a Post Industrial World**

The changing nature of Canadian culture and identity in the face of a vastly accelerated flow of people, goods and information within and across our national borders.

Prerequisites: CDNS 1000 or permission of the instructor or the School of Canadian Studies.

Prerequisite: CDNS 1000 or permission of the instructor or the School of Canadian Studies. Seminar three hours a week.

CDNS 3500 [0.5 credit] (formerly 12.350\*)

**Canada in the Global Village**

Canada's development as a series of technological projects from fur-trade routes to canals, railways and telegraphs, radio and television and now, the information highway. Critiques the dominant discourse on Canadian technology: technology as progress versus technological dependency.

Prerequisites: CDNS 3002, and CDNS 4002 (if taken before fall 1997).

Prerequisite: CDNS 1000.

Seminar three hours a week.

CDNS 3800 [1.0 credit] (formerly 12.380)

**Internship Practicum**

A limited number of internships and practicum placements are available in institutional settings, primarily in the Ottawa area. Students are required to submit a formal written report concerning their placement. The written work is evaluated jointly by the student's internal and placement supervisors. A maximum of 1.0 credit of internship/practicum may be offered in fulfillment of Canadian Studies requirements.

Prerequisite: permission of the School.

CDNS 3801 [0.5 credit] (formerly 12.381\*)

**Internship/Practicum**

For course description, see CDNS 3800.

Prerequisite: permission of the School.

CDNS 3802 [0.5 credit] (formerly 12.382\*)

**Internship/Practicum**

For course description, see CDNS 3800.

Prerequisite: permission of the School.

CDNS 3803 [0.5 credit] (formerly 12.383\*)

**Internship/Practicum**

For course description, see CDNS 3800.

Prerequisite: permission of the School.

CDNS 4100 [0.5 credit] (formerly 12.410\*)

**Issues in Theory and Methods**

Theoretical and methodological questions associated with interdisciplinarity and Canadian Studies. Project design and research ethics will be addressed.

Prerequisite: fourth-year standing or permission of the School.

Seminar three hours a week.

CDNS 4101 [0.5 credit] (formerly 12.411\*)

**Selected Topics in Métis Studies**

Selected topics such as traditions, history, culture, and contemporary issues. Topics will vary depending upon the interests and expertise of the instructor.

Seminar: Three hours per week.

Prerequisite: CDNS 2100 or by permission of the School of Canadian Studies.

CDNS 4104 [0.5 credit] (formerly 12.414\*)

**Aboriginal Health and Healing**

Healing has become a cultural phenomenon among Aboriginal peoples even as good health eludes most. The collisions within and between traditional beliefs, symbols and practices are examined against that of the Canadian health care system.

Prerequisites: CDNS 2100 or permission of the instructor of the School of Canadian Studies.

Two-hour lecture, one-hour discussion group each week.

CDNS 4200 [0.5 credit] (formerly 12.420\*)

**Intersections between Traditional and Popular Cultures in Canada**

An interdisciplinary seminar using cultural studies methods to explore how ideas, images, rituals and objects are appropriated between traditional and popular cultures in Canada.

Prerequisite: CDNS 2200 or CDNS 3200 or permission of the instructor or the School of Canadian Studies.

Seminar three hours a week.

CDNS 4300 [0.5 credit] (formerly 12.430\*)

**Communities in Canada**

Exploration of the concepts of community in a Canadian context. Analysis of the diverse communities that define contemporary society and major issues such as community development, cultural survival and integration versus assimilation.

Prerequisite: CDNS 2100 or CDNS 2300 or permission of the instructor or the School of Canadian Studies.

Seminar Three hours a week.

CDNS 4102 [0.5 credit] (formerly 12.412\*)

**Selected Topics**

Topics vary from year to year.

Prerequisite: fourth year standing or permission of the School.

Seminar three hours a week.

CDNS 4901 [0.5 credit] (formerly 12.491\*)

**Selected Topics in Canadian Studies**

Topics vary from year to year.

Prerequisite: permission of the School.

CDNS 4901 [0.5 credit] (formerly 12.491\*)

**Selected Topics in Canadian Studies**

Topics vary from year to year.

Prerequisite: permission of the School.

CDNS 4902 [0.5 credit] (formerly 12.492\*)

**Selected Topics in Canadian Studies**

Topics vary from year to year.

Prerequisite: permission of the School.

CDNS 4902 [0.5 credit] (formerly 12.492\*)

**Selected Topics in Canadian Studies**

Topics vary from year to year.

Prerequisite: permission of the School.

CDNS 4903 [0.5 credit] (formerly 12.493\*)

**Études dirigées I**

Cours facultatif offert seulement aux étudiants de quatrième année Honours en Études canadiennes (*Mention: français*). Ce cours comprend des lectures dirigées et des travaux écrits dans un domaine relié aux Études canadiennes.

Prerequisite: permission of the School.

CDNS 4904 [0.5 credit] (formerly 12.494\*)

**Études dirigées II**

Cours facultatif offert seulement aux étudiants de quatrième année Honours en Études canadiennes (*Mention: français*). Ce cours comprend des lectures dirigées et des travaux écrits dans un domaine relié aux Études canadiennes.

Prerequisite: permission of the School.

CDNS 4905 [0.5 credit] (formerly 12.495\*)

**Directed Studies I**

An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year Graduate students. Includes supervised reading and written work in a Canadian Studies area.

Prerequisite: permission of the School.

CDNS 4906 [0.5 credit] (formerly 12.496\*)

**Directed Studies II**

An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year graduate students. Includes supervised reading and written work in a Canadian Studies area.

Prerequisite: permission of the School.

CDNS 4907 [1.0 credit] (formerly 12.497)

**Directed Studies III**

An optional course normally restricted to fourth-year Honours students in Canadian Studies and to Qualifying-year graduate students. Includes supervised reading and written work in a Canadian Studies area.

Prerequisite: permission of the School.

## Chemistry (CHEM)

Department of Chemistry  
Faculty of Science

CHEM 0100 [1.0 credit] (formerly 65.010)

**Introductory Chemistry**

Introduction to fundamental laws and principles of chemistry and the techniques needed to solve numerical problems. Laboratory component introduces common lab methods and techniques, and reinforces some of the lecture material.

Precludes additional credit for OAC Chemistry.

Prerequisite: Ontario Grade 11 Chemistry or equivalent.

Lectures three hours a week, tutorial one hour a week.

CHEM 1000 [1.0 credit] (formerly 65.100)

**General Chemistry**

Solution equilibria, acid and base chemistry; electronic structure of atoms; energy states and spectra; descriptive chemistry and periodic properties of elements; structure of covalent and ionic substances; energy relationships and theories in bonding, equilibria, and rates of reactions. Experimental techniques in analysis and synthesis.

Precludes additional credit for CHEM 1101.

Prerequisites: OAC in Calculus and Chemistry, or equivalent. This course is intended for students in all programs who plan to take further chemistry courses.

Lectures three hours a week, laboratory and tutorial three hours a week.

CHEM 1003 [0.5 credit] (formerly 65.103)

**The Chemistry of Food, Health and Drugs**

Aspects of chemistry relating to food, food additives, drugs (both illicit and beneficial) and their relation to metabolism and health. Topics may include: proteins, carbohydrates, fats, vitamins and cofactors, enzymes, steroids, electrolyte and pH balance, trace elements.

Available only as a free option for Science students.

Prerequisite: a course in Chemistry (e.g. Ontario Grade 11).

Lectures three hours a week.

CHEM 1101 [0.5 credit] (formerly 65.111)

**Chemistry for Engineering Students**

Topics include stoichiometry, atomic and molecular structure, thermodynamics and chemical equilibrium, acid-base chemistry, carbon dioxide in water, alkalinity, precipitation, electrochemistry, kinetics and basic organic chemistry. Laboratory component emphasizes techniques and methods of basic experimental chemistry.

Precludes additional credit for CHEM 1000.

Prerequisites: OAC in Calculus and Chemistry, or equivalent.

Lectures three hours a week, laboratory three hours a week.

CHEM 2101 [0.5 credit] (formerly 65.211)

**Physical Chemistry I**

Principles of thermodynamics. Development of thermodynamic functions, enthalpy, entropy and free energy and their applications to biochemical and chemical processes. Brief introduction to Excel.

Precludes additional credit for CHEM 2100. Students presenting both CHEM 2101 and CHEM 2207 or CHEM 2203 will not be able to receive additional credit for CHEM 2800. Students in the B.Sc. program with CHEM 2203 will only be able to use CHEM 2800 in the free elective category.

Prerequisites: CHEM 1000; MATH 1007 and MATH 1107; OAC Physics or PHYS 1007 and PHYS 1008.

Lectures three hours a week, problems one hour a week, laboratory three hours a week.



CHEM 2102 [0.5 credit] (formerly 65.212)

**Physical Chemistry II**

Further development of thermodynamic equations and their applications to phase equilibria, chemical equilibria, electrochemistry, transport properties and kinetics.

Precludes additional credit for CHEM 2100.

Prerequisite: CHEM 2101.

Lectures three hours a week, problems one hour a week, laboratory three hours a week.

CHEM 2203 [0.5 credit] (formerly 65.223)

**Organic Chemistry I**

Structure, organization, and scope of organic chemistry including molecular structures of well-known and important organic chemicals, types of chemical reactions, and spectroscopic methods used in identification. Training in the handling and purification of organic compounds, organic chemical reactions, and the use of infrared spectroscopy.

Precludes additional credit for CHEM 2200 and CHEM 2207. Students presenting both CHEM 2203 and CHEM 2101 will not be able to receive additional credit for CHEM 2800. Students in the B.Sc. program with CHEM 2203 will only be able to use CHEM 2800 in the free elective category, except for students in the Environmental Science Program, who may include CHEM 2203 in the Approved Science Course category while maintaining CHEM 2800 as a mandatory course requirement.

Prerequisite: CHEM 1000.

Lectures three hours a week, laboratory three hours a week.

CHEM 2204 [0.5 credit] (formerly 65.224)

**Organic Chemistry II**

Further discussion of chemical bonding in organic compounds, nomenclature, stereochemistry, and a systematic coverage of the chemical reactions of organic functional groups. Laboratory experience in organic chemical reactions, use of infrared spectroscopy and other techniques to determine the structure of unknown organic compounds.

Precludes additional credit for CHEM 2208 or CHEM 2206.

Prerequisite: CHEM 2200 or CHEM 2203.

Lectures three hours a week, laboratory three hours a week.

CHEM 2206 [0.5 credit] (formerly 65.226)

**Organic Chemistry IV**

Further discussion of the chemical bonding in organic compounds, nomenclature, stereochemistry, and a systematic coverage of the chemical reactions of the organic functional groups. The laboratory consists of computational experiments and calculations on organic structures and reactions.

Precludes additional credit for CHEM 2200, CHEM 2204, or CHEM 2208.

Prerequisite: CHEM 2203 or CHEM 2207.

Lectures three hours a week, laboratory three hours a week.

CHEM 2207 [0.5 credit] (formerly 65.227)

**Introduction to Organic Chemistry I**

Structure, organization, and scope of organic chemistry, including molecular structures of well-known and important organic chemicals, types of chemical reactions, and spectroscopic methods used in identification.

Precludes additional credit for CHEM 2200 and CHEM 2203. Students presenting both CHEM 2207 and CHEM 2101 will not be able to receive additional credit for CHEM 2800. Students in the B.Sc. program with CHEM 2207 will only be able to use CHEM 2800 in the free elective category, except for students in the Environmental Science Program, who may include CHEM 2207 in the Approved Science Course category while maintaining CHEM 2800 as a mandatory course requirement.

Prerequisites: CHEM 1000.

Lectures three hours a week.

CHEM 2208 [0.5 credit] (formerly 65.228)

**Introduction to Organic Chemistry II**

Further discussion of the chemical bonding in organic compounds, nomenclature, stereochemistry, and a systematic coverage of chemical reactions of the organic functional groups. Precludes additional credit for CHEM 2200, CHEM 2204 or CHEM 2206.

Prerequisite: CHEM 2207 or CHEM 2203.

Lectures three hours a week.

CHEM 2302 [0.5 credit] (formerly 65.232)

**Analytical Chemistry**

Analytical measurement process. Sampling and sample preparation techniques. Instrumental methods of analysis including absorption spectrophotometry (UV-visible, IR), molecular fluorimetry, atomic spectrometry, inductively coupled plasma atomic emission and ion chromatography. Experimental methodologies for various organic, inorganic, geological and industrial analyses.

Precludes additional credit for CHEM 2300.

Prerequisites: CHEM 1000 or CHEM 1101, MATH 1007 and MATH 1107.

Lectures three hours a week, laboratory three hours a week.

CHEM 2303 [0.5 credit] (formerly 65.233)

**Analytical Chemistry**

Analytes in biological and environmental matrices are separated by solvent or solid phase extraction, before they are determined by chromatographic, mass spectrometric and electrochemical methods. Topics of social and economic interests will be covered, including drugs, food, lipids, proteins, pesticides, dioxins, and PCBs.

Precludes additional credit for CHEM 2300 and CHEM 2301.

Prerequisites: CHEM 1000 or CHEM 1101, MATH 1007 and MATH 1107.

Lectures three hours a week, laboratory three hours a week.

CHEM 2800 [0.5 credit] (formerly 65.280)

**Foundations for Environmental Chemistry**

A basis of chemistry needed to understand the environment: composition of the atmosphere and natural waters; equilibrium; surface properties; kinetics and spectroscopy; physical and chemical properties of chemicals in the environment. This is a limited enrolment course; therefore top priority will be given to students registered in the Environmental Science program.

Students in the B.Sc. program with CHEM 2203 or CHEM 2207 will only be able to use CHEM 2800 in the free elective category, except for students in the Environmental Science program, who may include CHEM 2203 or CHEM 2207 in the Approved Science Course category while maintaining CHEM 2800 as a mandatory course requirement.

Prerequisites: CHEM 1000, or CHEM 1101; and MATH 1007 or equivalents.

Lectures three hours a week, laboratory three hours a week.

CHEM 2909 [0.5 credit] (formerly 65.299)

**Co-operative Work Term Report 1**

These work terms provide practical experience for students enrolled in the Co-operative option. To receive credit, students must receive satisfactory evaluations from their work term employer and in their written and oral reports. Graded Sat or Uns.

Prerequisites: Registration in the Chemistry Co-operative option and permission of the Department.

CHEM 3101 [0.5 credit] (formerly 65.311)

**Quantum Chemistry**

Classical equations of motion, harmonic oscillator, diatomic and polyatomic molecules, molecular mechanics, quantum mechanics, Schrödinger equation and wave functions, vibrational spectra, hydrogen atom, quantum numbers, electronic spectra, bonding in small molecules.

Prerequisites: CHEM 2101, MATH 2007 and MATH 2008.

Lectures and problems three hours a week.

CHEM 3102 [0.5 credit] (formerly 65.312)

**Methods of Computational Chemistry**

Molecular orbital theory of organic and inorganic chemistry. Applications of computational chemistry to chemical bonding, aromaticity, molecular spectra. Semi-empirical and ab initio electronic structure theory. Comparison of theoretical methods used to obtain molecular properties. Introduction to statistical thermodynamics.

Prerequisite: CHEM 3101.

Lectures and problems three hours a week.

CHEM 3105 [0.5 credit] (formerly 65.315)

**Experimental Physical Chemistry**

A laboratory-based course designed to acquaint students with

advanced concepts in physical chemistry and the use of more advanced physico-chemical techniques in other areas of chemistry. Students are responsible for literature surveys, acquisition of theoretical background, design of experimental procedures and mathematical analysis of data.

Prerequisites: CHEM 2102, CHEM 3101 (may be taken concurrently), and at least one of CHEM 2203, CHEM 2302, CHEM 2303.

Note: Withdrawal from CHEM 3101 will require deregistration from CHEM 3105.

Laboratory and seminars four hours a week.

CHEM 3106 [0.5 credit] (formerly 65.316)

**Computational Chemistry Methods Laboratory**

Use of PC Spartan. Molecular mechanics models. Geometry optimization, vibration frequencies, IR spectra, animation of normal modes. Ab initio and semi-empirical models. Selection of an appropriate model; comparison of results. Reaction thermochemistry. Molecular structure. Transition states and activation energies. Display of graphical surfaces.

Prerequisite: CHEM 3102 (may be taken concurrently).

Laboratory four hours a week.

CHEM 3201 [0.5 credit] (formerly 65.321)

**Advanced Organic Chemistry I**

Instrumental methods for determining organic structures. Selected organic reactions with emphasis on mechanisms and reactive intermediates.

Prerequisite: CHEM 2204 or CHEM 2206 or CHEM 2208.

Lectures three hours a week.

CHEM 3202 [0.5 credit] (formerly 65.322)

**Advanced Organic Chemistry II**

Continued mechanistic survey of additional organic reactions with emphasis on synthetic usefulness and stereochemistry. Interspersed with selected topics such as instrumental methods, photochemistry, literature of organic chemistry, natural and synthetic polymers, heterocycles, terpenes and alkaloids.

Prerequisite: CHEM 3201 or equivalent.

Lectures three hours a week.

CHEM 3205 [0.5 credit] (formerly 65.325)

**Experimental Organic Chemistry**

A laboratory-based course including advanced concepts and techniques in organic synthesis, structure determination, and the rates and mechanisms of reactions. Students are responsible for literature surveys, acquisition of theoretical background, and design of experimental procedures.

Prerequisite: CHEM 2204 or CHEM 2206, CHEM 3201 or BIOC 3100 (may be taken concurrently).

Note: Withdrawal from CHEM 3201 will require deregistration from CHEM 3205.

Laboratory four hours a week.

CHEM 3305 [0.5 credit] (formerly 65.335)

**Advanced Analytical Chemistry Laboratory**

Advanced instrumentally based techniques of analysis. Emphasis on identification and quantitation of low-level contaminants in environmental matrices using chromatographic and spectroscopic methods, including sampling, cleanup, measurement and reporting of results.

Prerequisites: CHEM 2302 and CHEM 2303.

Laboratory four hours a week.

CHEM 3503 [0.5 credit] (formerly 65.353)

**Inorganic Chemistry I**

Concepts of atomic theory, elemental properties and the periodic system, resonance, introduction to molecular orbital theory, main group chemistry, transition metal complexes, metalloproteins and solid state materials.

Prerequisite: CHEM 1000.

Lectures three hours a week.

CHEM 3504 [0.5 credit] (formerly 65.354)

**Inorganic Chemistry II**

Symmetry and the application of group theory to spectroscopy and bonding, ligand field theory, solid state and molecular magnetic properties, organometallic chemistry, and electron transfer reactions.

Prerequisite: CHEM 3503.

Lectures three hours a week.

CHEM 3505 [0.5 credit] (formerly 65.355)

**Experimental Inorganic and Analytical Chemistry**

A laboratory-based course including advanced concepts and techniques in inorganic synthesis, structure determination and analytical chemistry. Students are responsible for literature surveys, acquisition of theoretical background, design of experimental procedures and mathematical analysis of data.

Prerequisites: CHEM 2101, CHEM 2302, CHEM 2303, CHEM 3503 and CHEM 3504 (may be taken concurrently).

Note: Withdrawal from or a final grade of F in CHEM 3503 will require deregistration from CHEM 3505.

Laboratory four hours a week.

CHEM 3700 [0.5 credit] (formerly 65.370)

**Industrial Applications of Chemistry**

Uses of chemistry in a number of industries: fertilizers, electrochemical, metallurgical, petrochemical, pulp and paper, plastics, pharmaceutical. Interaction of chemistry with economic, political, engineering, environmental, health, legal considerations. Guest lecturers.

Prerequisite: CHEM 2101 and one of CHEM 2207 or CHEM 2203.

CHEM 3800 [0.5 credit] (formerly 65.380)

**The Chemistry of Environmental Pollutants**

Inorganic and organic environmental pollutants: their toxicology, production, use pattern and known effects on the environment. Aspects of risk and regulation. Chemistry involved in water and sewage treatment.

Prerequisite: CHEM 2207 or CHEM 2203 or CHEM 2800.

Lectures three hours a week.

CHEM 3909 [0.5 credit] (formerly 65.399)

**Co-operative Work Term Report 2**

These work terms provide practical experience for students enrolled in the Co-operative option. To receive credit, students must receive satisfactory evaluations from their work term employer and in their written and oral reports. Graded Sat or Uns.

Prerequisites: Registration in the Chemistry Co-operative option and permission of the Department.

CHEM 4100 [0.5 credit] (formerly 65.410)

**Advanced Topics in Physical Chemistry I**

Principles of Group Theory as applied to Chemistry. Point groups, character tables, symmetry orbitals, molecular orbitals, aromaticity, allowed and forbidden reactions, sandwich complexes. Selection rules in spectroscopy, molecular vibrations.

Prerequisites: CHEM 3102 or PHYS 3602.

Lectures three hours a week.

CHEM 4102 [0.5 credit] (formerly 65.412)

**Advanced Topics in Physical Chemistry II**

Statistical thermodynamics, energy states, equilibrium, partition functions for diatomic molecules. Chemical kinetics: rate laws, solution of differential equations, transition state theory, bimolecular reactions in gases and in solution, chain reactions, catalysis, atmospheric chemical reactions and photochemistry.

Prerequisite: CHEM 3102.

Lectures and seminars three hours a week.

CHEM 4202 [0.5 credit] (formerly 65.422)

**Advanced Topics in Organic Chemistry I**

Topics include 2-dimensional <sup>1</sup>H and <sup>13</sup>CNMR spectroscopy and structure determination of complex organic molecules. Also offered at the graduate level, with additional requirements, as CHEM 5407, for which additional credit is precluded.

Prerequisite: CHEM 3201.

Lectures and seminars three hours a week.

CHEM 4203 [0.5 credit] (formerly 65.423)

**Advanced Topics in Organic Chemistry II**

Synthetic organic chemistry. The application of reactions to the synthesis of organic molecules. Emphasis on design of sequences, new reagents, and stereoselectivity.

Prerequisites: CHEM 3201 and CHEM 3202.

Lectures and seminars three hours a week.

CHEM 4204 [0.5 credit] (formerly 65.424)

**Organic Polymer Chemistry**

Introduction to basic principles of polymer chemistry, industrial

and synthetic polymers, different types of polymerization and polymer characterization. Study of commodity plastics, engineering thermoplastics, and specialty polymers, with emphasis on their synthesis. Also offered at the graduate level, with additional or different requirements, as CHEM 5406, for which additional credit is precluded.  
Prerequisites: CHEM 3201 or equivalent.  
Lectures three hours a week.

CHEM 4301 [0.5 credit] (formerly 65.431)

#### **Advanced Topics in Analytical Chemistry I**

Trace and ultratrace analytical chemistry. Sampling and sample preservation. The problems of the blank. Trace and ultratrace analysis. Sampling and sample preparation. Atomic absorption, fluorescence and emission spectroscopy.  
Prerequisites: CHEM 2101; CHEM 2302 or CHEM 2303.  
Given in alternate years with CHEM 4302.

CHEM 4302 [0.5 credit] (formerly 65.432)

#### **Advanced Topics in Analytical Chemistry II**

Solutions and separations in analytical chemistry. Stability of aqueous solutions of standards and samples. Complex formation, multi-step and competing equilibria and their application to the design of selective methods of separation and determination. Electroanalytical techniques. Electroanalytical chemistry of aqueous solutions. Phase equilibria and solvent extraction.  
Prerequisites: CHEM 2101; CHEM 2302, or CHEM 2303.  
Text: Laitinen and Harris, *Chemical Analysis*, Second Edition.  
Given in alternate years with CHEM 4301.  
Lectures and seminars three hours a week.

CHEM 4406 [0.5 credit] (formerly 65.446)

#### **Pharmaceutical Drug Design**

Important elements of rational drug design. Ligand-receptor interactions, structure-activity relationships, molecular modeling of pharmacophores, structure and mechanism-based approaches to drug design. Enzyme inhibition in chemotherapy and design of anti-viral drugs.  
Prerequisite: CHEM 2101, CHEM 2203 or CHEM 2207 and BIOC 3100.  
Lectures and laboratory five hours a week.

CHEM 4407

#### **Polymer Modeling**

Polymer architectures; Flexible and rigid rod polymers; Rotational isomeric states (RIS); Molecular mechanics, Ramachandran Map, Helix parameters; Internal and External Parameters; Regular and random coil structures; Molecular Dynamics; Calculation of end-to-end distance, NMR chemical shifts; conformational entropy and properties.  
Prerequisite: MATH 1107 and CHEM 2204 or permission of the department.  
Lectures three hours per week.

CHEM 4502 [0.5 credit] (formerly 65.452)

#### **Radiochemistry**

A study of nuclear stability and decay; chemical studies of nuclear phenomena. Applications of radioactivity.  
Prerequisites: CHEM 2102, CHEM 2302 and CHEM 2303; or permission of the Department.  
Reference text: Friedlander, Kennedy, Macias and Miller, *Nuclear and Radiochemistry*.  
Lectures and seminars three hours a week.

CHEM 4503 [0.5 credit] (formerly 65.453)

#### **Advanced Topics in Inorganic Chemistry I**

Static and dynamic structures of inorganic coordination compounds. Group-theoretical description of vibrational and electronic excited states. Ligand-field, parameters, bond covalence, prediction of inorganic reaction paths.  
Precludes additional credit for CHEM 4500.  
Prerequisite: CHEM 3504 or equivalent.  
Lectures three hours a week.

CHEM 4504 [0.5 credit] (formerly 65.454)

#### **Advanced Topics in Inorganic Chemistry II**

Reactivity of inorganic coordination compounds. Thermodynamic and kinetic factors affecting reactivity. Industrial and biochemical processes catalyzed by metal coordination compounds. Experimental methodologies, data analysis and rate law evaluation used to obtain reaction

mechanisms leading to improved methods of catalysis.

Prerequisite: CHEM 3504 or equivalent.

Lectures three hours a week.

CHEM 4700 [0.5 credit] (formerly 65.470)

#### **Special Topics in Chemistry**

A topic of current interest in any branch of chemistry. Only one special topics course may be presented for credit.  
Prerequisite: permission of the Department.

CHEM 4800 [0.5 credit] (formerly 65.480)

#### **Atmospheric Chemistry**

Properties of natural atmospheric constituents; biogeochemical cycles involving gases; chemical reactions in the atmosphere; anthropogenic atmospheric pollutants (e.g., chlorofluorocarbons, sulphur and nitrogen oxides, photochemical smog sources and effects on the biosphere. Relation between the structure of molecules and their spectral and reactive properties.  
Prerequisite: CHEM 2101 or CHEM 2800.  
Lectures three hours a week.

CHEM 4908 [1.0 credit] (formerly 65.498)

#### **Research Project and Seminar**

Senior students in Honours Chemistry carry out a research project under the direction of one of the members of the Department. A written report and an oral presentation of the work are required before a grade can be assigned.

Prerequisites: Any two of CHEM 3105, CHEM 3106, CHEM 3205, CHEM 3305 and CHEM 3505.

Laboratory and associated work equivalent to at least eight hours a week for two terms.

CHEM 4909 [0.5 credit] (formerly 65.499)

#### **Co-operative Work Term Report 3**

These work terms provide practical experience for students enrolled in the Co-operative option. To receive credit, students must receive satisfactory evaluations from their work term employer and in their written and oral reports. Graded Sat or Uns.

Prerequisites: Registration in the Chemistry Co-operative option and permission of the Department.

## **Child Studies (CHST)**

Child Studies Committee

Institute of Interdisciplinary Studies

Faculty of Arts and Social Sciences

CHST 2501 [0.5 credit] (formerly 04.251\*)

#### **Issues in Child Studies**

An interdisciplinary approach to Child Studies. Introduction to perspectives and methods of study employed by various disciplines, including psychology and sociology. Issues related to research ethics will be introduced.

Prerequisite: PSYC 1001 and PSYC 1002 or PSYC 1000 and permission of the Institute.

Lecture and discussion groups, three hours a week.

## **Civil Engineering (CIVE)**

Civil and Environmental Engineering

Faculty of Engineering

CIVE 1005 [0.5 credit] (formerly 82.105)

#### **Introduction to Technology**

Technical issues involved in architectural design of buildings from ancient times to the present. Technological innovation and materials related to structural developments, and the organization and design of structures. Basic concepts of equilibrium, and mechanics of materials.  
Precludes additional credit for ARCC 2103.  
Lectures three hours a week, laboratory three hours a week.

CIVE 2004 [0.5 credit] (formerly 82.204)

#### **GIS, Surveying, and Graphics**

Engineering geometry and spatial graphics. Structural engineering drawings and computer aided drafting.



Fundamentals of surveying, measuring horizontal and vertical distances and angles. Topographic and construction surveys. GPS and electronic surveying. Geographic information systems, data, data structure and processing, spatial referencing, cartographic modeling, application software. Precludes additional credit for CIVE 1004. Lectures three hours a week, problem analysis and laboratories three hours a week.

CIVE 2101 [0.5 credit] (formerly 82.211)

**Mechanics II**

Plane trusses. Virtual work. Friction. Relative motion of particles. Kinematics of a rigid body: translation, rotation; general plane motion; absolute and relative motion. Kinetics of a rigid body: equations of motion; work-energy; impulse-momentum; conservation of momentum and energy. Conservative forces and potential energy.

Precludes additional credit for MAAE 2101 and ECOR 2101. Prerequisites: ECOR 1101 and MATH 1004 and MATH 1104. Lectures three hours a week, problem analysis three hours a week.

CIVE 2200 [0.5 credit] (formerly 82.220)

**Mechanics of Deformable Bodies**

Stress and strain. Stress-strain relationship: Hooke's law. Torsion of circular shafts. Bending moment and shear force distribution. Flexural stresses. Deflection. Shear stress in beams. Stresses in thin-walled cylinders. Transformation of 2D stress and strain: Mohr's circle. Buckling of columns.

Precludes additional credit for MAAE 2202.

Prerequisite: ECOR 1101.

Lectures three hours a week, problem analysis and laboratory three hours a week.

CIVE 2700 [0.5 credit] (formerly 82.270)

**Civil Engineering Materials**

Introduction to material science. Structure of atoms. Crystallography. Crystal Imperfections. Characteristics, behaviour and use of Civil Engineering materials: steel, concrete, asphalt, wood, polymers, composites. Specifications. Physical, chemical and mechanical properties. Quality control and material tests. Fatigue. Corrosion. Applications in construction and rehabilitation of structures.

Prerequisites: CHEM 1000 CHEM 1101 or equivalent, MATH 1004, and PHYS 1004.

Lectures three hours a week, problem analysis and laboratories three hours a week.

CIVE 3202 [0.5 credit] (formerly 82.322)

**Advanced Mechanics**

Shear flow. Definition of shear centre, Saint Venant and warping torsional constants. Behaviour, governing differential equations and solutions for torsion, beam-columns, lateral torsional buckling of doubly symmetric beams, axially loaded doubly symmetric, singly symmetric and asymmetric columns. Failure criterion, fatigue and fracture.

Precludes additional credit for CIVE 4404 and MAAE 3202.

Prerequisite: CIVE 2200.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3203 [0.5 credit] (formerly 82.323)

**Introduction to Structural Analysis**

Concepts and assumptions for structural analysis: framed structures; joints; supports; compatibility and equilibrium; stability and determinacy; generalized forces and displacements. Principle of Virtual Work: unknown force calculations; influence lines. Complementary Virtual Work: displacement calculations, indeterminate analysis. Introduction to the Stiffness Method of Analysis.

Prerequisite: CIVE 2200.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3204 [0.5 credit] (formerly 82.324)

**Introduction to Structural Design**

Building systems and bridge types. Limit States Design. The design process. Material standards. National Building Code of Canada. The determination of dead, live, snow, rain, wind,

earthquake and crane loads. Preliminary analyses. The determination of maximum load effects.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

CIVE 3205 [0.5 credit] (formerly 82.325)

**Design of Structural Steel Components**

Introduction to CAN/CSA - S16.1, design and behaviour concepts; shear lag, block shear, local plate buckling, lateral torsional buckling, instantaneous centre, inelastic strength and stability. Design of tension members, axially loaded columns, beams, beam-columns, simple bolted and welded connections. (Also listed as ARCC 3106.)

Prerequisites: CIVE 2200 and CIVE 3204.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3206 [0.5 credit] (formerly 82.326)

**Design of Reinforced Concrete Components**

Introduction to CAN/CSA - A23.3; design and behaviour concepts; shear, bond, Whitney stress block, under and over reinforced behaviour, strain compatibility and ultimate strength, construction detailing. Flexural design of singly reinforced, doubly reinforced and T-beams. Shear design for beams. Design of slabs, columns, and footings.

Prerequisites: CIVE 2200 and CIVE 3204.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 3208 [0.5 credit] (formerly 82.328)

**Geotechnical Mechanics**

Soil composition and soil classification. Soil properties, compaction, seepage and permeability. Concepts of pore water pressure, capillary pressure and hydraulic head. Principle of effective stress, stress-deformation and strength characteristics of soils, consolidation, stress distribution with soils, and settlement. Laboratory testing. (Also listed as GEOG 4107 and GEOL 4107.)

Prerequisites: GEOL 2404 or equivalent and Third-year registration, or permission of the Department.

Lectures three hours a week, laboratory three hours alternate weeks.

CIVE 3304 [0.5 credit] (formerly 82.334)

**Transportation Engineering and Planning**

Transportation and the socio-economic environment; modal and intermodal systems and components; vehicle motion, human factors, system and facility design; traffic flow; capacity analysis; planning methodology; environmental impacts; evaluation methods. (Also listed as GEOG 4304.)

Prerequisite: third-year registration, or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4200 [0.5 credit] (formerly 82.420)

**Matrix Analysis of Framed Structures**

Review of basic structural concepts. Betti's law and applications. Matrix flexibility method, flexibility influence coefficients. Development of stiffness influence coefficients. Stiffness method of analysis: beams; plane trusses and frames; space trusses and frames. Introduction to the finite element method. (Also listed as ARCC 3104.)

Prerequisite: CIVE 3203.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4201 [0.5 credit] (formerly 82.421)

**Finite Element Methods in Structural Analysis**

Review of matrix stiffness analysis of frames. Introduction to theory of elasticity. Simple finite elements. Virtual Work formulation of equilibrium of structure and element. Lagrange interpolation and basis for displacement shape functions. Considerations in finite element modeling. Plate bending theory and analysis.

Also offered, at the graduate level with additional or different requirements, as CIVE 5103 for which additional credit is precluded.

Prerequisite: CIVE 4200.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4202 [0.5 credit] (formerly 82.422)

### **Wood Engineering**

Structural design in timber. Properties, anatomy of wood, wood products, factors affecting strength and behaviour, strength evaluation and testing. Design of columns, beams and beam-columns. Design of trusses, frames, glulam structures, plywood components, formwork, foundations, connections and connectors. Inspection, maintenance and repair. (Also listed as ARCC 4202.)

Prerequisite: fourth-year registration or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4208 [0.5 credit] (formerly 82.428)

### **Geotechnical Engineering**

Strength of soils; shear strength, bearing capacity, consolidation. Stress distribution in soils. Earth pressures: at rest, active and passive. Design of flexible and rigid retaining structures. Stability of excavations, slopes and embankments. Settlement of foundations. Bearing capacity of footings.

Prerequisite: CIVE 3208.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4209 [0.5 credit] (formerly 82.429)

### **Highway Engineering**

Highway planning; highway location and geometric design; traffic engineering; highway capacity; soil classifications; subgrade and base materials; highway drainage; frost action; structural design of rigid and flexible pavements; highway economics and finance; maintenance and rehabilitation.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4301 [0.5 credit] (formerly 82.431)

### **Foundation Engineering**

A critical study of the theories in soil mechanics and their application to the solution of geotechnical engineering problems. Field investigations, laboratory and field testing, special footings, mat foundations, caissons, pile foundations and excavations. Discussion of new methods and current research.

Prerequisite: CIVE 4208.

Lectures three hours a week, laboratory three hours alternate weeks.

CIVE 4302 [0.5 credit] (formerly 82.432)

### **Reinforced and Prestressed Concrete Design**

Reinforced concrete shear and torsion design by the General Method. Two-way slab design by Direct Design and Equivalent Frame Method. Behaviour and design of slender reinforced concrete columns. Prestressed concrete concepts; flexural analysis and design; shear design; anchorage zone design; deflection and prestress loss determination.

Prerequisite: CIVE 3206.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4303 [0.5 credit] (formerly 82.433)

### **Urban Planning**

A systematic approach to urban planning; urban sprawl; data collection; forecasting; standards; space requirements; land use; zoning; transportation; land development; site selection; land capability; layout; evaluation; housing; urban renewal and new towns. (Also listed as GEOG 4303.)

Prerequisite: third-year registration, or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4307 [0.5 credit] (formerly 82.437)

### **Municipal Hydraulics**

Fluid flow fundamentals. Hydraulics of pipe systems. Open channel flow. Prediction of sanitary and storm sewage, flow rates. Design of water distribution systems, culverts, sanitary and storm sewers. Pumps and measuring devices. Hydraulic and flow control structures.

Prerequisite: MAAE 2300.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4308 [0.5 credit] (formerly 82.438)

### **Behaviour and Design of Steel Structures**

Behaviour and design of open web steel joists, steel and composite decks, composite beams and columns, stud girders, and plate girders. Design of moment connections, base plates and anchor bolts, and bracing connections. Stability of rigid and braced frames. Design for lateral load effects.

Prerequisites: CIVE 3205 and fourth-year registration.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4400 [0.5 credit] (formerly 82.440)

### **Construction/Project Management**

Systems approach to project planning and control. Analysis of alternative network planning methods: CPM, precedence and PERT; planning procedure; computer techniques and estimating; physical, economic and financial feasibility; implementation feedback and control; case studies. (Also listed as BUSI 4308.)

Prerequisite: fourth-year registration.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4403 [0.5 credit] (formerly 82.443)

### **Masonry Design**

Introduction to structural design in masonry. Properties of masonry materials and assemblages. Behaviour and design of beams, walls and columns. Selected topics including veneer wall systems, differential movement, workmanship, specifications, inspection, maintenance and repair. Lowrise and highrise building design.

Also offered, at the graduate level with additional or different requirements, as CIVE 5200, for which additional credit is precluded.

Prerequisite: fourth-year registration or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4407 [0.5 credit] (formerly 82.447)

### **Municipal Engineering**

Introduction to fundamentals of municipal engineering. City management; permits and approvals; water supply, treatment and distribution; sewage collection, treatment and disposal; solid waste management; snow disposal; protective services.

Precludes additional credit for CIVE 3307.

Prerequisite: fourth-year registration.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4500 [0.5 credit] (formerly 82.450)

### **Computer Methods in Civil Engineering**

Application of object oriented programming to solve Civil Engineering problems in surveying; transportation, hydrotechnical, geotechnical, environmental and structural engineering. Computing techniques include data structures, data storage and data base management, development of hypertext documents, and the development of graphical user interfaces.

Prerequisites: ECOR 2606 and fourth-year registration.

Lectures three hours a week, problem analysis three hours alternate weeks.

CIVE 4600 [0.5 credit] (formerly 82.460)

### **Advanced Building Systems**

Architecture as a multi-disciplinary endeavour with emphasis on the architect's role and responsibility. Relationship of design intentions to support, enclosure, services, interior finishes with emphasis on contemporary concerns and means in architecture. Basic concepts of structural analysis and design.

Precludes additional credit for ARCC 2103.

Prerequisites: ARCC 1001 and CIVE 1005.

Lectures three hours a week, laboratory one hour a week.

CIVE 4905 [0.5 credit] (formerly 82.495)

### **Professional Practice**

Presentations by faculty and external lecturers on the Professional Engineers Act, professional ethics and responsibilities practice within the discipline and its relationship with other disciplines and to society, health and safety,

environmental stewardship, principles and practice of sustainable development. Communication skills are emphasized.  
 Precludes additional credit for MAAE 4905, SYSC 3905 and ELEC 3905.  
 Prerequisite: fourth-year registration.  
 Lectures three hours a week.

CIVE 4907 [1.0 credit] (formerly 82.497)

**Engineering Project**

A major project in engineering analysis, design, development or research carried out by individual students or small teams. The objective is to provide an opportunity to develop initiative, self-reliance, creative ability and engineering judgment. A project proposal, an interim report, an oral presentation, and a comprehensive final report are required.

CIVE 4908 [0.5 credit] (formerly 82.498)

**Design Project**

Teams of students develop professional level experience through a design project that incorporates fundamentals acquired in previous mathematics, science, engineering, and complementary studies courses. A final report and oral presentations are required.  
 Prerequisite: fourth-year registration.  
 Lectures one hour a week, problem analysis seven hours a week.

## Classical Civilization (CLCV)

College of the Humanities  
 Faculty of Arts and Social Sciences

CLCV 1000 [1.0 credit]

**Introduction to Classics**

An introduction to the study of Greek and Roman antiquity and to the discipline of Classics and its methodologies. The culture and society will be set in their historical context and studied through readings from representative ancient authors (in English translation) and through the art and architecture of the period. Precludes additional credit for FYSM 1106, CLCV 1002, CLCV 1003, and CLCV 1109.  
 Lectures two hours a week.

CLCV 1002 [0.5 credit] (formerly 13.102\*)

**Survey of Greek Civilization**

An introduction to the study of Greek antiquity and the discipline of Classics and its methodologies. The culture and society will be set in their historical context and studied through readings from representative ancient authors (in English translation) and through the art and architecture of the period. Precludes additional credit for FYSM 1106, CLCV 1000, and CLCV 1109.  
 Lectures two hours a week.

CLCV 1003 [0.5 credit] (formerly 13.103\*)

**Survey of Roman Civilization**

An introduction to the study of Roman antiquity and the discipline of Classics and its methodologies. The culture and society will be set in their historical context and studied through readings from representative ancient authors (in English translation) and through the art and architecture of the period. Precludes additional credit for FYSM 1106, CLCV 1000, and CLCV 1109.  
 Lectures two hours a week.

CLCV 2000 [1.0 credit] (formerly 13.200)

**Classical Mythology**

A study of classical mythology, emphasizing its use in Greek and Roman literature and its place in classical art and religion. There is some discussion of classical myths in terms of contemporary interpretations of myth. (All texts used are in English).  
 Precludes additional credit for CLCV 3000.  
 Prerequisite: second-year standing or registration in the B.Hum. program or permission of the unit.  
 Lectures and discussion three hours a week.

CLCV 2006 [0.5 credit] (formerly 13.206\*)

**Plato and Aristotle**

An historical and critical study of some central issues in the philosophy of Plato and of Aristotle. (Also listed as PHIL 2006).  
 Precludes additional credit for PHIL 2005.  
 Prerequisite: at least 0.5 credit in Philosophy or second-year standing.  
 Lectures three hours a week.

CLCV 2007 [0.5 credit] (formerly 13.207\*)

**Western Phil.: 300 BC - AD 1200**

The evolution of western philosophy from the fourth through the twelfth century: theories of human nature, knowledge and reality are traced from the Hellenistic philosophers through the early medieval synthesis of reason with Christianity. Several thinkers (e.g. Plotinus, Augustine, and Anselm) are studied in depth. (Also listed as PHIL 2007.)  
 Precludes additional credit for PHIL 2205.  
 Prerequisite: CLCV 2006 or permission of the Philosophy department.  
 Lectures three hours a week.

CLCV 2009 [1.0 credit] (formerly 13.209)

**Greek & Roman Literary Genres**

A study through English translation of the various genres of Greek and Latin literature, especially those which influenced later European writings: epic, drama, the ode, pastoral poetry, satire. (Also listed as ENGL 2009.)  
 Prerequisite: second-year standing or permission of the unit.  
 Lectures two hours a week.

CLCV 2102 [0.5 credit] (formerly 13.212\*)

**Graeco-Roman Religions**

A study of religion in the ancient Mediterranean, concentrating on the rise of individualism, life after death, mystery religions, hero cults, gnosticism, asceticism, and magic. (Also listed as RELI 2102.)  
 Lecture three hours a week.

CLCV 2300 [1.0 credit] (formerly 13.230)

**Introduction to Archaeology**

The interrelation of archaeology and anthropology, history, classics, art history, etc. Techniques of field archaeology such as stratigraphy, air photography, surveying, Carbon 14, typology and seriation, underwater archaeology, laboratory analysis; and the organization and administration of a major excavation. Precludes additional credit for CLCV 2301.  
 Prerequisite: second-year standing or permission of the unit.  
 Lectures two hours a week.

CLCV 2302 [0.5 credit] (formerly 13.232\*)

**Greek & Roman Art & Archaeology**

The art, architecture and archaeology of Greece and Rome. Vase painting, sculpture, Greek and Roman architecture, town planning and analogous arts are studied. (Also listed as ARTH 2100.)  
 Prerequisite: second-year standing or permission of the Department.  
 Lectures two hours a week.

CLCV 2305 [1.0 credit] (formerly 13.235)

**Ancient Science and Technology**

The development of science and technology in the ancient world and their practical application in such fields as ancient engineering, machinery, metallurgy, transport, building, agriculture and Hippocratic medicine; the position of the craftsman and artisan in society, the attitude of the intellectuals to science and manual labour, and the effect upon technological development of the institution of slavery. This course is suitable for students with no previous knowledge of Greece or Rome. (Also listed as TSES 2305.)  
 Prerequisite: second-year standing or permission of the unit.  
 Lectures two hours a week.

CLCV 2900 [1.0 credit] (formerly 13.290)

**History of Ancient Greece**

The history of classical Greece to the conquest of Asia by Alexander with special attention to the development of her characteristic institutions. (Also listed as HIST 2900.)  
 Prerequisite: second-year standing or permission of the unit.  
 Lectures two hours a week.



CLCV 2901 [1.0 credit] (formerly 13.291)

### **History of Ancient Rome**

The history of ancient Rome, her organization and expansion especially during the late Republic and early Empire. (Also listed as HIST 2901.)

Prerequisite: second-year standing or permission of the unit.  
Lectures two hours a week.

CLCV 3001 [0.5 credit] (formerly 13.301\*)

### **Early Greek Philosophy**

A study of the pre-Socratic Greek philosophers and of the Sophists and Socrates. (Also listed as PHIL 3001.)

Precludes additional credit for PHIL 2005.

Prerequisite: CLCV 2006 or permission of the Philosophy department.

Lecture three hours a week.

CLCV 3002 [1.0 credit] (formerly 13.302)

### **The Later Roman Empire**

The study of major developments - administrative, ecclesiastical, cultural and societal - of the later Roman Empire. (Also listed as HIST 3002.)

Prerequisite: a 2000-level Classical Civilization course.

Lectures three hours a week.

CLCV 3201 [0.5 credit] (formerly 13.321\*)

### **Studies in Greek History**

A study of one of the major periods or themes of ancient Greek history. Contents of this course vary from year to year. (Also listed as HIST 3009)

Prerequisite: CLCV 2900 or permission of the unit.

Lectures two hours a week.

CLCV 3202 [0.5 credit] (formerly 13.322\*)

### **Studies in Roman History**

A study of one of the major periods or themes of the history of ancient Rome. Topic for 2002-2003: The Roman Revolution: Republic into Empire. (Also listed as HIST 3101.)

Prerequisite: CLCV 2901 or permission of the unit.

Lectures two hours a week.

CLCV 3300 [1.0 credit] (formerly 13.330)

### **Archaeological Field Work**

Students will participate for a minimum of five weeks in the excavation of an archaeological site. In addition they will study stratigraphic analysis and the recording and processing of finds. Written reports on specific aspects of the particular excavation are required.

Prerequisites: CLCV 2300 (old CLCV 2301) and permission of the School, or permission of the unit.

CLCV 3305 [0.5 credit] (formerly 13.335\*)

### **Studies in Greek and Roman Art**

A study of a period or theme in the art and archaeology of Ancient Greece and Rome. Topics may vary from year to year. (Also listed as ARTH 3101.)

Prerequisite: second-year standing or permission of the unit.

Lectures three hours a week.

CLCV 3701 [0.5 credit] (formerly 13.371\*)

### **Studies in Greek Literature**

A study of an author or topic in Greek literature. Topic for 2002-2003: The Orestes Myth from Homer to Euripides.

Prerequisite: second-year standing or permission of the School.  
Lectures two hours a week.

CLCV 3702 [0.5 credit] (formerly 13.372\*)

### **Studies in Roman Literature**

A study of an author or topic in Roman literature.

Prerequisite: second-year standing or permission of the unit.

Lectures two hours a week.

CLCV 3900 [0.5 credit] (formerly 13.390\*)

### **Directed Studies**

Supervised readings and research projects chosen in consultation with the Supervisor of Undergraduate Studies.

Prerequisite: third-year standing or permission of the unit.

CLCV 3901 [0.5 credit] (formerly 13.391\*)

### **Directed Studies**

Supervised readings and research projects chosen in consultation with the Supervisor of Undergraduate Studies.

Prerequisite: third-year standing or permission of the unit.

CLCV 4207 [1.0 credit] (formerly 13.427)

### **Topics in Classics**

A seminar on historical and literary aspects of a particular period of antiquity. Intended for third- and fourth-year students.

Prerequisites: CLCV 2900, one of CLCV 2900, CLCV 2901, CLCV 3201, CLCV 3202; and permission of the unit.

Seminar two hours a week.

CLCV 4208 [1.0 credit] (formerly 13.428)

### **Topics in Ancient Literature**

Intended for third- and fourth-year students.

Prerequisites: CLCV 2900 and permission of the unit.

Seminar two hours a week.

CLCV 4209 [1.0 credit] (formerly 13.429)

### **Topics in Ancient History**

Intended for Honours students in History and Classics who should normally be in the third- or fourth-years. (Also listed as HIST 4209.)

Prerequisites: CLCV 2900 or CLCV 2901 or CLCV 3201 or CLCV 3202 and permission of the unit.

Seminar two hours a week.

CLCV 4300 [1.0 credit] (formerly 13.430)

### **Archaeological Field Work II**

Students will participate for a minimum of five weeks in a position of responsibility in the excavation of an archaeological site. They will be responsible for excavating and for the recording, processing and analysis of finds. A specialized report on a particular aspect of the excavation is required.

Prerequisites: CLCV 3300 and permission of the unit.

CLCV 4900 [0.5 credit] (formerly 13.490\*)

### **Directed Readings and Research**

These courses consist of supervised readings and research projects in a specific area of Classical Civilization to be chosen in consultation with the Honours Supervisor.

Prerequisites: fourth-year Honours standing and permission of the unit.

CLCV 4901 [0.5 credit] (formerly 13.491\*)

### **Directed Readings and Research**

These courses consist of supervised readings and research projects in a specific area of Classical Civilization to be chosen in consultation with the Honours Supervisor.

Prerequisites: fourth-year Honours standing and permission of the unit.

CLCV 4902 [0.5 credit] (formerly 13.492\*)

### **Directed Readings and Research**

These courses consist of supervised readings and research projects in a specific area of Classical Civilization to be chosen in consultation with the Honours Supervisor.

Prerequisites: fourth-year Honours standing and permission of the unit.

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## **Cognitive Science (CGSC)**

Cognitive Science Committee

Institute of Interdisciplinary Studies

Faculty of Arts and Social Sciences

CGSC 2001 [0.5 credit] (formerly 07.201\*)

### **History of Cognitive Science**

Survey of the history and development of cognitive science as a separate branch of knowledge, from cybernetics and theory of computation in the late 1940s to the large multi-disciplinary, multi-national teaching and research program it has become.

Prerequisite: second-year standing or permission of the Institute.  
Seminar three hours a week.

CGSC 3001 [0.5 credit] (formerly 07.301\*)

**Elements of Cognitive Science**

Selected topics in cognitive science covered from the perspectives of psychology, computer science, linguistics, philosophy and other related disciplines.

Precludes additional credit for IASS 1001.

Lectures three hours a week.

CGSC 3100 [0.5 credit]

**Co-operative Work Term Report 1**

A comprehensive report is due on what was learned during the first work term.

Prerequisites: Registration in the Co-op Education Option of the Cognitive Science program of Interdisciplinary Studies and permission of the Co-ordinator.

CGSC 4100 [0.5 credit]

**Co-operative Work Term Report 2**

A comprehensive report is due on what was learned during the second work term.

Prerequisites: Registration in the Co-op Education Option of the Cognitive Science program of Interdisciplinary Studies, successful completion of CGSC 3100, and permission of the Co-ordinator.

CGSC 4101 [0.5 credit]

**Co-operative Work Term Report 3**

A comprehensive report is due on what was learned during the third work term.

Prerequisites: Registration in the Co-op Education Option of the Cognitive Science program of Interdisciplinary Studies, successful completion of CGSC 4100, and permission of the Co-ordinator.

CGSC 4908 [1.0 credit] (formerly 07.498)

**Honours Project**

Interdisciplinary research project for Honours students in the fourth year of all IIS programs. In selecting a project, students must consult their Program Coordinator. Only the Program Coordinator can assign a supervisor or grant approval to register in this course. Faculty regulations governing Honours Research Essays and Honours Theses apply.

Prerequisite: registration in this course is limited to students in the fourth year of a B.A. (Honours) program in IIS.

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## Comparative Literary Studies (CLST)

Institute of Comparative Studies in Literature,  
Art and Culture

Faculty of Arts and Social Sciences

CLST 1000 [1.0 credit] (formerly 17.100)

**The Literatures of Europe: Representative Texts**

Study of major literary traditions in Europe and their interrelations from antiquity to the present. Homer, Sophocles, Virgil, Dante, Boccaccio, Machiavelli, Cervantes, Molière, Goethe, Flaubert, Austen, Dostoevsky, Proust, Joyce, Pirandello, Kafka, Woolf, Calvino. All texts in English.

Lectures and seminar three hours a week.

CLST 2001 [1.0 credit] (formerly 17.201)

**The Literatures of the Americas: Comparative Perspectives**

Through the analysis of representative texts from the 19th and 20th centuries, the course will examine issues pertaining to the interrelation between the literatures of North and South America. All texts in English. Topics may vary from year to year. Prerequisite: second-year standing or permission of the Discipline.

Lectures and seminars three hours a week.

CLST 2007 [0.5 credit] (formerly 17.207\*)

**The Literatures of Asia: Comparative Perspectives**

Issues arising from the literatures of the Asian continent. Topics may vary from year to year. Texts will be read in English, which is also the language of instruction.

Prerequisite: second-year standing or permission of the Discipline.

Lectures and seminars three hours a week.

CLST 2008 [0.5 credit] (formerly 17.208\*)

**The Literatures of Africa and the Middle East: Comparative Perspectives**

Issues arising from the literatures of the African continent and the Middle East. Topics may vary from year to year. All texts will be read in English, which is also the language of instruction.

Prerequisite: second-year standing or permission of the Discipline.

Lectures and seminars three hours a week.

CLST 3000 [1.0 credit] (formerly 17.300)

**Themes, Genres, Periods**

Comparative study of a specific theme or genre through texts drawn from several historic periods. Topics may vary from year to year.

Prerequisite: second-year standing or permission of the Discipline.

Seminar two hours a week, tutorials one hour a week.

CLST 3001 [1.0 credit] (formerly 17.301)

**International Literary Movements**

Comparative study of primary and secondary sources that define international literary movements such as Renaissance, Romanticism, Realism, Modernism, and Post-modernism. Topics may vary from year to year.

Precludes additional credit for CLST 2000.

Prerequisite: second-year standing or permission of the Discipline.

Seminar three hours a week.

CLST 3002 [1.0 credit] (formerly 17.302)

**Gender and Literature**

Study of autobiographical writing, novels, short stories, and poetry by women writing in the 1970s, 1980s, and 1990s in a variety of cultural settings. Cross-cultural point of view informed by poststructuralist feminist criticism. All texts available in English translation. (Also listed as WOMN 3002.)

Prerequisite: second-year standing or permission of the Discipline.

Seminar three hours a week.

CLST 4001 [0.5 credit] (formerly 17.401\*)

**Foundations of Comparative Literature**

The history of the discipline of comparative literature is studied, including its beginning in nineteenth-century France, its evolution, and its current status in Europe, the United States and Canada.

Prerequisite: permission of the Discipline.

Seminar three hours a week.

CLST 4002 [0.5 credit] (formerly 17.402\*)

**Theories of Literature**

Twentieth-century literary theories in the context of comparative studies. Over-all view of the theoretical discussion of literature from 1920 to the present: Russian Formalism; American New Criticism; structuralist, semiotic, socio-cultural and hermeneutic approaches.

Prerequisite: permission of the Discipline.

Note: Students enrolling in this course under the cross-listed number SPAN 4002 should note the requirements of Spanish. Seminar three hours a week.

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## Computational Sciences (CMPS)

College of Natural Sciences

Faculty of Science

CMPS 2800 [0.5 credit] (formerly 68.280\*)

**Discrete Mathematics and Algorithms**

Introduction to discrete mathematics and algorithms in the context of the computational sciences. Basic number theory and counting methods, algorithms for strings, trees and sequences. Applications to DNA and protein sequencing problems. Analysis and complexity of algorithms. (Also listed as MATH 2800.)

Only one of COMP 1805/MATH 1805 or CMPS 2800/MATH 2800 may count for credit in a Bachelor of Mathematics program.

Prerequisites: COMP 1006 and at least one of MATH 1007, MATH 1107, or STAT 2507.

Lectures three hours a week.

CMPS 3604 [0.5 credit] (formerly 68.364\*)

#### **Analysis of Ecological Relationships**

Introduction to the analysis of ecological data. Students analyze real ecological data sets in weekly laboratory sessions. Methods introduced include simple linear, polynomial, and multiple regression analysis, analysis of variance, non-parametric tests, tests of independence and logistic regression analysis. (Also listed as BIOL 3604.)

Prerequisites: BIOL 2600 and Mathematics STAT 2507.

Workshops four hours a week.

CMPS 3800 [0.5 credit] (formerly 68.380\*)

#### **Modeling and Computational Methods for Experimental Science**

Mathematical modeling in the experimental sciences: design, analysis and pitfalls. Computational methods directly applicable to problems in science will be described including function evaluation, Interpolation, solution of linear equations, root finding, integration, solution of differential equations, Fourier series and Monte Carlo methods. (Also listed as MATH 3800.) Only one of COMP 3806/Mathematics MATH 3806 or CMPS 3800/MATH 3800 may count for credit in a Bachelor of Mathematics program.

Prerequisites: MATH 1107, MATH 2007 or MATH 2009, COMP 1006.

Lectures three hours a week.

CMPS 4909 [1.0 credit] (formerly 68.499)

#### **Honours Research Thesis in Computational Science**

An independent research project under the supervision of a Faculty adviser, applying computational techniques to some experimental or theoretical problem in the disciplinary area of the student.

Prerequisite: permission of the Department or Institute associated with the discipline.

## **Computer Science (COMP)**

School of Computer Science

Faculty of Science

#### **Note:**

Some of the following Computer Science courses are cross-listed from other parts of the Calendar. In every such case, only one course is actually offered and the two numbers are alternate identifiers for this single course. Students in the B.C.S. program should register in such a course under the Computer Science (95) number.

COMP 1001 [0.5 credit] (formerly 95.101\*)

#### **Introduction to Computers for the Arts and Social Sciences**

This course is intended to give students in the arts and social sciences a working knowledge of computers and their applications; computer fundamentals; use of computing facilities; introduction to graphical user interfaces; a sampling of software packages applied to problems in the arts and social sciences.

Precludes additional credit for COMP 1000 and COMP 1004.

This course cannot be taken for credit by students in Business, Engineering, Computer Science, Mathematics or Science.

Lectures three hours a week.

COMP 1002 [0.5 credit] (formerly 95.102\*)

#### **Introduction to Systems Programming**

Introduction to programming with procedures and primitive data types. Topics include: arrays, strings, pointers, heap and stack memory allocation and deallocation, iterative and recursive linked list manipulations, system/library calls.

Precludes additional credit for COMP 1007, COMP 1402, SYSC 1102 and ECOR.

Prerequisite: COMP 1005.

Lectures three hours a week.

COMP 1004 [0.5 credit] (formerly 95.104\*)

#### **Introduction to Computers for the Sciences**

Working knowledge of computers and their applications with particular reference to problems in Science. Computer fundamentals and the use of application packages such as spreadsheets, databases and symbolic Mathematics programs. A basic familiarity with computers is assumed.

Precludes additional credit for COMP 1001. This course cannot be taken for credit by students in the B.C.S. program or combined programs in Computer Science.

Lectures three hours a week.

COMP 1005 [0.5 credit] (formerly 95.105\*)

#### **Introduction to Object-Oriented Programming**

A first course in problem solving and computer programming designed for students wishing to specialize in Computer Science. Introduction to object-oriented programming: syntactic constructs, data abstraction, classification and inheritance, typing and polymorphism, testing and debugging.

Precludes additional credit for COMP 1405 and SYSC 1100.

Lectures three hours a week and one hour tutorial.

COMP 1006 [0.5 credit] (formerly 95.106\*)

#### **Design and Implementation of Computer Applications**

A continuation of COMP 1005, focusing on the design and implementation of complete applications including the user interface, the software architecture, and the interacting domain objects. Brief introduction to UML. Possible application topics include a testing framework, user-interface architectures and managing persistence.

Precludes additional credit for COMP 1406 and SYSC 1101.

Prerequisites: a grade of C- or better in COMP 1005.

Lectures three hours a week.

COMP 1007 [0.5 credit] (formerly 95.107\*)

#### **Introduction to Structured Programming**

A first course in computer programming using a procedural language. Introduces basic sequencing, alternation, and looping control constructs, functional and procedural abstractions, data abstraction, and problem solving in the context of computer programming.

Precludes additional credit for ECOR 1606.

This course cannot be taken for credit by students in the B.C.S. program or combined programs in Computer Science.

Lectures three hours a week.

COMP 1402 [0.5 credit] (formerly 95.142\*)

#### **Introduction to Systems Programming**

Introduction to programming with procedures and primitive data types, designed for honours students in Computer Science. Topics include: arrays, strings, pointers, heap and stack memory allocation and deallocation, iterative and recursive linked list manipulations, system/library calls.

Precludes additional credit for COMP 1002, COMP 1007, SYSC 1102, and ECOR 1606.

Prerequisite: COMP 1405. Restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics.

Lectures three hours a week.

COMP 1405 [0.5 credit] (formerly 95.145\*)

#### **Introduction to Object-Oriented Programming**

A first course in problem solving and computer programming designed for Honours students in Computer Science. Introduction to object-oriented programming; syntactic constructs, data abstraction, classification and inheritance, typing and polymorphism, testing and debugging.

Precludes additional credit for COMP 1005 and SYSC 1100.

Prerequisite: Restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics.

Lectures three hours a week and one hour tutorial.

COMP 1406 [0.5 credit] (formerly 95.146\*)

#### **Design and Implementation of Computer Applications**

A continuation of SYSC 1405 focusing on the design and implementation of complete applications including the user



interface, the software architecture, and the interacting domain objects. Brief introduction to UML. Possible application topics include a testing framework, user-interface architectures and managing persistence.

Precludes additional credit for COMP 1006 and SYSC 1101. Prerequisite: COMP 1405 (with a grade of C- or better). Restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics. Lectures three hours a week.

COMP 1805 [0.5 credit] (formerly 95.185\*)

**Discrete Structures I**

Introduction to discrete mathematics and discrete structures. Topics include: propositional and predicate calculus, Boolean algebra, introduction to complexity of algorithms, mathematical reasoning, counting, recurrences, relations, introduction to graphs. (Also listed as MATH 1805.)

Prerequisites: Two OACs in Mathematics and one of COMP 1005 or COMP 1007 (which may be taken concurrently). Lectures three hours a week.

COMP 2002 [0.5 credit] (formerly 95.202\*)

**Abstract Data Types and Algorithms**

Introduction to the design and implementation of abstract data types and to the complexity analysis of data structures. Topics include: stacks, queues, lists, trees and graphs. Special attention is given to abstraction, interface specification and hierarchical design using an object-oriented programming language.

Precludes additional credit for COMP 2402 and SYSC 2002. Prerequisites: a grade of C- or better in COMP 1006. Lectures three hours a week.

COMP 2003 [0.5 credit] (formerly 95.203\*)

**Computer Organization**

A thorough treatment of computer system organization. Processor architectures (RISC, CISC, superscalar). Instruction sets and addressing modes. Assembly language. Basics of digital logic and hardware construction. Memory organization and cache principles. System buses. Input/output methods and devices.

Precludes additional credit for SYSC 2003, SYSC 3006 for students in the Computer Science program and in combined programs with Mathematics or Chemistry. Prerequisite: COMP 1002 or ECOR 1606. Lectures three hours a week.

COMP 2004 [0.5 credit] (formerly 95.204\*)

**Programming in C++**

In-depth study of the language C++ from a software engineering perspective, with emphasis on features supporting the development of large efficient and reusable systems. Topics include: encapsulation, templates, references, constructors and destructors, overloading, memory management, exception handling, and the standard template library.

Precludes additional credit for COMP 2404 and SYSC 2004. Prerequisites: a grade of C- or better in COMP 1002. Lectures three hours a week.

COMP 2005 [0.5 credit] (formerly 95.205\*)

**Internet Application Programming**

Design and implementation of Internet application programs. Topics include: fundamentals of the Web, introduction to client/server architectures, Internet programming, Web browsers, hypertext links, network programming.

Precludes additional credit for COMP 2405. Prerequisites: COMP 1002 and COMP 1006 or equivalent. Lectures three hours a week.

COMP 2402 [0.5 credit] (formerly 95.242\*)

**Abstract Data Types and Algorithms**

Introduction to the design and implementation of abstract data types and to complexity analysis of data structures. Topics include: stacks, queues, lists, trees and graphs. Special attention is given to abstraction, interface specification and hierarchical design using an object-oriented programming language.

Precludes additional credit for COMP 2002 and SYSC 2002. Prerequisite: COMP 1406 (with a grade of C- or better). Restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Statistics. Lectures three hours a week.

COMP 2404 [0.5 credit] (formerly 95.244\*)

**Programming in C++**

In-depth study of the language C++ from a software engineering perspective, with emphasis on features supporting the development of large efficient and reusable systems. Topics include: encapsulation, templates, references, constructors and destructors, overloading, memory management, exception handling, and the standard template library.

Precludes additional credit for COMP 2004 and SYSC 2002. Prerequisite: COMP 1402 (with a grade of C- or better). Restricted to students registered in the B.C.S. program, the combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics. Lectures three hours a week.

COMP 2405 [0.5 credit] (formerly 95.245\*)

**Internet Application Programming**

Design and implementation of Internet application programs. Topics include: fundamentals of the Web, introduction to client/server architectures, Internet programming, Web browsers, hypertext links, network programming.

Precludes additional credit for COMP 2005. Prerequisite: COMP 1402 and COMP 1406. Restricted to students registered in the B.C.S. program, combined Honours in Computer Science and Mathematics, Honours Computer Mathematics, and Honours Computer Statistics. Lectures three hours a week.

COMP 2805 [0.5 credit] (formerly 95.285\*)

**Discrete Structures II**

A second course in theoretical aspects of computer science. Topics include: formal languages and automata theory, computability theory, complexity theory, graph theory and algorithms, NP-completeness.

Prerequisite: COMP 1805. Lectures three hours a week.

COMP 3000 [0.5 credit] (formerly 95.300\*)

**Operating Systems**

A first course in operating systems stressing fundamental issues in design: process management; memory management; process co-ordination and synchronization; interprocess communication; real-time clock management; i/o device drivers; file systems; frame-level network communication. Assignments involve the use, modification, and extension of a multitasking operating system.

Precludes additional credit for SYSC 3001. Prerequisites: One of COMP 2002 or SYSC 2002, and one of COMP 2003 or SYSC 3003. Lectures three hours a week.

COMP 3002 [0.5 credit] (formerly 95.302\*)

**Compiler Construction**

The structure, organization and design of the phases of a compiler are considered: lexical translators, syntactical translators, scope handlers, type checkers, code generators and optimizers. Components of a compiler will be implemented.

Prerequisite: COMP 2404. Lectures three hours a week.

COMP 3004 [0.5 credit] (formerly 95.304\*)

**Object-Oriented Software Engineering**

Theory and practice in teams at developing software systems. Possible topics include: software development processes, requirement specification, class and scenario modeling, state modeling, UML, design patterns, traceability. Students are to complete the iterations of the team project using a CASE tool.

Precludes additional credit for SYSC 3100 and SYSC 4800. Prerequisite: COMP 2004. Lectures three hours a week.

COMP 3005 [0.5 credit] (formerly 95.305\*)

**Database Management Systems**

Introduces students to concepts of database management systems, database design and file structures. Topics include: entity-relationship modeling and object oriented database design, data models (relational, network and object oriented), the relational algebra, SQL, normalization theory, physical data organization, object oriented databases and OQL.

Precludes additional credit for BUSI 3400 and SYSC 3001.  
Prerequisites: COMP 2002 and COMP 2004, or SYSC 3003.  
Lectures three hours a week.

COMP 3007 [0.5 credit] (formerly 95.307\*)

#### **Programming Paradigms**

An introduction to functional and logic programming. Topics include: semantics of functional programming, assignment-free programming, the meta-circular interpreter, recursive functions, Prolog, backtracking, cutting, negation.

Precludes additional credit for 95.207\*.

Prerequisite: two of COMP 2402, COMP 2404, COMP 2405 or their equivalents.

Lectures three hours a week.

COMP 3008 [0.5 credit] (formerly 95.308\*)

#### **User Interface Architectures**

This course addresses architectures and tools for the design and implementation of user-interfaces driven application. Emphasis will be on case studies using libraries and visual programming tools. Examples may be drawn from object-oriented programming environments, Motif and Tcl/Tk.

Prerequisites: COMP 1006 and COMP 2004.

Lectures three hours a week.

COMP 3104 [0.5 credit] (formerly 95.314\*)

#### **Foundations of Software Engineering**

Survey of the Software Engineering field, including computer ethics. Possible topics include: processes, project management, requirements engineering, formal specifications, software design, software reliability, reuse, computer-aided software engineering, configuration management, maintenance and re-engineering.

Precludes additional credit for SYSC 4800.

Prerequisite: COMP 3004.

Lectures three hours a week.

COMP 3200 [0.5 credit] (formerly 95.320\*)

#### **Co-operative Work Term Report 1**

Prerequisites: Registration in the Co-operative Education Option of the Bachelor of Computer Science program, completion of the Co-op preparation classes offered by the Co-op office and permission of the School.

COMP 3201 [0.5 credit] (formerly 95.321\*)

#### **Co-operative Work Term Report 2**

Prerequisites: Registration in the Co-operative Education Option of the Bachelor of Computer Science program and permission of the School.

COMP 3202 [0.5 credit] (formerly 95.322\*)

#### **Co-operative Work Term Report 3**

Prerequisites: Registration in the Co-operative Education Option of the Bachelor of Computer Science program and permission of the School.

COMP 3203 [0.5 credit] (formerly 95.323\*)

#### **Principles of Computer Networks**

This is an introductory course to the field of Network Computing. Topics include: Protocol Architectures and Internetworking, Types of Networks, Communication Protocols, End-System and Network Traffic Management, Structure of Routing and Congestion Control.

Precludes additional credit for SYSC 4602.

Prerequisites: COMP 2005.

Lectures three hours a week.

COMP 3804 [0.5 credit] (formerly 95.384\*)

#### **Design and Analysis of Algorithms I**

An introduction to the design and analysis of algorithms. Topics include: recurrence relations, sorting and searching, divide-and-conquer, dynamic programming, greedy algorithms, amortized analysis. (Also listed as Mathematics 69.384.)

Prerequisites: COMP 2002 and either COMP 2805 or both of MATH 2007 and MATH 2108 or equivalents.

Lectures three hours a week.

COMP 3805 [0.5 credit] (formerly 95.385\*)

#### **Discrete Structures and Applications**

Enumeration: elementary methods, inclusion and exclusion,

recurrence relations, generating functions and applications. Graph theory and algorithms: connectivity, planarity, Hamilton and Euler paths. Error-correcting codes. (Also listed as MATH 3805.)

Prerequisites: One of Mathematics MATH 2108 or MATH 3101, MATH 2100.

COMP 3806 [0.5 credit] (formerly 95.386\*)

#### **Numerical Analysis**

Elementary discussion of error, polynomial interpolation, quadrature, linear systems of equations and matrix inversion, non-linear equations, difference equations and ordinary differential equations. (Also listed as MATH 3806.)

Prerequisites: i) MATH 1002, MATH 1005 or MATH 2007 (or MATH 2001 or MATH 2002); and ii) MATH 1102 or MATH 2107; and (iii) knowledge of a computer language.

Lectures three hours a week and one hour tutorial.

COMP 3807 [0.5 credit] (formerly 95.387\*)

#### **Mathematical Software**

Incorporation of basic numerical methods into efficient, reliable software. The course includes examination of existing software systems, e.g. linear systems, non-linear systems, optimization, or differential equations. (Also listed as MATH 3807.)

Prerequisite: COMP 3806.

COMP 4000 [0.5 credit] (formerly 95.400\*)

#### **Distributed Operating Systems**

An advanced course emphasizing the principles of distributed operating systems including networking protocols, distributed file systems, remote IPC mechanisms, graphical user interfaces, load balancing, and process migration. Case studies include current "standards" as well as novel systems under development.

Prerequisite: COMP 3000.

Lectures three hours a week.

COMP 4001 [0.5 credit] (formerly 95.401\*)

#### **Distributed Computing**

Overview of distributed computing. Topics include: computational models, communication complexity, design and analysis of distributed algorithms and protocols, fault-tolerant protocols, synchronous computations. Applications may include: communication in data networks, control in distributed system (e.g., election, distributed mutual exclusion), manipulation of distributed data (e.g., ranking).

Prerequisite: COMP 3203.

Lectures three hours a week.

COMP 4002 [0.5 credit] (formerly 95.402\*)

#### **Computer Graphics**

Principles and techniques of real-time 2D and 3D graphics: raster graphics algorithms, transformations (scaling, translation, rotations) and viewing, object modeling, texture mapped rendering, illumination, ray tracing, hidden line and surface elimination. Other possible topics include: camera control, collision detection, articulated figures, 3D game engine development.

Prerequisite: COMP 2404.

Lectures three hours a week.

COMP 4003 [0.5 credit] (formerly 95.403\*)

#### **Transaction Processing Systems**

Investigates concepts of on-line transaction processing. Traces transaction processes from their initiation (WWW Interfaces) to their completion in client/server environments under concurrent executions and system failures. Topics include: transaction properties and models, embedded-SQL and database applications, query processing, concurrency, recovery, and some case studies.

Prerequisites: COMP 2004, and COMP 3005 or SYSC 3001.

Lectures three hours a week.

COMP 4004 [0.5 credit] (formerly 95.404\*)

#### **Software Quality Assurance**

Introduction to the theory and practice of Software Quality Assurance. Topics include: functional requirements analysis, system requirement analysis, verification and validation, traceability, white box testing, integration testing, object-oriented testing, tools, and management issues.

Prerequisite: COMP 3004.

Lectures three hours a week.

COMP 4009 [0.5 credit] (formerly 95.409\*)

**Introduction to Parallel and Systolic Computing**

Introduction to algorithms, architectures, and languages for parallel computing. Topics include: models of computation, parallel programming languages, performance measures for parallel algorithms, shared memory parallel machines, VLSI design methodologies, processor arrays, hypercube multiprocessors, parallel algebraic operations, parallel data structures and parallel searching, parallel geometric processing. Prerequisite: COMP 3804.

Lectures three hours a week.

COMP 4100 [0.5 credit] (formerly 95.410\*)

**Multimedia Systems**

Introduction to Multimedia Systems and Virtual Reality. Topics include: basic sound and video formats, compression, image- and geometry-based model creation, stereo displays, immersion, texture mapping, VRML and virtual environments. Prerequisites: two of COMP 2402, COMP 2404, and COMP 2405 or their equivalents.

Lectures three hours a week.

COMP 4101 [0.5 credit] (formerly 95.411\*)

**Distributed Object Management and Transaction Processing Systems.**

Study of the principles involved in the design and implementation of distributed object management, CORBA-based transaction services and distributed object-based applications. Topics include: Distributed Object Management Architectures, Transactional Middleware, Combining Java, Web and CORBA Objects within Heterogeneous Systems, Interoperability, Security, Scalability and Performance Measures.

Prerequisite: COMP 3000 and COMP 3005.

Lectures three hours a week.

COMP 4103 [0.5 credit] (formerly 95.413\*)

**Computer Security and Cryptography**

Introduction to information security in computer and communication systems. Classical and public-key cryptosystems are overviewed. Applications to information schemes and digital signatures, key distribution and key agreement, authentication and secret sharing are also discussed. Also offered at the graduate level, with additional or different requirements, as COMP 5103, for which additional credit is precluded.

Prerequisite: COMP 3804.

Lectures three hours a week.

COMP 4104 [0.5 credit] (formerly 95.414\*)

**Distributed Programming in Java**

Advanced course on distributed programming in Java. Introduces students to standard design patterns for implementing components that solve common distributed programming challenges in Java. Topics covered include: threads, message passing, coordination, distributed object technology, web-based services, and collaborative applications.

Prerequisites: COMP 2005 and COMP 3004.

Lectures three hours a week.

COMP 4106 [0.5 credit] (formerly 95.416\*)

**Topics in Artificial Intelligence**

Several areas in knowledge-based systems are covered, including recent approaches to machine learning and data mining, inference methods, knowledge-based and fuzzy systems, heuristic search, and natural language processing. Precludes additional credit for COMP 4007.

Prerequisite: COMP 3007.

Lectures three hours a week.

COMP 4107 [0.5 credit] (formerly 95.417\*)

**Evolutionary Computation and Artificial Life**

Study of algorithms based upon biological theories of evolution, applications to machine learning and optimization problems. Genetic Algorithms, Classifier Systems, and Genetic Programming in details. Recent work in the fields of Artificial Life (swarm intelligence, distributed agents, behavior-based AI) and of connectionism is also studied.

Precludes additional credit for COMP 3007.

Prerequisite: COMP 3007 and COMP 4106.

Lectures three hours a week.

COMP 4200 [0.5 credit] (formerly 95.420\*)

**Co-operative Work Term Report 4**

Prerequisites: Registration in the Co-operative Education Option of the Bachelor of Computer Science program and permission of the School.

COMP 4201 [0.5 credit] (formerly 95.421\*)

**Co-operative Work Term Report 5**

Prerequisites: Registration in the Co-operative Education Option of the Bachelor of Computer Science program and permission of the School.

COMP 4803 [0.5 credit] (formerly 95.483\*)

**Computable Functions**

Recursive functions and computability, algorithms, Church's thesis, Turing machines, computational logic, NP-completeness. (Also listed as MATH 4803.)

Prerequisite: MATH 2100 or COMP 3805 or permission of the School.

COMP 4804 [0.5 credit] (formerly 95.484\*)

**Design and Analysis of Algorithms II**

A second course on the design and analysis of algorithms. Topics include: advanced recurrence relations, algebraic complexity, advanced graph algorithms, approximation algorithms, randomized algorithms. Also offered at the graduate level, with additional or different requirements, as COMP 5703, for which additional credit is precluded.

Prerequisite: COMP 3804 or permission of the School.

Lectures three hours a week.

COMP 4805 [0.5 credit] (formerly 95.485\*)

**Theory of Automata**

Finite automata and regular expressions, properties of regular sets, context-free grammars, pushdown automata, deterministic context-free languages. Turing machines, the Chomsky hierarchy. Undecidability, intractable problems. (Also listed as MATH 4805.)

Precludes additional credit for MATH 5605.

Prerequisite: COMP 3805 or MATH 3100 or permission of the School.

Lectures three hours a week.

COMP 4806 [0.5 credit] (formerly 95.486\*)

**Numerical Linear Algebra**

Study of matrix inversion techniques; techniques of finding eigenvalues and eigenvectors, solution of systems of linear equations; direct and indirect methods, their comparison and error analysis; applications in optimization and other areas. (Also listed as MATH 4806.)

Prerequisites: MATH 1102 or MATH 2107; and MATH 2000 or MATH 3009, or permission of the School.

Lectures three hours a week.

COMP 4900 [0.5 credit] (formerly 95.490\*)

**Advanced Topics in Computer Science**

Selected topics in Computer Science offered by members of the School of Computer Science.

Prerequisite: permission of the School.

Lectures three hours a week.

COMP 4901 [0.5 credit] (formerly 95.491\*)

**Directed Studies**

A course of independent study under the supervision of a member of the School of Computer Science, open only to students in the B.C.S. program. Students are required to obtain their supervisor's written approval prior to registration and are limited to two such courses in their programs.

Prerequisite: permission of the School of Computer Science.

COMP 4905 [0.5 credit] (formerly 95.495\*)

**Honours Project**

As part of the Fourth-year program, each B.C.S. student is required to select and complete a major project in computer science. Students are required to submit written project proposals to the Honours Project Co-ordinator for approval normally during the term preceding the term of registration. Consult the Honours Project Co-ordinator for details.

Prerequisite: registration in either the Bachelor of Computer Science program or one of the Combined Honours programs involving Computer Science and the permission of the School.



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## Criminology and Criminal Justice (CRCJ)

Institute of Criminology and Criminal Justice  
Faculty of Public Affairs and Management

CRCJ 3000 [1.0 credit] (formerly 48.300)

### Honours Seminar in Criminology

Issues and research methodologies in the study of crime. Emphasis is on a critical evaluation of literature and methods used across disciplines. Topics of professional interest, including ethics, are also considered. Students may be required to complete independent research projects.

Prerequisites: third-year standing in the B.A. (Honours) program in Criminology and Criminal Justice and permission of the Institute.

Lectures and seminar three hours a week, laboratory one hour a week.

CRCJ 3901 [1.0 credit] (formerly 48.391)

### Practicum in Criminology and Criminal Justice I

Through a field placement in an agency setting, students are provided the opportunity to obtain practical involvement in various aspects of criminal justice. Discussion and presentations in the Seminar Class and required term papers integrate applied, theoretical and empirical knowledge.

Precludes additional credit for LAWS 3905, PSYC 3903, PSYC 3904, and SOCI 3806. CRCJ 3901 may not be repeated.

Prerequisites: third-year standing in Criminology and Criminal Justice and permission of the Institute.

Field placement eight hours a week, seminar three hours a week.

CRCJ 3902 [1.0 credit] (formerly 48.392)

### Practicum in Criminology and Criminal Justice II

Through a field placement in an agency setting, students are provided the opportunity to obtain practical involvement in various aspects of criminal justice. Discussion and presentations in the Seminar Class and required term papers integrate applied, theoretical and empirical knowledge.

Precludes additional credit for LAWS 3905, PSYC 3903, PSYC 3904, and SOCI 3806. CRCJ 3902 may not be repeated.

Prerequisites: Third-year Honours standing in Criminology and Criminal Justice and permission of the Institute.

Field placement eight hours a week, seminar three hours a week.

CRCJ 4908 [1.0 credit] (formerly 48.498)

### Honours Research Project

A research project conducted under the direct supervision of a faculty adviser from Psychology, Law or Sociology. Mandatory workshops and symposiums are scheduled during the year.

Prerequisite: CRCJ 3000 and fourth-year standing in the B.A. (Honours) program in Criminology and Criminal Justice with a GPA of 10.00 or better in the Major and permission of the Institute.

Workshops and symposiums as scheduled.

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## Directed Interdisciplinary Studies (DIST)

Institute of Interdisciplinary Studies  
Faculty of Arts and Social Sciences

DIST 3901 [0.5 credit] (formerly 04.391\*)

### Interdisciplinary Research Methods

A survey of the history of academic disciplines and interdisciplinarity. Transdisciplinary research problems are approached in an interdisciplinary and intermedial manner. Students will be required to work in areas different from those in their plan of study. Required for students in Directed Interdisciplinary Studies and Child Studies.

Prerequisite: third-year standing in Child Studies or Directed Interdisciplinary Studies.

Seminar three hours a week.

DIST 3902 [0.5 credit] (formerly 04.392\*)

### Topics in Interdisciplinary Inquiry

Examination of topics chosen by interdisciplinary faculty to present interdisciplinary thought and research not usually available in the university curriculum.

Prerequisite: third-year standing in Directed Interdisciplinary Studies or permission of the Institute.

Seminar three hours a week.

DIST 4401 [0.5 credit] (formerly 04.441\*)

### A Seminar in United States Studies

A required course for students in United States Studies area in Directed Interdisciplinary Studies designed to allow discussion and research on topics of an interdisciplinary nature.

DIST 4901 [0.5 credit] (formerly 04.491\*)

DIST 4902 [0.5 credit] (formerly 04.492\*)

### Directed Reading

Individual or small-group tutorial related to the theme of a Directed Interdisciplinary Studies program. Written permission from the Director of Interdisciplinary Studies is required before registering; please contact the DIS administrator.

Prerequisite: For Directed Interdisciplinary Studies students with fourth year Honours standing and a GPA of 9.00 or better or permission of the Institute.

DIST 4905 [0.5 credit] (formerly 04.495\*)

### Directed Interdisciplinary Studies Fieldwork I

Fieldwork related to the theme of a Directed Interdisciplinary Studies program. A proposal with a fieldwork research question and a supervisor must be approved prior to registration. A paper relating the fieldwork to the student's DIS program must be submitted. Graded as Sat/Uns.

Prerequisite: fourth-year Honours standing in Directed Interdisciplinary Studies or permission of the Institute.

DIST 4906 [0.5 credit] (formerly 04.496\*)

### Directed Interdisciplinary Studies Fieldwork II

Fieldwork related to the theme of a Directed Interdisciplinary Studies program. A proposal with a fieldwork research question and a supervisor must be approved prior to registration. A paper relating the fieldwork to the student's DIS program must be submitted. Graded as Sat/Uns.

Prerequisite: fourth-year Honours standing in Directed Interdisciplinary Studies or permission of the Institute.

DIST 4908 [1.0 credit] (formerly 04.498)

### Honours Project

Interdisciplinary research project for Honours students in the fourth year of all IIS programs except Cognitive Science. In selecting a project, students must consult their Program Coordinator. Only the Program Coordinator can assign a supervisor or grant approval to register in this course. Registration in this course is limited to students eligible for fourth-year standing in the B.A. Honours program in IIS.

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## Economics (ECON)

Department of Economics  
Faculty of Public Affairs and Management

ECON 1000 [1.0 credit] (formerly 43.100)

### Introduction to Economics

An introduction to the major tools and policy problems of economics. Economic analysis is applied to a variety of contemporary problems such as pollution, poverty, the control of monopoly, unemployment, inflation and international economic problems.

Precludes additional credit for FYSM 1003.

Lectures three hours a week and discussion group one hour every two weeks.

ECON 2001 [0.5 credit] (formerly 43.201\*)

### Intermediate Microeconomics for Non-Majors

The main topics in microeconomic theory with illustrations of their applications. Not open to students in Economics or the Bachelor of Commerce program.

Precludes additional credit for ECON 2002 or ECON 2003.

Prerequisite: ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 2002 [0.5 credit] (formerly 43.202\*)

**Intermediate Microeconomics I**

An analysis of consumer demand, production, costs and an introduction to market structures, with special reference to the determination of conditions which maximize social welfare.

Precludes additional credit for ECON 2001.

Prerequisites: ECON 1000 or FYSM 1003, (grade of C- or better); and MATH 1009, which may be taken concurrently with ECON 2002.

Lectures three hours a week.

ECON 2003 [0.5 credit] (formerly 43.203\*)

**Intermediate Microeconomics II**

An analysis of distribution, market structures and general equilibrium theory, with special reference to the determination of conditions that maximize social welfare.

Precludes additional credit for ECON 2001.

Prerequisite: ECON 2002.

Lectures three hours a week.

ECON 2101 [0.5 credit] (formerly 43.211\*)

**Intermediate Macroeconomics for Non-Majors**

The main topics in macroeconomic theory with illustrations of their application. Not open to students in Economics or the Bachelor of Commerce program.

Precludes additional credit for ECON 2102 or ECON 2103.

Prerequisite: ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 2102 [0.5 credit] (formerly 43.212\*)

**Intermediate Macroeconomics I**

An examination of the standard macroeconomic model of a closed economy, emphasizing both the aggregate demand and the aggregate supply side of the economy. The model is used to analyze basic macroeconomic problems and evaluate proposed solutions of these problems.

Precludes additional credit for ECON 2101.

Prerequisite: ECON 1000 or FYSM 1003 (grade of C- or better); and MATH 1009, which may be taken concurrently with ECON 2102.

Lectures three hours a week.

ECON 2103 [0.5 credit] (formerly 43.213\*)

**Intermediate Macroeconomics II**

An extension of the standard macroeconomic model to include topics such as macroeconomic theory and policy in an open economy, theoretical development and empirical analysis of basic macro relationships, the short-run dynamics of wage-price adjustment and economic growth.

Precludes additional credit for ECON 2101.

Prerequisite: ECON 2102.

Lectures three hours a week.

ECON 2200[1.0 credit] (formerly 43.220)

**Statistical Methods in the Social Sciences**

An introduction to statistical inference. Topics covered include probability theory, estimation, sampling distributions, two-population inference, tests of goodness of fit and independence, correlation, simple and multiple linear regression with residual analysis, and analysis of variance.

Precludes additional credit for GEOG 2006, STAT 2507, STAT 2509, STAT 2606, STAT 2607, PSYC 3000, and SOCI 3700.

Prerequisites: MATH 1009 and MATH 1109 (or equivalent); or permission of the Department. These courses may be taken concurrently with ECON 2200. For students in the Bachelor of International Business program, the prerequisite is successful completion of BUSI 1703.

Lectures three hours a week, tutorials one hour a week.

ECON 2305[1.0 credit] (formerly 43.235)

**Canadian Economic History**

A historical survey of persistence and change in the Canadian economy from the eighteenth to the twentieth centuries. (Also listed as HIST 2305.)

Prerequisite: ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 2400 [0.5 credit] (formerly 43.240\*)

**Economic Applications of Mathematics**

Optimization, with and without constraints, and comparative static methods applied to models such as utility maximization and least cost production; homogenous functions; compounding and exponential functions; economic models involving integration; the use of matrix algebra and differential equations.

Prerequisites: ECON 1000 or FYSM 1003, and MATH 1009 and MATH 1109. Enrolment in this course is limited to students whose major is Economics or Business.

Lectures three hours a week.

ECON 2504 [0.5 credit] (formerly 43.254\*)

**Essentials of Business Finance**

Business firms' financing, capital investment, and dividend policy decisions, cost of capital and short-term asset management problems. (Also listed as BUSI 2504.)

Precludes additional credit for ECON 2500.

Prerequisites: BUSI 1004 and BUSI 1005 (or BUSI 1001 and BUSI 1002) with grade of C- or better in each. For students in the Bachelor of International Business or in the Management Concentration in Civil and Environmental Engineering: BUSI 2700 (with a grade of C- or better).

Lectures three hours a week.

ECON 2505 [0.5 credit] (formerly 43.255\*)

**Business Finance**

Capital investment and financing decisions in the context of risk and return tradeoffs. Primary and derivative securities, and their role in risk management. Topics include mergers, corporate restructuring, the theory of principal-agent relationships, and financial planning, forecasting, and control. (Also listed as BUSI 2505.)

Precludes additional credit for ECON 2500.

Prerequisites: ECON 2504, ECON 1000 or FYSM 1003, MATH 1009 (or its equivalent) and MATH 1109 (or its equivalent). For students in the Bachelor of International Business program the Mathematics courses can be replaced by BUSI 1703. For students in the Management Concentration in Engineering, ECON 1000 can be replaced by ECOR 3800.

Lectures three hours a week.

ECON 3005 [0.5 credit] (formerly 43.305\*)

**Selected Topics in Economic History**

Examination of the economic development of North America or Europe or other possible selected sets of countries. Countries examined vary from year to year.

Prerequisite: ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 3100 [0.5 credit] (formerly 43.310\*)

**Women in the Economy**

Topics include women's and men's paid work and earnings; discrimination; unpaid work and the value of household production; family decision making and intra-household resource allocation; gender and macroeconomic policy; women and poverty; feminist approaches to economic theory.

Prerequisites: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3200 [0.5 credit] (formerly 43.320\*)

**Economics of Information and the Media**

An introduction to the economics of information and the media, with a focus on the analysis of production and distribution of information, the application of theory to selected communications-media industries in Canada, and the analysis of existing Canadian policies.

Precludes additional credit for ECON 4205.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3204 [0.5 credit] (formerly 43.324\*)

**An Economic Analysis of Law**

An introduction to the application of economic principles and methodology to a variety of legal problems with particular emphasis

on the theory of property rights and the allocation of resources.  
Prerequisite: ECON 1000 or FYSM 1003.  
Lectures three hours a week.

ECON 3205 [1.0 credit] (formerly 43.325)

**The Economic Development of Canada**

A general survey of Canadian economic development from 1534 to 1970.

Prerequisite: ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 3206 [0.5 credit] (formerly 43.326\*)

**Economic Theories of Federalism**

Economic dimensions of federalism, with reference to Canadian experience. Issues include: fiscal federalism; impact of federal economic policies on provincial economies, decentralization possibilities for fiscal and economic development policies, consequences of policies such as provincial trade barriers and impediments to factor flows.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3300 [0.5 credit] (formerly 43.330\*)

**Public Policy Toward Business**

The interaction of government and business in the Canadian economy. Reasons for government involvement in selected public policy areas. Topics covered may include competition policy, regulation of firms by boards and commissions, environmental regulation and public enterprise.

Precludes additional credit for ECON 4301.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3305 [1.0 credit] (formerly 43.335)

**Political Economy in the Modern State**

An examination of the role of government in the economy, with special emphasis on alternate forms of social co-ordination and the advantages and disadvantages of each form in the Canadian system.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures two hours a week.

ECON 3401 [0.5 credit] (formerly 43.341\*)

**Regional Economics**

Unequal distribution of economic activity between spatially defined regions. The pattern in Canada since World War II, and the outlook for the future is evaluated, considering "natural" adjustment mechanisms, and policy tools.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3402 [0.5 credit] (formerly 43.342\*)

**Special Studies in Economics**

Content of this course varies year by year; topics to be determined by the instructor invited to offer the course.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3404 [0.5 credit] (formerly 43.344\*)

**Economic Thought and Policy in Canada**

An account of the interrelationship between economic theories expounded in Canada and their issue in national policy.

Prerequisite: An introductory course in one of the social sciences or Canadian history.

Lectures three hours a week.

ECON 3406 [0.5 credit] (formerly 43.346\*)

**Agricultural Economics**

An examination of the agricultural industry in the national economy and in low-income societies. The course emphasizes the working out of the basic forces that determine supply-demand for the industry and the functional distribution of income among the factors of production. Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3407 [0.5 credit] (formerly 43.347\*)

**Public Finance: Taxation**

Role and nature of the government sector in the economy, principles of taxation, tax equity, incidence and excess burden of taxes, structure of taxes in the economy, role of personal,

corporate, sales and wealth taxes, fiscal stabilization policy, and economics of public debt.

Precludes additional credit for ECON 3003 and ECON 4401.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3408 [0.5 credit] (formerly 43.348\*)

**Public Finance: Expenditure**

The role and nature of the government sector in the economy, the theory of public goods, the equity and efficiency effects of public expenditures, voting rules and fiscal politics, techniques of public expenditure analysis, and intergovernmental fiscal relations.

Precludes additional credit for ECON 3003 and ECON 4402.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3500 [0.5 credit] (formerly 43.350\*)

**Corporate Finance**

An examination of the major issues in corporate finance and applied financial management. Topics include: introduction to portfolio theory, the capital asset pricing model, cost of capital, capital structure and dividend policy, lease financing, capital budgeting under uncertainty, mergers and consolidations. (Also listed as BUSI 3500.)

Prerequisites: ECON 2002, ECON 2500 or ECON 2505, and ECON 2200 or STAT 2607.

Lectures three hours a week.

ECON 3501 [0.5 credit] (formerly 43.351\*)

**Principles of Investments**

Procedures and methods of investment analysis. The stock and bond markets. Government regulation of securities markets. Valuation of common stocks and fixed income securities. Options, warrants, convertibles and commodities. (Also listed as BUSI 3502.)

Prerequisites: ECON 2500 or ECON 2505, and ECON 2200 or STAT 2607.

Lectures three hours a week.

ECON 3506 [0.5 credit] (formerly 43.356\*)

**Introduction to Labour Economics**

Basic principles of labour economics including market, institutional and sociological forces. Issues such as technology and labour demand, wage systems, human capital, internal wage structure, market discrimination, female labour-force entry, wage/price spiral, household labour supply, wage determination are considered.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3507 [0.5 credit] (formerly 43.357\*)

**Introduction to Industrial Relations**

An introduction to industrial relations covering such topics as: industrial relations systems, the functioning of trade unions, collective bargaining in Canada and Canadian public policy in industrial relations.

Precludes additional credit for BUSI 3107.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3600 [0.5 credit] (formerly 43.360\*)

**Topics in International Economics**

Possible topics include theory and policy in international trade, finance, investment and development. Intended for students planning to take only 0.5 credit in international economics at the 3000-level.

Precludes additional credit for ECON 3601, ECON 3602, ECON 4601, and ECON 4602.

Prerequisite: ECON 1000 or FYSM 1003, or permission of the Department.

Lectures three hours a week.

ECON 3601 [0.5 credit] (formerly 43.361\*)

**Introduction to International Trade**

An extension of the basic principles of economics to international trade. Topics covered include the theory of international specialization, tariffs and other barriers to trade, trade liberalization and economic integration, international movements of labour and capital, trade and development.

Precludes additional credit for ECON 3600 and ECON 4601.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.



ECON 3602 [0.5 credit] (formerly 43.362\*)

**International Monetary Problems**

A discussion of the theory and institutions of the international monetary system, and the related balance of payments problems of nation states.

Precludes additional credit for ECON 3600 and ECON 4602.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3603 [0.5 credit] (formerly 43.363\*)

**Introduction to Economic Development**

A discussion of the principles of economic development. Application to the problems of the developing countries.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3604 [0.5 credit] (formerly 43.364\*)

**Development Planning and Project Evaluation**

An Introduction to the tools used in the planning and evaluation of development projects. Topics include the theory, application, strengths and limitations of cost-benefit analysis and competing approaches, and an examination of project evaluation techniques.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3607 [0.5 credit] (formerly 43.367\*)

**Monetary and Financial Institutions**

This course examines the behaviour of financial intermediaries and institutions, such as the Bank of Canada, banks and trust companies, and regulatory bodies such as the Canada Deposit Insurance Corporation and the Superintendent of Financial Institutions.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3700 [0.5 credit] (formerly 43.370\*)

**The Economics of Transition**

The transition from state ownership and central planning to mixed ownership structure with resource allocation by market mechanisms. "Classical socialism" is criticized and the processes of transition in countries of Central and Eastern Europe, the former Soviet Union and Asia are compared.

Precludes additional credit for ECON 3701 and ECON 3702.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3800 [0.5 credit] (formerly 43.380\*)

**Topics in Canadian Economic Policy**

Economic analysis applied to selected policy areas, issues or institutions. One or more of the following topics may be dealt with: decision-making by bureaucratic institutions, policy problems arising from poverty, the economics of natural resources and pollution, urban economics.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3805 [0.5 credit] (formerly 43.385\*)

**The Economics of Natural Resources**

This course is concerned with the application of economic analysis to questions concerning natural-resource use, management and conservation, as well as market failures and environmental effects. Policy problems relating to natural resources are discussed.

Prerequisite: ECON 1000 or FYSM 1003.

Lectures three hours a week.

ECON 3806 [0.5 credit] (formerly 43.386\*)

**Environmental Economics**

Microeconomic analysis of environmental issues. Frameworks for measuring environmental costs and benefits. The efficiency of alternative pollution control policies. Applications include air and water pollution and global environmental problems such as ozone depletion and global warming.

Prerequisites: ECON 1000 or FYSM 1003, or ECOR 3800.

Lectures three hours a week.

ECON 4004 [0.5 credit] (formerly 43.404\*)

**Operations Research I**

Linear programming, duality, sensitivity analysis, transportation and network problems. Both theory and a wide range of applications are studied.

Precludes additional credit for BUSI 2300 and MATH 3801.

Prerequisites: MATH 1009 and MATH 1109 (grade of C- or better in each course).

Lectures three hours a week.

ECON 4005 [0.5 credit] (formerly 43.405\*)

**Operations Research II**

Dynamic programming, inventory models, queuing, simulation, non-linear programming. (Also listed as BUSI 4305.)

Prerequisites: ECON 4004, or BUSI 2300, or MATH 3801, and ECON 2200 (grade of C- or better) or STAT 2607 (grade of C- or better).

Lectures three hours a week.

ECON 4006 [0.5 credit] (formerly 43.406\*)

**Economics of Uncertainty and Information**

Uncertainty, imperfect information and asymmetric information in the allocation of resources and the performance of markets and alternative co-ordinating mechanisms.

Prerequisites: ECON 2200 or STAT 2606 and STAT 2607, and ECON 2002, with a GPA of 4.00 or better on these prerequisites.

Lectures three hours a week.

ECON 4007 [0.5 credit] (formerly 43.407\*)

**Statistical Decision Theory**

Bayesian and classical approaches to decision-making under uncertainty for individuals and firms.

Precludes additional credit for BUSI 4306.

Prerequisite: ECON 2200 or STAT 2606 and STAT 2607 (grade of C- or better).

Lectures three hours a week.

ECON 4008 [0.5 credit] (formerly 43.408\*)

**Advanced Corporate Finance**

An in-depth examination of some of the major theoretical issues in corporate finance. This course requires analyses and presentations of both articles from the finance literature and case studies. (Also listed as BUSI 4500.)

Prerequisite: ECON 3500 (grade of C- or better).

Lectures three hours a week.

ECON 4100 [0.5 credit] (formerly 43.410\*)

**Financial Markets**

Issues in financial markets. Topics may include: optimal portfolio choice, consumption based capital asset pricing model, arbitrage theory, financial incentives, equity premium puzzle, asset prices and monetary policy, options and futures markets, real options, regulation of financial markets.

Precludes additional credit for BUSI 4503.

Prerequisites: ECON 2002, ECON 2003, ECON 2102, and ECON 2200 or STAT 2509 or STAT 2607 (a grade of C- or better is required in each course).

Lectures and seminars three hours a week.

ECON 4101 [0.5 credit] (formerly 43.411\*)

**Investment Management**

Analysis of investment requirements for individuals and institutional investors: liquidity, risk and return; portfolio design, construction, management and control; performance measurement; capital market theory. (Also listed as BUSI 4502.)

Prerequisite: ECON 3501 (grade of C- or better).

Lectures three hours a week.

ECON 4105 [1.0 credit] (formerly 43.415)

**History of Economic Thought**

Crucial achievements in economic theory and doctrine in the nineteenth and twentieth centuries are studied. Special emphasis is given to the interrelationship between the social environment and economic thought, especially to the role of economics in the development of the national state and international institutions. Also offered at the graduate level, with additional or different requirements, as ECON 5201 and ECON 5202, for which additional credit is precluded.

Prerequisite: ECON 2002, ECON 2003, ECON 2102 and ECON 2103, (with an average grade of C- or better), or permission of the Department.

Lectures and seminars three hours a week.

ECON 4200 [0.5 credit] (formerly 43.420\*)

**Microeconomic Theory**

Theory of individual economic behaviour, theory of exchange and production, general equilibrium, alternative theories of pricing, allocation and distribution. Elementary tools of mathematics are employed in the exposition of most topics.

Prerequisites: ECON 2002 and ECON 2003, with an average grade of C+ or better, ECON 2400 (with a grade of C- or better) and ECON 2200 (ECON 2200 may be taken concurrently with ECON 4200).

This course is required for students in the Honours program in Economics.

Lectures three hours a week.

ECON 4201 [0.5 credit] (formerly 43.421\*)

**Macroeconomic Theory**

Major controversies in macroeconomic theory. Topics such as: determination of national income, employment, price level and interest rates; commodity, labour and asset markets; fiscal and monetary stabilization policy.

Prerequisites: ECON 2102 and ECON 2103, with an average grade of C+ or better, ECON 2400 (with a grade of C- or better) and ECON 2200 (ECON 2200 may be taken concurrently with ECON 4201).

This course is required for students in the Honours program in Economics.

Lectures three hours a week.

ECON 4205 [0.5 credit] (formerly 43.425\*)

**Advanced Economics of Information and Media**

The economics of information production, its distribution through broadcasting, publishing or the Internet, its exchange through telephone and e-mail networks, its use in private and public organizations. An analysis of telecommunications, broadcasting, copyright, privacy and Internet policy.

Precludes additional credit for ECON 3200.

Prerequisites: ECON 2001 or ECON 2002 and ECON 2003 (grade of C- or better in each course)

Lectures three hours a week.

ECON 4206 [0.5 credit] (formerly 43.426\*)

**Topics in North American Economic History**

An examination of methodology applicable to the analysis of economic history. Intensive examination of selected topics in North American economic history.

Prerequisites: ECON 2002, ECON 2003, ECON 2102 and ECON 2103, (with an average grade of C- or better on these prerequisites), or permission of the Department.

Lectures three hours a week.

ECON 4207 [0.5 credit] (formerly 43.427\*)

**Topics in European Economic History**

An examination of methodology applicable to the analysis of economic history. Intensive examination of selected topics in European economic history.

Prerequisites: ECON 2002, ECON 2003, ECON 2102 and ECON 2103, (with an average grade of C- or better on these prerequisites), or permission of the Department.

Lectures three hours a week.

ECON 4301 [0.5 credit] (formerly 43.431\*)

**Industrial Organization I - Theory and Evidence**

An examination of various theoretical and empirical studies of firm and market organization with emphasis on the pricing, advertising, investment and locational behaviour of firms in imperfectly competitive markets.

Precludes additional credit for ECON 3300, and ECON 4300.

Prerequisites: ECON 2002 and ECON 2003, or ECON 2001 (with an average grade of C- or better on these prerequisites).

Lectures three hours a week.

ECON 4302 [0.5 credit] (formerly 43.432\*)

**Industrial Organization II - Policy and Applications**

This course extends the theoretical material developed in ECON 4301 and applies it to examine public policies toward business in Canada and in other market economies with emphasis on policies relating to regulation, competition, and innovation.

Precludes additional credit for ECON 4300.

Prerequisite: ECON 4301.

Lectures three hours a week.

ECON 4306 [0.5 credit] (formerly 43.436\*)

**Labour Economics**

The application of price theory is applied to the labour market. Topics include models of labour supply and labour demand, human capital and the economics of education and unions and their impact on the labour market. Also offered at the graduate level, with additional or different requirements, as ECON 5307, for which additional credit is precluded.

Precludes additional credit for ECON 4305.

Prerequisites: ECON 2002 or ECON 2001 (with a grade of C- or better), or permission of the Department.

Lectures three hours a week.

ECON 4309 [0.5 credit] (formerly 43.439\*)

**Applied Industrial Economics**

This course examines the empirical application of microeconomics, with special emphasis on the Canadian economy. Topics include: consumer demand, firm production and investment, and industrial and trade structure.

Prerequisites: ECON 2002, ECON 2003, and ECON 2200, (with a grade of C- or better on these prerequisites).

Lectures three hours a week.

ECON 4401 [0.5 credit] (formerly 43.441\*)

**Public Sector Economics: Taxation**

A discussion of the theory of taxation and an examination of empirical attempts to quantify the theory. Some topics of current interest, such as the redistribution of income in Canada and tax reform are examined.

Precludes additional credit for ECON 3407.

Prerequisites: ECON 2002 and ECON 2003, or ECON 2001, (with an average grade of C- or better on these prerequisites).

Lectures three hours a week.

ECON 4402 [0.5 credit] (formerly 43.442\*)

**Public Sector Economics: Expenditures**

A discussion of the theory of government expenditures and an examination of empirical attempts to quantify the theory. Some topics of current interest, such as expenditures and grants in the Canadian federalism are examined.

Precludes additional credit for ECON 3408.

Prerequisites: ECON 2002 and ECON 2003, or ECON 2001 (with an average grade of C- or better on these prerequisites).

Lectures three hours a week.

ECON 4405 [0.5 credit] (formerly 43.445\*)

**Welfare Economics**

An examination of contemporary welfare economics and its applications. Also offered at the graduate level, with additional or different requirements, as ECON 5405, for which additional credit is precluded.

Prerequisites: ECON 2002 and ECON 2003, or ECON 2001, (with an average grade of C- or better on these prerequisites).

Lectures and seminars three hours a week.

ECON 4406 [0.5 credit] (formerly 43.446\*)

**Economic Dynamics: Growth**

An examination of modern steady equilibrium economic growth encompassing neoclassical, neo-Keynesian and neo-Ricardian theories of growth and accumulation. The theories of money and capital (and controversies) are examined in a growth context. Some discussion of optimum saving and accumulation is also included.

Prerequisites: ECON 2002, ECON 2003, ECON 2102 and ECON 2103, (with an average grade of C- or better on these prerequisites).

Lectures and seminars three hours a week.

ECON 4407 [0.5 credit] (formerly 43.447\*)

**Project Evaluation**

An analytic treatment of the principles of project evaluation and their applications. Also offered at the graduate level, with additional or different requirements, as ECON 5407, for which additional credit is precluded.

Prerequisite: ECON 4200 with a grade of C+ or better.

Lectures three hours a week.

ECON 4501 [0.5 credit] (formerly 43.451\*)

**Economic Dynamics: Business Cycles**

An analysis of the nature and causes of fluctuations in income, prices and employment. A review of theories of short-run economic dynamics, with particular references to how expectations are formed. Some consideration is given to countercyclical government policies.

Prerequisites: ECON 2102 and ECON 2103, (with an average grade of C- or better on these prerequisites).  
Lectures and seminars three hours a week.

ECON 4507 [0.5 credit] (formerly 43.457\*)

**The Economics of Development**

An examination of some theoretical approaches to the economics of development, together with analysis of some economic policy issues of a largely internal character, such as intersectoral investment allocation, income distribution, unemployment, and investment in human development.

Prerequisites: ECON 2002 and ECON 2003, or ECON 2001; and ECON 2102 and ECON 2103, or ECON 2101 (with an average grade of C- or better on these prerequisites).  
Lectures three hours a week.

ECON 4508 [0.5 credit] (formerly 43.458\*)

**International Aspects of Economic Development**

An analysis of the international economic policy problems of development in Asia, Africa and Latin America, focusing on international trade, direct foreign investment, technological transfer, regional integration, debt and development financing, and international migration.

Prerequisites: ECON 2002 and ECON 2003, or ECON 2001; and ECON 2102 and ECON 2103, or ECON 2101 (with an average grade of C- or better on these prerequisites).  
Lectures three hours a week.

ECON 4601 [0.5 credit] (formerly 43.461\*)

**International Trade Theory and Policy**

International trade theory and its implications for economic policy. Topics such as determinants of trade and specialization, gains from trade and commercial policy, international factor mobility, growth and development.

Precludes additional credit for ECON 3600 and ECON 3601.  
Prerequisites: ECON 2002 and ECON 2003, or ECON 2001 (with an average grade of C- or better on these prerequisites).  
Lectures three hours a week.

ECON 4602 [0.5 credit] (formerly 43.462\*)

**International Monetary Theory and Policy**

International monetary theory and its implications for economic policy. Topics such as sources of disequilibrium and adjustment in the balance of payments under fixed versus flexible exchange rates, international capital movements, and international monetary reform.

Precludes additional credit for ECON 3600 and ECON 3602.  
Prerequisites: ECON 2102 and ECON 2103, or ECON 2101 (with an average grade of C- or better on these prerequisites).  
Lectures three hours a week.

ECON 4605 [0.5 credit] (formerly 43.465\*)

**Industrial Relations**

Economic analysis of selected industrial relations and labour market policy problems. Topics include unionization, strike activity, the economics of occupational health and safety, pension policy, and the impact of new technology on the labour market.

Precludes additional credit for ECON 4605 [1.0].  
Prerequisites: ECON 2001 or ECON 2002 (with a grade of C- or better); or permission of the Department.  
Lectures three hours a week.

ECON 4607 [0.5 credit] (formerly 43.467\*)

**Monetary Theory I**

The foundations of monetary theory. Topics include classical, Keynesian and other money transmission mechanisms; the "optimum quantity of money;" estimates of supply and demand; difficulties of policy implementation in open and closed economies and in a growth context.

Prerequisites: ECON 2002 and ECON 2003, or ECON 2001; and ECON 2102 and ECON 2103, or ECON 2101 (with an average grade of C- or better on these prerequisites).  
Lectures three hours a week.

ECON 4608 [0.5 credit] (formerly 43.468\*)

**Monetary Theory II**

A continuation of ECON 4607. This course analyzes in depth some past and current controversies in monetary theory particularly as they relate to policy issues.

Prerequisite: ECON 4607.  
Lectures three hours a week.

ECON 4701 [0.5 credit] (formerly 43.471\*)

**National Accounting**

Introduction to modern social accounting, including national income and expenditure accounts, input-output accounts, financial flow and national balance sheet accounts. Canadian practice concerning national wealth accounts, price and quantity indices and productivity measures, and the effects of inflation on national accounts.

Prerequisites: ECON 2002, ECON 2003, and ECON 2102 (with an average grade of C- or better on these prerequisites).  
Lectures three hours a week.

ECON 4706 [0.5 credit] (formerly 43.476\*)

**Econometrics I**

An introduction to econometric theory and analysis of the classical normal regression model. Topics include estimation methods, hypothesis testing, multicollinearity, autocorrelation, and heteroscedasticity.

Precludes additional credit for ECON 4805, ECON 4802, STAT 3503 and STAT 3505.

Prerequisite: ECON 2200 or equivalent (with a grade of C+ or better).  
Lectures three hours a week.

ECON 4707 [0.5 credit] (formerly 43.477\*)

**Econometrics II**

An extension of ECON 4706, Econometrics I. Topics include dummy variables, qualitative and limited dependent variables, and simultaneous equation models. Optional topics include simple expectations models, errors in variables, specification tests and diagnostics checks, distributed lag models, and seemingly unrelated regression models.

Precludes additional credit for ECON 4805.  
Prerequisite: ECON 4706, or STAT 3503 or STAT 3505 (with a grade of C- or better).  
Lectures three hours a week.

ECON 4800 [0.5 credit] (formerly 43.480\*)

**Research Seminar in Urban Economics**

An inquiry into the internal dynamics of cities and inter-urban relationships primarily through directed research.

Prerequisites: ECON 2002 and ECON 2003, or ECON 2001; and ECON 2200 or STAT 2606 and STAT 2607 (with an average grade of C- or better on these prerequisites).

ECON 4803 [0.5 credit] (formerly 43.483\*)

**Applied Time Series Analysis in Economics and Business**

An introduction to basic concepts of time series analysis with emphasis on model building and forecasts in economics and business. Topics include: models for stationary and nonstationary time series, model identification, estimation, computation of forecasts and transfer function models. Also offered at the graduate level, with additional or different requirements, as ECON 5703, for which additional credit is precluded.

Prerequisites: ECON 2200 (with a grade of C+ or better), or STAT 2606 and STAT 2607 (or equivalent) (with an average grade of C+ or better).  
Lectures three hours a week.

ECON 4804 [0.5 credit] (formerly 43.484\*)

**Advanced Topics in Applied Econometrics**

Advanced coverage of one or more areas of current interest in applied econometrics. An empirical research project may be required.

Prerequisites: ECON 4706 and ECON 4707 (with an average grade of C- or better on these prerequisites).  
Lectures three hours a week.



ECON 4806 [0.5 credit] (formerly 43.486\*)

### **Comparative Economic Systems I**

This course builds a framework for comparing economic systems, and considers the interaction between economic and political systems. The traditional Soviet-type economy, industrial policy, and problems of transition receive particular attention. Also offered at the graduate level, with additional or different requirements, as ECON 5806, for which additional credit is precluded.

Prerequisite: ECON 2001 or ECON 2002 (with a grade of C- or better), or permission of the Department.

Lectures three hours a week.

ECON 4807 [0.5 credit] (formerly 43.487\*)

### **Comparative Economic Systems II**

A comparison of contemporary economic systems. Such diverse economies as mainland China, Japan, Germany, Sweden, Russia, Taiwan and Hungary may be explored. Also offered at the graduate level, with additional or different requirements, as ECON 5807, for which additional credit is precluded.

Prerequisite: ECON 2001 or ECON 2002 (with a grade of C- or better), or permission of the Department.

Lectures three hours a week.

ECON 4900 [1.0 credit] (formerly 43.490)

### **Honours Seminar**

This seminar focuses on the use of basic economic analysis in a small number of research topics to be selected by the instructors. A major research paper is required. This seminar is intended for fourth-year Honours Economics students.

Prerequisites: ECON 4200 and ECON 4201 or permission of the Department.

Lectures three hours a week.

ECON 4903 [0.5 credit] (formerly 43.493\*)

### **Tutorial in Economics**

An additional tutorial in Economics may be taken subsequent to, or concurrently with ECON 4900.

Prerequisite: permission of the Department.

ECON 4904 [0.5 credit] (formerly 43.494\*)

### **Tutorial in Economics**

An additional tutorial in Economics may be taken subsequent to or concurrently with ECON 4900.

Prerequisite: permission of the Department.

ECON 4908 [1.0 credit] (formerly 43.498)

### **Honours Essay**

Students taking Honours in Economics may write an Honours essay during their final year. This essay counts for one credit. Students work under an individual faculty adviser.

Prerequisite: permission of the Department.

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## **Electronics (ELEC)**

Department of Electronics  
Faculty of Engineering

ELEC 1908 [0.5 credit] (formerly 97.198\*)

### **First Year Project**

A practical introduction to engineering design. Students work in small teams to specify, design and implement a system, formally managing the project progress and submitting oral and written reports.

Prerequisite: registration in the Engineering Physics program.

Lectures and tutorials two hours a week, laboratory four hours a week.

ELEC 2501 [0.5 credit] (formerly 97.251\*)

### **Circuits and Signals**

Properties of signals. Basic circuit elements: voltage and current sources. Kirchhoff's laws, linearity, superposition. Thevenin and Norton's theorems. Circuit simplification. AC steady-state analysis: impedance, admittance, phasors, frequency response. Transient response of RL and RC circuits: form of response, initial and final conditions. RLC circuits: resonance.

Prerequisites: MATH 1005 and PHYS 1004 (or PHYS 1001

and PHYS 1002).

Lectures three hours a week, laboratory and problem analysis three hours a week.

ELEC 2507 [0.5 credit] (formerly 97.257\*)

### **Electronics I**

Qualitative semiconductor physics, leading to the diode equation. Diode applications. Operational amplifiers and their application in feedback configurations including active filters. Introduction to bipolar transistors and MOSFETs, biasing and simple circuit applications. Transistor structure of digital logic gates.

Prerequisite: ELEC 2501.

Lectures three hours a week, laboratory and problem analysis three hours a week.

ELEC 2607 [0.5 credit] (formerly 97.267\*)

### **Switching Circuits**

Boolean algebra, gate, combinatorial circuits. DeMorgan notation, sum-of-product and product-of-sum forms. Logic arrays, PLAs and PALs. Flip-flops, latches, sequential circuits, state graphs and state minimization. Counters and controllers. Hazards. Asynchronous sequential circuits, race free assignment, realization.

Precludes additional credit for SYSC 2607/SYSC 3607 or ELEC 3607.

Prerequisite: PHYS 1004 or permission of the Department.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 3105 [0.5 credit] (formerly 97.315\*)

### **Basic EM and Power Engineering**

Electrostatics and magnetostatics. Solution of Poisson's and Laplace's equations. The Lorenz equation and force. Time varying fields. Magnetic circuits and transformers. DC and AC motors.

Precludes additional credit for ELEC 2601 or ELEC 3504.

Prerequisites: MATH 2004 and PHYS 1004 (or PHYS 1001 and PHYS 1002).

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 3500 [0.5 credit] (formerly 97.350\*)

### **Digital Electronics**

Digital circuit design using verilog and logic synthesis, the electronic properties of logic gates, electrical interfacing between logic families, asynchronous to synchronous interfacing, clock distribution and timing, VLSI design options. Students implement substantial circuits with field-programmable gate arrays.

Prerequisites: ELEC 2507 and ELEC 2607.

Lectures three hours a week, laboratory three hours a week.

ELEC 3509 [0.5 credit] (formerly 97.359\*)

### **Electronics II**

Introduction to semiconductor devices and ICs. DC, AC and switching properties of BJTs. Linear amplifiers; bandwidth considerations; two-port analysis. Large signal amplifiers; power amplifiers; transformerless circuits. Feedback and operational amplifiers; gain, sensitivity, distortion and stability. Filter design. Oscillators.

Prerequisite: ELEC 2507.

Lectures three hours a week, laboratory three hours a week.

ELEC 3605 [0.5 credit] (formerly 97.365\*)

### **Electrical Engineering**

DC circuits: elements, sources, analysis. Single phase AC circuits: phasors, RLC circuits, real and reactive power, impedance, network analysis, three phase systems. Power transformers. DC motors: operation and characteristics. AC motors: single phase and three phase.

Prerequisites: MATH 1005 and PHYS 1004 (or PHYS 1001 and PHYS 1002). Not open to students in Communication Engineering, Computer Systems Engineering, Electrical Engineering, Engineering Physics or Aerospace Stream C.

Lectures three hours a week, problem analysis three hours alternate weeks.

ELEC 3905 [0.5 credit] (formerly 97.395\*)

### **Professional Practice**

Presentations by faculty and external lecturers on the Professional Engineers Act, professional ethics and

responsibilities, practice within the discipline and its relationship with other disciplines and to society, health and safety, environmental stewardship, principles and practice of sustainable development. Communication skills are emphasized. (Also listed as SYSC 3905.)

Precludes additional credit for CIVE 4905 and MAAE 4905.  
Prerequisite: ECOR 1000, ALSS 1000, and third-year registration.

Lectures three hours a week

ELEC 3908 [0.5 credit] (formerly 97.398\*)

**Physical Electronics**

Fundamentals of device physics and operation of the pn junction, bipolar transistor and MOSFET. Basic integrated circuit processing and application to diodes, BJTs and MOSFETs. Correlation between processing, structure, operation and modeling. Consideration of parasitic and small-geometry effects, reliability and process variation.

Precludes additional credit for ELEC 3608.

Prerequisites: CHEM 1101, MATH 2004, PHYS 1004 (or PHYS 1001 and PHYS 1002), ELEC 2507.

Lectures three hours a week, problem analysis three hours alternate weeks.

ELEC 3909 [0.5 credit] (formerly 97.399\*)

**Electromagnetic Waves**

Maxwell's equations and EM wave solutions. Polarization. Poynting vector. EM waves in dielectrics and conductors; skin depth. Reflection and refraction. Standing waves. Fresnel relations, Brewster angle. Transmission lines. Line termination, basic impedance matching and transformation. Smith charts. Introduction to guided waves; slab waveguide.

Prerequisite: ELEC 3105 or permission of the Department

Lectures three hours a week, problem analysis three hours alternate weeks.

ELEC 4502 [0.5 credit] (formerly 97.452\*)

**Microwave Circuits**

Introduction to microwave tubes, semiconductor devices, and passive components. Scattering matrix description of microwave junctions. Properties of basic reciprocal and non-reciprocal passive microwave devices. Fundamentals of microwave amplifiers and oscillators. Design of solid-state microwave amplifiers and oscillators.

Prerequisite: ELEC 4503.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4503 [0.5 credit] (formerly 97.453\*)

**Radio Frequency Lines and Antennas**

Introduction to distributed circuits, travelling and standing waves, reflection coefficient, SWR, impedance transformation, Smith charts. Introduction to transmission lines; coaxial, rectangular waveguide, resonators, optical fibers. Introduction to antennas; gain, directivity, effective area. Introduction to linear arrays.

Prerequisite: ELEC 3909.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4504 [0.5 credit] (formerly 97.454\*)

**Avionics Systems**

Electromagnetic spectrum. Air data sensing, display. Communications systems. Navigation and landing systems; ground-based, inertial and satellite systems. Airborne radar. Guidance, control for aircraft, autopilots; stability augmentation; active control; sensor requirements; display techniques. Aircraft power systems. Safety systems. Vehicle/systems integration, certification.

Precludes additional credit for AERO 4504.

Prerequisite: Fourth-year registration. Not open to students in Electrical Engineering, Computer Systems Engineering, Aerospace Stream C Engineering or Engineering Physics.

Lecture three hours a week.

ELEC 4505 [0.5 credit] (formerly 97.455\*)

**Telecommunication Circuits**

A course of study of the commonly used circuit components in modern telecommunication systems. Both analog and digital

systems are included. The design of the hardware is emphasized. Examples are drawn from broadcasting, telephony and satellite systems.

Prerequisites: SYSC 3501 and ELEC 3509.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4506 [0.5 credit] (formerly 97.456\*)

**CAD for Communication Circuits**

Basic principles of Computer-Aided Design tools used for analysis and design of communication circuits and systems. Frequency and time-domain analysis. Noise and distortion analysis. Transmission line effects. Sensitivity analysis, and circuit performance optimization. Digital simulation.

Prerequisite: fourth-year registration.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4509 [0.5 credit] (formerly 97.459\*)

**Communication Links**

Fundamentals; decibel, intermodulation, idB compression, dynamic range, SNR, noise figure, noise temperature, antenna gain, EIRP, G/T. Line-of-sight links; receiver, diversity, fade margin. Satellite links; link calculations, multiple accessing, earth stations. Fiber links, fiber types, sources, detectors, systems.

Prerequisite: fourth-year registration or permission of the Department.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4600 [0.5 credit] (formerly 97.460\*)

**Radar and Navigation**

Radar: operation, minimum detectable signal, propagation effects. Surveillance Radars: Moving Target indicator and Pulse Doppler operation. Radio Navigation: pulsed and CW operation. Operational systems: Loran C., VOR/DME, TACAN, Global Positioning system. Inertial Navigation. Navigation Co-ordinate Systems. Techniques for determining best estimates of position.

Lectures three hours a week.

ELEC 4601 [0.5 credit] (formerly 97.461\*)

**Microprocessor Systems**

Interfacing aspects in microprocessor systems. Microprocessors and bus structures, internal architecture, instruction set and pin functions. Memory interfacing, input-output, interrupts, direct memory accesses, special processors and multiprocessor systems.

Precludes additional credit for SYSC 3601 and COMP 3006. Prerequisite: ELEC 2607 and one of SYSC 2003 or SYSC 3003 or SYSC 3006 or permission of the Department.

Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4609 [0.5 credit] (formerly 97.469\*)

**Integrated Circuit Design and Fabrication**

Introduction to nMOS IC design: static logic gates, noise margin, transmission gates, factors influencing switching speed, dynamic logic, input protection, output buffers, circuit simulation with SPICE. Laboratory work includes design and layout of a simple nMOS IC that is fabricated and returned for testing.

Prerequisite: ELEC 3500.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4700 [0.5 credit] (formerly 97.470\*)

**Modeling of Integrated Devices**

The operation and modeling of integrated semiconductor devices. Topics include: physical models, analytic device models, their limitations and, where appropriate, their implementation in commercial circuit simulators, parameter extraction and numerical simulation.

Prerequisite: ELEC 3908.

Lectures three hours a week, problem analysis two hours alternate weeks.

ELEC 4702 [1.0 credit] (formerly 97.472)

**Fiber Optic Communications**

Fundamentals of optoelectronics with application to fiber optic communications. Optical fibre: modes, losses, dispersion,

splices and coupling to sources. Optical sources: LEDs and laser diodes. Optical detectors: photoconductor, pin and avalanche photodiodes. Optical receiver design. Fiber optic communications systems: intensity modulation/direct detection; coherent homodyne or heterodyne detection. Prerequisites: ELEC 3908 and ELEC 3909. Lectures three hours a week, laboratory three hours alternate weeks.

ELEC 4705 [0.5 credit] (formerly 97.475\*)

#### **Electronic Materials, Devices and Transmission Media**

Review of solid-state theory, conductors, semiconductors, superconductors, insulators, and optical and magnetic properties. Devices used in modern high speed electronic and communication systems: transistors, lasers, photodiodes, fiber optics, Josephson junctions. Implications of material properties on fabrication and operation of devices and circuits.

Precludes additional credit for SYSC 4705.

Prerequisite: Fourth-year registration. Not available for credit to students in Electrical Engineering or Engineering Physics. Lectures three hours a week.

ELEC 4706 [0.5 credit] (formerly 97.476\*)

#### **Digital Integrated Electronics**

Lectures and hands-on experience introduce advanced concepts in digital interfacing and hardware simulation. Industry standard VME bus operation, VHDL programming and simulation, programmable logic devices, memory devices. A modern laboratory supports VME multiprocessing, VHDL modeling and hardware design.

Prerequisite: ELEC 3500.

Lectures two hours a week, laboratory three hours a week.

ELEC 4707 [0.5 credit] (formerly 97.477\*)

#### **Analog Integrated Electronics**

Emphasis on integration of analog signal processing techniques in monolithic IC technology. Continuous active filter design. MOS IC technology. OP amp design. Basic sampled data concepts; Z-transform analysis, switched capacitor filters. Noise aspects. Bipolar technology: radio frequency IC design.

Prerequisite: ELEC 3509.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4708 [0.5 credit] (formerly 97.478\*)

#### **Advanced Digital Integrated Circuit Design**

VLSI design based on CMOS technology; switching characteristics of CMOS logic circuits; cell libraries; structured design and test, Computer-Aided Design tools, design for testability. Laboratory emphasis on design methods using synthesis from Verilog Code.

Prerequisite: fourth-year registration in Electronics or permission of the Department.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4906 [0.5 credit] (formerly 97.496\*)

#### **Special Topics in Electrical and Computer Systems Engineering**

At the discretion of the Engineering Faculty Board, a course dealing with selected advanced topics of interest to Electrical and Computer Systems engineering students may be offered. (Also listed as SYSC 4906.)

Prerequisite: fourth-year registration.

Lectures three hours a week, laboratory and problem analysis three hours alternate weeks.

ELEC 4907 [1.0 credit] (formerly 97.497)

#### **Engineering Project**

Student teams develop professional-level experience by applying, honing, integrating, and extending previously acquired knowledge in a major design project. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required. Prerequisite: fourth-year registration and ELEC 3905 (may be taken concurrently). Certain projects may have additional prerequisites or corequisites.

Lecture one hour a week, laboratory seven hours a week.

ELEC 4908 [1.0 credit] (formerly 97.498)

#### **Engineering Project**

Student teams develop professional-level experience by applying, honing, integrating, and extending previously acquired knowledge in a major design project. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required. Prerequisite: fourth-year registration and ELEC 3905 (may be taken concurrently). Certain projects may have additional prerequisites or corequisites.

Lecture one hour a week, laboratory seven hours a week.

## **Engineering Common Core Courses (ECOR)**

Faculty of Engineering

ECOR 1000 [0.5 credit] (formerly 91.100\*)

#### **Orientation to Engineering**

Introduces the engineering profession; major disciplines, regulation and contemporary issues in engineering; importance of writing in engineering. Drawing instruments and elementary drawing techniques such as pictorial sketching and orthographic projection; section views; CAD systems, introduction to the fundamentals of manufacturing methods. Lectures three hours a week, laboratories two hours a week.

ECOR 1101 [0.5 credit] (formerly 91.111\*)

#### **Mechanics I**

Introduction to mechanics. Scalars and vectors. Concurrent forces: resultant and components. Statics of particles. Moments and couples. Force system resultants. Rigid body equilibrium. Frames and machines. Internal forces. Kinematics and kinetics of particles. Conservation theorems: work-energy; impulse-momentum. Centroids and centres of gravity. Lectures three hours a week, tutorials and problem analysis three hours a week.

ECOR 1606 [0.5 credit] (formerly 91.166\*)

#### **Problem Solving and Computers**

Introduction to engineering problem solving. Defining and modeling problems, designing algorithmic solutions, converting algorithms to C++ programs, testing, debugging. Program style, documentation, reliability. Numeric methods: representation of data, rounding and truncation errors, root finding, curve fitting. Precludes additional credit for SYSC 1100 and SYSC 1102. Lectures three hours a week, laboratory one hour a week.

ECOR 2606 [0.5 credit] (formerly 91.266\*)

#### **Numerical Methods**

Numerical algorithms and tools for engineering and problem solving. Sources of error and error propagation, solution of systems of linear equations, curve fitting, polynomial interpolation and splines, numerical differentiation and integration, root finding, solution of differential equations. Software tools. Precludes additional credit for SYSC 2606.

Prerequisites: MATH 1005 and ECOR 1606.

Lectures three hours a week, laboratory one hour a week.

ECOR 3800 [0.5 credit] (formerly 91.380\*)

#### **Engineering Economics**

Introduction to engineering economics; cash flow calculations; methods of comparison of alternatives; structural analysis; replacement analysis; public projects; depreciation and income tax; effects of inflation; sensitivity analysis; break-even analysis; decision making under risk and uncertainty. Prerequisite: third-year registration.

Lectures three hours a week.

ECOR 4000 [1.0 credit] (formerly 91.400)

#### **Industrial Experience Report**

Students participating in the Industrial Experience Program must submit a formal report upon returning. This report should describe the organization in which the internship took place, the role of the student, the experience obtained and an



appraisal of the effectiveness of the training received. ECOR 4000 is a course with a 0.0 credit value and carries no weight. Grades for the course are Sat (satisfactory) or Uns (unsatisfactory). This course is extra to the degree requirements.

## English (ENGL)

Department of English Language and Literature  
Faculty of Arts and Social Sciences

ENGL 1000 [1.0 credit] (formerly 18.100)

### Survey of English Literature

A study of significant works of English literature from the fourteenth to the twentieth centuries, presented as a general historical survey.

Precludes additional credit for FYSM 1004.

Lectures three hours a week.

ENGL 1001 [1.0 credit] (formerly 18.101)

### English and Continental Texts

A study of works by English and continental writers. The list of authors to be read usually includes Dante, Boccaccio, Chaucer, Shakespeare, Byron, Flaubert, Tolstoy, Ibsen, and O'Casey. Consult the instructor or the Department for complete reading lists. The continental texts are read in translation.

Lectures three hours a week.

ENGL 1005 [1.0 credit] (formerly 18.105\*)

### Writing and Language

An introduction to the principles, styles, and structures of effective writing, including essay writing.

Precludes additional credit for FYSM 1005.

Lectures and workshop three hours a week.

ENGL 1602 [1.0 credit] (formerly 18.162)

### 20th-Century Literature

An introduction to literary study, examining the poetry, drama, and fiction of the twentieth century, against the background of the social, cultural, and artistic issues that have determined the concerns of its writers. This course or FYSM 1006 is recommended for English Honours and General students.

Precludes additional credit for FYSM 1006.

Lectures three hours a week.

ENGL 2000 [0.5 credit] (formerly 18.200\*)

### Theatre Workshop I

A course dealing with the rudiments of theatrical performance: voice, movement, improvisation, interpretation. Exercises are based upon examples drawn from the classic and contemporary repertoires.

Note: Enrolment is restricted. See Restricted-Enrolment Workshops.

Prerequisite: a 1000-level credit in English, or second-year standing.

ENGL 2001 [0.5 credit] (formerly 18.201\*)

### Theatre Workshop II

A course dealing with techniques of characterization, principles of ensemble performance, scene analysis for actors and directors, styles of performance. Exercises are based upon examples from the classic and contemporary repertoires.

Note: Enrolment is restricted. See Restricted-Enrolment Workshops.

Prerequisite: ENGL 2000, or permission of the Department.

ENGL 2003 [1.0 credit] (formerly 18.203)

### Introduction to the Novel

A historical and critical study of the novel from its beginnings in the eighteenth century to the present. Twelve to fifteen novels are studied.

Precludes additional credit for ENGL 3003.

Prerequisite: a 1000-level credit in English, or second-year standing.

Lectures three hours a week.

ENGL 2006 [1.0 credit] (formerly 18.206)

### Children's Literature

A historical and critical study of children's literature. The course introduces students to critical analysis and assessment of a number of acknowledged classics of children's literature.

Prerequisite: a 1000-level credit in English, or second-year standing.

Lectures two hours a week.

ENGL 2008 [1.0 credit] (formerly 18.208)

### Myth and Symbol

A study of myth and its appearance in literature. The course explores the great myths that gave form to man's search for meaning, and that still strike a deep response in the psyche. A wide range of texts demonstrates the nature and vitality of myth.

Prerequisite: a 1000-level credit in English, or second-year standing.

Lectures three hours a week.

ENGL 2009 [1.0 credit] (formerly 18.209)

### Greek & Latin Literary Genres

A study through English translations of the various genres of Greek and Latin literature, especially those which influenced later European writing: epic, drama, the ode, pastoral poetry, satire. (Also listed as CLCV 2009.)

ENGL 2102 [0.5 credit] (formerly 18.212\*)

### Comedy and Satire

A critical examination of the comic and satiric in English literature through a study of representative plays, novels and short stories. The theory of comedy and satire is examined in relation to the texts: types, techniques, and themes.

Precludes additional credit for ENGL 2002.

Prerequisite: a 1000-level credit in English, or second-year standing.

Lectures three hours a week.

ENGL 2105 [0.5 credit] (formerly 18.215\*)

### History of the Language

A course on the nature and development of the sounds, grammar, and spelling of the English language, together with some study of its cultural and stylistic evolution.

Precludes additional credit for ENGL 2005.

Prerequisite: a 1000-level credit in English, or second-year standing.

Lectures three hours a week.

ENGL 2107 [0.5 credit] (formerly 18.217\*)

### Science Fiction

A course concentrating on certain points of intersection between literature and science, using texts from various periods and genres.

Precludes additional credit for ENGL 2007.

Prerequisite: a 1000-level credit in English, or second-year standing.

Lectures three hours a week.

ENGL 2108 [0.5 credit]

### Women and Literature

An exploration of the representations of women and the construction of femininity in selected literary texts, the position of women as readers and authors, and the impact of feminist criticism on literary analysis.

Precludes additional credit for ENGL 2902.

Prerequisite: a 1000-level credit in English, or second-year standing.

Lectures three hours a week.

ENGL 2109 [0.5 credit]

### Gender and Literature

An investigation of how literature represents, reproduces, and resists cultural notions of gender and sexuality. Topics may include: do masculinity and femininity have a literary history, are literary genres and forms gendered, does gender influence how one reads or writes?

Precludes additional credit for ENGL 2902.

Prerequisite: a 1000-level credit in English, or second-year standing.

Lectures three hours a week.

ENGL 2300 [1.0 credit] (formerly 18.230)

### British Literature I

A study of major writers of non-dramatic literature from Chaucer to the nineteenth century.

Prerequisite: a 1000-level course in English.

Lecture three hours a week.

ENGL 2602 [0.5 credit] (formerly 18.262\*)

**Literature of Ireland**

Selected writers of modern Ireland.  
Precludes additional credit for ENGL 3602.  
Prerequisite: a 1000-level course in English, or second-year standing.  
Lecture three hours a week.

ENGL 2604 [1.0 credit] (formerly 18.264)

**Modern Drama**

The study of drama from the late nineteenth century to the present.  
Precludes additional credit for ENGL 3604.  
Prerequisite: a 1000-level credit in English, or second-year standing.  
Lectures three hours a week.

ENGL 2606 [0.5 credit] (formerly 18.266\*)

**Literature of Scotland**

Selected writers of modern Scotland.  
Precludes additional credit for ENGL 3902.  
Prerequisite: a 1000-level course in English, or second-year standing.  
Lecture three hours a week.

ENGL 2608 [1.0 credit] (formerly 18.268)

**Forms & Conventions of Cinema**

This course examines the forms, structures and stylistic conventions of the cinema. Attention is given to the development of a critical idiom suited to the description, analysis and evaluation of film. (Also listed as FILM 2608)  
Prerequisite: FILM 1000, or a 1000-level credit in English.  
Three hours lecture and screening, one hour lecture.

ENGL 2702 [1.0 credit] (formerly 18.272)

**American Literature**

An introduction to the major authors and traditions of American literature from its beginnings to the present.  
Prerequisite: a 1000-level credit in English, or second-year standing.  
Lectures three hours a week.

ENGL 2802 [1.0 credit] (formerly 18.282)

**Canadian Literature**

A survey of the development of Canadian literature in English from its nineteenth-century beginnings to the present.  
Prerequisite: a 1000-level credit in English, or second-year standing.  
Lectures three hours a week.

ENGL 2808 [1.0 credit] (formerly 18.288)

**English & French Canadian Lit.**

This course, offered by faculty from the English and French Departments, introduces and compares the two major literatures of Canada. Lectures are given in both English and French. Students are encouraged to use the French language for self-expression but need not do so. (Also listed as CDNS 2808 and FREN 2808.)  
Precludes additional credit for ENGL 1808.  
Prerequisite: a 1000-level credit in English, or second-year standing.

Lectures three hours a week.

ENGL 2900 [0.5 credit] (formerly 18.290\*)

**Literature of the Self**

A study of the forms, themes, and meaning of autobiographical literature. Attention is paid to the history of autobiographical writing and to the autobiography as a social document, but the main focus is on autobiography as part of the modern search for the self.  
Prerequisite: a 1000-level credit in English, or second-year standing.

Lectures three hours a week.

ENGL 2901 [0.5 credit] (formerly 18.291\*)

**Poetry Workshop**

A workshop involving regular assignments in writing poetry and practical criticism based on this work.  
Note: Enrolment is restricted. See Restricted-Enrolment Workshops.  
Precludes additional credit for English 18.291.

Prerequisites: a 1000-level credit in English and permission of the Department.

Workshop three hours a week.

ENGL 2903 [0.5 credit] (formerly 18.293\*)

**Fiction Workshop**

A workshop involving regular assignments in writing prose fiction and practical criticism based on this work.

Note: Enrolment is restricted. See Restricted-Enrolment Workshops.  
Precludes additional credit for English 18.293.

Prerequisites: a 1000-level credit in English and permission of the Department.

Workshop three hours a week.

ENGL 2904 [1.0 credit] (formerly 18.294)

**Drama to the 19th Century**

A study of selected significant plays from the classical to the modern period of world drama, including classical, medieval, renaissance, Restoration, and modern drama.

Precludes additional credit for ENGL 3004.

Prerequisite: a 1000-level credit in English, or second-year standing.

Lectures three hours a week.

ENGL 2905 [0.5 credit] (formerly 18.295\*)

**The English Language**

The sound system, vocabulary, syntax, and grammar of English.

Prerequisite: second-year standing.

Lectures three hours a week.

ENGL 2906 [0.5 credit] (formerly 18.296\*)

**Culture and Society**

A study of literature in relation to its social and political contexts. The roles adopted by the writer in society will also be considered. Texts are chosen primarily from the 19th and 20th century.

Precludes additional credit for English 18.296.

Prerequisite: a 1000-level credit in English, or second-year standing.

Lectures three hours a week.

ENGL 2907 [1.0 credit] (formerly 18.297)

**Writing: Theory and Practice**

The process of writing in theory and practice. Readings and discussions focus on the nature of the composing process; the development of writing abilities from the elementary years to maturity; the interrelationships between thinking and writing; strategies for encouraging growth in writing. (Also listed as LALS 3400.)

Precludes additional credit for LALS 2407.

Prerequisite: second-year standing, or enrolment in either of the Certificate in English Language and Composition program or CTESL program.

ENGL 3000 [1.0 credit] (formerly 18.300)

**History of Literary Theory**

Problems and questions in literary criticism.

Prerequisite: ENGL 2300, or permission of the Department.

Lectures three hours a week.

ENGL 3002 [0.5 credit] (formerly 18.302\*)

**Contemporary Literary Theory**

An introduction to contemporary approaches to literary texts, such as formalist, structuralist, deconstructive, psychoanalytic, Marxist, historicist, and feminist. Topics considered may include: the nature and role of literature, of author and reader, of canons, ideology, gender, sexuality, and race. Precludes additional credit for ENGL 3002.

Prerequisite: third-year standing, or permission of the Department.

Lectures three hours a week.

ENGL 3005 [0.5 credit] (formerly 18.305\*)

**Style, Imagination, & Judgment**

An examination of the nature of good and bad writing. The category of imagination as a criterion for judging prose. Conditions favourable to the production of good writing. The cultural effects of bad writing.

Precludes additional credit for ENGL 3005.

Prerequisite: A 1000-level course in English and second-year standing.

Lectures three hours a week.

ENGL 3102 [0.5 credit] (formerly 18.312\*)

**Old English**

A study of Old English language and literature, including grammar and phonology, and translation of selections of Old English prose and poetry.

Precludes additional credit for ENGL 3102.

Prerequisite: a 1000-level credit in English, or permission of the Department.

Lectures three hours a week.

ENGL 3202 [0.5 credit] (formerly 18.322\*)

**Chaucer**

A study of Chaucer's works and of the English language and literature between the Norman Conquest and the fifteenth century.

Precludes additional credit for ENGL 3202.

Prerequisite: ENGL 2300 or permission of the Department.

Lectures three hours a week.

ENGL 3300 [1.0 credit] (formerly 18.330)

**British Literature: 16C-19C**

A study of major authors from the Early Renaissance to the Romantics.

Precludes additional credit for ENGL 2300.

Prerequisite: Enrolment in the B. Humanities program.

Lecture and seminar three hours a week.

ENGL 3302 [0.5 credit] (formerly 18.332\*)

**Renaissance Literature**

A study of the great age of English literature. Selected Poetry and/or prose from Wyatt and More to Donne and Milton is studied. Precludes additional credit for ENGL 3302, ENGL 3307 and ENGL 3308.

Prerequisite: ENGL 2300, or permission of the Department.

Lectures three hours a week.

ENGL 3304 [1.0 credit] (formerly 18.334)

**Shakespeare**

Selected plays by Shakespeare and his contemporaries.

Precludes additional credit for ENGL 2306.

Prerequisites: a 1000-level course in English and second-year standing, or permission of the Department.

Lecture three hours a week.

ENGL 3402 [0.5 credit] (formerly 18.342\*)

**18th-Century Literature**

A detailed study of authors and movements of the period 1660 to 1780.

Precludes additional credit for ENGL 2402 and ENGL 3402.

Prerequisite: ENGL 2300, or permission of the Department.

Lectures three hours a week.

ENGL 3502 [1.0 credit] (formerly 18.352\*)

**British Literature II**

A study of major writers of the nineteenth century.

Prerequisite: ENGL 2300, or permission of the Department.

Lectures three hours a week.

ENGL 3503 [0.5 credit] (formerly 18.353\*)

**The Novel: Dickens to Conrad**

A study of the English novel from the High Victorian period of Dickens, Thackeray, and Eliot to World War I.

Precludes additional credit for ENGL 2503 and ENGL 3503.

Prerequisites: third-year standing and a 1000-level credit in English, or permission of the Department.

Lectures three hours a week.

ENGL 3601 [0.5 credit] (formerly 18.361\*)

**20th-Century British Poetry**

A course in twentieth-century British Poetry.

Precludes additional credit for ENGL 3601.

Prerequisites: third-year standing and a 1000-level credit in English, or permission of the Department.

Lectures three hours a week.

ENGL 3603 [0.5 credit] (formerly 18.363\*)

**20th-Century British Fiction**

A study of twentieth-century British fiction.

Precludes additional credit for ENGL 3603.

Prerequisites: third-year standing and a 1000-level credit in

English, or permission of the Department.

Lectures three hours a week.

ENGL 3701 [0.5 credit] (formerly 18.371\*)

**American Poetry**

A study of American poetry.

Precludes additional credit for ENGL 3701.

Prerequisites: third-year standing and a 1000-level credit in English, or permission of the Department.

Lectures three hours a week.

ENGL 3703 [0.5 credit] (formerly 18.373\*)

**American Fiction**

A study of American fiction.

Precludes additional credit for ENGL 3703.

Prerequisites: third-year standing and a 1000-level credit in English, or permission of the Department.

Lectures three hours a week.

ENGL 3801 [0.5 credit] (formerly 18.381\*)

**Canadian Poetry**

A study of Canadian poetry.

Precludes additional credit for ENGL 3801.

Prerequisite: ENGL 2802, or permission of the Department.

Seminar two hours a week.

ENGL 3803 [0.5 credit] (formerly 18.383\*)

**Canadian Fiction**

A study of Canadian fiction.

Precludes additional credit for ENGL 3803.

Prerequisite: ENGL 2802, or permission of the Department.

Seminar three hours a week.

**Topics or courses at the 4000-level change from year to year. Consult the English Department's Undergraduate Studies in English Course Guide for topics offered in 2002/2003. The guide is available from the Department of English after June 1 or on the Web at [www.carleton.ca](http://www.carleton.ca).**

ENGL 4000 [0.5 credit] (formerly 18.400\*)

**Studies in Literary Theory**

This seminar is a study of a selected topic in literary theory and criticism.

Precludes additional credit for ENGL 4000.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4001 [0.5 credit] (formerly 18.401\*)

**Studies in Poetry**

A study of a selected topic in poetry.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4003 [0.5 credit] (formerly 18.403\*)

**Studies in the Novel**

A seminar for the study and discussion of the art of the novel as exemplified by major works of fiction. Study includes varieties of form and pattern, modes of narration, imagery and symbolism, realism, and naturalism.

Precludes additional credit for English 18.403.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4208 [0.5 credit] (formerly 18.428\*)

**Studies in Medieval Lit.**

A study of a selected topic in Medieval literature.

Prerequisites: ENGL 3202 and fourth-year standing in Honours English or permission of the Department.

Seminar.

ENGL 4301 [0.5 credit] (formerly 18.431\*)

**Studies in Renaissance Lit.**

A study of a selected topic in Renaissance literature.

Prerequisite: fourth-year standing in Honours English; or permission of the Department.

Seminar.



ENGL 4306 [0.5 credit] (formerly 18.436\*)

**Studies in Shakespeare**

A seminar for Honours students, concentrating on critical and scholarly approaches to Shakespeare's work.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.  
Seminar.

ENGL 4401 [0.5 credit] (formerly 18.441\*)

**Studies in 18th-Century Lit.**

A study of a selected topic in Restoration or Eighteenth-Century literature.

Prerequisite: fourth-year standing in Honours English or permission of the Department.  
Seminar.

ENGL 4407 [0.5 credit] (formerly 18.447\*)

**Studies in Romantic Lit.**

A study of a selected topic in Romantic literature.

Precludes additional credit for English 184408 (if taken between 1990-94).

Prerequisite: fourth-year standing in Honours English or permission of the Department.  
Seminar.

ENGL 4501 [0.5 credit] (formerly 18.451\*)

**Studies in Victorian Lit. I**

A study of a selected topic in Victorian Literature.

Prerequisite: fourth-year standing in Honours English or permission of the Department.

Seminar.

ENGL 4502 [0.5 credit] (formerly 18.452\*)

**Studies in Victorian Lit. II**

A study of a selected topic in Victorian Literature.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4607 [0.5 credit] (formerly 18.467)

**Studies in 20th-Century Lit.**

A study of a selected topic in literature of the twentieth century.

Prerequisite: fourth-year standing in Honours English or permission of the Department.

Seminar.

ENGL 4608 [0.5 credit] (formerly 18.468)

**Studies in 20th-C British Lit.**

A study of a selected topic in British literature of the twentieth century.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4708 [0.5 credit] (formerly 18.478)

**Studies in American Lit. I**

A study of a selected topic in American literature.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4709 [0.5 credit] (formerly 18.479)

**Studies in American Lit. II**

A study of a selected topic in American literature.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4802 [0.5 credit] (formerly 18.482)

**Canadian Ethnic Minority Lit.**

A study of selected works by Canadian ethnic minority writers. Precludes additional credit for ENGL 4802.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4803 [0.5 credit] (formerly 18.483)

**English & French Canadian Lit.**

A study of selected works of the literatures of Quebec and English Canada.

Prerequisites: fourth-year standing in Honours English, or

permission of the Department.

Seminar.

ENGL 4806 [0.5 credit] (formerly 18.486)

**Studies in Canadian Lit.**

A study of a selected topic in Canadian literature.

Prerequisite: fourth-year standing in Honours English or permission of the Department.

Seminar.

ENGL 4808 [0.5 credit] (formerly 18.488)

**First Nations Literatures I**

This course examines the dominant discourse about native people in Canadian writing and the literatures produced by storytellers and writers of the First Nations. The focus is on the oral tradition, work produced prior to contact, until the modern post-contact period.

Precludes additional credit for ENGL 4808.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4809 [0.5 credit] (formerly 18.489)

**First Nations Literatures II**

This course focuses solely on the contemporary period of First Nations literature in Canada. It will examine both historical and mythic influences on this literature.

Precludes additional credit for ENGL 4808.

Prerequisite: fourth-year standing in Honours English, or Permission of the Department.

Seminar.

ENGL 4900 [0.5 credit] (formerly 18.490)

**Culture & the Text I**

A course in applied literary theory.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4901 [0.5 credit] (formerly 18.491)

**Culture & the Text II**

A course in applied literary theory.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4902 [0.5 credit] (formerly 18.492)

**Culture & the Text III**

A course in applied literary theory.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4903 [0.5 credit] (formerly 18.493)

**Culture & the Text IV**

A course in applied literary theory.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4905 [0.5 credit] (formerly 18.495)

**English and Education**

The implications of the study of language, rhetoric, composition, and the literary imagination for the teaching of English.

Precludes additional credit for ENGL 4905.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4906 [0.5 credit] (formerly 18.496)

**World Literature I**

A study of a selected topic in African or Caribbean literature.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.

Seminar.

ENGL 4907 [0.5 credit] (formerly 18.497)

**World Literature II**

A study of a selected topic in Australian and New Zealand literature or Indian literature in English.

Prerequisite: fourth-year standing in Honours English, or permission of the Department.  
Seminar.

ENGL 4908 [1.0 credit] (formerly 18.498)

### **Independent Study**

A course for independent research and writing, under the supervision of a member of the Department, open to students in the fourth year of Honours with an A- standing in their English courses. An essay of approximately 10,000 words is the usual written assignment. A written request, outlining the project, with the approval of the supervisor, must be submitted to the co-ordinator by the last day for course changes.

Note: This course may be used to fulfil one of the seminar or 4000-level requirements for the Honours degree, but it cannot normally substitute for ENGL 2300, ENGL 3304 or ENGL 3502. For students in Combined Honours, however, it is considered the equivalent of an Honours Essay.

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## **English as a Second Language (ESL) (ESLA)**

School of Linguistics and Applied  
Language Studies  
Faculty of Arts and Social Sciences

ESLA 1300 [1.0 credit] (formerly 21.130)

### **Introductory English as a Second Language for Academic Purposes**

Skills and strategies in ESL for students with little or no experience with academic English. General proficiency development. Integrated language skills and strategies for academic success at university.

Prerequisite: Placement by the Canadian Academic English Language Assessment.

Nine hours a week (one term).

ESLA 1500 [1.0 credit] (formerly 21.150)

### **Intermediate English as a Second Language for Academic Purposes**

Skills and strategies in ESL for students with basic grammatical and oral competence but limited experience with academic English. Focus on reading, listening and writing. Introduction to research skills.

Prerequisite: ESLA 1300 or placement by the Canadian Academic English Language Assessment.

Six hours a week (one term).

ESLA 1900 [1.0 credit] (formerly 21.190)

### **Advanced English as a Second Language for Academic Purposes**

Development of research and analytic skills, primarily through reading and writing of academically-oriented texts.

Prerequisite: Grade of C or better in ESLA 1500 or placement by the Canadian Academic English Language Assessment.

Six hours a week (one term).

ESLA 1905 [1.0 credit] (formerly 21.195)

### **Advanced English as a Second Language for Engineering Students**

Development of technical communication skills specific to Engineering and Industrial Design: reports, design projects, oral presentations.

Prerequisite: Grade of C or better in ESLA 1500 or placement by the Canadian Academic English Language Assessment.

Three hours a week (two terms).

ESLA 1906 [0.5 credit] (formerly 21.196)

### **Advanced Writing for English as a Second Language**

Strategies for writing academic papers and professional text.

Three hours a week (one term).

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## **Environmental Engineering (ENVE)**

Department of Civil and Environmental Engineering  
Faculty of Engineering

ENVE 2001 [0.5 credit] (formerly 81.201\*)

### **Process Analysis for Environmental Engineering**

Material and energy balances for reacting and non-reacting systems. Applications in mining, metallurgy, pulp and paper, power generation, energy utilization. Emissions to the environment per unit product or service generated. Introduction to life cycle analysis, comparative products and processes.

Prerequisites: CHEM 1000 or CHEM 1101 or equivalent, and MAAE 2400, or approval of the Department.

Lectures two hours a week, problem analysis three hours a week.

ENVE 2002 [0.5 credit] (formerly 81.202\*)

### **Microbiology**

The biology of the Bacteria, Archaea, Viruses and Protozoans, from the fundamentals of cell chemistry, molecular biology, structure and function, to their involvement in ecological and industrial processes and human disease. (Also listed as BIOL 2303) Precludes additional credit for BIOL 3301.

Prerequisite: BIOL 1003 or CHEM 1000 or CHEM 1101 or equivalent.

Lectures three hours a week.

ENVE 3001 [0.5 credit] (formerly 81.301\*)

### **Environmental Engineering Unit Operations**

Dimensional analysis and dimensionless numbers; agitation and mixing of fluids; flow past particles, drag coefficients, settling classification; filtration and other mechanical separations; heat transfer, individual and overall coefficients; mass transfer, individual and overall coefficients; absorption and leaching; membrane separations. Laboratory procedures: settling operations, filtration, aeration.

Prerequisite: MAAE 2300.

Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 3002 [0.5 credit] (formerly 81.302\*)

### **Environmental Engineering Systems Modeling**

Engineered systems for pollution abatement; chemical reaction engineering; reaction kinetics and rate data analysis; design and modeling of reactors; single and multiple reactions; ideal and nonideal reactors; single and multi-parameter models; biochemical reaction engineering; process control. Laboratory procedures: reactor systems performance: Batch, CSTR and PFR. Prerequisites: CHEM 1000 or CHEM 1101 or equivalent, MATH 2004, ENVE 2001.

Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 3003 [0.5 credit] (formerly 81.303\*)

### **Water Resources Engineering**

A quantitative analysis of natural water systems and the development of these systems as a resource. Components of the hydrologic cycle. Quantitative analysis of stream flow. Probability concepts in water resources. Reservoir design and operation. Availability of groundwater. Storm water management.

Prerequisites: CIVE 3208 (concurrent) and MAAE 2300, or permission of the Department.

Lectures three hours a week, problem analysis one hour a week.

ENVE 3004 [0.5 credit] (formerly 81.304\*)

### **Contaminant and Pollutant Transport in the Environment**

Physical phenomenon governing the transport of contaminants in the environment: diffusion, advection, dispersion, sorption, interphase transfer. Derivation and application of transport equations in air, surface and groundwater pollution; analytical and numerical solutions. Equilibrium partitioning of contaminants among air, water, sediment, and biota.

Prerequisites: CHEM 2800, ENVE 3002.

Lectures three hours a week, problem analysis one hour a week.

ENVE 4002 [0.5 credit] (formerly 81.402\*)

**Environmental Geotechnical Engineering**

Landfill design; hydrogeologic principles, water budget, landfill liners, geosynthetics, landfill covers, quality control/quality assurance, clay leachate interaction, composite liner design and leak detection. Landfill operation, maintenance and monitoring. Case studies of landfill design and performance. Geotechnical design of environmental control and containment systems.

Prerequisites: ENVE 3004, CIVE 3208.

Lectures three hours a week, problem analysis one hour a week.

ENVE 4003 [0.5 credit] (formerly 81.403\*)

**Air Pollution and Emissions Control**

Sources and classification of air pollutants. Ambient air quality objectives and monitoring. Stoichiometric, thermodynamic, kinetic considerations in combustion. Particulates. Control and measurement of emissions from mobile and stationary sources. Indoor air quality. Laboratory procedures: emissions from boilers and IC engines, particulate size distribution and control.

Prerequisites: CHEM 2800, MAAE 2300, MAAE 2400.

Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 4005 [0.5 credit] (formerly 81.405\*)

**Environmental Engineering Unit Processes**

Chemical treatment methods, biological waste water treatment, and sludge management. Removal of trace organics/hazardous substances. Nutrient removal. Laboratory procedures: Activated sludge, anaerobic growth, chemical precipitation, chlorination.

Prerequisites: ENVE 2002, ENVE 3001, ENVE 3002.

Lectures three hours a week, problem analysis one hour a week, laboratory three hours alternate weeks.

ENVE 4006 [0.5 credit] (formerly 81.406\*)

**Hydrogeology and Groundwater Flow**

Theory of flow through porous media; soil characterization, soil properties, anisotropy, heterogeneity. Contaminant transport. Unsaturated and multiphase flow. Flow in fractured media. Numerical modeling; finite differences, finite elements, boundary conditions. Site remediation and remediation technologies. Case studies and parameter sensitivity.

Prerequisites: ENVE 3004 and CIVE 3208.

Lectures three hours a week, problem analysis three hours alternate weeks.

ENVE 4101 [0.5 credit] (formerly 81.411\*)

**Waste Management**

A systematic analysis of issues dealing with solid and hazardous waste management. Waste definitions and description, collection and transportation, prevention and diversion, treatment technologies, landfilling, thermal processes.

Precludes additional credit for ENVE 4001 and ENVE 4007.

Prerequisites: ENVE 3001, ENVE 3002 and ENVE 3004.

Lectures three hours a week, problem analysis one hour a week.

ENVE 4104 [0.5 credit] (formerly 81.414\*)

**Environmental Planning and Impact Assessment**

Environmental planning and management of residuals. Environmental standards and marketable rights. Risk Assessment, policy development and decision-making. Fault-tree analysis. Canada and U.S environmental regulations. Framework for Environmental Impact Assessment, survey of techniques for impact assessment and EIA review process. Case studies of selected engineering projects.

Precludes additional credit for ENVE 4004 and ENVE 4008.

Prerequisite: fourth-year registration in the Environmental Engineering program.

Lectures three hours a week, problem analysis three hours alternate weeks.

ENVE 4907 [1.0 credit] (formerly 81.497)

**Engineering Project**

A major project in engineering analysis, design, development or research carried out by individual students or small teams. The objective is to provide an opportunity to develop initiative, self-reliance, creative ability and engineering judgment. A project proposal, an interim report, an oral presentation, and a comprehensive final report are required.

ENVE 4908 [0.5 credit] (formerly 81.498\*)

**Design Project**

Teams of students develop professional level experience through a design project that incorporates fundamentals acquired in previous mathematics, science, engineering, and complementary studies courses. A final report and oral presentations are required.

Prerequisite: fourth-year registration.

Lectures one hour a week, problem analysis seven hours a week.

## Environmental Science (ENSC)

Institute of Environmental Science

Faculty of Science

ENSC 1500 [0.5 credit] (formerly 62.150\*)

**Environmental Science Seminar**

The purpose and nature of the program; society's view on the natural and human-modified environment; major environmental issues and their scientific aspects; preparation and presentation of paper and seminars.

Prerequisite: registration in the Environmental Science Program.

Lectures, seminars and workshops four hours a week.

ENSC 2909 [0.5 credit]

**Co-operative Work Term Report 1**

This course provides practical experience for students enrolled in the Co-operative Option. To receive course credit a student must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.

Prerequisites: Registration in the Environmental Science Co-operative Option and permission of the Department. Four-month work term.

ENSC 3509 [0.5 credit] (formerly 62.359\*)

**Group Project**

Major project relating to an issue involving environmental science; effective methods of team research and presentation of group work.

Prerequisite: registration in third year of the Environmental Science program or permission of the Program Director.

Lectures, seminars and workshops three hours a week.

ENSC 3906 [0.5 credit] (formerly 62.396\*)

**Research Planning**

Assists students in preparing a research plan and proposal for their fourth year Honours project; discussion and workshop experience in the fundamentals of scientific investigation, including use of literature, theory and data, preparation and evaluation of a scientific research proposal.

Prerequisite: registration in third year of the Environmental Science program, or an Honours Science program with permission of the Program Director.

Discussion groups and workshops three hours a week.

ENSC 3909 [0.5 credit]

**Co-operative Work Term Report 2**

This course provides practical experience for students enrolled in the Co-operative Option. To receive course credit a student must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.

Prerequisites: Registration in the Environmental Science Co-operative Option and permission of the Department. Four-month work term.

ENSC 4001 [0.5 credit] (formerly 62.401\*)

**Environmental Science Practicum**

Experience in an external agency setting, translating the academic dimension into practical involvement with environmental issues. Requires a final report integrating the placement experience with the student's background knowledge. Graded Sat/Uns.

Prerequisite: registration in fourth year of the Environmental Science program.



ENSC 4700 [0.5 credit] (formerly 62.470\*)

**Topics in Environmental Science**

Prerequisite: third-year standing.

Lectures and discussion three hours a week

ENSC 4906 [1.0 credit] (formerly 62.496)

**Honours Research Project**

An independent investigation into an aspect of environmental science supervised by a member of the faculty. Approval of the topic and the research schedule must be obtained from the project supervisor and the program director before the last date for late registration.

Prerequisite: registration in fourth year of the Environmental Science program and permission of the Program Director.

ENSC 4909 [0.5 credit]

**Co-operative Work Term Report 3**

This course provides practical experience for students enrolled in the Co-operative Option. To receive course credit a student must receive satisfactory evaluations from their work term employer. Written reports describing the work term project will be required. Graded Sat or Uns.

Prerequisites: Registration in the Environmental Science Co-operative Option and permission of the Department. Four-month work term.

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## Environmental Studies (ENST)

Department of Geography and Environmental Studies  
Faculty of Arts and Social Sciences

ENST 1001 [1.0 credit]

**Geography and the Environment**

Human activity and the physical environment and links between them. Social, economic, cultural, and political forces shaping human activity at scales ranging from local to global. Methods of collecting and interpreting geographic information. (Also listed as GEOG 1001.)

Lectures two hours a week and workshops/discussions one hour a week.

ENST 2000 [0.5 credit] (formerly 57.200\*)

**Nature and Environment**

Conceptual and practical approaches to understanding nature and the environment, involving descriptive, analytic, investigative and experiential methods. Through reading, participation, research and writing, students should demonstrate an ability to integrate various approaches to environmental awareness and analysis.

Precludes additional credit for IASS 2000.

Prerequisite: second-year standing in the Environmental Studies program or permission of the Environmental Studies Co-ordinator.

Lectures, seminars and field work three hours a week.

ENST 2900 [0.5 credit] (formerly 57.290\*)

**Intensive Field Course**

Training in specific fields of research or practice related to careers in Environmental Studies. Such training could include environmental education, environmental auditing, environmental assessment, or living resource inventories, for example. Specific topics may change from year to year.

Prerequisite: second-year standing or higher in Environmental Studies, and permission of the Environmental Studies Co-ordinator.

Field work for one week (36 contact hours).

ENST 3000 [0.5 credit] (formerly 57.300\*)

**Environmental Studies Colloquium**

Interactions among complex natural systems, social values and attitudes and economic, political and legal concerns are explored through invited speakers from various disciplines and agencies addressing specific environmental issues.

Precludes additional credit for IASS 3000.

Prerequisite: third-year standing in Environmental Studies or permission of the Environmental Studies Co-ordinator.

ENST 4000 [0.5 credit] (formerly 57.400\*)

**Environmental Studies Seminar**

How societal institutions respond to environmental concerns, how various stakeholders understand the environment and how environmental priorities may be reflected in social, political and economic decision-making. Interdisciplinary case studies are used. Precludes additional credit for IASS 4000.

Prerequisite: registration is restricted to students eligible for fourth-year standing in the B.A. (Environmental Studies) Honours program.

ENST 4001 [0.5 credit] (formerly 57.401\*)

**Environmental Studies Practicum I**

External agency setting provides the basis for translating academic training into practical involvement with environmental issues. Final report which integrates the placement experience with the student's background knowledge is required. Graded Sat/Uns.

Precludes additional credit for IASS 4001.

Prerequisite: registration is restricted to students eligible for fourth-year standing in the B.A. (Environmental Studies) Honours program, and permission of the Environmental Studies Co-ordinator.

ENST 4002 [0.5 credit] (formerly 57.402\*)

**Environmental Studies Practicum II**

External agency setting provides the basis for translating academic training into practical involvement with environmental issues. A final report integrating the placement experience with the student's background knowledge is required. Graded Sat/Uns.

Precludes additional credit for IASS 4002.

Prerequisite: Restricted to students in the Fourth-year of the Environmental Studies Honours program, and permission of the Environmental Studies Co-ordinator.

ENST 4907 [1.0 credit] (formerly 57.497)

**Honours Essay in Environmental Studies**

Interdisciplinary research essay on an environmental issue, carried out in consultation with a faculty supervisor. The student must consult with the Environmental Studies Co-ordinator in selecting a project and a supervisor.

Precludes additional credit for IASS 4907.

Prerequisite: registration is restricted to students eligible for fourth-year standing in the B.A. (Environmental Studies) Honours program.

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## European and Russian Studies (EURR)

Institute of European and Russian Studies  
Faculty of Public Affairs and Management

EURR 1103 [0.5 credit] (formerly 55.113\*)

**Social Impact of Transformation in the Post-Communist Era**

Political, economic and social changes that have accompanied the collapse of the Berlin Wall. The role of the society in these political upheavals and the impact of the end of the Cold War on reform in Western and developing countries. (Also listed as PSCI 1103.)

Precludes additional credit for FYSM 1002 and FYSM 1303.

Lecture and discussion three hours a week.

EURR 2000 [1.0 credit] (formerly 55.200)

**Literature and Culture in Europe**

A survey of the literature and cultural texts that have defined Europe. Examination of fiction and non-fiction texts that have contributed to and reflected the development of European culture and society.

Lecture and discussion three hours a week.

EURR 4002 [0.5 credits] (formerly 55.402\*)

**State-Society Relations in Transition**

The relationship between social forces and state structures at both the national and local levels in the USSR and the post-communist states. Also offered at the graduate level, with

additional or different requirements, as EURR 5002, for which additional credit is precluded.

Precludes additional credit for 55.491\* (if taken in 1998-99).  
Prerequisite: fourth-year standing and one of the following: PSCI 3208 or PSCI 3209 or PSCI 3704 or HIST 3600, or permission of the Institute.

Seminar three hours a week.

EURR 4003 [0.5 credit] (formerly 55.403\*)

**Social and Political Perspectives in Europe**

The emergence of a European polity, identity and culture. Examination of whether "Europe" as a defined entity exists and the ways in which we may try to understand its evolution. Also offered at the graduate level with additional or different requirements, as EURR 5003, for which additional credit is precluded.

Precludes additional credit for EURR 4000.

Prerequisite: EURR 2000 or PSCI 3207, or another 3000-level course in European politics or history, or permission of the Institute.

Seminar three hours a week.

EURR 4005 [0.5 credit] (formerly 55.405\*)

**Environmental Problems and Politics in East/Central Europe and Eurasia**

Nature, origins and policy responses viewed from economic, political, and geographic perspectives. Also offered at the graduate level, with additional or different requirements, as EURR 5005, for which additional credit is precluded.

Prerequisite: a previous course on the region or on environmental issues, or permission of the Institute.

Seminar three hours a week.

EURR 4006 [0.5 credit] (formerly 55.406\*)

**The Business Environment in East/Central Europe and the Soviet Successor States**

Economic and legal environment in which new businesses are emerging in the region and the practical problems which face them. Regulatory structures, patterns or foreign trade, market characteristics, scientific and technological base and business culture. (Also listed as BUSI 4604.)

Prerequisite: ECON 3700 or BUSI 3601, or permission of the Institute.

Seminar three hours a week.

EURR 4007 [0.5 credit] (formerly 55.407\*)

**Social and Political Discourse in Russia**

Contemporary social and political issues covered in Russian-language media. Most course readings and instruction in Russian, but student participation may be in English and Russian. Also offered at the graduate level, with additional or different requirements, as EURR 5007, for which additional credit is precluded.

Prerequisites: Appropriate facility in the Russian language and permission of the Institute.

Seminar three hours a week.

EURR 4008 [0.5 credit] (formerly 55.408\*)

**Nationalism and Ethnic Conflict in Eastern and Central Europe**

Ethnic basis of nationalism in the region. Ethnic politics and trends. Also offered at the graduate level with additional or different requirements, as EURR 5008, for which additional credit is precluded.

Precludes additional credit for 55.401\* or 55.404\* (if taken before 1995-96).

Prerequisite: permission of the Institute.

Seminar three hours a week.

EURR 4100 [0.5 credit] (formerly 55.410\*)

**Nation-Building in Central and Eastern Europe**

Processes of nation building in the region examined in terms of a particular country, or set of countries. Also offered at the graduate level, with additional or different requirements, as EURR 5100, for which additional credit is precluded.

Prerequisite: PSCI 3704 or PSCI 3705, or PSCI 3208, or PSCI 3209 or HIST 3600; or permission of the Institute.

Seminar three hours a week.

EURR 4101 [0.5 credit] (formerly 55.411\*)

**The Balkans**

Differing paths of transition from communist rule. Sources of friction and conflict in the region. Emphasis on the Yugoslav crisis and its extra-regional dimensions.

Prerequisites: PSCI 3704 or PSCI 3208 or PSCI 3209, or HIST 3509, or HIST 3600; or permission of the Institute.

Seminar three hours a week.

EURR 4104 [0.5 credit] (formerly 55.414\*)

**European Integration and European Security**

Issues related to the formation of supra-national decision-making structures in Europe. Also offered at the graduate level, with additional or different requirements, as EURR 5104, for which additional credit is precluded. (Also listed as PSCI 4608.)

Prerequisite: fourth-year standing or permission of the Institute.

Seminar three hours a week.

EURR 4106 [0.5 credit] (formerly 55.416\*)

**Selected Topics in European Integration Studies**

Selected topics related to European integration in the post-World War II period. (Also listed as PSCI 4609.)

Prerequisite: fourth-year standing or permission of the Institute.

Seminar three hours a week.

EURR 4107 [0.5 credit]

**Russia and the New World Order, 1992 to the Present**

An examination of how the Russia Federation has sought a place for itself in the world order since the collapse of the USSR up until the present. Also offered at the graduate level, with different requirements, as EURR 5107, for which additional credit is precluded.

Prerequisite: fourth-year standing or permission of the Institute.

Seminar three hours a week.

EURR 4900 [1.0 credit] (formerly 55.490)

**Tutorial in European and Russian Studies**

Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor.

Prerequisite: permission of the Institute.

EURR 4901 [0.5 credit] (formerly 55.491\*)

**Tutorial in European and Russian Studies**

Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor.

Prerequisite: permission of the Institute.

EURR 4902 [0.5 credit] (formerly 55.492\*)

**Tutorial in European and Russian Studies**

Tutorials or reading courses on selected topics may be arranged with the permission of the Institute and agreement of the instructor.

Prerequisite: permission of the Institute.

EURR 4908 [1.0 credit] (formerly 55.498)

**Honours Essay**

Topic and faculty supervisor to be selected in consultation with Honours Adviser. Oral defense of essay is required.

Prerequisites: fourth-year standing, a GPA of 9.00 or better in courses qualifying for credit in European and Russian Studies, and permission of the Institute.

## Film Studies (FILM)

School for Studies in Art and Culture  
Faculty of Arts and Social Sciences

FILM 1000 [1.0 credit] (formerly 19.100)

**Introduction to Film Studies**

Introduction to the study of film that considers the nature of the medium, audience perception, historical and technical development of the cinema, and problems of theory and critical method. Focus on style and techniques; a period of film history; the filmmaker; and film genres.

Lecture and screening three hours a week, discussion one hour a week.

FILM 2000 [1.0 credit] (formerly 19.200)

**Film Theory, Historiography and Criticism**

Basic questions of film theory, historiography and criticism. Emphasis on developing critical skills through a close analysis of films, theoretical and historiographical writings.

Prerequisites: FILM 1000 and second-year standing; or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2101 [0.5 credit] (formerly 19.211\*)

**The Film Industry**

The organization of the production, distribution and exhibition practices of various film industries. May include an examination of the relationship between a national film industry and its television industry.

Prerequisite: FILM 1000 or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2106 [0.5 credit] (formerly 19.216\*)

**The Documentary**

An examination of the work of individual filmmakers, of documentary styles and of organizations and institutions in the context of the history of documentary film making, including documentaries made for television. Non-fiction films other than documentaries may be considered. (Also listed as JOUR 2106.) Precludes additional credit for FILM 2105 (JOUR 2105).

Prerequisite: FILM 1000 or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2201 [0.5 credit] (formerly 19.221\*)

**National Cinema**

This course examines the film production of specific countries in order to determine the themes, the styles, and the character of a national cinema.

Prerequisite: FILM 1000.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2209 [1.0 credit] (formerly 19.229)

**The Canadian Cinema**

A critical examination of Canadian cinema. The course relates the Canadian cinema to other aspects of Canadian culture, including television, and examines the conditions that have affected filmmaking in this country.

Precludes additional credit for FILM 3208.

Prerequisite: second-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2401 [0.5 credit] (formerly 19.241\*)

**The Film Maker**

A detailed study of the themes, the characteristic style, development and influence of one or more directors.

Prerequisite: FILM 1000.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2601 [0.5 credit] (formerly 19.261\*)

**Film Genres**

This course examines questions of generic form, drawing examples from world cinema.

Prerequisite: FILM 1000.

Lecture and screening three hours a week, lecture one hour a week.

FILM 2608 [1.0 credit] (formerly 19.268)

**Forms and Conventions of the Cinema**

A history of cinema that will examine the forms, structures and stylistic conventions of world cinema. Attention is given to the development of a critical idiom suited to the description, analysis, and evaluation of film. (Also listed as ENGL 2608.)

Prerequisite: FILM 1000 or a 1000-level course in English.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3105 [0.5 credit] (formerly 19.315\*)

**Questions of Documentary Practice**

Theoretical implications of documentary film and documentary television practice. (Also listed as JOUR 3105.)

Prerequisite: at least 1.0 credit in Film Studies at the 2000-level and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3205 [1.0 credit] (formerly 19.325\*)

**Studies in American Cinema**

Focus on features such as the major production companies, the star system, genres, film style, and the role of the individual filmmaker. The course may also examine the relationship between cinema and television.

Precludes additional credit for FILM 2208.

Prerequisite: 1.0 credit in Film Studies at the 2000-level, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3209 [0.5 credit] (formerly 19.329\*)

**Topics in Canadian Cinema**

Studies in various aspects of Canadian cinema. Topics may vary from year to year.

Precludes additional credit for FILM 3208.

Prerequisite: at least 1.0 credit in Film Studies at the 2000-level and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3301 [0.5 credit] (formerly 19.331\*)

**Topics in Cinema and Gender**

A study of selected topics in gender and cinema with emphasis on critical and historical questions.

Prerequisite: at least 1.0 credit in Film Studies at the 2000-level and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3303 [1.0 credit] (formerly 19.333)

**Film and Society**

An examination of film in relation to social and intellectual developments of the twentieth century. The ways in which the cinema has both shaped and been shaped by some of these developments are considered. (Also listed as JOUR 3303.)

Prerequisite: at least 1.0 credit in Film Studies and third-year standing, or permission of the Discipline or the School.

Lecture and screening three hours a week, lecture one hour a week.

FILM 3402 [0.5 credit] (formerly 19.342\*)

**Film Music**

The use of music in film, from the silent era to the present day. Techniques, styles and theory of film music through the examination of selected films. (Also listed as MUSI 3402.)

Lectures three hours a week, screening two hours a week.

FILM 3505 [1.0 credit] (formerly 19.355)

**Aspects of Film History and Theory**

This course provides an advanced study of issues of film theory and film historiography. It offers a detailed inquiry into major film theories, examines issues of argument and evidence specific to film-historical inquiry, and investigates shared concerns between film theory and film history.

Precludes additional credit for the following courses: FILM 3000, FILM 3001, FILM 3500, FILM 3501 and FILM 3608.

Prerequisite: FILM 2000 and third-year standing, or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 3701 [0.5 credit] (formerly 19.371\*)

**Topics in Animation, Video, and Experimental Film**

A study of selected topics in animation, video or experimental film.

Prerequisite: 1.0 credit in Film Studies at the 2000-level or permission of the Discipline.

Lecture and screening three hours a week, lecture one hour a week.



FILM 3801 [0.5 credit] (formerly 19.381\*)

**Audiovisual Practice**

Practical and conceptual approaches to film studies from the point of view of production, using models of audiovisual practice. Prerequisite: FILM 2000.

Lecture/workshops four hours a week.

FILM 4000 [1.0 credit] (formerly 19.400)

**Modes of Historical Research**

This course develops the critical and archival skills necessary for individual research in the field of film history, and includes practical research related to the course material.

Prerequisite: FILM 3001 or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4002 [0.5 credit] (formerly 19.402\*)

**Topics in Audio-Visual Culture**

Selected aspects of the audio-visual cultures of the late nineteenth and twentieth centuries. (Also listed as ACUL 4002.)

Prerequisite: fourth-year standing in Film Studies, or permission of the Discipline.

Seminar three hours a week.

FILM 4201 [0.5 credit] (formerly 19.421\*)

**Selected Topics in National Cinemas**

A study of a selected topic in national cinema.

Prerequisite: fourth-year Honours standing in Film Studies or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4202 [0.5 credit] (formerly 19.422)\*

**Film Music Analysis**

An examination through selected films/programs of approaches to understanding music as an integral dimension of film and television. Emphasis will be placed on theories of signification in both film/television and music, and how they can be understood to relate. (Also listed as MUSI 4402.)

Prerequisite: FILM 3402 or MUSI 3402, or permission of the Discipline.

Lecture and screening three hours a week, seminar one and one-half hours a week.

FILM 4209 [0.5 credit] (formerly 19.429\*)

**Selected Topics in Canadian Cinema**

A study of selected topics in Canadian cinema.

Prerequisite: fourth-year Honours standing in Film Studies or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4401 [0.5 credit] (formerly 19.441\*)

**Selected Topics in Film Authorship**

A study of questions of authorship in the cinema, concentrating on one or more filmmakers.

Prerequisite: fourth-year Honours standing in Film Studies or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4501 [0.5 credit] (formerly 19.451\*)

**Selected Topics in Film Theory**

A study of a selected topic in film theory.

Prerequisite: FILM 3501 or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4800 [0.5 credit] (formerly 19.480\*)

**Seminar in Film/Video Archival or Curatorial Practice**

Selected topics in film/video archival or curatorial practice, including questions related to cultural policy, exhibition, conservation, and interrelationship of media. Students are expected to bear all travel and other costs arising from required visits to local facilities.

Prerequisite: fourth-year standing in Film Studies or permission of the Discipline.

Lecture and screening three hours a week, seminar two hours a week.

FILM 4805 [0.5 credit] (formerly 19.485\*)

**Practicum in Film and Film Studies**

Practical experience through working on specific projects under the supervision of staff at a museum, gallery, archive, or production company in the Ottawa area. A maximum of 0.5 credit may be offered in fulfilment of Film Studies requirements.

Prerequisite: fourth-year standing in Film Studies and permission of the Discipline.

FILM 4806 [0.5 credit] (formerly 19.486\*)

**Practicum in Film and Film Studies**

Practical experience through working on specific projects under the supervision of staff at a museum, gallery, archive, or production company in the Ottawa area. A maximum of 0.5 credit may be offered in fulfilment of Film Studies requirements.

Prerequisite: fourth-year standing in Film Studies and permission of the Discipline.

FILM 4807 [0.5 credit] (formerly 19.487\*)

**Practicum in Film and Film Studies**

Practical experience through working on specific projects under the supervision of staff at a museum, gallery, archive, or production company in the Ottawa area. A maximum of 0.5 credit may be offered in fulfilment of Film Studies requirements.

Prerequisite: fourth-year standing in Film Studies and permission of the Discipline.

FILM 4901 [0.5 credit] (formerly 19.491\*)

**Special Topic**

This course offers selected topics in film studies not ordinarily available in the regular course program. The choice of topic or topics will vary at least every two years and will be announced well in advance of the registration period.

Prerequisite: fourth-year standing in Film Studies or permission of the Discipline.

Screening three hours a week, seminar two hours a week.

FILM 4905 [1.0 credit] (formerly 19.495)

**Independent Study**

For students who wish to study a specific topic. Proposed projects must be approved by the Program Committee. Written request outlining the project must be submitted by the first day of fall term. An essay is the usual assignment.

Prerequisites: fourth-year Honours standing in Film Studies, a GPA of 10.00 or better in Film Studies courses, and permission of the Discipline.

## First-Year Seminars (FYSM)

Faculty of Arts and Social Sciences

Faculty of Public Affairs and Management

FYSM 1001 [1.0 credit] (formerly 01.101)

**Reading Art and Culture**

Development of academic writing and study skills through a close analysis of individual works and an examination of theories, aesthetic issues, and critical perspectives found in the literature of music, art history and film studies. Limited enrolment.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminar three hours a week.

FYSM 1002 [1.0 credit] (formerly 01.102)

**Social Impact of Transformation in the Post-Communist Era**

Political, economic and social changes that have accompanied the collapse of the Berlin Wall. The role of society in these political upheavals and the impact of the end of the Cold War on reform in Western and developing countries. Limited enrolment. (Also listed as FYSM 1303.)

Precludes additional credit for PSCI 1103 and EURL 1103.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminars three hours a week.

FYSM 1003 [1.0 credit] (formerly 01.103)

**Introduction to Economics**

Introduction to the major tools and policy problems of economics. Economic analysis is applied to a variety of

contemporary problems such as pollution, poverty, the control of monopoly, unemployment, inflation and international economic problems. Limited enrolment.

Precludes additional credit for ECON 1000.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminar three hours a week and one hour discussion group weekly.

FYSM 1004 [1.0 credit] (formerly 01.104)

**Survey of English Literature**

Historical study of selected authors and works from all periods of British Literature. Communication skills are emphasized. Limited enrolment.

Precludes additional credit for ENGL 1000.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminars three hours a week.

FYSM 1005 [1.0 credit] (formerly 01.105)

**Writing and Language**

An introduction to the principles, styles, and structures of effective writing, including essay writing. Limited enrolment.

Precludes additional credit for ENGL 1005.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminars three hours a week.

FYSM 1006 [1.0 credit] (formerly 01.106)

**20th-Century Literature**

Selected authors and works from twentieth-century literature. Recommended for English majors. Limited enrolment.

Precludes additional credit for ENGL 1602.

Prerequisite: normally restricted to students entering the first year of the B.A. program.

Seminars three hours a week.

FYSM 1100 [1.0 credit] (formerly 01.110)

**It's Your Environment**

The causes and consequences of environmental change; emphasis on the interactions of nature and human behaviour. Ways in which the environment can be protected and restored. Environmental issues that affect our own communities. Limited enrolment.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminars three hours a week.

FYSM 1101 [1.0 credit] (formerly 01.111)

**Location is Everything**

Where we live affects who we are; the role of geographic location and environment on human perception, behaviour, and well-being, viewed at scales ranging from local to global; methods of collecting and interpreting information about location. Limited enrolment.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminars three hours a week.

FYSM 1102 [1.0 credit] (formerly 01.112)

**Western Civilization**

Major events, ideas and movements that have shaped western civilization from the fall of Rome to the twentieth century. Emphasis on the development of writing, research and analytical skills. Limited enrolment.

Precludes additional credit for HIST 1001.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Three hours a week.

FYSM 1106 [1.0 credit] (formerly 01.116)

**Issues in Classics**

An investigation of important issues relating to the Greek and Roman world. Themes will be drawn from literature, history, art, religion and social life. All texts are in English. Limited enrolment. Precludes additional credit for CLCV 1000, CLCV 1002 and CLCV 1003.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminars three hours a week.

FYSM 1203 [1.0 credit] (formerly 01.123)

**Introduction to Academic Language and Culture**

Language as it is related to disciplinary inquiry; the language and culture of a variety of disciplines. Intended to enhance students' abilities to understand and acquire the culture, language, and conventions of their own disciplines. Limited enrolment.

Precludes additional credit for LALS 1805.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Lectures three hours a week.

FYSM 1204 [1.0 credit] (formerly 01.124)

**Language and Social Identity**

The creation and expression of social identities through language: gender, age, ethnic and social background. Limited enrolment.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Lectures three hours a week.

FYSM 1205 [1.0 credit] (formerly 01.125)

**Language and Power**

The role of language in maintaining and contesting power relations in domains such as the media, education, advertising, and politics. How meanings are made and exchanged through language in different situations. Limited enrolment.

Precludes additional credit for LALS 2705.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Lectures three hours a week.

FYSM 1206 [1.0 credit] (formerly 01.126)

**Intensive Introductory Linguistics**

Language as the defining human characteristic. Universal and specific linguistic features in language and adults, children and second-language learners. Limited enrolment.

Precludes additional credit for LALS 1000.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Lectures three hours a week.

FYSM 1207 [1.0 credit] (formerly 01.127)

**Introduction to Mass Communication**

The emergence of mass communication studies in the 20th century; the major incidents and events which shaped our views of and attitudes towards communication and the media. Limited enrolment.

Precludes additional credit for MCOM 1101.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Lectures three hours a week.

FYSM 1208 [1.0 credit] (formerly 01.128)

**Looking at Philosophy**

An examination of the following: What is logical thinking? Does God exist? Are values relative? Do we have responsibilities? What is a just society? Do we have free will? What is the mind? What is the nature of reality? Limited enrolment.

Precludes additional credit for PHIL 1100.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminars three hours a week.

FYSM 1209 [1.0 credit] (formerly 01.129)

**Contemporary Moral, Social, and Religious Issues**

Philosophical problems associated with such topical issues as feminism; atheism vs. theism; the meaning of life; moral relativism vs. moral objectivism; egoistic vs. non-egoistic ethics; euthanasia and capital punishment; legal paternalism; freedom of the will. Limited enrolment.

Precludes additional credit for PHIL 1500.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminars three hours a week.

FYSM 1300 [1.0 credit] (formerly 01.130)

**History of Philosophy**

The major figures and developments in philosophy from the early Greeks to the present. A primarily descriptive and comparative approach, through critical reasoning is included

for comprehending philosophic development. Provides a background from which to understand the philosophical aspects of other disciplines. Limited enrolment. Precludes additional credit for PHIL 1600. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminars three hours a week.

FYSM 1301 [1.0 credit] (formerly 01.131)

#### **Global Political Cultures**

The political role of culture in a global context. The integral role of architecture, art, landscape and film in legitimating, popularizing and propagating political endeavours. The imperialism of cultural exchanges between developed and developing countries. Limited enrolment. Precludes additional credit for PSCI 1101. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminar three hours a week.

FYSM 1302 [1.0 credit] (formerly 01.132)

#### **North American Politics**

Canadian, U.S. and Mexican political institutions and the impact of the increasing cultural, economic, political, and military interdependence of these three countries. Topics may include migration, the environment, gender, development and underdevelopment, sovereignty and democracy. Limited enrolment. Precludes additional credit for PSCI 1102. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminar three hours a week.

FYSM 1303 [1.0 credit] (formerly 01.133)

#### **Social Impact of Transformation in the Post-Communist Era**

Political, economic and social changes that have accompanied the collapse of the Berlin Wall. The role of the society in these political upheavals and the impact of the end of the Cold War on reform in Western and developing countries. Limited enrolment. Precludes additional credit for PSCI 1103, EURL 1103 and FYSM 1002. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminar three hours a week.

FYSM 1304 [1.0 credit] (formerly 01.134)

#### **Politics of Race**

Meaning, sources and practice of racialism, as well as efforts to combat it, in a comparative context. Case studies include South Africa, the United States, and Canada. Limited enrolment. Precludes additional credit for PSCI 1104. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminar three hours a week.

FYSM 1305 [1.0 credit] (formerly 01.135)

#### **Indigenous Politics**

Struggles of indigenous peoples against colonial dispossession and for political autonomy, rights to land and resources, protection of sacred sites, language and cultural revival. Case studies will include Australia, Canada, Mexico, New Zealand and the United States. Precludes additional credit for PSCI 1105. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminar three hours a week.

FYSM 1306 [1.0 credit] (formerly 01.136)

#### **Diversity in Psychological World Views**

Theories, research and applications of psychology from the perspective of different cultures and sub-cultures. The validity of psychology across society; how it defines and changes people, and how it reflects and engineers particular social values and norms. Limited enrolment. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminars three hours a week.

FYSM 1307 [1.0 credit] (formerly 01.137)

#### **Psychology and Criminal Justice**

Theories, research, and practical applications of psychology to the criminal justice system. Topics may include eyewitness testimony, prediction of violence, classification and rehabilitation of offenders, victim studies, and judicial decision making. Limited enrolment. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminars three hours a week.

FYSM 1308 [1.0 credit] (formerly 01.138)

#### **Motivating Humans**

The psychology of human motivation. Everyday concepts such as laziness in relation to diverse theories and explanations of motivation such as drive-reduction, sociobiology, personal goals, self-actualization and spiritual awareness. Limited enrolment. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminars three hours a week.

FYSM 1309 [1.0 credit] (formerly 01.139)

#### **Parents and Parenting Theories, Concepts and Applications from Developmental Psychology**

Parents and parenting from infancy to adolescence. Potential topics include: establishing a relationship with your child, child discipline, historical perspectives, child care issues, and the impact of marital conflict and divorce. Applied issues relevant to parents and "future" parents. Limited enrolment. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminars three hours a week.

FYSM 1400 [1.0 credit] (formerly 01.140)

#### **Cognition: A Scientific Exploration of the Mind**

Theories, research, and applications of Cognitive Psychology. Research projects will familiarize students with the scientific method. used to study pattern recognition, attention, memory, language and thinking. Limited enrolment. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminars three hours a week.

FYSM 1401 [1.0 credit] (formerly 01.141)

#### **Multiculturalism in Canada**

Issues relating to the development of and interaction among cultural communities, with major emphasis on the realities of "doing multiculturalism in Canada." Research teams; organized seminars with volunteers from Canadian cultural and community groups. Limited enrolment. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminars three hours a week.

FYSM 1402 [1.0 credit] (formerly 01.142)

#### **Issues in Women's Studies**

Emphasis on the development of writing, research and analytical skills through the intensive examination of selected topics in women's studies (e.g. motherhood, sexuality, health, technology, law, politics). Specific themes will vary from year to year. Limited enrolment. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminars three hours a week.

FYSM 1403 [1.0 credit] (formerly 01.143)

#### **Women and the Arts**

Feminist research across a range of arts disciplines (including music, theatre, visual arts and film). The importance of feminist debates and theoretical issues in understanding women's involvement in the arts. Topics include gender and sexuality, feminine aesthetics, representation, identity and difference. Limited enrolment. Prerequisite: normally restricted to students entering the first year of a B.A. program. Seminars three hours a week.



FYSM 1405 [1.0 credit] (formerly 01.145)

**Turning Points in History**

Introductory seminars emphasizing the development of writing, research, and analytical skills through the intensive examination of selected topics in modern history. For 2002-2003 the topic for Section A is Unexamined Assumptions; for Section B, the topic is Social Protest, Social Change; for Section C, the topic is Russia in the Age of Revolution, 1825-1928; for Section D, the topic is Crime and Criminal Justice in England from Witchcraft to Homosexuality; and for Section E and F, the topic is Shaping Modern Canada.

Precludes additional credit for HIST 1000 and HIST 1009.  
Prerequisite: normally restricted to students entering the first year of a B.A. program.

FYSM 1406 [1.0 credit] (formerly 01.146)

**How Ottawa Works: Exploring National Institutions**

This course examines the fundamental political, judicial and administrative institutions that made Canada a unique nation. Students will learn how government institutions are dealing with preservation and maintenance of Canadian cultural and social values.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminar three hours a week.

FYSM 1407 [1.0 credit] (formerly 01.147)

**Thinking About Talking?**

Open only to students who have very little French. Comprehensive introduction to the French language and culture with emphasis on oral comprehension and speaking; use of authentic contemporary documents (video, TV, radio, newspapers, etc.) This course is given in French. Limited enrolment.

Precludes additional credit for FYSM 1408, FREN 1007, FREN 1200, FREN 1300, FREN 1400, FREN 1401, FREN 1405, FREN 1500, FREN 1501, FREN 1502, FREN 1600 and FREN 1609.  
Prerequisite: French Placement.

Seminar three hours a week. Not offered in 2002-2003.

FYSM 1408 [1.0 credit] (formerly 01.148)

**What About Literature?**

Advanced French. Open to students with a good knowledge of French. Comprehensive study of the French language and culture. Texts by contemporary francophone writers (literature and media). This course is given in French. Limited enrolment. Precludes additional credit for FYSM 1407, FREN 1400, FREN 1401, FREN 1405, FREN 1500, FREN 1501, FREN 1502, FREN 1601, FREN 1602 and FREN 1603 and FREN 2009.

Prerequisite: OAC in French or permission of the Department.

Seminar three hours a week.

FYSM 1409 [1.0 credit] (formerly 01.149)

**Social Change in Canada**

Interdisciplinary examination of contemporary movements involved in social change. Assessment of opportunities and constraints for political activism in Canada today. Focus on movements active around the environment, labour, feminism, gay and lesbian rights, racism, poverty and peace.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminar three hours a week.

FYSM 1500 [1.0 credit] (formerly 01.150)

**The Literatures of Europe: Representative Texts**

Study of major literary traditions in Europe and their interrelations from antiquity to the present. Authors, such as Homer, Sophocles, Virgil, Dante, Boccaccio, Machiavelli, Cervantes, Molière, Goethe, Flaubert, Austen, Dostoevsky, Proust, Joyce, Pirandello, Kafka, Woolf, Calvino. All texts in English. Limited enrolment.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminar three hours a week.

FYSM 1501 [1.0 credit] (formerly 01.151)

**Interpretations of Religion**

Modern inquiries into the nature of religion from various perspectives such as anthropology, history, psychology, sociology and theology. Myths, symbols, scriptures, doctrines, codes and rituals of religious traditions are examined. Limited enrolment.

Precludes additional credit for RELI 1205, RELI 1205 or RELI 2002.  
Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminar three hours a week.

FYSM 1502[1.0 credit] (formerly 01.152)

**Selected Topics in Legal Studies**

Selected topics in legal studies. For 2002-03, the topic for Section A is Youth and Employment Law Policy. The topic for Section B is Law and Literature. The topic for Section C is Global Governance and Human Rights, and the topic for Sections D and E is Governance and the Rule of Law. A fourth topic may be offered and will be announced in advance of the registration period. Limited enrolment.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminar three hours a week.

FYSM 1503 [1.0 credit] (formerly 01.153)

**Contemporary Culture in Everyday Life**

Consideration of the role of contemporary cultural forms in everyday life. Focus is on the culture/power relationship with special attention to the ways that popular forms such as television, film, music, and tourism facilitate or work against the cultural and economic interests of different societal groups.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminars three hours a week.

FYSM 1504 [1.0 credit] (formerly 01.154)

**Society and the Designed Environment**

Inquiry into the relation between human societies and the material environment which they inhabit and use. Focus is on the ways in which groups create the environments in which they live and the ways in which those environments influence and reproduce the groups.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminars three hours a week.

FYSM 1505 [1.0 credit] (formerly 01.155)

**Introduction to Applied Sociology**

Survey of the historic and contemporary contributions of Sociology to various applied fields, which may include official statistics, policy studies, consumer research, and workplace management. Focus is placed on the philosophical, professional, and ethical distinctions between scholarly and applied Sociology.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminars three hours a week

FYSM 1506 [1.0 credit]

**Topics in the Study of Societies**

Introductory seminar emphasizing the development of writing, research and analytical skills through the intensive examination of selected topics in the study of historic and contemporary societies.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

FYSM 1508 [1.0 credit]

**Stress, Coping and Well-being**

How do you cope with stress? We live in a stressful world, and how we cope with this stress has important implications for our happiness and well-being. In this course we will examine theory and research on how stress affects our lives, how people cope, and what it means to be well-adjusted. Limited enrolment.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminars three hours a week.

FYSM 1509 [1.0 credit]

**Special Studies in Art History, Film Studies and/or Music**

Topics and focus to be determined on a yearly basis.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminar three hours a week.

FYSM 1600 [1.0 credit]

**Contemporary Controversies in Canadian Society**

An interdisciplinary exploration of key debates that currently affect Canadian society and culture. Topics may include: nationalism, race language and ethnicity, multilingualism, the new economy, Aboriginal governance, globalization, the environment and human rights.

FYSM 1601 [1.0 credit]

**Literature and Culture in Europe**

A survey of the literature and cultural texts that have defined Europe. Examination of fiction and non-fiction texts that have contributed to and reflected the development of European culture and society.

Lecture and discussion three hours a week.

FYSM 1602 [1.0 credit]

**Selected Topics (Political Science)**

Selected topics in politics and governance.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminar three hours a week.

## French (FREN)

Department of French

Faculty of Arts and Social Sciences

Note:

**French Placement for Language Students**

Students who have not previously taken a language course in the Department and who wish to enrol in FREN 1007, FREN 1405, FREN 1600 or FREN 1609, FREN 2405, FREN 2600 or FREN 2609 must read and follow the guidelines for choosing French language courses that can be found in the Registration Instructions and Class Schedule booklet and follow the instructions of the Touch Tone Registration System. Before selecting a language course, students should note that there are three levels in the language courses and the following sequence applies:

Level 1: FREN 1007

Level 2: FREN 1405 or FREN 1600 or FREN 1609

Level 3: FREN 2405 or FREN 2600 or FREN 2609

Students cannot go backward in the sequence of levels. Students should also note that FREN 1006 can be taken simultaneously with FREN 1007.

Students desiring a first-year French credit to satisfy the language requirement of their department or school should consult that department or school.

FREN 1006 [1.0 credit] (formerly 20.106)

**Reading French**

Enable students from other departments to read academic texts in French from various fields with reasonable ease. Basic French grammar and vocabulary. Individual reading in the student's specialization. Given in English. Open to beginners. No auditors. Prerequisite: registration by permission of the Department. Lecture plus discussion three hours a week.

FREN 1007 [1.0 credit] (formerly 20.107)

**French I**

This course emphasizes both oral expression and comprehension leading to the development of reading and writing skills. Compulsory attendance. Limited enrolment. No auditors. Precludes additional credit for FREN 1008, FREN 1200 and FREN 1300.

Prerequisite: French Placement.

Lecture three hours a week.

FREN 1405 [1.0 credit] (formerly 20.145)

**French II a)**

Enrichment of written and oral skills. Texts from various cultural areas to reinforce language skills. Compulsory attendance. Limited enrolment. No auditors.

Precludes additional credit for FYSM 1407, FYSM 1408, FREN 1400, FREN 1401, FREN 1500, FREN 1501, FREN 1502 and FREN 1600, FREN 1609 and FREN 2009.

Prerequisite: FREN 1007 or French Placement.

Lecture three hours a week.

FREN 1600 [1.0 credit] (formerly 20.160)

**French II b)**

Enrichment of written and oral skills. Texts from the areas of literature and culture to reinforce language skills. Compulsory attendance. Limited enrolment. No auditors. Precludes additional credit for French 01.147, 01.148, FREN 1400, FREN 1401, FREN 1405, FREN 1500, FREN 1501, FREN 1502 and FREN 2009.

Prerequisite: OAC in French or French Placement.

Lecture three hours a week.

FREN 1609 [1.0 credit] (formerly 20.169)

**French II for Francophones**

Approfondissement de la langue écrite et orale. Étude de textes littéraires et culturels. Présence obligatoire. Maximum 40 étudiants. Pas d'auditeurs.

Precludes additional credit for FYSM 1407, FYSM 1408, FREN 1400, FREN 1401, FREN 1405, FREN 1500, FREN 1501, FREN 1502 and FREN 1600.

Prerequisite: OAC in French or French Placement.

Lecture three hours a week.

FREN 2405 [1.0 credit] (formerly 20.245)

**Techniques d'expression écrite et orale II a)**

Composition française. Perfectionnement du français oral. Enrichissement du vocabulaire, perfectionnement grammatical, lecture de textes littéraires, culturels et spécialisés.

Precludes additional credit for FREN 2101, FREN 2102, FREN 2600 and FREN 2609.

Prerequisite: FREN 1405 or permission of the Department.

Lecture three hours a week.

FREN 2600 [1.0 credit] (formerly 20.260)

**Techniques d'expression écrite et orale II b)**

Composition française. Perfectionnement du français oral. Enrichissement du vocabulaire, perfectionnement grammatical, lecture de textes littéraires, culturels et spécialisés.

Precludes additional credit for FREN 2101 and FREN 2102 and FREN 2609.

Prerequisite: FYSM 1407, FYSM 1408, FREN 1600 or FREN 1609 or permission of the Department.

Lecture three hours a week.

FREN 2609 [1.0 credit] (formerly 20.269)

**Techniques d'expression écrite et orale II pour francophones et étudiants bilingues**

Composition française. Perfectionnement du français oral. Enrichissement du vocabulaire, perfectionnement grammatical, lecture de textes littéraires, culturels et spécialisés.

Precludes additional credit for FREN 2101, FREN 2102 and FREN 2600.

Prerequisite: FYSM 1407, FYSM 1408, FREN 1600 or FREN 1609 or permission of the Department.

Lecture three hours a week.

FREN 2700 [1.0 credit] (formerly 20.270)

**Introduction à la littérature française**

Initiation aux valeurs, aux procédés et aux genres littéraires. Introduction aux diverses approches critiques. Textes choisis parmi les grands textes des littératures française, québécoise et canadienne-française.

Precludes additional credit for FREN 1601, FREN 1602 and FREN 1603.

Prerequisite: FYSM 1407, FYSM 1408, FREN 1405, FREN 1600, FREN 1609 or permission of the Department. Lecture three hours a week.

FREN 2701 [1.0 credit] (formerly 20.271)

**Civilization and Culture**

The culture, institutions and the intellectual and political life of the Francophonie. Given in English, this course is designed for students interested in the vitality and the diversity of French cultures. Does not count as part of the specific requirements for a B.A. (Honours) or B.A. degree in French. No auditors.

Prerequisite: permission of the Department.

Lecture three hours a week.

FREN 2800 [1.0 credit] (formerly 20.280)

**Introduction à la linguistique du français**

Initiation aux principes et méthodes d'analyse linguistique. Application de ces éléments à la description et à l'analyse du français. Precludes additional credit for FREN 2302 and FREN 2303. Prerequisite : FYSM 1407, FYSM 1408, FREN 1405, FREN 1600 or FREN 1609; or permission of the Department. Lecture three hours a week.

FREN 2806 [1.0 credit] (formerly 20.286)

**Initiation à la traduction**

Comparaisons d'ordre grammatical, lexical et stylistique entre l'anglais et le français. Exercices de traduction de l'anglais au français visant l'expression et exercices de traduction du français à l'anglais visant la compréhension. Precludes additional credit for FREN 2301. Prerequisite: FYSM 1407, FYSM 1408, FREN 1405, FREN 1600 or FREN 1609; or permission of the Department. Lecture three hours a week.

FREN 3600 [1.0 credit] (formerly 20.360)

**Français écrit et oral**

Cours de langue avancé. Commun aux anglophones et aux francophones. Prerequisite: FREN 2405, FREN 2600 or FREN 2609; or permission of the Department. Lecture three hours a week.

FREN 3700 [0.5 credit] (formerly 20.370\*)

**Littérature française I**

Principaux courants de la littérature française du Moyen Âge au XVIIe siècle. Étude détaillée de plusieurs aspects de cette littérature dans un choix de textes représentatifs. Precludes additional credit for FREN 2601, FREN 2602 and FREN 2603. Prerequisite: FREN 2700 or permission of the Department. Lecture three hours a week.

FREN 3701 [0.5 credit] (formerly 20.371\*)

**Littérature française II**

Principaux courants de la littérature française du XVIIIe au XXe siècle. Étude détaillée de plusieurs aspects de cette littérature dans un choix de textes représentatifs. Precludes additional credit for FREN 2604, FREN 2605 and FREN 2606. Prerequisite: FREN 2700 or permission of the Department. Lecture three hours a week.

FREN 3702 [0.5 credit] (formerly 20.372\*)

**Littérature québécoise, acadienne et canadienne-française I**  
Principaux courants de la littérature québécoise, acadienne et canadienne-française de la Nouvelle-France à aujourd'hui. Étude détaillée de plusieurs aspects de cette littérature dans un choix de textes représentatifs. Precludes additional credit for FREN 2607 and FREN 2608. Prerequisite: FREN 2700 or permission of the Department. Lecture three hours a week.

FREN 3703 [0.5 credit] (formerly 20.373\*)

**Littératures francophones**

Principaux courants des littératures francophones (africaine, belge, caraïbéenne, suisse). Étude détaillée de plusieurs aspects de cette littérature dans un choix de textes représentatifs. Prerequisite: FREN 2700 or permission of the Department. Lecture three hours a week.

FREN 3704 [0.5 credit] (formerly 20.374\*)

**Littérature québécoise, acadienne et canadienne-française II**  
Principaux courants de la littérature québécoise, acadienne et canadienne-française à l'époque contemporaine. Étude thématique détaillée de plusieurs aspects de cette littérature dans un choix de textes représentatifs. Precludes additional credit for FREN 2607 and FREN 2608. Prerequisite: FREN 2700 or permission of the Department. Lecture three hours a week.

FREN 3800 [0.5 credit] (formerly 20.380\*)

**Histoire de la langue française**

Étude de l'évolution de la prononciation, de la grammaire et du vocabulaire français, des origines à nos jours.

Prerequisite: FREN 2800 or permission of the Department. Lecture three hours a week.

FREN 3801 [0.5 credit] (formerly 20.381\*)

**Morphologie et syntaxe du français**

Étude linguistique des structures du mot et de la phrase. Approches descriptives et théoriques. Prerequisite: FREN 2800 or permission of the Department. Lecture three hours a week.

FREN 3802 [0.5 credit] (formerly 20.382\*)

**Sémantique et lexicologie du français**

Étude linguistique du sens et de la structure du vocabulaire français. Sémantique de la phrase et du discours. Precludes additional credit for FREN 4303. Prerequisite: FREN 2800 or permission of the Department. Lecture three hours a week.

FREN 3803 [0.5 credit] (formerly 20.383\*)

**Français canadien**

Étude des particularités du français parlé et écrit au Canada. Approches descriptives et sociolinguistiques. Precludes additional credit for FREN 3302. Prerequisite: FREN 2800 or permission of the Department. Lecture three hours a week.

FREN 3806 [1.0 credit] (formerly 20.386)

**Principes et méthodes de la traduction**

Initiation aux principes sous-jacents à la traduction en particulier de l'anglais au français. Exercices pratiques s'appliquant à des textes généraux ou spécialisés (scientifiques, administratifs, commerciaux, etc.) Precludes additional credit for FREN 3301. Prerequisite: FREN 2806 or permission of the Department. Lecture three hours a week.

FREN 4700 [0.5 credit] (formerly 20.470\*)

**Aspects de la littérature française I**

Le contenu précis de ce cours varie selon les années. Sujet pour 2002-2003: La poésie chantée en France 1950-1980. Analyse des oeuvres d'auteurs-compositeurs-interprètes. La voix (valeurs linguistiques et valeurs sociales); la composition: paroles et musiques (formes et rythmes); les thèmes (la société, l'amour, le quotidien); la performance: les circonstances (cabarets, salles de spectacles, télévision et disques), présence du corps, gestes. Prerequisite: FREN 2700 or permission of the Department. Seminar two hours a week.

FREN 4701 [0.5 credit] (formerly 20.471\*)

**Aspects de la littérature française II**

Le contenu précis de ce cours varie selon les années. Sujet pour 2002-2003: Roman français contemporain et cinéma. Analyse détaillée de quatre romans français contemporains et des films adaptés à partir de ces romans. Procédés d'adaptation, comparaison de la narration romanesque et cinématographique. (G. Montforez, P. Quignard, R. Jean, M. Winckler) Prerequisite: FREN 2700 or permission of the Department. Seminar two hours a week.

FREN 4702 [0.5 credit] (formerly 20.472\*)

**Aspects de la littérature québécoise ou canadienne-française**

Le contenu précis de ce cours varie selon les années. Sujet pour 2002-2003: Littérature et cinéma québécois. Étude de l'oeuvre romanesque et cinématographique de Jacques Godbout. Thèmes: mondialisation, écologie, féminisme, survie de cultures et de langues régionales et nationales; relevé des principales métaphores et figures de style dans sept romans et sept films. Prerequisite: FREN 2700 or permission of the Department. Seminar two hours a week.

FREN 4703 [0.5 credit] (formerly 20.473\*)

**Littératures et cultures de la francophonie**

Le contenu précis de ce cours varie selon les années. Sujet pour 2002-2003: Théâtre contemporain francophone. Regard comparé sur les théâtres québécois, français, haïtien et guadeloupéen. Au programme: France: Ariane Mnouchkine (1789); Haïti: Frankétienne (Totolomanwèl); Guadeloupe: Gerty Dambury (Lettres indiennes); et une oeuvre québécoise au programme du Centre National des Arts. La lecture sera accompagnée du visionnement des oeuvres filmées.



Prerequisite: FREN 2700 or permission of the Department.  
Seminar two hours a week.

FREN 4800 [0.5 credit] (formerly 20.480\*)

### Aspects de la linguistique du français I

Le contenu précis de ce cours varie selon les années. Sujet pour 2002-2003: Questions de sémantique. Qu'est-ce que la "compétence sémantique" lorsqu'on parle une langue? L'étude de cas concrets nous permettra de mettre en évidence l'aspect universel de la compétence sémantique et l'influence de l'univers conceptuel et culturel du français sur celle-ci. Lectures hebdomadaires, présentations en classe, travail final.

Prerequisite: FREN 2800 or permission of the Department.  
Seminar two hours a week.

FREN 4801 [0.5 credit] (formerly 20.481\*)

### Aspects de la linguistique du français II

Le contenu précis de ce cours varie selon les années. Sujet pour 2002-2003: Le français cajun. Phonétique, grammaire et lexique du français du sud-ouest de la Louisiane. À la confluence du créole, de l'anglais, du français populaire et du français acadien, la langue des Cajuns nous donne de multiples aperçus sur l'évolution et la diversité du français. Analyse de corpus.

Prerequisite: FREN 2800 or permission of the Department.  
Seminar two hours a week.

FREN 4802 [0.5 credit] (formerly 20.482\*)

### Aspects de la linguistique du français III

Le contenu précis de ce cours varie selon les années. Sujet pour 2002-2003: Histoire sociale et linguistique du français parlé au Canada. Aperçu des 400 ans d'histoire et de vie du français au Canada: de l'Empire français en Amérique, à la conquête britannique, à la Révolution tranquille, aux préoccupations sociolinguistiques du début du XXI<sup>e</sup> siècle. État actuel des variétés de français parlé: Acadie, Québec, Ontario, Ouest canadien. Prerequisite: FREN 2800 or permission of the Department.  
Seminar two hours a week.

FREN 4803 [0.5 credit] (formerly 20.483\*)

### Aspects de la linguistique du français IV

Le contenu précis de ce cours varie selon les années. Sujet pour 2002-2003: Le français en Ontario. Étude des variétés de français parlé en Ontario. Dimensions géographique, historique, sociolinguistique. Langues en contact et bilinguisme. Identité franco-ontarienne.

Prerequisite: FREN 2800 or permission of the Department.  
Seminar two hours a week.

FREN 4806 [1.0 credit] (formerly 20.486)

### Traduction littéraire

Traduction de l'anglais au français et du français à l'anglais de textes littéraires. Analyses de traductions déjà parues. Retraduction. Precludes additional credit for FREN 4301.

Prerequisite: FREN 2806 or permission of the Department.  
Seminar two hours a week.

FREN 4807 [1.0 credit] (formerly 20.487)

### Tutorial

Special Topics in Linguistics, Literature or Translation under the supervision of a faculty member. Prerequisite: permission of the Department. Hours to be determined.

FREN 4808 [0.5 credit] (formerly 20.488\*)

### Tutorial

Special Topics in Linguistics, Literature or Translation under the supervision of a faculty member.

Prerequisite: permission of the Department.  
Hours to be determined.

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## Geography (GEOG)

Department of Geography and Environmental Studies  
Faculty of Arts and Social Sciences  
Faculty of Science

GEOG 1001 [1.0 credit] (formerly 45.101)

### Geography and the Environment

Human activity and the physical environment and links between them. Social, economic, cultural, and political forces

shaping human activity at scales ranging from local to global. Methods of collecting and interpreting geographic information. (Also listed as ENST 1001.)

Lectures two hours a week and workshops/discussions one hour a week.

GEOG 1002 [0.5 credit] (formerly 45.102\*)

### World Issues I: Environment, Resources and Society

Global and regional issues through study of: geographic and environmental traditions; world views; ecosystem structure and function; biodiversity; atmosphere, climate and greenhouse effect; population and demography; food and nutrition; water; soil; agriculture; renewable and non-renewable resources; waste; environmental degradation; sustainability; environmental management and development.

Lectures two hours a week, discussions one hour a week.

GEOG 2004 [0.5 credit]

### Introduction to Geomatics

Introduction to the fundamentals within the Geomatics fields of cartography, remote sensing and geographic information systems, including: history of maps and mapping; map design; data acquisition procedures; digital data display and analysis; and integration of the Geomatics fields.

Prerequisite: second year standing, or enrolment in B.A. (GIP), B.Sc. (GIP concentration), or GIP minor.

Lectures two hours a week, workshops/discussion two hours a week.

GEOG 2005 [0.5 credit] (formerly 45.205\*)

### Research Methods in Geography

Theory and method in the production of geographical knowledge. Topics include: logic of research design in human and physical geography; issues of data type, quality, and acquisition with extensive and intensive research approaches; techniques of data analysis and presentation, including computer applications; research ethics.

Precludes additional credit for GEOG 2004.

Prerequisite: GEOG 1001, ENST 1001 or 1.0 credit in Geography at the 1000-level, GEOG 2004 (or co-registration) and second-year standing, or permission of the Department.  
Lectures two hours a week, laboratory two hours a week.

GEOG 2006 [0.5 credit] (formerly 45.206\*)

### Statistical Methods in Geography

Descriptive and inferential statistical methods applied to quantitative and qualitative data in contemporary human and physical geography. Introduction to statistical and graphical computer applications.

Precludes additional credit for GEOG 2004, STAT 2507, STAT 2606, ECON 2200, PSYCH 2000, PSCI 2700.

Prerequisite: GEOG 2005 and GEOG 2004, or permission of the Department.

Lectures two hours a week, laboratory two hours a week.

GEOG 2007 [0.5 credit] (formerly 45.207\*)

### An Introduction to Geographic Information Systems

Data in a spatial context; spatial data structures, georeferencing, data query; mapping; creating spatial databases; selected topics in GIS application to environmental, land-use planning and market analysis issues.

Prerequisite: GEOG 2004 or GEOG 2006 (may be taken concurrently) or permission of the Department. Familiarity with personal computers is assumed.

Workshop three hours a week.

GEOG 2100 [1.0 credit]

### Physical Geography

A survey of the form and processes operating in the Earth-atmosphere system, including: weather, climate and climate change, landform development, soils, the hydrologic cycle, the Quaternary earth history.

Prerequisite: GEOG 1001, or ENST 1001, or first year B.Sc. or permission of the department.

Lecture three hours a week, laboratory three hours a week.

GEOG 2101 [0.5 credit] (formerly 45.211\*)

### Environmental Geography

Biophysical elements of the environment; human-environment interactions; natural hazards; human response to environmental

change and variation; land-use planning and risk management. Prerequisite: 1.0 credit in Geography at the 1000-level, or second-year standing. Lectures two hours a week, laboratory two hours a week.

GEOG 2102 [0.5 credit] (formerly 45.212\*)

**Physical Environments of Canada**

Canada's physiography, climates, biogeography, soils, and landforms. Prerequisite: GEOG 1100 or GEOG 2100, or GEOG 1005/GEOL 1005. Lectures two hours a week, laboratory two hours a week.

GEOG 2200 [0.5 credit] (formerly 45.220\*)

**Global Change: Economy, Culture, and Environment**

Economic and cultural globalization, global environmental change, and the linkages between them. Global-local interactions. Economic and environmental sustainability. Natural resources and industrial systems in the global economy. Culture, politics, and the global environment. Prerequisite: 1.0 credit in Geography at the 1000-level, or second-year standing. Lectures three hours a week.

GEOG 2300 [0.5 credit] (formerly 45.230\*)

**Culture, Society and Space**

Ways in which individuals and societies create, modify, and interact with environments; social dimensions of landscapes; the culture and politics of space; geographies of identity. Prerequisite: 1.0 credit in Geography at the 1000-level (GEOG 1001 is recommended), or second-year standing. Lectures two hours a week, discussion one hour a week.

GEOG 2505 [0.5 credit] (formerly 45.255\*)

**Canada: Contemporary Geographic Issues**

Analysis and interpretation of Canada, its regions and localities, using a range of geographical concepts; interactions among society, the economy and the environment, and related policy issues. Precludes additional credit for GEOG 3005 (taken before 1998-99) and GEOG 3505. Prerequisite: second-year standing or permission of the Department. Lectures two hours a week, discussion one hour a week.

GEOG 2600 [1.0 credit]

**Geography behind the Headlines: Geographical Foundations to Current Issues**

Exploration of the geographical backgrounds to selected issues of current public interest, through geography's perspective of integrating human and physical environments. Issues selected will be structured from the global through the national/regional to the local, identifying the interdependencies among the scales. Preclusions: additional credit for GEOG 1003, students in Geography programs may not include GEOG 2600 among the minimum number of Geography courses required for their degree. Lecture three hours a week.

GEOG 3000 [0.5 credit] (formerly 45.300\*)

**Honours Field Course and Tutorial**

Geographical techniques of field observation, measurement, recording, and analysis involving work in groups, normally in the Ottawa region. Development of research, writing, and thinking skills in a tutorial setting. A supplementary charge may apply. Prerequisite: third-year Honours standing in Geography, or permission of the Department. A four-day field camp, tutorial one hour a week.

GEOG 3001 [0.5 credit] (formerly 45.301\*)

**Social Geography Methods**

Methods of acquiring, analyzing and presenting primary information relating to contemporary issues in social geography; technical and ethical aspects of such topics as: mental mapping, sampling and questionnaire design, participant observation and interviewing, discourse analysis, and qualitative research methods. Prerequisite: GEOG 2004 or GEOG 2005. Lectures two hours a week, discussion group one hour a week.

GEOG 3002 [0.5 credit] (formerly 45.302\*)

**Air Photo Interpretation and Remote Sensing**

Aerial photography and digital remote sensing; visual

interpretation of land use, landforms, and surficial materials; introduction to digital image processing and analysis.

Prerequisite: third-year standing, or permission of the Department.

Lectures two hours a week, laboratory two hours a week.

GEOG 3003 [0.5 credit] (formerly 45.303\*)

**Quantitative Geography**

Multivariate quantitative methods, such as multiple correlation and regression, factor analysis, cluster analysis, discriminant analysis, and analysis of variance as applied to classification, regionalization, explanation and hypothesis testing in geographical research.

Prerequisite: GEOG 2004 or GEOG 2006, or permission of the Department.

Lectures two hours a week, laboratory two hours a week.

GEOG 3005 [0.5 credit] (formerly 45.305\*)

**Geospatial Analysis**

Acquisition, manipulation, and display of spatially referenced information using Geographic Information Systems (GIS). Spatial modeling, site selection, and routing analysis in raster and vector GIS.

Precludes additional credit for GEOG 3004.

Prerequisite: GEOG 2007.

Workshop three hours a week.

GEOG 3006 [0.5 credit] (formerly 45.306\*)

**Applications of Geographic Information Systems**

Project design and customization, digital atlas compilation and geomatics education.

Precludes additional credit for GEOG 3004.

Prerequisite: GEOG 3005.

Workshop three hours a week.

GEOG 3007 [0.5 credit] (formerly 45.307\*)

**Cartographic Theory and Design**

Principles of cartography, cartographic communication and map design; practical work designed to provide experience in solving problems of cartographic representation.

Precludes additional credit for GEOG 3204 and GEOG 3205.

Prerequisite: GEOG 2004, GEOG 2005 (if taken prior to 2002-03), and third-year standing, or permission of the Department.

Lectures and laboratory four hours a week.

GEOG 3101 [0.5 credit] (formerly 45.311\*)

**Biophysical Resource Assessment**

The acquisition and interpretation of biophysical information, with regard to defining limitations on the use of the environment; field and laboratory techniques with an emphasis on the biophysical resources of a local area. A supplementary charge may apply.

Prerequisite: one of GEOG 1005/GEOL 1005, GEOG 1100, GEOG 2100, GEOG 2101 or permission of the Department.

Lectures, laboratory and fieldwork five hours a week.

GEOG 3102 [0.5 credit] (formerly 45.312\*)

**Geomorphology**

Geomorphological agents of landscape change at the Earth's surface, emphasizing the role of water, ice and wind in erosion and deposition; use of geomorphic indicators in studies of environmental change.

Prerequisites: GEOG 1005/GEOL 1005, GEOG 1100 or GEOG 2100 and third-year standing, or permission of the Department.

Lectures two hours a week, laboratory two hours a week, one field excursion.

GEOG 3103 [0.5 credit] (formerly 45.313\*)

**Watershed Hydrology**

Principles of hydrology at local and watershed scales, with an emphasis on: soil moisture regimes; field data collection and analysis of surface water or snow and ice conditions; hydrologic processes in cold environments; and regional runoff regimes in Canada. A supplementary charge may apply.

Prerequisite: GEOG 1100 or GEOG 2100, or permission of the Department.

Note: first-year mathematics and physics are recommended. Lectures two hours a week, laboratory three hours a week, two field excursions, including a two-day excursion. Students

are responsible for long-distance transportation, food and lodging costs associated with the field excursions.

GEOG 3104 [1.0 credit]

#### **Principles of Biogeography**

Contemporary and past controls on distribution of plants and animals at global, regional and local scales; significance of these distributions.

Prerequisite: GEOG 2100, BIOL 2600, or permission of the Department.

Lectures 3 hours a week.

GEOG 3105 [0.5 credit] (formerly 45.315\*)

#### **Climate and Atmospheric Change**

The global climate system, with emphasis on global change variability over the historical and modern periods; the changing composition of the atmosphere and its impact on climate; analysis and interpretation of climatic and atmospheric data; modeling of climate systems.

Prerequisites: GEOG 2006 and GEOG 1100 or GEOG 2100; or permission of the Department.

Lecture two hours a week, laboratory two hours a week.

GEOG 3108 [0.5 credit] (formerly 45.318\*)

#### **Soil Properties**

The physical and chemical properties of soils; soil-water relationships, weathering processes, soil mineralogy, cation exchange, soil pH. A plant-oriented perspective predominates. Precludes additional credit for GEOG 3008.

Prerequisite: GEOG 1005/GEOL 1005, or GEOG 1100, or GEOG 2100, or permission of the Department.

Lectures and laboratory five hours a week.

GEOG 3109 [0.5 credit] (formerly 45.319\*)

#### **Soils and Environment**

The formation and development of soils, soil classification, soil fertility, soils and environmental concerns, land degradation. Precludes additional credit for GEOG 3008.

Prerequisite: GEOG 3108 or permission of the Department.

Lectures three hours a week.

GEOG 3200 [0.5 credit] (formerly 45.320\*)

#### **The Canadian City: Environment, Structure and Contemporary Problems**

Internal structure of the Western city with specific application to Canadian cities; current urban problems with particular focus on inner city revitalization, peripheral expansion, metropolitan organization and transportation systems and their interaction with land use.

Prerequisite: GEOG 2200 or permission of the Department.

Lectures three hours a week.

GEOG 3206 [0.5 credit] (formerly 45.326\*)

#### **Health, Environment, and Society**

Factors influencing human health in an ecological framework involving population structure, habitat, and behaviour. Changes in the distribution of communicable and degenerative diseases are portrayed as being related to historical and contemporary development and globalization processes. Sources, types and characteristics of geographically referenced health information. Precludes additional credit for GEOG 4206.

Prerequisite: third-year standing.

Lectures three hours a week.

GEOG 3209 [0.5 credit] (formerly 45.329\*)

#### **Sustainability and Environment in the South**

A political ecology approach to the concept of sustainability in the South; case studies from Africa, Asia, and Latin America to analyze the relationship between people and the environment at scales ranging from the intra-household and local to the international.

Prerequisite: third-year standing and GEOG 2200 or GEOG 2300 or GEOG 2301; or permission of the Department.

Lectures two hours a week, discussion groups one hour a week.

GEOG 3300 [0.5 credit] (formerly 45.330\*)

#### **Environment and Sustainability in Sub-Saharan Africa**

Historical analysis of contemporary problems faced by selected states in sub-Saharan Africa, focusing on environmental sustainability in the context of political, social and economic

change, at scales from the intra-household and local to national. Prerequisite: third-year standing or permission of the Department.

Lectures two hours a week, discussion groups one hour a week.

GEOG 3305 [1.0 credit] (formerly 45.335)

#### **The Development of Canada: The Historical Geographical Perspective**

Canada from pre-history to the present; issues of culture and economy in a geographical context; methodology in historical geography.

Prerequisite: GEOG 2300 or HIST 2303 or HIST 2304; or permission of the Department.

Lectures three hours a week.

GEOG 3306 [0.5 credit] (formerly 45.336\*)

#### **Resource Analysis in Geography**

Human dimensions of resource assessment, use and management; topics relating to resource allocation theory and methods, carrying capacity, environmental and social impact assessment, public participation and resources policies; emphasis on Canadian case studies.

Precludes additional credit for GEOG 3303 and GEOG 3304. Prerequisite: at least third-year standing in Geography or Environmental Studies or Environmental Science, or permission of the Department.

Lectures and laboratory four hours a week.

GEOG 3307 [0.5 credit] (formerly 45.337\*)

#### **Contemporary Geopolitics**

Geographical understandings of power and conflict at the global scale; geographical discourses of peace and violence in the contemporary world system, critical perspectives on the world political map, geographical patterns of inequity and global order.

Prerequisites: third-year standing.

Lecture three hours a week.

GEOG 3404 [0.5 credit] (formerly 45.344\*)

#### **Economic Geography**

Geography of production, marketing, and consumption. Locational decision making in the private and public sectors with particular reference to manufacturing and service industries.

Prerequisite: GEOG 2200 or permission of the Department.

Lectures three hours a week.

GEOG 3501 [0.5 credit] (formerly 45.351\*)

#### **Northern Lands**

The physical characteristics, historical geography, economic resources, settlement patterns and problems and the future development of Arctic and Subarctic lands, focusing primarily on Canada.

Prerequisite: third-year standing or permission of the Department.

Lectures three hours a week.

GEOG 3600 [0.5 credit] (formerly 45.360\*)

#### **The Soviet Union and Successor States: A Geographic Survey**

A general review of the physical, social and economic geography of the Soviet Union and successor states, with detailed analyses of selected topics related to social and population conditions, resources development and environmental problems, including comparisons with North America.

Prerequisite: third-year standing.

Lectures three hours a week.

GEOG 3602 [0.5 credit] (formerly 45.362\*)

#### **Geography of Southern Africa**

Broad geographical coverage of the subcontinent from Zambia southwards with particular reference to the environmental, historical, economic, cultural and political dimensions necessary to understand the contemporary context of and around South Africa.

Precludes additional credit for 45.395\* (if taken in 1990-1994).

Prerequisite: third-year standing or permission of the Department.

Lectures three hours a week.



GEOG 3603 [0.5 credit] (formerly 45.363\*)

**Geography of Europe**

Systematic geographic survey of Europe with particular reference to historical, cultural, economic, political, resource, and environmental dimensions.

Prerequisite: third-year standing or permission of the Department.

Lectures three hours a week.

GEOG 3700 [0.5 credit] (formerly 45.370\*)

**Population Geography**

The distributional aspects of population attributes; areal patterns of population characteristics and their spatial variations associated with differences in the nature of places; migratory movements within the framework of spatial models of interactions between locations.

Prerequisite: either GEOG 2200 or GEOG 2300, or permission of the Department.

Lectures three hours a week.

GEOG 3900 [0.5 credit] (formerly 45.390\*)

**Geographic Thought and Methodology**

Debate about the nature of geography and what geographers do; frameworks for understanding the discipline; debates within physical, environmental, and human geography and the connections among them.

Prerequisite: third-year Honours Geography standing.

Lectures two hours a week, discussion one hour a week.

GEOG 3905 [0.5 credit] (formerly 45.395\*)

**Selected World Regional Problems**

Geographical analysis of topical problem areas in the world community.

Prerequisite: third-year standing or permission of the Department.

Lectures three hours a week.

• **4000-level courses are normally restricted to students with fourth-year Honours standing. However, students with third-year standing may take 4000-level courses provided they have the necessary prerequisites, a Geography GPA of 6.50 or better, and permission of the Department.**

GEOG 4000 [0.5 credit] (formerly 45.400\*)

**Field Studies**

Field observation and methodology in a selected region; individual or group basis.

Prerequisite: permission of the Department.

Hours to be arranged.

GEOG 4003 [0.5 credit] (formerly 45.403\*)

**Remote Sensing of the Environment**

Advanced image enhancement; land cover classification for thematic mapping; biophysical modeling; applications in resources, environment, and urban mapping.

Prerequisites: GEOG 3002 and Honours standing; or permission of the Department.

Lectures two hours a week, laboratory two hours a week.

GEOG 4004 [0.5 credit] (formerly 45.404\*)

**Environmental Impact Assessment**

Principles, scope and purpose of environmental impact assessment, from conceptual and methodological points of view; range of environmental issues with an emphasis on primarily Canadian case studies.

Prerequisite: fourth-year Honours standing in Geography or Environmental Studies or Environmental Science, or permission of the Department.

Note: GEOG 3101 or GEOG 3306 is recommended.

Lectures and seminars three hours a week.

GEOG 4005 [0.5 credit] (formerly 45.405\*)

**Directed Studies in Geography**

Students pursue their interest in a selected theme in geography on a tutorial basis with a member of the Department.

Precludes additional credit for GEOG 4001 and GEOG 4002. Prerequisites: fourth-year Honours standing in Geography and permission of the Department.

GEOG 4006 [0.5 credit] (formerly 45.406\*)

**Analytical and Computer Cartography**

Theoretical and practical approaches to analytical and computer cartography, with an emphasis on digital mapping algorithms using microcomputers.

Prerequisites: GEOG 3007 (or equivalent), and fourth-year Honours standing; or permission of the Department. Basic mathematical skills (linear algebra, geometry, and trigonometry) and knowledge of data processing are assumed.

Lectures and laboratory three hours a week.

GEOG 4008 [0.5 credit] (formerly 45.408\*)

**Advanced Topics in Geographic Information Systems**

Advanced methods and techniques in GIS applications including: positional and attribute error analysis, multiple criteria decision making, interpolation, elevation modeling and ortho-imaging, and spatial pattern measurement.

Prerequisites: Geography GEOG 3005 and GEOG 3006 and Honours standing in Geography.

Lectures two hours a week, laboratory two hours a week.

GEOG 4101 [0.5 credit] (formerly 45.411\*)

**Quaternary Geography**

Changes in the physical environment of the earth during the last two million years; methods of studying recent earth history; the last ice age in Canada. (Also listed as GEOL 4105.)

Prerequisites: GEOG 3105 or permission of the Department.

Note: GEOG 3102 and GEOL 3302 are recommended.

Lectures three hours a week.

GEOG 4103 [0.5 credit] (formerly 45.413\*)

**Water Resources Engineering**

A quantitative analysis of natural water systems and the development of these systems as a resource. Components of the hydrologic cycle. Quantitative analysis of stream flow. Probability concepts in water resources. Reservoir design and operation. Availability of ground water. Storm water management. (Also listed as ENVE 3003.) Prerequisites: CIVE 3208 and MAAE 2300, or permission of the department.

Lectures three hours a week, problem analysis one hour a week.

GEOG 4108 [0.5 credit] (formerly 45.418\*)

**Permafrost**

Distribution, development, and degradation of permafrost in Canada; thermal and hydrologic regime of permafrost terrain; development of landforms in permafrost regions; geotechnical consideration in northern construction.

Prerequisite: GEOG 3108 or permission of the Department.

Lectures three hours a week.

GEOG 4203 [0.5 credit] (formerly 45.423\*)

**Urban Revitalization**

Recent revitalization of inner cities from an internationally comparative perspective; residential, commercial and institutional dimensions of revitalization, with particular reference to waterfronts and to heritage conservation issues.

Prerequisites: GEOG 3200 and fourth-year Honours Geography standing, or permission of the Department.

Seminar three hours a week; optional residential field week.

GEOG 4207 [0.5 credit] (formerly 45.427\*)

**Urban Development and Analysis**

The relationship between changes in urban development and geographic theory, emphasizing contemporary critical perspectives on selected urban issues.

Prerequisite: fourth-year Honours Geography standing or permission of the Department.

Seminar three hours a week.

GEOG 4208 [0.5 credit] (formerly 45.428\*)

**Geographical Analysis of Health Information**

Integration of theory and application through (1) extensive, quantitative methods of analyzing geographical data on disease and (2) intensive, qualitative methods of producing primary information on health, space, and place.

Prerequisites: GEOG 3001 (or SOCI 2003/ANTH 2003), GEOG 3003, and GEOG 3206, and fourth-year Honours standing in Geography or Environmental Studies, or permission of the Department.

Lecture two hours a week, laboratory two hours a week.

GEOG 4300 [0.5 credit] (formerly 45.430\*)

**Comparative Environmental Movements**

The emergence of contemporary, locally based, environmental movements in Canada, Africa, Asia, and Latin America. Case studies to analyze local environmental action in relation to the broader political economy and long term sustainability of land use.

Prerequisites: fourth-year Honours standing and GEOG 3209 or GEOG 3300 or permission of the Department.  
Seminar three hours a week.

GEOG 4301 [0.5 credit] (formerly 45.431\*)

**Advanced Cultural Geography**

Cross-cultural thematic examination of territorial organization, territoriality, mental maps, geographies of the mind, and landscape impact of authority and ideology. Regional emphasis on Canada.

Prerequisite: GEOG 2300 or permission of the Department.  
Seminar three hours a week.

GEOG 4303 [0.5 credit] (formerly 45.433\*)

**Urban Planning**

A systematic approach to urban planning; urban sprawl; data collection; forecasting; standards; space requirements; land use; zoning; transportation; land development; site selection; land capability; layout; evaluation; housing; urban renewal and new towns. (Also listed as CIVE 4303.)

Prerequisite: third-year registration, or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

GEOG 4304 [0.5 credit] (formerly 45.434\*)

**Transportation Engineering and Planning**

Transportation and the socio-economic environment; modal and intermodal systems and components; vehicle motion; human factors, system and facility design; traffic flow; capacity analysis; planning methodology; environmental impacts; evaluation methods. (Also listed as CIVE 3304.)

Prerequisite: third-year registration, or permission of the Department.

Lectures three hours a week, problem analysis three hours alternate weeks.

GEOG 4305 [0.5 credit] (formerly 45.435\*)

**Historical Geography**

The relation of geography and history, the use of field techniques, primary documents, model building and statistical methods in historical geography. Emphasis on Ontario and local studies. Also offered at the graduate level, with additional or different requirements, as GEOG 5405, for which additional credit is precluded.

Prerequisite: GEOG 3305 or permission of the Department.  
Seminar three hours a week.

GEOG 4400 [0.5 credit] (formerly 45.440\*)

**Environmental Geopolitics**

Environment and conflict in geopolitical perspective, ecological change and security policies of the industrial world, the geography of environmental threats, the political consequences and world order implications of environmental degradation and environmental refugees.

Prerequisites: fourth-year Honours standing and two of GEOG 2101, GEOG 2200, GEOG 3307, or permission of the Department.

Seminar three hours a week.

GEOG 4401 [0.5 credit] (formerly 45.441\*)

**Geographies of Globalization**

Theories of globalization in geographic perspective; local consequences of global processes, interconnections and patterns of social, economic, environmental, political and cultural change.

Prerequisites: fourth-year Honours standing, or permission of the Department.

Seminar three hours a week.

GEOG 4405 [0.5 credit] (formerly 45.445\*)

**Rural Land Use Analysis**

Rural land use issues from physical and socio-economic perspectives, contemporary methods for rural land use

evaluation; rural land use policies.

Prerequisite: GEOG 3306 and fourth-year Honours standing, or permission of the Department.

Lectures and seminars three hours a week.

GEOG 4406 [0.5 credit] (formerly 45.446\*)

**Practicum in Geography I**

Experience in an employment environment through field placement. Observation and involvement in issues and research methods used by professional geographers.

May be taken for credit in addition to GEOG 4408.

Prerequisites: fourth-year Honours standing in Geography and permission of the Department.

Field placement one day a week.

GEOG 4408 [0.5 credit] (formerly 45.448\*)

**Practicum in Geography II**

Experience in an employment environment through field placement. Observation and involvement in issues and research methods used by professional geographers. May be taken for credit in addition to GEOG 4406.

Prerequisites: fourth-year Honours standing in Geography and permission of the Department.

Field placement of one day a week.

GEOG 4600 [0.5 credit] (formerly 45.460\*)

**Post-Communist Eastern Europe**

Geographical dimensions of political and economic transition in the post-communist societies of Eastern Europe and the former USSR. Topics may include environmental degradation, resource management, population, quality of life, industrial restructuring and regional development, urban and rural changes, energy, transportation, and foreign trade.

Prerequisites: fourth-year Honours standing, GEOG 3600 or GEOG 3601, or permission of the Department.

Lectures and seminars three hours a week.

GEOG 4904 [1.0 credit] (formerly 45.494)

**Honours Research Workshop and Tutorial**

Advanced training in research design, data collection and analysis, report writing and oral presentations in workshop and tutorial settings; undertaking of an individual research project and preparation of a major report on a selected topic normally on the National Capital Region.

Precludes additional credit for GEOG 4901 GEOG 4902, GEOG 4908, and GEOG 4909.

Prerequisite: fourth-year Honours standing in Geography.  
Workshop/seminar/tutorial three hours per week.

GEOG 4906 [1.0 credit] (formerly 45.496)

**Honours Research Project**

Candidates for B.Sc. with Honours in Geography undertake a research project based on a laboratory or field problem. The project is supervised by a member of the department and a written report must be submitted. The candidate may be examined orally on the report.

Prerequisite: fourth-year Honours standing in Geography.  
Hours to be arranged.

GEOG 4909 [1.0 credit] (formerly 45.499)

**Honours Research Essay**

A student in the fourth year of B.A. (Honours) or Combined B.A. (Honours) in Geography may write an Honours essay or equivalent. The essay counts as the equivalent of 1.0 credit. Students work under an individual faculty adviser. The subject for research is decided upon in consultation with the supervisor.

Prerequisites: fourth-year Honours standing in Geography, a Geography GPA of 8.00 or better, an approved research topic, and permission of the Honours supervisor.

Hours to be arranged with faculty adviser.

## Geology (GEOL)

Department of Earth Sciences  
Faculty of Science

Natural Sciences 66.100 [0.5 credit] (formerly 66.100)

### Seminar in Science

This cross-disciplinary course presents a survey of current issues in science. The course provides new science students with an orientation to the study of science at the university level. The course is structured around seminars, oral and written presentations.

Restricted to students in the first year of B.Sc. programs or B.A. Biology programs.

Lectures and tutorials three hours per week

GEOL 1004 [0.5 credit] (formerly 67.104)

### The Evolving Earth

The 4.6 billion year history of geological processes, catastrophic events, climatic change, and history of life, as the foundation from which to interpret the evolution of Earth's environments. Precludes additional credit for GEOL 1008, GEOL 1000 or GEOL 1005, ISCI 2001 and ISCI 2000.

Prerequisite: For non-Science students.

Lectures three hours a week

GEOL 1005 [1.0 credit] (formerly 67.105)

### Introduction to Geoscience

Survey of processes operating within the Earth and at its surface: the hydrological cycle, oceans, Earth structure, tectonics, rocks, minerals, history of life on the Earth, climatic change, soils, landforms and resources. (Also listed as GEOG 1005.)

Precludes additional credit for GEOL 1000, GEOL 1006, GEOL 1007, GEOL 1008.

Lecture three hours a week, laboratory three hours a week, a field excursion.

Note: Students wishing to continue in a Geology program may, with permission of the Department of Earth Sciences, substitute GEOL 1005 for GEOL 1000.

GEOL 1006 [0.5 credit] (formerly 67.106)

### Exploring Planet Earth

Origin of the Earth and concepts of geological time. Exploration of processes that shape our planet and form its rocks and mineral deposits: magmatism, volcanism, metamorphism within the Earth's interior; weathering, erosion and sedimentation at the Earth's surface.

Precludes additional credit for GEOL 1000, GEOL 1005, GEOG 1005, and GEOG 1100.

Prerequisites: OAC in Calculus and one of Physics, Biology or Chemistry; or permission of the Department.

Lectures three hours a week, laboratory three hours a week, field excursions.

GEOL 1007 [0.5 credit] (formerly 67.107)

### The Dynamic Earth: Plate Tectonics

Dynamic processes that drive our planet and create the interior structure of the Earth; plate tectonics and processes at plate boundaries; earthquakes and seismic hazards; use of geophysics to explore the subsurface.

Precludes additional credit for GEOL 1000, GEOL 1005, GEOG 1005, and GEOG 1100.

Prerequisites: OAC in Calculus and one of Physics, Biology or Chemistry; or permission of the Department.

Lectures three hours a week, laboratory three hours a week, field excursion.

GEOL 1008 [0.5 credit] (formerly 67.108)

### Earth Systems through Time

Historical development of ideas concerning gradualism, catastrophism, and complex systems as guiding forces of local to global geological changes that define the past 4.6 billion years, the history of life, and the evolution of Earth's environments.

Precludes additional credit for GEOL 1000, GEOL 1004 and GEOL 1005.

Prerequisite: OAC in Calculus and one of Physics, Biology or Chemistry; or permission of the Department.

Lectures three hours a week, laboratory three hours a week, field excursion.

GEOL 2001 [0.5 credit] (formerly 67.201)

### Co-operative Work Term Report 1

This course provides practical experience for students enrolled in the Co-operative Option. To receive course credit a student must receive satisfactory evaluations from their work term employer. Written and oral reports describing the work term project will be required.

Prerequisites: Registration in the Earth Sciences Co-operative Option and permission of the Department.

Four-month work term.

GEOL 2203 [0.5 credit] (formerly 67.223)

### Optical Mineralogy

Methods of optical mineralogy and optics of the rock forming minerals.

Precludes additional credit for GEOL 2202.

Prerequisites: at least 1.0 credit from GEOL 1006, GEOL 1007, GEOL 1008 or GEOL 1000 or GEOL 1005 and Chemistry 65.100; or permission of the Department

Lectures two hours a week, tutorial one hour a week, laboratory three hours a week.

GEOL 2205 [0.5 credit] (formerly 67.225)

### Introductory Geochemistry

An introduction to thermodynamics, phase diagrams, and solution chemistry as applied to geological systems. Distribution of the elements.

Precludes additional credit for GEOL 2201.

Prerequisites: at least 1.0 credit from GEOL 1006, GEOL 1007, GEOL 1008 or GEOL 1000 or GEOL 1005 and Chemistry 65.100; or permission of the Department

Lectures two hours a week, laboratory three hours a week.

GEOL 2208 [0.5 credit] (formerly 67.228)

### Petrology and Geochemistry of Igneous Rocks

The classification of igneous rocks. The chemical characteristics of the crust and mantle. The generation and physical properties of magmas, magma emplacement of volcanic and plutonic rocks. Phase equilibrium and isotope geochemistry.

Prerequisites: GEOL 2203 and GEOL 2205.

Lectures two hours a week, tutorial one hour a week, laboratory three hours a week.

GEOL 2301 [0.5 credit] (formerly 67.231)

### Historical Geology and the Fossil Record

Evolution of the earth and its biosphere through geological time, the stratigraphic and fossil record in relationship to geological and paleontological processes, introduction to important fossil groups and their paleoenvironmental implications.

Prerequisites: at least 1.0 credit from GEOL 1006, GEOL 1007, GEOL 1008 or GEOL 1000 or GEOL 1005; or permission of the Department

Lectures three hours a week and laboratory three hours a week. May involve one or more field trips.

GEOL 2306 [0.5 credit] (formerly 67.236)

### Evolutionary Paleocology

Principles of ecology and paleocology applied to the stratigraphic succession of fossil communities. Current concepts of micro- and macro-evolution and extinction and the synthesis of key paleontological events through the Phanerozoic are emphasized.

Precludes additional credit for GEOL 3302 and GEOL 3303.

Prerequisite: GEOL 2301 or permission of the Department.

Lectures two hours a week, laboratory three hours a week.

GEOL 2308 [0.5 credit] (formerly 67.238)

### Environmental and Resource Geology

Enhances appreciation of the resource basis of society and addresses issues related to the extraction and utilization of geological resources. Deals with the role of the Earth Sciences in the forecasting and mitigation of natural disasters such as earthquakes and volcanic eruptions.

Available only as a free elective in the Geology programs.

Prerequisite: Any one of the 1000-level courses in Geology or ISCI 2001 or permission of the Department

Lectures three hours a week.



GEOL 2401 [0.5 credit] (formerly 67.241)

### **Dinosaurs**

A general introduction to dinosaurs, their place in evolution, their social behaviour, the Mesozoic landscape, extinction theories, and public perception of dinosaurs.

Not available as Science credit in Geology programs.

Lectures three hours a week.

GEOL 2402 [0.5 credit] (formerly 67.242)

### **Climate Change: An Earth Sciences Perspective**

An exploration of the often dramatic climate changes that have occurred through earth history from a geological perspective, emphasizing the history of earth climates, geological causes of climate change, and impact that rapid climate change has had on the biosphere.

Not available as Science credit in Geology programs.

Lectures three hours a week.

GEOL 2403 [0.5 credit] (formerly 67.243)

### **Introduction to Oceanography**

An environmental approach to understanding the oceans which cover over 70 percent of the Earth's surface; deals with origins, physical and organic components and processes, geological marine resources and marine pollution.

Not available as Science credit in Geology programs.

Lectures three hours per week.

GEOL 2404 [0.5 credit] (formerly 67.244)

### **Engineering Geology**

Overview of geological processes essential for understanding engineering problems. Topics include: geologic cycle; classification of rocks; stratigraphy; geological structures; physical and chemical weathering; erosion, transportation, and depositional environments; definition, classification and properties of soils; physical and geochemical aspects of groundwater; and geophysical techniques.

Precludes additional credit for any 1000-level Geology courses. Prerequisites: Registration in B.Eng.; CHEM 1101; or permission of the Department.

Lectures three hours a week, laboratory three hours alternate weeks, a field excursion.

GEOL 2801 [0.5 credit] (formerly 67.281)

### **Field Geology I**

An introduction to the study of rocks from the Precambrian and Phanerozoic Eras. Geologic mapping techniques are emphasized. A mandatory two-week field camp before classes in the fall with additional laboratories and field trips during the fall term.

Precludes additional credit for GEOL 2805 as a Science credit for students in Geology program but may be taken as a Free Elective.

Prerequisites: At least 1.0 credit from GEOL 1006, GEOL 1007, GEOL 1008, GEOL 1000 or GEOL 1005 and completion of the first-year Science program; or permission of the Department.

GEOL 2802 [0.5 credit] (formerly 67.282)

### **Field Geology II**

An introduction to methods of field analysis and interpretation in deformed and metamorphosed terranes. The course includes a two-week field camp to be taken in early May.

Prerequisites: GEOL 2801 and permission of the Department. Lectures one hour a week, laboratory three hours a week, two-week field camp in early May.

GEOL 2805 [0.5 credit] (formerly 67.285)

### **Environmental Field Geology**

The geology of the environment studied in the field. The course includes exercises on topics such as hydrogeology, limnology and Pleistocene Geology. Mandatory two-week field camp before classes begin in the fall.

Precludes additional credit for GEOL 2801 as a Science credit for students in the Geology programs but may be taken as a Free Elective.

Prerequisites: At least 1.0 credit from GEOL 1006, GEOL 1007, GEOL 1008, GEOL 1000 or GEOL 1005 and completion of the first-year Science program; or permission of the Department.

GEOL 3001 [0.5 credit] (formerly 67.301)

### **Co-operative Work Term Report 2**

This course provides practical experience for students enrolled in the Co-operative Option. To receive course credit a student must receive satisfactory evaluations from their work term employer. Written and oral reports describing the work term project will be required.

Prerequisites: Registration in the Earth Sciences Co-operative Option and permission of the Department.

Four-month work term.

GEOL 3201 [0.5 credit] (formerly 67.321)

### **Sedimentary Environments**

Principles of sediment transport, and classification of sedimentary rocks and structures, as applied to interpretation of sedimentary facies within the context of sequence stratigraphy.

Prerequisite: GEOL 2801 or GEOL 2805; or permission of the Department.

Lectures two hours a week and laboratories three hours a week.

May involve one or more field trips.

GEOL 3203 [0.5 credit] (formerly 67.323)

### **Petrology and Geochemistry of Metamorphic Rocks**

The classification of metamorphic rocks. The origin of metamorphic rocks with emphasis on the chemical and mineralogical characteristics of these rocks and the processes involved in their evolution. Related phase equilibria and thermodynamics.

Prerequisite: GEOL 2203.

Lectures two hours a week, laboratory three hours a week, one day long field trip.

GEOL 3204 [0.5 credit] (formerly 67.324)

### **Mineral Deposits**

Metallic and non-metallic ore deposits, property valuation, mineral economics, exploration geochemistry, stable isotope and trace element geochemistry, partition coefficients.

Prerequisites: GEOL 3201 and GEOL 3203; or permission of the Department.

Lectures two hours a week and laboratory three hours a week, one day long field trip.

GEOL 3205 [0.5 credit] (formerly 67.325)

### **Physical Hydrogeology**

An introduction to the principles governing the movement of groundwater through various geological materials. The exploration, development and use of groundwater as a resource by man, and groundwater-related geohazards are examined. Precludes additional credit for GEOL 4204.

Prerequisites: at least 1.0 credit from GEOL 1006, GEOL 1007, GEOL 1008 or GEOL 1000 or GEOL 1005; or permission of the Department.

Lectures two hours a week, laboratory two hours a week.

GEOL 3805 [0.5 credit] (formerly 67.385)

### **Geodynamics**

The structure, composition, and rheological properties of the Earth: lithosphere, mantle and core. Plate tectonics and its relation to geophysical fields, driving mechanisms, and processes at plate boundaries and in plate interiors.

Precludes additional credit for GEOL 3800 or GEOL 3802.

Prerequisites: GEOL 2208; GEOL 2801 or GEOL 2805; and GEOL 2802; or permission of the Department.

Lectures two hours a week, laboratory three hours a week.

GEOL 3806 [0.5 credit] (formerly 67.386)

### **Structural Geology**

Structure and tectonic evolution of mountain belts; analysis of strain and fabrics in a variety of crustal settings. Applications to geological engineering and mineral and petroleum exploration. Precludes additional credit for GEOL 3800 or GEOL 3801.

Prerequisites: GEOL 3805 or permission of the Department.

Lectures two hours a week, laboratory three hours a week.

GEOL 4001 [0.5 credit] (formerly 67.401)

### **Co-operative Work Term Report 3**

This course provides practical experience for students enrolled in the Co-operative Option. To receive course credit a student must receive satisfactory evaluations from their work term employer. Written and oral reports describing the work term

project will be required.

Prerequisites: Registration in the Earth Sciences Co-operative Option and permission of the Department.  
Four-month work term.

GEOL 4003 [0.5 credit] (formerly 67.403)

**Directed Studies in Geology**

One or more projects involving at least 15 days field and/or laboratory research, not related to thesis research. Assessment based on written reports and an oral presentation. Expenses for long-distance travel are borne by the student.

Prerequisites: Honours standing and permission of the Department.

Hours to be arranged.

GEOL 4105 [0.5 credit] (formerly 67.415)

**Quaternary Geography**

Changes in the physical environment of the earth during the last 2 million years; methods of studying recent earth history; the last ice age in Canada. (Also listed as GEOG 4101.)

Note: GEOL 3201 and GEOG 3102 are recommended.

Lectures three hours a week.

GEOL 4107 [0.5 credit] (formerly 67.417)

**Geotechnical Mechanics**

Soil composition and soil classification. Soil properties, compaction, seepage and permeability. Concepts of pore water pressure, capillary pressure and hydraulic head. Principle of effective stress, stress-deformation and strength characteristics of soils, consolidation, stress distribution with soils, and settlement. Laboratory testing. (Also listed as CIVE 3208, GEOG 4107.)

Precludes additional credit for GEOG 4204.

Prerequisites: GEOL 2404 or equivalent and Third-year registration, or permission of the Department.

Lectures three hours a week, laboratory three hours alternate weeks.

GEOL 4202 [0.5 credit] (formerly 67.422)

**Metallic Mineral Deposits**

Ore deposits studied from their relationships to the petrologic cycle. Ore genesis interpreted in light of field studies of local deposits, reflected light microscopy of ore suites, description of classic deposits, phase equilibria and isotopic evidence.

Prerequisites: GEOL 3203 and GEOL 3204.

Lectures, seminars and laboratories five hours a week.

GEOL 4203 [0.5 credit] (formerly 67.423)

**Petroleum Geology**

Principles and methods of petroleum exploration geology with emphasis on the Western Canada Sedimentary Basin.

Prerequisites: GEOL 2301, GEOL 3201, GEOL 3806; or permission of the Department.

Lectures, seminars and laboratories five hours a week.

GEOL 4205 [0.5 credit] (formerly 67.425)

**Geochemistry of Waters**

The principles and processes controlling the chemical quality of groundwater and the subsequent effects on water quality due to human activities. Isotope geochemistry of the hydrologic cycle and dissolved constituents in groundwater.

Precludes additional credit for GEOL 4200.

Prerequisites: GEOL 3205 and CHEM 1000, or permission of the Department.

GEOL 4301 [0.5 credit] (formerly 67.431)

**Microfossils**

Oceanological and marine geological processes; microorganisms of the oceans; microfossils: their evolution, biostratigraphic and paleoecologic significance and economic use; microfaunal correlation in petroleum geology. Laboratory: Examination and identification of microfossils.

Prerequisite: GEOL 2301 or permission of the Department.

Lectures and laboratories five hours a week.

GEOL 4302 [0.5 credit] (formerly 67.432)

**Marine Geology**

Development of ocean basins, physical and chemical oceanographic processes, paleoceanographic changes of watermass distribution and circulation patterns, interaction

between atmosphere and ocean, marine sedimentation, offshore seismic stratigraphy, marine habitats, marine instrumentation.

Prerequisites: GEOL 2301, GEOL 3201; GEOL 3805; or permission of the Department.

Lectures, seminars and laboratories five hours a week.

GEOL 4305 [0.5 credit] (formerly 67.435)

**Carbonate Sedimentology**

Aspects of modern depositional systems, dynamic facies models, sequence stratigraphy, mineralogy, and diagenesis of carbonate sediments. Practical part of the course will introduce various techniques in carbonate sedimentology (mapping, petrography, staining, cathodoluminescence, fluorescence, SEM).

Precludes additional credit for GEOL 4603.

Prerequisites: GEOL 3201 or permission of the Department.

Lectures two hours a week and a three-hour laboratory.

GEOL 4402 [0.5 credit] (formerly 67.442)

**Advanced Structure**

A study of the structural evolution of mountain belts, with emphasis on field methods.

Prerequisites: GEOL 3805 and GEOL 3806; or permission of the Department.

Lectures, seminars and laboratories five hours a week.

GEOL 4501 [0.5 credit] (formerly 67.451)

**Igneous Petrology**

Genesis of plutonic and volcanic rocks, their spatial and petrochemical relationships and crust-mantle differentiation; associated problems in phase equilibria and isotopic studies. One day-long field trip.

Prerequisite: GEOL 3203.

Lectures and laboratories five hours a week.

GEOL 4502 [0.5 credit] (formerly 67.452)

**Metamorphic Petrology**

Field relations of metamorphic rocks; graphical treatment and interpretation of mineral assemblages. Laboratory: Petrographic techniques, study of rock suites.

Prerequisite: GEOL 3203.

GEOL 4604 [0.5 credit] (formerly 67.464)

**Precambrian Geology**

Introduction to problems of the Precambrian, emphasizing both classical and current North American studies. Laboratory: research methods, field trips, petrologic studies of representative rock suites.

Prerequisite: GEOL 3203.

GEOL 4707 [0.5 credit] (formerly 67.477)

**Engineering Seismology**

Seismological topics with engineering applications. Characterization of seismicity and seismic sources (areas and faults). Seismic hazard analysis. Empirical and theoretical modeling of strong ground motion in time and frequency domains.

Prerequisites: GEOL 3805 and GEOL 3806; or permission of the department.

Lectures two hours a week.

GEOL 4801 [0.5 credit] (formerly 67.481)

**Physics of the Earth**

The physical properties of the solid Earth. Gravitational, magnetic and palaeomagnetic fields; seismology and earthquake occurrence; heat flow and thermal history. Geodynamic processes.

Prerequisites: GEOL 3805 and GEOL 3806; or permission of the Department.

GEOL 4802 [0.5 credit] (formerly 67.482)

**Geochemistry and Isotope Geology**

Chemical evolution of the Earth, meteorites, development of the continental crust, origin of the atmosphere and hydrosphere, radiometric dating, stable isotopes, origin of life.

Prerequisites: GEOL 3203 and GEOL 3204; or permission of the Department.

Lectures and seminars five hours a week.

GEOL 4803 [0.5 credit] (formerly 67.483)

**Applied Geochemistry**

Chemical and physical factors responsible for the distribution

and migration of the elements in the lithosphere, hydrosphere, atmosphere and biosphere; geochemistry applied to mineral exploration; methods of analysis. Laboratory: determination of trace amounts of the common metallic elements in soils and stream sediments; case histories, research problems, field trips. Prerequisites: GEOL 2208, GEOL 3204, CHEM 1000; or permission of the Department.

GEOL 4804 [0.5 credit] (formerly 67.484)

#### **Exploration Geophysics**

An introduction to the fundamental theory and application of geophysics to economic and structural geology. Methods studied are electrical, gravitational, magnetic, radioactive and seismic. Case history studies integrate the application of the methods.

Prerequisites: GEOL 3805 and GEOL 3806, PHYS 1001 and PHYS 1002, or PHYS 1007 and PHYS 1008; or permission of the Department.

Lectures and problems three hours a week.

GEOL 4805 [0.5 credit] (formerly 67.485)

#### **Data Integration and Analysis in the Geosciences**

Integration and analysis of spatial data in a Geographical Information System environment. Topics include acquisition, representation, analysis, and modeling of geological, geophysical, geochemical, and remotely-sensed data.

Prerequisites: Completion of the Second-Year Geology course requirements in Earth Sciences, or permission of the Department. Lectures and laboratory five hours a week.

GEOL 4807 [0.5 credit] (formerly 67.487)

#### **Field Geology III**

Two-week field camp designed to extend the student's geological knowledge by integrating advanced field, theory and experimental data. Assessment based on written reports, seminars, and oral examinations. Part of the cost is borne by the student. Prerequisites: Completion of the Third-year Geology course requirements and permission of the Department.

GEOL 4908 [1.0 credit] (formerly 67.498)

#### **Honours Thesis**

Independent studies. Requires prior written approval of a topic from a supervisor and the course co-ordinator. Oral and written proposal, progress and defence reports are required. Prerequisite: Completion of the Third-Year Geology course requirements.

## **German (GERM)**

College of the Humanities  
Faculty of Arts and Social Sciences

GERM 1105 [1.0 credit] (formerly 22.115)

#### **Introductory German**

For students with no knowledge of German. Oral skills, reading and writing. Compulsory attendance.

Offered either intensively in one term (8 hours per week plus out-of-class requirements) or over two terms (4 hours per week plus out-of-class requirements).

GERM 2105 [1.0 credit] (formerly 22.215)

#### **Intermediate German**

Further study of German to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for German 22.120, 22.205, 22.206, 22.209\*, 22.213.

Prerequisite: GERM 1105 or equivalent.

Offered either intensively in one term (8 hours per week plus out-of-class requirements) or over two terms (4 hours per week plus out-of-class requirements).

GERM 2400 [1.0 credit] (formerly 22.240)

#### **An Introduction to German Literature**

An introduction both to representative works of German literature, and to the informed discussion of literary texts, including narrative fiction, poetry and drama. Instruction in English, texts in English translation, with an option to read in German.

Prerequisite: second-year standing or permission of the College of the Humanities.

Lecture three hours a week.

GERM 3105 [1.0 credit] (formerly 22.315)

#### **Advanced German**

Continuation of the study of German to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Precludes additional credit for German 22.301\*, 22.302\*.

Prerequisite: GERM 2105 or equivalent.

Offered either intensively in one term (6 hours per week plus out-of-class requirements) or over two terms (3 hours per week plus out-of-class requirements).

GERM 3408 [0.5 credit] (formerly 22.348\*)

#### **Genre in German Literature**

This course discusses in different years the development of one of the literary genres (poetry, drama, prose) within a specific time frame. Instruction in English, texts in English translation, with an option to read in German.

Prerequisite: GERM 2400 or permission of the College of the Humanities.

Seminar three hours a week.

GERM 3500 [1.0 credit] (formerly 22.350)

#### **German Literature 1700-1800**

The literature of the Enlightenment, Storm and Stress, and Early Classicism, with special emphasis on the works of Lessing, Goethe and Schiller. Instruction in English, texts in English translation, with an option to read in German.

Prerequisite: GERM 2400 or permission of the College of the Humanities.

Seminar three hours a week.

GERM 3502 [0.5 credit] (formerly 22.352\*)

#### **German Literature 1800-1900**

This course discusses, for example, an author, a genre, a theme. Instruction in English, texts in English translation, with an option to read in German.

Prerequisite: GERM 2400 or permission of the College of the Humanities.

Seminar three hours a week.

GERM 3605 [1.0 credit] (formerly 22.365)

#### **Functional Contemporary German**

Advanced spoken and written German with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study.

Precludes additional credit for German 22.301\*, 22.302\*.

Prerequisite: GERM 3105 or equivalent.

Offered either intensively in one term (6 hours per week plus out-of-class requirements) or over two terms (3 hours per week plus out-of-class requirements).

GERM 3800 [1.0 credit] (formerly 22.380)

#### **German Literature 1900-2000**

Representative texts from drama, poetry, and prose fiction in the period from Hauptmann to Grass. Instruction in English, texts in English translation, with an option to read in German.

Prerequisite: GERM 2400 or permission of the College of the Humanities.

Seminar three hours a week.

## **Greek (GREK)**

College of the Humanities  
Faculty of Arts and Social Sciences

GREK 1005 [0.5 credit] (formerly 15.105\*)

#### **Introduction to Greek I**

A course for beginners in ancient Greek, designed to give students a grasp of basic grammatical forms and vocabulary (with reference to English derivatives) through the reading of continuous Greek.

Lectures and practice periods four hours a week.



GREK 1006 [0.5 credit] (formerly 15.106\*)

**Introduction to Greek II**

A course for students with some previous knowledge of the language: study of grammatical forms and constructions; acquisition of reading skills.

Prerequisite: GREK 1005 or equivalent.

Lectures and practice periods four hours a week.

GREK 2200 [0.5 credit] (formerly 15.220\*)

**Intermediate Greek I**

Further study of the language; introduction to the reading of ancient Greek authors.

Precludes additional credit for GREK 2001.

Prerequisite: GREK 1006 or equivalent.

Tutorials three hours a week.

GREK 2201 [0.5 credit] (formerly 15.221\*)

**Intermediate Greek II**

Continued study of the language; reading of selected prose and poetry by ancient Greek authors; development of translation skills.

Precludes additional credit for GREK 2001.

Prerequisite: GREK 2200 or equivalent.

Tutorials three hours a week.

GREK 3900 [0.5 credit] (formerly 15.390\*)

**Studies in Greek Poetry**

Reading and critical discussion of selections from ancient Greek poetry.

Prerequisite: GREK 2201 or equivalent.

Tutorials three hours a week.

GREK 3901 [0.5 credit] (formerly 15.391\*)

**Studies in Greek Prose**

Reading and critical discussion of selections from ancient Greek prose.

Prerequisite: GREK 2201 or equivalent.

Tutorials three hours a week.

GREK 4900 [0.5 credit] (formerly 15.490\*)

**Directed Study (Poetry)**

GREK 4901 [0.5 credit] (formerly 15.491\*)

**Directed Study (Prose)**

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## History (HIST)

Department of History

Faculty of Arts and Social Sciences

HIST 1001 [1.0 credit] (formerly 24.101)

**Western Civilization**

A survey of the major events, ideas and movements that have shaped western civilization from the fall of Rome to the twentieth century. (Field a or b)

Precludes additional credit for FYSM 1102.

Prerequisite: registration is restricted to first-year students.

Lectures two hours a week, discussion groups one hour a week

HIST 1002 [1.0 credit] (formerly 24.102)

**Europe in the 20th Century**

An introduction to some of the major ideological, political, diplomatic, military, social, cultural and economic developments that have shaped contemporary Europe. This course is designed primarily for students who do not plan to major in history. Registration is restricted to first-year students, except for those students who need the course to satisfy the degree requirements of their department, faculty, or school. (Field b)

Lectures three hours a week.

HIST 1009 [1.0 credit] (formerly 24.109)

**Turning Points in History**

Introductory seminars emphasizing the development of writing, research, and analytical skills through the intensive examination of selected topics in modern history. For 2002-2003 the topic for Section A is Unexamined Assumptions; for Section B, the

topic is Social Protest, Social Change; for Section C, the topic is Russia in the Age of Revolution, 1825-1928; for Section D, the topic is Crime and Criminal Justice in England from Witchcraft to Homosexuality; and for Section E and F, the topic is Shaping Modern Canada.

Precludes additional credit for HIST 1000 and HIST 1009.

Prerequisite: normally restricted to students entering the first year of a B.A. program.

Seminar three hours a week.

HIST 1300 [1.0 credit] (formerly 24.130)

**Intro. to Canadian History**

An historical study of the political, economic and social development of Canada with emphasis on the twentieth century. (Field c)

Precludes additional credit for FYSM 1103.

Prerequisite: registration is restricted to first-year students, except for those students who need the course to satisfy the degree requirements of their department, faculty, or school.

Three hours a week.

HIST 1700 [1.0 credit] (formerly 24.170)

**Europe and the World**

A study of European expansion overseas and of the range of local responses to Western pressures, with a view to explaining how this two-fold process shaped the historical development of Asia, Africa and Latin America. (Field d)

Registration is restricted to first-year students, except for those students who need the course to satisfy the degree requirements of their department, faculty, or school.

Lectures three hours a week.

HIST 2005 [1.0 credit] (formerly 24.205)

**England During the Middle Ages**

A study concentrating on the political development of medieval England, A.D. 410-1485. (Field a)

Lectures three hours a week.

HIST 2100 [1.0 credit] (formerly 24.210)

**Intro. to the History of Ideas**

A study of Western intellectual development which considers such movements as humanism, the Enlightenment, romanticism, Darwinism and contemporary ideologies. (Field a or b)

Lectures three hours a week.

HIST 2201 [1.0 credit] (formerly 24.221)

**History of Science**

An introduction to the history of science from antiquity to the twentieth century. Readings include works by Plato, Aristotle, Grosseteste, Galileo, Newton, Darwin and Einstein. No special knowledge of modern science is assumed. (Field a or b)

Lectures three hours a week.

HIST 2202 [1.0 credit] (formerly 24.222)

**The Industrial Revolution**

A study of industrialization in Europe and North America, with emphasis on technological innovation. Key developments in power production; their application to manufacturing, transport and communications; new forms of business organization and marketing; science and industry; political and social responses to industrialization. (Field b or c)

Lectures three hours a week.

HIST 2203 [1.0 credit] (formerly 24.223)

**Early Modern Europe 1500-1789**

The social, economic, cultural and political development of Europe (including Scandinavian, Eastern and Mediterranean as well as Western and Central Europe) from the era of the Reformation to the outbreak of the French Revolution. Special attention is paid to social themes. (Field a)

Lectures three hours a week.

HIST 2205 [1.0 credit] (formerly 24.225)

**Europe 1815-1914**

The Napoleonic legacy; liberalism and the struggle for constitutional government; industrialization and social change; the revolutions of 1848; reform in Russia; nation building and

national unification in Italy and Germany; the Franco-Prussian war; socialism and labour; the transformation of nationalism into imperialism. (Field b)  
Lectures three hours a week.

HIST 2303 [1.0 credit] (formerly 24.233)

**Canadian Political History**

An historical survey of the Canadian political tradition from the late eighteenth century to the present. Politicians, parties, ideas, social context and dissent are examined. second-year standing recommended. (Field c)  
Lectures three hours a week.

HIST 2304 [1.0 credit] (formerly 24.234)

**Canadian Social History**

Historical insights into the structures and values inherent in Canadian society and culture from the eighteenth to the twentieth centuries. second-year standing recommended. (Field c)  
Lectures three hours a week.

HIST 2305 [1.0 credit] (formerly 24.235)

**Canadian Economic History**

A historical survey of persistence and change in the Canadian economy from the eighteenth to the twentieth centuries. (Field c) (Also listed as ECON 2305.)

Prerequisite: ECON 1000 or permission of the Department of History.

Lectures three hours a week.

HIST 2307 [1.0 credit] (formerly 24.237)

**History of Latin America**

Beginning with the Maya, Aztec, and Inca civilizations, this course follows the transformation of these societies by colonialism, the impact of Spanish, Portuguese and African cultures, and by their transition to modern nation-states. (Field d)  
Lectures three hours a week.

HIST 2400 [1.0 credit] (formerly 24.240)

**History of the United States**

A survey of United States politics and society since the American Revolution. (Field c)

Lectures three hours a week.

HIST 2500 [1.0 credit] (formerly 24.250)

**History of Modern England**

A survey of significant political and social developments in England from the mid-fifteenth to the early twentieth century. (Field a or b)

Lectures three hours a week.

HIST 2504 [1.0 credit] (formerly 24.254)

**Intro. to Women's History**

A survey of themes in the history of women with emphasis on their European experience, from the early modern period to the present. (Field a or b)

Lectures three hours a week.

HIST 2509 [1.0 credit] (formerly 24.259)

**History of Germany**

A history of the German-speaking peoples from the rise of the Holy Roman Empire to the present. (Field a or b)

Lectures three hours a week.

HIST 2600 [1.0 credit] (formerly 24.260)

**History of Russia**

A survey of Russian history from rise of Kievan Rus to the collapse of the Soviet Union in 1991, with emphasis on the period from the reign of Peter the Great to the revolutions of 1917. (Field a or b)

Lectures three hours a week.

HIST 2705 [1.0 credit] (formerly 24.275)

**History of Africa**

An introduction to the history of Africa. The first half is devoted to the period prior to European colonization with emphasis on West African states and empires; the second half deals with resistance to colonization, European colonial rule, independence and liberation movements. (Field d)

Lectures three hours a week.

HIST 2708 [1.0 credit] (formerly 24.278)

**The Middle East since 1798**

Development of the civilization and culture of the Middle East from 1798 to the present emphasizing the mutual discovery of East and West, the search for identity, the impact of colonialism and international rivalry, and social, religious and cultural change within a continuing tradition. (Field d) (Also listed as RELI 2708.)

Lectures three hours a week.

HIST 2801 [1.0 credit] (24.281)

**War & Society in Modern Europe**

A survey of the diplomatic, political, military and social experience of war and its consequences for the major western European states and Russia from 1799 to 1945. (Field b)

Lectures three hours a week.

HIST 2805 [1.0 credit] (formerly 24.285)

**History of China**

A survey of Chinese political and intellectual history from the Xia Dynasty to the 1911 Revolution. Emphasis is placed on the impact of the West on China from the sixteenth to the twentieth century. (Field d)

Lectures three hours a week.

HIST 2806 [1.0 credit] (formerly 24.286)

**History of Japan**

A survey of Japanese history from the legendary beginning of the country in 6000 B.C. to the end of World War Two. (Field d)

Lectures three hours a week.

HIST 2808 [1.0 credit] (formerly 24.288)

**The Historian's Craft**

Lectures and workshops on historical methods and materials. Topics will include the discovery, evaluation, use and analysis of documents in historical context, non-documentary evidence, statistics, and bibliographical tools. Highly recommended for Honours students. Not open to first-year students.

Lectures and workshops three hours a week.

HIST 2900 [1.0 credit] (formerly 24.290)

**History of Ancient Greece**

The history of classical Greece to the conquest of Asia by Alexander with special attention to the development of her characteristic institutions. (Field a) (Also listed as CLCV 2900.)

Prerequisite: second-year standing or permission of the Department.

Lectures two hours a week.

HIST 2901 [1.0 credit] (formerly 24.291)

**History of Ancient Rome**

The history of ancient Rome, her organization and expansion especially during the late Republic and early Empire. (Field a) (Also listed as CLCV 2901.)

Prerequisite: second-year standing or permission of the Department.

Lectures two hours a week.

HIST 2909 [1.0 credit] (formerly 24.299)

**Special Subject in History**

A lecture course on a special topic, theme, or period. For Section A, the topic for 2002-2003 is The Ottoman Empire and the Origins of Turkey. (Field d) For Section B, the topic for 2002-2003 is Profits and Power: Business-Government Relations in Canada from the Conquest to NAFTA. (Field c)

Lectures three hours a week.

HIST 3002 [1.0 credit] (formerly 24.302)

**The Later Roman Empire**

A study of major developments-administrative, ecclesiastical, cultural and societal-of the later Roman Empire. (Field a) (Also listed as CLCV 3002.)

Prerequisite: a 2000-level History course or third-year standing.

Lectures three hours a week.

HIST 3006 [0.5 credit] (formerly 24.306\*)

**Early Medieval Thought**

A general examination of medieval European intellectual life from the fifth to the twelfth century, with special reference to its

setting in the monastery and the cathedral school. (Field a)  
 Precludes additional credit for HIST 3005.  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3007 [0.5 credit] (formerly 24.307\*)

**Later Medieval Thought**

A general examination of medieval European intellectual life in the thirteenth and fourteenth centuries, with special reference to its setting in the university. (Field a)  
 Precludes additional credit for HIST 3005.  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3009 [0.5 credit] (formerly 24.309\*)

**Studies in Greek History**

A study of one of the major periods or themes of ancient Greek history. Contents of this course vary from year to year. (Field a)  
 (Also listed as CLCV 3201.)  
 Prerequisite: CLCV 2900/HIST 2900 or permission of the unit.  
 Lectures two hours a week.

HIST 3100 [1.0 credit] (formerly 24.310)

**Modern Intellectual History**

An intensive study of selected aspects of American, Canadian and European intellectual history in the nineteenth and twentieth centuries, with emphasis on twentieth-century social thought. (Field b or c)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3101 [0.5 credit] (formerly 24.311\*)

**Studies in Roman History**

A study of one of the major periods or themes of the history of ancient Rome. Topic for 2002-2003: The Roman Revolution: Republic into Empire. (Field a) (Also listed as CLCV 3202.)  
 Prerequisite: CLCV 2901/HIST 2901 or permission of the unit.  
 Lectures two hours a week.

HIST 3105 [0.5 credit] (formerly 24.315\*)

**Renaissance Europe**

The political and cultural history of Europe in the fourteenth, fifteenth and sixteenth centuries, with emphasis on the Italian Renaissance and its diffusion into England and France. (Field a)  
 Precludes additional credit for HIST 2105.  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3106 [0.5 credit] (formerly 24.316\*)

**Social History of Sexuality**

Sexuality in Western society, Middle Ages to the present. Themes include attitudes and behaviour; regulation of sexuality; gender; heterosexuality and homosexuality; prostitution; pornography; the politics of sex: stresses continuities and changes and the understanding of sexuality in contexts of place, class, gender, and culture. (Field a or b)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3107 [1.0 credit] (formerly 24.317)

**Hist. of the Family in Europe**

Comparative study of the family in early modern and modern Europe. Themes include family and household forms; family economy and government; demography; law; marriage formation, stability and breakdown; gender and family relationships; sexuality. (Field a or b)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3108 [1.0 credit] (formerly 24.318)

**The French Revolution**

Study of the main social, economic and political developments in eighteenth-century France, with emphasis on the origins and course of the Revolution up to 1799. (Field b)  
 Precludes additional credit for HIST 3106.  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3109 [0.5 credit] (formerly 24.319\*)

**Social History of Alcohol**

Alcohol in Western society from Ancient times to the present. Production, trade, and consumption of alcohol; religious and social significance; class, gender, and health; drinking cultures; policies toward drunkenness, and alcoholism. Specific topics include comparative trends, temperance movements, and prohibition. (Field a or b)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3201 [1.0 credit] (formerly 24.321)

**The Enlightenment**

An intellectual and cultural history of eighteenth-century Europe, with particular attention to Scotland, France and Italy. Representative themes include the shaping of historical knowledge, gender and sensibility; manners and private life; the literature of travel and ethnography, science and medicine. (Field b)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3202 [0.5 credit] (formerly 24.322\*)

**Capital Cities in History**

An examination of capital cities from the early modern period to the present. Ottawa and the provincial capitals of Canada will be a particular focus. (Field c)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3205 [0.5 credit] (formerly 24.325\*)

**Canadian Business History**

The place of business in Canadian society, economics and politics. The internal dynamics of Canadian business (organization, strategy, the rise of the manager), and its external implications (competition, foreign investment, business-government relations). (Field c)  
 Precludes additional credit for BUSI 4608.  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3206 [0.5 credit]

**Canadian Regional History**

A lecture course involving selected topics in the history of one of Canada's regions. The region and topics will be specified each year. The topic for 2002-2003 is The Prairie West. (Field c)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3208 [0.5 credit] (formerly 24.328\*)

**Eastern Ontario Communities**

The local history of Eastern Ontario, with particular reference to the settlement and development of the Ottawa Valley in the nineteenth century. (Field c)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3209 [0.5 credit] (formerly 24.329\*)

**Canadian Urban History**

Introduction to urban growth and development in Canada. The historical basis of the urban pattern and its influence in Canada and the internal structure and institutions of Canadian cities. Ottawa is used as a case study. (Field c)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3301 [0.5 credit] (formerly 24.331\*)

**Quebec Since the 1860s**

A social, economic, cultural and intellectual history of Quebec with emphasis on the development of Quebec nationalism. (Field c)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3304 [0.5 credit] (formerly 24.334\*)

**Canada-United States Relations**

An examination of diplomatic, economic, cultural and military relations, with particular attention to the twentieth century. (Field c)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.



HIST 3306 [0.5 credit] (formerly 24.336\*)

**Canadian External Relations**

The development of Canadian attitudes and policies toward external affairs, with emphasis on the twentieth century. (Field c)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3400 [0.5 credit] (formerly 24.340\*)

**U.S. Foreign Policy since 1941**

A study of United States foreign relations from intervention in World War II to the present. Principal themes include the developing antagonism with the Soviet Union, global political and economic expansion, and the response to the changed circumstances of the post-Cold War era. (Field c)  
Precludes additional credit for HIST 3409.  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3402 [0.5 credit] (formerly 24.342\*)

**The United States 1819-1850**

An examination of major developments in the United States from the Panic of 1819 to the Compromise of 1850, stressing the major social and political issues arising from territorial expansion, immigration and the reform impulse. (Field c)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3404 [1.0 credit] (formerly 24.344)

**The United States since 1941**

Some principal themes in the history of the United States since 1941. (Field c)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3405 [0.5 credit] (formerly 24.345\*)

**U.S. Foreign Policy 1865-1941**

A study of United States foreign relations from the end of the Civil War up to intervention in World War II. Principal themes include economic and political expansion in the Americas, the domestic contexts of foreign policy, and the developing relationship with Europe. (Field c)  
Precludes additional credit for HIST 3409.  
Prerequisite: A 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3406 [0.5 credit] (formerly 24.346\*)

**African-American Women**

An examination of aspects of the social, cultural, and political history of African-American women since the eighteenth century. (Field c)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3407 [0.5 credit] (formerly 24.347\*)

**Blacks in the United States**

A study of blacks in the United States, which concentrates on their experience under slavery and the recurring themes of integration and separatism after emancipation. (Field c)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3408 [1.0 credit] (formerly 24.348)

**American Intellectual History**

An examination of American thought from the colonial period to the twentieth century, with emphasis on political, social and religious ideas and their relation to American society and institutions. (Field c)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3500 [0.5 credit] (formerly 24.350\*)

**Canadian Immigration 1760-1875**

A study of immigration to and within British North America and of the adaptation of immigrants to colonial life between the Seven Years War and the early years of Confederation. (Field c)  
Precludes additional credit for HIST 3308.  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3503 [1.0 credit] (formerly 24.353)

**Aboriginal Peoples of Canada**

The history of the aboriginal peoples of Canada, including cultural, political, and economic themes. (Field c)  
Precludes additional credit for HIST 3502 and HIST 3503.  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3504 [1.0 credit] (formerly 24.354)

**Women in North America**

An examination of the changes that have taken place in the position of women in North America and the relationship of these changes to other social, economic and intellectual developments. (Field c)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3506 [0.5 credit] (formerly 24.356\*)

**Welfare & Poverty in Canada**

Analysis of the development of the Canadian welfare state. Chronological examination of welfare arrangements in Canada since the beginning of the nineteenth century; comparisons with selected western countries; discussions of the role of different social groups in policy formation. (Field c)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3507 [0.5 credit] (formerly 24.357\*)

**Canadian Immigration from 1875**

A study of immigration to Canada and of the adaptation of immigrants to their new environment from 1875. (Field c)  
Precludes additional credit for HIST 3308.  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3508 [1.0 credit] (formerly 24.358)

**English Society 1500-1914**

An inquiry into the relationship between society and politics in England. (Field a or b)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3600 [1.0 credit] (formerly 24.360)

**History of the U.S.S.R.**

A history of the politics, diplomacy, culture and society of Soviet Russia from 1917 to the end of the U.S.S.R. in 1991. (Field b)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3602 [0.5 credit] (formerly 24.362\*)

**The Modern Canadian Family**

The transformations of family life in Canada since 1800, its varieties, its continuities, its relationship with political and economic institutions, and the changing status of its members. The construction of ideas about families will be discussed to underline the complex dynamic between images and practices. (Field c)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3603 [0.5 credit] (formerly 24.363\*)

**European Women's History**

An examination of themes in the social, cultural, and intellectual history of modern European women. (Field b)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3605 [0.5 credit] (formerly 24.365\*)

**The U.S.S.R. in Int'l. Affairs**

Study of Soviet diplomatic activity and foreign policy principles from the founding of Comintern in 1919 to the end of the U.S.S.R. in 1991. (Field b)  
Prerequisite: a 2000-level History course or third-year standing.  
Lectures three hours a week.

HIST 3700 [0.5 credit] (formerly 24.370\*)

**The International Oil Industry**

Origins and growth of the "seven sisters": Rockefeller and Standard Oil (Exxon, Mobil, Chevron); Royal Dutch/Shell and British Petroleum; Gulf and Texaco; spread of transnational

operations; frontier producing regions in Latin America and the Middle East; cartels and the international structure of corporate control. (Field b or c)  
 Precludes additional credit for HIST 3702.  
 Prerequisite: A 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3703 [0.5 credit] (formerly 24.373\*)

**Oil & International Politics**

Petroleum as a factor in war and diplomacy: Oil in the world wars; development of Middle Eastern oil; nationalization crises in Mexico and Iran; rise of OPEC; nationalist challenges to international corporate control; the oil crisis of the 1970s; oil and the Gulf War. (Field b or c or d)  
 Precludes additional credit for HIST 3702.  
 Prerequisite: A 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3704 [0.5 credit] (formerly 24.374\*)

**Aztecs**

An examination of the Aztec social system, culture, religion, and philosophy both before and after the Spanish conquest. (Field c or d)  
 Prerequisite: A 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3705 [0.5 credit] (formerly 24.375\*)

**Latin American Women to 1825**

An introduction to the history of women and the family in Latin America from pre-Hispanic cultures to the wars of independence. This course will examine the lives of indigenous, Spanish, and African women within the context of colonialism. (Field d)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3706 [0.5 credit] (formerly 24.376\*)

**Revolutions in Latin America**

The context of revolutions and attempted revolutions as well as the question of resistance will be examined in a chronological framework. While exploring the revolutionary movements of the colonial and nineteenth-century periods, the course will focus on the twentieth century experience. (Field d)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3707 [0.5 credit] (formerly 24.377\*)

**Latin American Women from 1825**

An examination of Latin American women and the family in the national period with an emphasis on the growing role of women in politics and the impact of education and feminism in the region. (Field d)  
 Precludes additional credit for HIST 3705 (if taken before 1999-2000).  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3708 [0.5 credit] (formerly 24.378\*)

**Reformation Europe**

A history of the Protestant and Catholic Reformations of the sixteenth century, with special emphasis on the theological disputes of the protagonists and the impact of these disputes on the social, political and cultural developments of the era. (Field a) (Also listed as RELI 3708).  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3709 [0.5 credit] (formerly 24.379\*)

**Int'l. Relations in Latin America**

An examination of the troubled diplomatic relations of the region principally with the United States but also Europe and Canada, beginning with the Wars of Independence up to the invasion of Panama. (Field d)  
 Lectures three hours a week.  
 Prerequisite: a 2000-level History course or third-year standing.

HIST 3800 [0.5 credit] (formerly 24.380\*)

**International History 1914-41**

A survey of European international history in the First World War; peace making 1919-1923; inter-war diplomacy and the origins of the Second World War; the European war to 1941. (Field b)  
 Precludes additional credit for HIST 3800.  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week

HIST 3801 [0.5 credit] (formerly 24.381\*)

**International History 1941-90**

A survey of European international history in the Second World War, 1941-1945; peacemaking; post-war relations; European union. (Field b)  
 Precludes additional credit for HIST 3800.  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3802 [0.5 credit] (formerly 24.382\*)

**Britain & the Great War**

A lecture course on Britain's experience of the Great War. Topics include the military effort, civil-military relations, wartime government and politics, state expansion, labour and the trade unions, women's experience, religion and pacifism, war and remembrance. (Field b)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3805 [0.5 credit] (formerly 24.385\*)

**Twentieth-Century China**

A political history of China from the 1911 Revolution to the present. Emphasis is placed on the development of Chinese communism and the People's Republic since 1949. (Field d)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3806 [0.5 credit] (formerly 24.386\*)

**Japan Since 1945**

A political, intellectual and economic history of Japan in the twentieth century, concentrating on the period since the end of the Pacific War. (Field d)  
 Prerequisite: a 2000-level History course or third-year standing.  
 Lectures three hours a week.

HIST 3807 [0.5 credit] (formerly 24.387\*)

**Practicum in History**

An historical research project in a museum or public institution in the Ottawa area conducted under the supervision of the external institution and the History Department. Work includes reading, reports, and meetings. Students should be prepared to devote one day a week to the project.  
 Prerequisite: Major or Honours history student with third- or fourth- year standing and a G.P.A. of 9.00 or better in history courses, or permission of the Department.

HIST 3808 [1.0 credit] (formerly 24.388)

**Historical Theory and Method**

An examination of questions concerning the nature and value of historical inquiry and the meaning of the course of history.  
 Prerequisite: third-year standing.  
 Three hours a week.

HIST 3900 [1.0 credit] (formerly 24.390)

**Études Dirigées**

Un programme de lectures choisies et de travaux écrits dans le domaine de spécialisation d'un membre du département. Consultez le conseiller de *Mention: français* pour les sujets offerts. For students of *Mention: français* only. Permission of the *Mention: français* adviser required.  
 Precludes additional credit for HIST 3901.  
 Tutorials to be announced.

HIST 3901 [0.5 credit] (formerly 24.391\*)

**Études Dirigées**

Voir HIST 3900 pour description.  
 Permission of the *Mention: français* adviser required.  
 Precludes additional credit for HIST 3900.  
 Tutorials to be announced.

HIST 3902 [0.5 credit] (formerly 24.392\*)

**Topics in European History**

A lecture course on a special topic in European history. (Field a or b) For Section A, the topic for 2002-2003 is England in the Age of Jack the Ripper, 1870-1914. (Field b) For Section B, the topic for 2002-2003 is Byzantium between Europe and Islam. (Field a). For Section C, the topic for 2002-2003 is Hitler's Racial State. (Field b) Prerequisite: a 2000-level History course or third-year standing. Lectures three hours a week.

HIST 3903 [0.5 credit] (formerly 24.393\*)

**Topics in Canadian History**

A lecture course on a special topic in Canadian history. (Field c) Prerequisite: a 2000-level History course or third-year standing. Lectures three hours a week.

HIST 3904 [0.5 credit] (formerly 24.394\*)

**Topics in American History**

A lecture course on a special topic in United States history. (Field c)

Prerequisite: a 2000-level History course or third-year standing. Lectures three hours a week.

HIST 3905 [0.5 credit] (formerly 24.395\*)

**Topics in Intl History**

A lecture course on a special topic in international political or economic history. (Field b)

Prerequisite: a 2000-level History course or third-year standing. Lectures three hours a week.

HIST 3906 [0.5 credit] (formerly 24.396\*)

**Topics in World History**

A lecture course on a special topic in African, Asian, or Latin American history. The topic for 2002-2003 is Africa in the Era of the Slave Trade. (Field d)

Prerequisite: a 2000-level History course or third-year standing. Lectures three hours a week.

HIST 4006 [1.0 credit] (formerly 24.406)

**Seminar in Medieval History**

An examination of a selected problem in the history of medieval Europe. The topic for 2002-2003 is Political Culture in Late Medieval and Renaissance England. (Field i)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4200 [1.0 credit]

**Seminar in European History**

An examination of a selected problem or period in the history of Continental Europe. The topic for 2002-2003 is Politics and Society in Europe, 1914-1945. (Field i or ii)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4209 [1.0 credit] (formerly 24.429)

**Topics in Ancient History**

Intended for Honours students in Classics or History in their third- or fourth-year. (Field i) (Also listed as CLCV 4209.)

Prerequisites: CLCV 2900 (HIST 2900) or CLCV 2901 (HIST 2901) or CLCV 3201 (HIST 3009) or CLCV 3202 (HIST 3101) and permission of the Department.

Seminar two hours a week.

HIST 4302 [1.0 credit]

**Canada: Ideas & Culture**

A seminar on ideas, culture, and society in Canada. The particular themes and historical period will be specified each year. The topic for 2002-2003 is Political Culture, Political Ideas and the Canadian State since 1700. (Field v)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4304 [1.0 credit]

**Canada: Politics & Society**

A seminar on politics and society in Canada. The particular themes and historical period will be specified each year. The topic for 2002-2003 is Canadian Politics, Leadership, and Foreign Policy, 1921-2001. (Field v)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4306 [1.0 credit]

**Canada: Ethnicity & Community**

A seminar on population, ethnicity, and community in Canada. The particular approach, themes, and historical period will be specified each year. The topic for 2002-2003 is Immigrants and Community after 1860. (Field v)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4308 [1.0 credit] (formerly 24.438)

**History of Popular Culture**

Selected studies in the social history of culture in the age of mass society, including the popular arts, and the "culture of consumption". The topic for 2002-2003 is Popular Culture in North America. (Field v or vi)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4400 [1.0 credit] (formerly 24.440)

**Seminar in American History**

An examination of a selected problem or period in the history of the United States. The topic for 2002-2003 is A Cold War Society, 1945-1965. (Field vi)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4500 [1.0 credit]

**Seminar in British History**

An explanation of a selected problem or period in the history of Great Britain. The topic for 2002-2003 is Forms and Forces: Power and Community in the Century of the Reformation. (Field iv)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4505 [1.0 credit]

**Sem. in Women's & Gender Hist.**

A seminar on the history of women and gender. The particular approach, themes, and historical period will be specified each year. (Field: will depend on specified theme)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4600 [1.0 credit]

**Seminar in Russian History**

An examination of a selected problem or period in the history of Imperial or post-Imperial Russia. (Field iii)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4602 [0.5 credit] (formerly 24.462\*)

**Canadian-Soviet Relations**

A study of the ideology, economics, culture, and diplomacy of the relationship between the Soviet Union and Canada from the Russian Civil War era to the fall of the USSR. (Field iii)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4700 [1.0 credit] (formerly 24.470)

**Seminar in World History**

An examination of a selected problem or period in the history of Asia, Africa, or Latin America. (Field vii)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4802 [1.0 credit] (formerly 24.482)

**Sem. in International History**

An examination of a selected problem or period in the history of international relations. The topic for 2002-2003 is A Century of 'Asianism' in Japanese Foreign Policy, 1895-1995. (Field ii or v or vii)

Prerequisite: permission of the Department.

Seminar three hours a week.

HIST 4908 [1.0 credit] (formerly 24.498)

**Mémoire de recherche**

Un travail écrit dans le domaine de spécialisation d'un membre du département. Consultez le conseiller de *Mention: français* pour les sujets offerts. For students of *Mention: français* only. Permission of the *Mention: français* adviser required.

Precludes additional credit for HIST 4909.



HIST 4909 [2.0 credits] (formerly 24.499)

**Honours Research Essay**

B+ standing in History courses is expected. The subject for research is settled in consultation with the Department and a supervisor is assigned. Written outline of the project submitted to the Honours Committee one week before the last day for course changes. Oral examination. Not available to students in a Combined Honours program. The decision to commit to a research essay should be made at the beginning of third year. Precludes additional credit for HIST 4908.

Prerequisites: Registration in the Fourth-year of Honours History program and permission of the Department.

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## Humanities (HUMS)

College of the Humanities  
Faculty of Arts and Social Sciences

HUMS 1000 [1.0 credit] (formerly 02.100)

**Myth and Symbol**

Recurring symbols in myth, epic and ritual representing the relation between the sacred and the profane, the origin of the cosmos, the basis of community, and formative human experiences. Primary sources drawn from ancient India and China, Greek epic, Hebrew Scripture, and aboriginal practices. Lectures three hours a week and tutorials one and a half hours a week.

HUMS 1005 [0.5 credit] (formerly 02.105\*)

**Introduction to Anthropology**

An examination of a range of anthropological approaches to the study of human kind and culture. The course will focus on the study of human evolution and the development of symbolic thought as well as the nature and evolution of human cultural systems.

Precludes additional credit for ANTH 1000.

Prerequisite: Restricted to students in the Bachelor of Humanities program.

Lectures three hours a week.

HUMS 2000 [1.0 credit] (formerly 02.200)

**Reason and Revelation**

Philosophical and theological speculation in the Western world. Themes include knowledge and faith, justice and charity, the origin of the university, and the rise and fall of empires. Primary sources are drawn from Greek and Roman works, patristic theology, Muslim Scripture, medieval philosophy and literature. Prerequisites: HUMS 1000 and good standing in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 3000 [1.0 credit] (formerly 02.300)

**Culture and Imagination**

Major forms of literary, artistic, and philosophical expression from 1500-1800. Sources drawn from renaissance humanism, reformation theology, enlightenment and romantic philosophy. Prerequisites: HUMS 2000 and good standing in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 3200 [1.0 credit] (formerly 02.320)

**Continental European Literature**

Major movements and works from Dante's Divine Comedy through Voltaire's Candide. Themes include the New Humanism vs. old Chivalry in the Renaissance and Baroque periods; the rise of the modern novel and drama; reason, nature, and the Enlightenment project.

Prerequisites: HUMS 2000 and third-year standing in the B.Humanities program.

Lectures three hours a week.

HUMS 3205 [1.0 credit] (formerly 02.325)

**Platonism and Idealism**

The Platonic tradition in epistemology will be compared with Modern epistemological theories, primarily from the German

Idealistic school. Main authors will be Plato, Kant, Hegel. Other authors may include Plotinus, Proclus, Augustine, Eriugena, Cusanus, Ficino, Leibniz, Spinoza, Locke.

Prerequisite: third-year standing or permission of the Department. Lectures three hours a week.

HUMS 4000 [1.0 credit] (formerly 02.400)

**Politics, History & Modernity**

Politics, ideology, science, and technology of Western modernity. New forms of social authority, politics of revolution, philosophy of language, evolution of the nation-state, the rise of psychoanalysis. Sources drawn from German philosophy, economics, sociology, and psychoanalysis, and the works of modernism and post-modernism.

Prerequisites: HUMS 3000 and good standing in the Bachelor of Humanities program.

Lectures three hours a week and tutorials one and a half hours a week.

HUMS 4001 [0.5 credit] (formerly 02.401\*)

**Directed Studies in the Humanities**

A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays.

Prerequisites: fourth-year standing in the Bachelor of Humanities program and good standing in the program.

HUMS 4002 [0.5 credit] (formerly 02.402\*)

**Directed Studies in the Humanities**

A course for independent study and writing, under the supervision of a College designated faculty member. This course involves supervised readings and written essays.

Prerequisites: fourth-year standing in the Bachelor of Humanities program and good standing in the program.

HUMS 4100 [1.0 credit] (formerly 02.410)

**Principles of Modern Science**

A detailed investigation through laboratory experimentation and theoretical inquiry of the major principles of modern science. Students will acquire an understanding of the significant issues confronted in modern biology, physics, and chemistry. Lectures three hours a week, laboratories one hour a week, and discussion groups one hour a week.

HUMS 4101 [0.5 credit] (formerly 02.411\*)

**Modern European Art 1527-2000**

A brief historical survey followed by a discussion of how works of art were conceived, commissioned, used and produced during three periods: 1) The religious fragmentation of Europe and the rise of the New Powers, from the Sack of Rome to the time of the American and French revolutions (1520-1770), 2) The Age of Revolutions, Industry and the Bourgeoisie (1770-1914), 3) Modernism and Postmodernism (1914-2000)

Lectures three hours a week.

HUMS 4102 [0.5 credit] (formerly 02.412\*)

**Western Music 1700-2000**

A review of the major musical genres in Western music from the 18th to the 20th centuries. Students will gain familiarity with significant musical works of this period as well as an understanding of the techniques that were used in their composition.

Lectures three hours a week.

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## Integrated Science (ISCS)

Integrated Science Institute  
Faculty of Science

ISCS 3909 [0.5 credit] (formerly 64.399)

**Independent Study**

The student integrates aspects of both the science and the non-science areas of study in a project supervised by a faculty member. Prior to or immediately upon registration, the student should consult with the IS Chair for topic approval and course regulations. Precludes additional credit for ISCI 3909.

Prerequisites or co-requisite: at least 0.5 credits at the 3000-level or better and permission of the IS Chair.

ISCS 4908 [0.5 credit] (formerly 64.498)

### Honours Project

Under the supervision of a faculty adviser, the student carries out a research project in the IS areas of study. Prior to or immediately upon registration, the student should consult with the IS Chair for topic approval and course regulations. Precludes additional credit for ISCI 4908. Prerequisite: permission of the IS Chair.

## Industrial Design (IDES)

School of Industrial Design  
Faculty of Engineering and Design

IDES 1000 [0.5 credit] (formerly 85.100\*)

### Intro. to Industrial Design

The theoretical background of industrial design: definitions of design and industrial design; its nature and its history; aspects of manufactured objects; design methods; design management in industry; professional practice and industrial design promotion, nationally and internationally. (Also listed as ARCH 2006.) Lectures three hours a week.

IDES 1001 [0.5 credit] (formerly 85.101\*)

### Industrial Design Analysis

Various aspects of industrial design practice, including: the principles of product analysis; the object/context relationship; the role of the manufactured object; and design analysis from the perspective of the user, the maker and the designer. (Also listed as ARCH 2101.)

Prerequisite: IDES 1000 (ARCH 2006).

Lectures three hours a week.

IDES 1300 [0.5 credit] (formerly 85.130\*)

### Projects IA

An introduction to the techniques of industrial design including drawing and sketching as an aid to design, basics of line and shape, ideation and visualization, product drawing, presentation techniques, laboratory equipment and practices, introduction to the design process.

Prerequisite: IDES 1000 (may be taken concurrently).

Lectures and tutorials two hours a week, studio four hours a week.

IDES 1301 [0.5 credit] (formerly 85.131\*)

### Projects IB

Further aspects of industrial design theory and practice, more specifically those dealing with principles of product development and fundamentals of form and colour; case studies. Emphasis is on creative problem-solving techniques and application of visual communication techniques in design; introduction to fundamentals of photography.

Prerequisite: IDES 1300.

Lectures and tutorials two hours a week, studio four hours a week.

IDES 2101 [0.5 credit] (formerly 85.211\*)

### Mass Production Technology A

Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. Influences and role of assembly, finishing, production tooling, and costing.

Precludes additional credit for IDES 2100.

Prerequisites: IDES 1000, IDES 1300.

Lecture and tutorials three hours a week, laboratory three hours a week.

IDES 2102 [0.5 credit] (formerly 85.212\*)

### Mass Production Technology B

Continuation of IDES 2101\*. Transformation techniques applied to manufacturing materials. Part-design requirements and cost factors for manufacturing processes. The influences and role of assembly, finishing, production tooling, costing are addressed. Precludes additional credit for IDES 2100.

Prerequisite: IDES 2101 or permission of the School.

Lecture and tutorials three hours a week, laboratory three hours a week.

IDES 2105 [0.5 credit] (formerly 85.215\*)

### Computer Applications

Provides industrial design students with a working knowledge of computers and their applications. Topics covered include computer fundamentals and the use of application packages in design. Sample applications may include text/word processors, graphics manipulation, authoring software, computer-aided design and 3-D modellers.

Precludes additional credit for COMP 1004.

Prerequisite: IDES 1301.

Lecture and tutorials three hours a week.

IDES 2106 [0.5 credit] (formerly 85.216\*)

### Introduction to Multimedia

Analogue and digital systems and graphic processes used in the making of images. Fundamentals of still photography and videography combined with current computer technologies in the application of visual communication techniques.

Lectures three hours a week, laboratory three hours a week.

IDES 2203 [0.5 credit] (formerly 85.223\*)

### Form and Colour Fundamentals

The course approaches the phenomena of form and colour systematically by exploring basic elements and principles of design. Form giving properties such as structure, proportion, composition and static and dynamic symmetry are studied. Additional topics include typology of objects, surface transitions, and colour specification.

Prerequisite: IDES 1301 or permission of the School.

Lectures two hours a week, studio four hours a week.

IDES 2300 [0.5 credit] (formerly 85.230\*)

### Projects IIA

An introduction to the design process and basic principles of design. Topics include: basic design theory and practice, design methodology, problem solving methods, visual communication skills and basic modeling techniques. The design project(s) will relate to the principles covered in the lectures.

Prerequisites: IDES 1001 and IDES 1301, or permission of the School.

Lectures two hours a week, studio four hours a week.

IDES 2302 [0.5 credit] (formerly 85.232\*)

### Projects IIB

Introduction to the design principles associated with adapting products to an existing product semantic. Topics covered: principles of design, product semantics, design analysis, design synthesis, design evaluation, and modeling techniques. The design project(s) explore some or all of the design principles covered in the lectures.

Prerequisite: IDES 2301; or permission of the School.

Lectures two hours a week, studio four hours a week.

IDES 2401 [0.5 credit] (formerly 85.241\*)

### Work Term 1

(This course carries a 0.5 option credit)

Prerequisite: registration in the Co-op program of the Bachelor of Industrial Design Program.

IDES 2600 [0.5 credit] (formerly 85.260\*)

### Ergonomics for Product Design

Physical, biomechanical, environmental and cognitive issues. Displays, controls, workstations, tools and software interfaces are examined from scientific and practical perspectives.

Precludes additional credit for IDES 3600.

Prerequisite: PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures and discussion three hours a week.

IDES 3102 [0.5 credit] (formerly 85.312\*)

### Graphics Technology and Design

Techniques and processes used in printing and the relationship of these processes to graphic design. Typeface design and the development of type. Typefaces as exponents of cultural trends. Basic underlying typography and layout in graphic design. Minor graphic design projects.

Prerequisites: IDES 2301 and IDES 2302.

Lectures and tutorials three hours a week.

IDES 3103 [0.5 credit] (formerly 85.313\*)

**Package Engineering and Design**

Processes and materials used in the packaging industry. Principles of package engineering and design for the transportation and distribution of mass-produced products. Product and brand identification; corporate identity through package design. Minor packaging design projects. Prerequisites: Third-year registration and IDES 3102. Lecture and tutorials three hours a week.

IDES 3104 [0.5 credit] (formerly 85.314\*)

**Exhibition Design**

The field of exhibition design is explored through lectures and case studies. Students undertake a preliminary exercise in display and exhibition design prior to the development and implementation of an exhibition; this normally involves the design of the School of Industrial Design's Annual Graduation Exhibition. Prerequisite: IDES 2300. Lectures and tutorials three hours a week.

IDES 3201 [0.5 credit] (formerly 85.321\*)

**Product Communication**

The mechanics of communication in general and of communication by means of objects in particular. Analyses of objects and environments with respect to communicative functions. Prerequisite: third-year registration or permission of the School. Lecture and tutorials three hours a week.

IDES 3202 [0.5 credit] (formerly 85.322\*)

**Adv. Studies in Form and Colour**

Students may continue the research and study encountered in IDES 2301 and IDES 2302 by doing advanced research in some specific area of the phenomena of form and/or colour. Directed study. Prerequisites: IDES 2300 and IDES 2302 or permission of the School. Lecture and tutorials three hours a week.

IDES 3300 [1.0 credit] (formerly 85.330)

**Projects IIIA**

This course is an introduction to the design principles associated with the evaluation and re-design of an existing product. Topics to be covered include: user/machine relationship, component packaging, and manufacturability. The design project(s) explore some or all of the design principles covered in the lectures. Prerequisite: IDES 2302 or permission of the School. Lectures four hours a week, studio eight hours a week.

IDES 3301 [1.0 credit] (formerly 85.331)

**Projects IIIB**

This course is an introduction to the principles of innovation as found in industrial design. Topics to be covered include: invention, innovation, entrepreneurship, basic mechanisms. The design project(s) explore some or all of the design principles covered in the lectures. Prerequisite: IDES 3300 or permission of the School. Lectures four hours a week, studio eight hours a week.

IDES 3305 [0.5 credit] (formerly 85.335\*)

IDES 3306 [0.5 credit] (formerly 85.336\*)

**Special Studies**

Special Industrial Design Studies deal with specific projects, which may differ from year to year depending on the availability of specialists in a particular field or study opportunities as they present themselves. Prerequisite: third- or fourth-year registration, or permission of the School. Lectures, tutorials and laboratory six hours a week.

IDES 3402 [0.5 credit] (formerly 85.342\*)

**Work Term 2**

(This course carries a 0.5 option credit.) Prerequisite: registration in the Co-op option of the Bachelor of Industrial Design Program.

IDES 3403 [0.5 credit] (formerly 85.343\*)

**Work Term 3**

(This course carries a 0.5 option credit.) Prerequisite: registration in the Co-op option of the Bachelor of Industrial Design Program.

IDES 3404 [0.5 credit] (formerly 85.344\*)

**Work Term 4**

Prerequisite: registration in the Co-op option of the Bachelor of Industrial Design Program.

IDES 3405 [0.5 credit] (formerly 85.345\*)

**Work Term 5**

Prerequisite: registration in the Co-op option of the Bachelor of Industrial Design Program.

IDES 3501 [0.5 credit] (formerly 85.351\*)

**Fine Arts and Design**

Cultural subjects from the fields of fine and performing arts. The context and relevance of industrial design as an integral part of our culture. Guest lecturers. Precludes additional credit for IDES 3500. Prerequisite: IDES 1000 (ARCH 2006). Lectures and tutorials three hours a week.

IDES 3502 [0.5 credit] (formerly 85.352\*)

**Contextual Nature of Products**

Cultural subjects which have an influence on contemporary industrial design. The perspective of the course is anthropological: the context and cultural relevance of industrial design. Precludes additional credit for IDES 3500. Prerequisite: IDES 1000 (ARCH 2006). Lectures and tutorials three hours a week.

IDES 3601 [0.5 credit] (formerly 85.361\*)

**Industrial Design and the User**

Design methodology and the value of scientific methods for data collection and decision-making. Techniques such as interviewing, focus groups, usability testing, brainstorming, and value analysis will be covered. Teamwork techniques and values are considered. Prerequisite: IDES 2600 (ARCH 2006). Lectures three hours a week, laboratory three hours a week.

IDES 4000 [0.5 credit] (formerly 85.400\*)

**Professional Practice**

The organizational aspects of consultancies and client responsibilities within the framework of corporate management. Topics include: the form of contracts for consultancy, determination of fees, legal implications, patents and copyrights. Guest lecturers. Prerequisite: IDES 1000 (ARCH 2006). Lectures and discussion three hours a week.

IDES 4001 [0.5 credit] (formerly 85.401\*)

**Industrial Design Seminar**

Each year a special topic is chosen to be elaborated on and discussed. The topics deal with problems in the relationship of industrial design to other disciplines or problems regarding the theoretical aspects of industrial design itself. Prerequisite: registration in fourth-year Industrial Design projects. Seminar three hours a week.

IDES 4101 [0.5 credit] (formerly 85.411\*)

**Adv. Studies in Manufacturing**

Directed study in the field of manufacturing, centred on such topics as: cost analysis, new materials and processes, computer aided manufacturing, numerically controlled machining, machining of moulds, etc. Prerequisites: IDES 2101 and IDES 2102.

IDES 4200 [0.5 credit] (formerly 85.420\*)

**Form Organization**

Using form organization as a tool to design, the definition and prescription of monolithic solids by means of an abstract system; making and verifying materialized approximations of such solids. Prerequisites: IDES 2300 and IDES 2302 or permission of the School. Lectures, tutorials and laboratory six hours a week.

IDES 4300 [2.0 credits] (formerly 85.430)

**Major Project**

Application of design principles in a comprehensive design project. Problem area chosen should be product oriented and of sufficient complexity. Normally undertaken in consultation with off-campus



organizations and industry; supervised by faculty members.  
Prerequisite: IDES 3301 or permission of the School.  
Lectures and tutorials two hours a week, studio ten hours a week.

IDES 4301 [0.5 credit] (formerly 85.431\*)

#### Minor Projects A

Enables students to demonstrate through a series of short projects their versatility in product design or in complementary design fields such as communication, graphic design or design experiments. Emphasis is on time management and the ability to work independently on assigned projects.

Precludes additional credit for IDES 4301.

Prerequisite: IDES 3301 or permission of the School.

Lectures and tutorials two hours a week, studio four hours a week.

IDES 4302 [0.5 credit] (formerly 85.432\*)

#### Minor Projects B

The application of required skills and team work in a comprehensive design project. The subject matter deals with broad issues in design.

Precludes additional credit for IDES 4302.

Prerequisite: IDES 3301 or permission of the School.

Lectures and tutorials two hours a week, studio four hours a week.

IDES 4305 [0.5 credit] (formerly 85.435\*)

IDES 4306 [0.5 credit] (formerly 85.436\*)

#### Special Studies

Like the Third-year Special Industrial Design Studies, those of fourth year deal with specific projects, which may differ each year depending on the availability of specialists among the faculty of the School of Industrial Design or on particular opportunities as they present themselves.

Prerequisite: fourth-year registration or permission of the School.

Lectures and tutorials two hours a week, studio four hours a week.

IDES 4400 [0.5 credit] (formerly 85.440\*)

#### Internship Field Report

Work experience related to industrial design. Following the internship period (12 weeks minimum), a comprehensive report describing observations and insights must be submitted by the end of the fourth week of the fall term. Graded Sat or Uns.

Tutorial hours arranged.

## Interdisciplinary Arts and Social Sciences (IASS)

Institute of Interdisciplinary Studies  
Faculty of Arts and Social Sciences

IASS 3900 [1.0 credit] (formerly 04.390)

#### The Literature of Existentialism

A study of the origins, development, and principal characteristics of existentialist literature. (Also listed as ENGL 3900.)

All assigned readings will be in English.

Prerequisite: third-year standing.

IASS 3901 [0.5 credit] (formerly 04.391\*)

#### Interdisciplinary Research Methods

A survey of the history of academic disciplines and interdisciplinarity. Transdisciplinary research problems are approached in an interdisciplinary and intermedial manner. Students will be required to work in areas different from those in their plan of study. Required for students in Directed Interdisciplinary Studies and Child Studies.

Prerequisite: third-year standing in Child Studies or Directed Interdisciplinary Studies.

Seminar three hours a week.

IASS 4908 [1.0 credit] (formerly 04.498)

#### Honours Project

Interdisciplinary research project for Honours students in the fourth year of all IIS programs, except Cognitive Science. In selecting a project, students must consult their Program Coordinator. Only the Program Coordinator can assign a supervisor or grant approval to register in this course.

Prerequisite: registration in this course is limited to students in the fourth year of a B.A. (Honours) program in IIS.

## Interdisciplinary Science (ISCI)

Faculty of Science

ISCI 1001 [0.5 credit] (formerly 60.101\*)

#### Introduction to the Environment

The nature of the biosphere: scientific bases of important environmental issues; evolution of life; properties and dynamics of populations and ecosystems; biodiversity; introduction to identification skills; sustainability of renewable resources, including food. Not acceptable for credit in a Science program.

Precludes additional credit for ISCI 1000.

Prerequisite: a knowledge of Grade 10 advanced level Mathematics will be assumed.

Lectures/demonstrations three hours a week and project assignments.

ISCI 1002 [0.5 credit] (formerly 60.102\*)

#### The Laws of Nature

Fundamental ideas and concepts of science; origins and expressions of these in the ecosphere; types of forces; radiation; energy transfers and transitions; properties of atoms and molecules; chemistry in the environment. Not acceptable for credit in a Science program.

Precludes additional credit for ISCI 1000.

Prerequisite: ISCI 1001\* or permission of the Institute.

Lecture/demonstrations three hours and project assignments.

ISCI 2001 [0.5 credit] (formerly 60.201\*)

#### The Earth

Early earth history; tectonic cycles; mineral resources of the earth's surface; the oceans; biogeochemical cycles; natural hazards. Not acceptable for credit in a Science program.

Precludes additional credit for ISCI 2000.

Prerequisite: ISCI 1002\* or equivalent.

Lectures/demonstrations three hours a week and project assignments.

ISCI 2002 [0.5 credit] (formerly 60.202\*)

#### Human Impacts on the Environment

Air and water pollution; global climatic change; waste management; industrial chemicals; sources and uses of energy; nuclear energy and radiation; risk assessment of technological hazards. Acceptable only as a free elective in a Science program.

Precludes additional credit for ISCI 2000.

Prerequisite: ISCI 2001\* or two experimental science OACs or one first year university experimental science course.

Lectures/demonstrations three hours a week and project assignments.

## Interdisciplinary Studies - Social Sciences (ISSC)

Institute of Interdisciplinary Studies  
Faculty of Arts and Social Sciences

ISSC 1001 [1.0 credit] (formerly 03.101)

#### Human Rights and the Social Sciences

Human rights from an interdisciplinary perspective. Topics include: the foundations and nature of rights, roots of inequality and oppression, aboriginal rights, racism, women and rights, sexual orientation, state and corporate power, economic exploitation, the environment and rights, warfare, torture, social movements. (Also listed as SOAN 1001.)

Lectures three hours a week.

ISSC 3000 [0.5 credit] (formerly 03.300\*)

**Computer Applications in the Social Sciences**

An introduction to the use of mainframe and micro-computer applications in social science research. Topics covered may include statistical packages, database management, word processing, graphics, computer communications, spread sheets, computer data collection and laboratory control.

Prerequisites: COMP 1001, or any programming course, and a research-methods course.

ISSC 4001 [0.5 credit] (formerly 03.401\*)

**Innovations in Social-Science Data Collection and Measurement**

This course provides an opportunity to study recent innovations in social-science data collection and measurement. It is an interdisciplinary course of interest to senior students, researchers and practitioners who already have a preliminary foundation in social science methods. Topics emphasized vary from year to year, but developments in sampling theory, survey instrument design, and reduction of measurement bias are examples of intended topics.

Prerequisite: one full credit in methodology in one of the social sciences, or permission of the program co-ordinator.

ISSC 4002 [0.5 credit] (formerly 03.402\*)

**Innovations in Quantitative Analysis for the Social Sciences**

This course provides an opportunity to study recent innovations in quantitative analysis of social science data. It is an interdisciplinary course of interest to senior students, researchers and practitioners who already have a preliminary foundation in quantitative analysis for the social sciences. Topics emphasized vary from year to year, but linear restriction modeling, log-linear techniques and developments in time series analysis are examples of intended topics.

Prerequisite: one full credit in methodology in one of the social sciences, or permission of the program co-ordinator.

ISSC 4100 [0.5 credit] (formerly 03.410\*)

**Seminar on Special Research Problems in Social Sciences**

This is a research-oriented honours seminar that focuses on special problems in the Social Sciences.

Prerequisite: fourth-year Honours in a social sciences discipline or permission of the program co-ordinator.

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## International Affairs (INAF)

Norman Paterson School of International Affairs  
Faculty of Public Affairs and Management

INAF 3000 [1.0 credit] (formerly 46.300)

**Policy in a Global Context**

Analysis of international policy processes relevant to governments, non-governmental organizations, international organizations and multinational corporations, drawing upon theories of international relations, Political science, law and economics. Emphasis on analytical and normative aspects of public policy processes in international relations.

Prerequisites: third-year standing in the B.P.A.P.M. program and registration in the International Studies Specialization, or permission of the Norman Paterson School of International Affairs. Lectures or seminars three hours a week.

INAF 4101 [0.5 credit] (formerly 46.411\*)

**Special Topics in Conflict Analysis and International Affairs**

Selected issues in conflict analysis from an interdisciplinary perspective.

Prerequisites: fourth-year standing in the B.P.A.P.M. program and registration in the International Studies Specialization, or permission of the Norman Paterson School of International Affairs. Lectures or seminars three hours a week.

INAF 4102 [0.5 credit] (formerly 46.412\*)

**Special Topics in Development and International Affairs**

Analysis of selected issues in international aspects of development from an interdisciplinary perspective.

Prerequisites: ECON 3603 and fourth-year standing in the B.P.A.P.M. program and registration in either the International

Studies Specialization or the Development Studies Specialization, or permission of the Norman Paterson School of International Affairs.

Lectures or seminars three hours a week.

INAF 4103 [0.5 credit] (formerly 46.413\*)

**Special Topics in International Political Economy and International Affairs**

Analysis of issues in international political economy from an interdisciplinary perspective.

Prerequisites: fourth-year standing in the B.P.A.P.M. program and registration in the International Studies Specialization, or permission of the Norman Paterson School of International Affairs. Lectures or seminars three hours a week.

INAF 4202 [0.5 credit] (formerly 46.422\*)

**Issues in Development Management**

An examination of the application of organization theory to policy implementation and evaluation for developing and transitional systems, with an emphasis on the role of cultural differences and divergent value systems in development management. (Also listed as PSCI 4409.)

Prerequisites: ECON 3603 and fourth-year standing in the B.P.A.P.M. program and registration in either the International Studies Specialization or the Development Studies Specialization.

Lectures or seminars three hours a week.

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## Italian (ITAL)

College of the Humanities  
Faculty of Arts and Social Sciences

ITAL 1000 [1.0 credit] (formerly 26.100)

**Introductory Italian**

A course designed to introduce the student to the acquisition of Italian. Understanding, speaking, reading and writing. Compulsory attendance.

Precludes additional credit for Italian 26.110, ITAL 1700, 26.180 and 26.101\*/26.102\*.

Four hours per week plus out-of-class requirements.

ITAL 1500 [1.0 credit] (formerly 26.150)(2927/2928)

**Italian Literary Tradition**

Dante, Boccaccio, Petrarca, Machiavelli, Goldoni, Leopardi, Manzoni, Verga, D'Annunzio, Pirandello, Pasolini, Calvino, Maraini, Fo will be studied. All texts in English translation. English is also the language of instruction. Cannot be counted as credit towards the Minor.

Precludes additional credit for ITAL 3501 and ITAL 3503.

Lectures three hours a week.

ITAL 1700 [1.0 credit] (formerly 26.170)

**Italian for Italophones**

Designed to meet the needs of students of Italian origin and/or speakers of a community language or a dialect, wishing to retrieve standard Italian or to add standard Italian to their linguistic repertoire.

Precludes additional credit for ITAL 1000, 26.101\*, 26.102\*, 26.110, and 26.180.

Prerequisite: Some knowledge of an Italian dialect or of a community language.

Four hours per week plus out-of-class requirements.

ITAL 2000 [1.0 credit] (formerly 26.200)

**Intermediate Italian**

A sequel to Introductory Italian; speaking, reading, writing, understanding, and using the language as a means for self-expression. A course intended to lead to the comprehension and enjoyment of Italian texts.

Precludes additional credit for 26.180 and 26.210.

Prerequisites: ITAL 1000 or 26.110 or ITAL 1700 or (26.101\* and 26.102\*) or permission of the School.

Three hours per week plus out-of-class requirements.

ITAL 2602 [1.0 credit] (formerly 26.262)(2129/2130;F2529/2530)

### Italian Heritage in N. America

Italian-American and Italian-Canadian literature and cinema as relocated culture. Such authors as Fante, Di Donato, Puzo, Di Michele, Di Cicco, Ricci, Micone and such film-makers as Coppola, Scorsese, Cimino, Ferrara will be studied. All works in English. Language of instruction: English.

Precludes additional credit for 26.362.

Lectures three hours a week.

ITAL 3000 [1.0 credit] (formerly 26.300)

### Advanced Italian

A sequel to Intermediate Italian. Defined points of grammar, style, composition; conversation and translation.

Prerequisite: Italian 26.180, ITAL 2000 or 26.210; or permission of the School.

Three hours per week plus out-of-class requirements.

ITAL 3501 [0.5 credit] (formerly 26.351\*) (3952/3953)

### Italian Literature1250-1650

The formation of literary periods, the development of movements and other normative aspects of literary history. Texts in Italian, which is also the language of instruction.

Precludes additional credit for Italian 26.350.

Prerequisite: ITAL 2000.

Lectures three hours a week.

ITAL 3503 [0.5 credit] (formerly 26.353\*) (3953)

### Italian Literature1650-1990

The formation of literary periods, the development of movements and other normative aspects of literary history. Texts in Italian, which is also the language of instruction.

Precludes additional credit for Italian 26.352.

Prerequisite: ITAL 2000.

Lectures three hours a week

ITAL 3600 [1.0 credit] (formerly 26.360)(3958/3959)

### Themes in Italian Culture

Issues concerning the development of Italian culture from the Thirteenth century to the Twentieth Century. Topic may vary from year to year. Texts in Italian. Language of instruction: Italian.

Prerequisite: ITAL 2000.

Lectures three hours a week.

ITAL 3700 [1.0 credit] (formerly 26.370)(2105/2106;F2505/2506)

### Italian Culture 1200-2000

Major issues and major aspects of Italian social and cultural history from Dante to Fellini. Works from different media, and non-literary as well as literary, will be studied. Topics may vary from year to year. All material in English translation. English is also the language of instruction. May not be counted as credit towards the Italian Minor.

Precludes additional credit for Italian 26.160.

Prerequisite: third-year standing or permission of the College of the Humanities.

Lectures three hours a week.

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## Japanese (JAPA)

School of Linguistics and Applied  
Language Studies  
Faculty of Arts and Social Sciences

JAPA 1200 [2.0 credits] (formerly 23.120)

### Intensive Introductory Japanese

For students with no knowledge of Japanese. Oral skills; basic reading and writing skills.

Precludes additional credit for JAPA 1201.

Eight hours a week.

JAPA 1201[1.0 credit] (formerly 23.121)

### Low Intermediate Japanese

Continuation of the study of Japanese to reach by the end of the course a level of proficiency comparable to that of students

who complete JAPA 1200. All skills; emphasis on the development of reading and writing.

Precludes additional credit for JAPA 1200.

Prerequisites: at least one year of high school Japanese, or equivalent ability.

Eight hours a week (one term).

JAPA 2200 [1.0 credit] (formerly 23.220)

### Intermediate Japanese

Continuation of the study of Japanese to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language.

Prerequisite: JAPA 1200 or equivalent, or a minimum of two years of Japanese as a second language at secondary school.

Students must have an ability to read and write both hiragana and katakana and have some knowledge of kanji characters.

Three hours a week.

JAPA 3200 [1.0 credit] (formerly 23.320)

### Advanced Japanese

Continuation of the study of Japanese to reach a more advanced level, including ability to handle authentic materials and primary texts required for academic studies.

Prerequisite: JAPA 2200 or equivalent.

Three hours a week.

JAPA 4200 [1.0 credit] (formerly 23.420)

### Functional Contemporary Japanese

A continuation of JAPA 3200 aimed at developing speaking and writing abilities more complex than those used in daily communication. Development of language use for specific purposes in specific contexts such as the academic, business and technical domains.

Prerequisite: JAPA 3200 or equivalent.

Three hours a week.

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## Journalism and Communication (JOUR)

School of Journalism and Communication  
Faculty of Public Affairs and Management

JOUR 1000 [1.0 credit] (formerly 28.100)

### Introduction to Journalism Studies

In first term, the basics of journalistic literacy and writing with an explanation of journalistic style. In second term, an introduction to the social, philosophical and historical contexts of journalism.

Prerequisite: For Journalism Honours students only.

Lectures and discussion three hours a week.

JOUR 2106 [0.5 credit] (formerly 28.216\*)

### The Documentary

Examination of the work of individual film makers, of documentary styles and of organizations and institutions in the context of the history of documentary film making, including documentaries made for television. Non-fiction films other than documentaries may be considered. (Also listed as FILM 2106.)

Precludes additional credit for 28.215\* (19.215\*).

Prerequisite: FILM 1000 or permission of the School.

Lectures and screening two hours, two days a week.

JOUR 2201 [1.0 credit] (formerly 28.221)

### Fundamentals of Reporting

An introduction to the techniques of news gathering, the standard rules of news and feature writing, elements of news judgment, interviewing skills, a sense of narrative, and ethical reflection.

Precludes additional credit for 28.220 (last offered 1995-96).

Prerequisite: For second-year Honours Journalism students and students who transfer into the program.

Lectures, discussion and practicum three hours a week.

JOUR 2205 [0.5 credit] (formerly 28.225\*)

### Journalism's View of the Languages and Institutions of Public Life

An introduction to the major political institutions of Canada; the policy process and the avenues for public participation in government at the federal, provincial and municipal levels; the economy; the arts community; and the like.



Prerequisite: For second-year Honours Journalism students and students who transfer into the program, and for students enrolled in the Strategic Public Opinion and Policy Analysis specialization area of the Bachelor of Public Affairs and Policy Management. Lectures and discussion three hours a week.

JOUR 2501 [0.5 credit] (formerly 28.251\*)

**Communications Law I**

A survey of laws that affect the Canadian media. Specific areas include the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common law limitations on freedoms of the press, including publication bans, libel and contempt of court. (Also listed as MCOM 2501.) Precludes additional credit for 28.351\*, 27.351\* (last offered 1996-97).

Prerequisite: JOUR 1000 or MCOM 1101 or FYSM 1207, permission of the School, or registration in the Communication Information Technology Policy specialization area of the Bachelor of Public Affairs and Policy Management. Lectures and discussion three hours a week.

JOUR 3000 [1.0 credit] (formerly 28.300)

**The Modern Environment**

A seminar course for Journalism students in which a number of texts drawn from the social sciences, literature, journalism and philosophy are considered for their contributions to an understanding of contemporary society and the issues that provide the background to much of contemporary journalism. Prerequisite: third- or fourth-year B.J. (Hons.) standing, or permission of the School. Seminar three hours a week.

JOUR 3005 [0.5 credit] (formerly 28.305\*)

**International Media Systems**

Examination of the flow of global communication and information and their impact on our views of the world. Attention to the relationship between Canadian media and regional and international media institutions and systems. (Also listed as MCOM 3005.)

Prerequisite: MCOM 2101 or third- or fourth-year B.J. (Hons.) standing, or permission of the School, or third-year standing in the Bachelor of Public Affairs and Policy Management and registration in the Communication Information Technology Policy specialization area. Lectures and discussion three hours a week.

JOUR 3006 [0.5 credit] (formerly 28.306\*)

**Comparative Media Studies**

The comparative study of one or more of media content, effects, organization, operation, and criticism, and related theoretical perspectives. (Also listed as MCOM 3006.)

Prerequisite: MCOM 2101 or third- or fourth-year B.J. (Hons.) standing, or permission of the School, or third-year standing in the Bachelor of Public Affairs and Policy Management and registration in the Communication Information Technology Policy specialization area. Lectures and discussion three hours a week.

JOUR 3105 [0.5 credit] (formerly 28.315\*)

**Questions of Documentary Practice**

Theoretical implications of documentary film and documentary television practice. (Also listed as FILM 3105.)

Prerequisite: 1.0 credit in Film Studies at the 2000-level, or permission of the School.

JOUR 3205 [1.0 credit] (formerly 28.325)

**Intermediate Reporting**

The course will enhance students' skills in information-gathering, news and feature writing, story development, news judgment, computer-assisted reporting, interviewing skills and ethics. Precludes additional credit for 28.320 (last offered 1996-97). Prerequisite: JOUR 2201.

Lectures and practicum three hours a week.

JOUR 3206 [1.0 credit] (formerly 28.326)

**Introduction to Broadcast Journalism**

An introduction to the principles and practices of broadcast reporting. In this practical course students will produce journalistic reports for television and radio. Students will also

begin producing newscasts.

Precludes additional credit for 28.220 (last offered 1995-96).

Prerequisite: JOUR 2201.

Lectures and practicum three hours a week.

JOUR 3303 [1.0 credit] (formerly 28.333)

**Film and Society**

An examination of film in relation to social and intellectual developments of the twentieth century. The ways in which the cinema has both shaped and been shaped by some of these developments are considered. (Also listed as FILM 3303.)

Prerequisite: at least 1.0 credit in Film Studies and third-year standing, or permission of the Discipline or the School. Screening three hours a week, lecture one hour a week.

JOUR 3502 [0.5 credit] (formerly 28.352\*)

**Telecommunications Regulation**

The law regulating Canadian broadcasting and communications industries. Focus on the Canadian Radio-Television and Telecommunications Commission. Topics may include: administrative formulation of policy, ownership rules, program content and quality, access to the media, cablevision licensing and control, alternative sanctions. (Also listed as MCOM 3502 and LAWS 3502.)

Prerequisite: one of LAWS 2003, LAWS 2004 or LAWS 2005, or a 2000-level Journalism or Mass Communication credit.

Lectures and discussion three hours a week.

JOUR 4000 [1.0 credit] (formerly 28.400)

**Theoretical and Critical Aspects of Journalism**

This course will offer a theoretical overview of the news media in Canada, and the conditions under which they operate. It will study critiques of the media, including ethics.

Precludes additional credit for 28.200 (last offered 1995-96).

Prerequisite: For fourth-year Honours Journalism students and students who have fourth-year standing in the Bachelor of Public Affairs and Policy Management and who are registered in the Strategic Public Opinion and Policy Analysis specialization area. Lectures and discussion three hours a week.

JOUR 4100 [0.5 credit] (formerly 28.410\*)

**Special Topic**

An examination of a topic in journalism not covered in depth in other courses. Topics may vary from year to year. Seminar three hours a week.

JOUR 4101 [0.5 credit] (formerly 28.411\*)

**Special Topic**

An examination of a topic in journalism not covered in depth in other courses. Topics may vary from year to year. Seminar three hours a week.

JOUR 4201 [1.0 credit] (formerly 28.421)

**Specialized Reporting**

A seminar/workshop in one area of public affairs reporting. Offerings may include politics and government, international issues, the arts, the economy, science and technology, social issues, sports. Emphasis on explanatory/analytical reporting, culminating in an extended work of journalism in any medium, resources permitting.

Prerequisites: JOUR 3205 and JOUR 3206.

Lectures, discussion and seminars three hours a week.

JOUR 4204 [0.5 credit] (formerly 28.424\*)

**Professional Practices: Online Publishing**

A workshop course designed to give students instruction in online reporting and publishing.

Prerequisite: For fourth-year B.J. (Hons.) Students only.

Note: No more than two of JOUR 4204, JOUR 4205, JOUR 4206, JOUR 4207 and JOUR 4208 may be taken and they may not be taken simultaneously. JOUR 4204 may not be repeated. Workshops averaging eight hours per week.

JOUR 4205 [0.5 credit] (formerly 28.425\*)

**Professional Practices: Newspaper Publishing**

A workshop course designed to give students instruction in community newspaper publishing.

Prerequisite: For fourth-year B.J. (Hons.) students only.

Note: No more than two of JOUR 4204, JOUR 4205, JOUR 4206, JOUR 4207 and JOUR 4208 may be taken and cannot

be taken simultaneously. JOUR 4205 may not be repeated. Workshops averaging eight hours a week.

JOUR 4206 [0.5 credit] (formerly 28.426\*)

**Professional Practices: Radio News and Current Affairs**

A workshop course designed to give students instruction in radio news and current affairs.

Prerequisite: For fourth-year B.J. (Hons.) students only.

Note: No more than two of JOUR 4204, JOUR 4205, JOUR 4206, JOUR 4207 and JOUR 4208 may be taken and cannot be taken simultaneously. JOUR 4206 may not be repeated.

Workshops averaging eight hours a week.

JOUR 4207 [0.5 credit] (formerly 28.427\*)

**Professional Practices: Television News and Current Affairs**

A workshop course designed to give students instruction in television news and current affairs.

Prerequisite: For fourth-year B.J. (Hons.) students only.

Note: No more than two of JOUR 4204, JOUR 4205, JOUR 4206, JOUR 4207 and JOUR 4208 may be taken and cannot be taken simultaneously. JOUR 4207 may not be repeated.

Workshops averaging eight hours a week.

JOUR 4208 [0.5 credit] (formerly 28.428\*)

**Professional Practices: Specialized Media**

A workshop course designed to give students instruction in a specialized area such as radio documentary, video documentary, film documentary, editing, magazine writing, photojournalism. Not all specialties will be offered each year. Precludes additional credit for 28.321\* (last offered in 1997-98).

Prerequisite: For fourth-year B.J. (Hons.) students only.

Note: No more than two of JOUR 4204, JOUR 4205, JOUR 4206, JOUR 4207 and JOUR 4208 may be taken and cannot be taken simultaneously. JOUR 4208 may not be repeated.

Lecture and practicum two hours a week.

JOUR 4307 [0.5 credit] (formerly 28.437\*)

**Gender and the Journalist**

Using theoretical and textual analysis, this course examines the roles that social concepts of gender have played in several of the following: journalism history, journalistic expression and professional practice, professional status, cultural representations and expectations of the journalist, and the alternative or specialized media.

Prerequisite: third- or fourth-year B.J. (Honours) standing, or permission of the School.

Seminar three hours a week.

JOUR 4900 [1.0 credit] (formerly 28.490)

**Honours Tutorial**

Students analyze some major achievements in contemporary journalism, through individual or group research. Students also have the opportunity to acquire background and experience in the managerial aspects and production of print and broadcast journalism. Prerequisite: fourth-year B.J. (Honours) standing.

## Latin (LATN)

College of the Humanities

Faculty of Arts and Social Sciences

LATN 1005 [0.5 credit] (formerly 16.105\*)

**Introduction to Latin I**

A course for beginners in Latin, designed to give students a grasp of basic grammatical forms and vocabulary (with reference to English derivatives) through the reading of continuous Latin. Lectures and practice periods four hours a week.

LATN 1006 [0.5 credit] (formerly 16.106\*)

**Introduction to Latin II**

A course for students with some previous knowledge of the language: study of grammatical forms and constructions; acquisition of reading skills.

Prerequisite: LATN 1005 or equivalent.

Lectures and practice periods four hours a week.

LATN 1105 [1.0 credit] (formerly 16.115)

**Beginning Latin**

LATN 2001 [1.0 credit] (formerly 16.201)

**Intermediate Latin**

Further study of the language; reading of selected prose and poetry by Latin authors.

Prerequisite: LATN 1006 or equivalent.

Lectures three hours a week.

LATN 2200 [0.5 credit] (formerly 16.220\*)

**Intermediate Latin I**

Further study of the language; introduction to the reading of Latin authors.

Prerequisite: LATN 1006 or equivalent.

Precludes additional credit for LATN 2001.

Tutorials three hours a week.

LATN 2201 [0.5 credit] (formerly 16.221\*)

**Intermediate Latin II**

Continued study of the language; reading of selected prose and poetry by Latin authors; development of translation skills. Precludes additional credit for LATN 2001.

Prerequisite: LATN 2200 or equivalent.

Tutorials three hours a week.

LATN 2500 [0.5 credit] (formerly 16.250\*)

**Translation I**

A course designed to improve the students' proficiency in sight translation from Latin and to give practice in translation from English into Latin (prose composition).

Prerequisite: LATN 2001 or permission of the unit.

Tutorials three hours a week.

LATN 3900 [0.5 credit] (formerly 16.390\*)

**Studies in Latin Poetry**

Reading and critical discussion of selections from Latin poetry.

Prerequisite: LATN 2201 or equivalent.

Tutorials three hours a week.

LATN 3901 [0.5 credit] (formerly 16.391\*)

**Studies in Latin Prose**

Reading and critical discussion of selections from Latin prose.

Prerequisite: LATN 2201 or equivalent.

Tutorials three hours a week.

LATN 4900 [0.5 credit] (formerly 16.490\*)

**Directed Study (Poetry)**

LATN 4901 [0.5 credit] (formerly 16.491\*)

**Directed Study (Prose)**

## Law (LAWS)

Department of Law

Faculty of Public Affairs and Management

**Note**

Some graduate courses may also be open to interested fourth-year students with permission of the Department.

LAWS 1000 [1.0 credit] (formerly 51.100)

**Introduction to Legal Studies**

Concepts, sources, nature and function of law; law and social change; historical and constitutional foundations of the Canadian legal system; common and civil law traditions; statutory interpretation and precedent; legal institutions; the role of judges, lawyers and lay persons; accessibility; alternative dispute resolution.

Lectures two hours a week and group workshops one hour every second week.

LAWS 2003 [1.0 credit] (formerly 51.203)

**Introduction to Private Law Relationships**

Origins and scope of modern private law relationships; values espoused by legal personality, property and obligations arising from contracts, torts and the law of restitution will be studied; interaction of private law categories; role of the state in ordering private relations.

Prerequisite: LAWS 1000.

Lectures three hours a week.

LAWS 2004 [1.0 credit] (formerly 51.204)

**An Introduction to Criminal Law in Context**

Canadian criminal process; nature and purpose of criminal law; criminal acts distinguished from civil wrongs; origins and development of principles and procedures; categories of criminal conduct; role of enforcement agencies and courts; criminal correction; relationship between criminal activity and deviant behavior.

Prerequisite: LAWS 1000.

Lectures three hours a week.

LAWS 2005 [1.0 credit] (formerly 51.205)

**Introduction to Public Law**

Law relating to the state and its relationship to other legal persons; basic principles of constitutional law, administrative law and selected areas; special features and problems of public law; implications of the expanded new role of modern governments; legal and alternative processes.

Prerequisite: LAWS 1000 or PSCI 1001 and PSCI 1002, or PSCI 1000.

Lectures three hours a week.

LAWS 2105 [0.5 credit] (formerly 51.215\*)

**Law, Social Justice and Human Rights**

Theories and practices of law and social justice. Issues examined may include: civil democracy and repression; global governance and the rule of law; democratic movements and social power; human rights instruments, regimes and remedies; armed conflict; and humanitarian intervention.

Prerequisite: second-year standing.

Lectures and discussion three hours a week.

LAWS 3000 [0.5 credit] (formerly 51.300\*)

**The Legal Process**

Advanced topics in the legal process such as the nature and function of law, dispute resolution and law making.

Prerequisite: third-year standing.

Lectures three hours a week.

LAWS 3001 [0.5 credit] (formerly 51.301\*)

**Women and the Legal Process**

How the legal process has affected the status of women. Areas of concentration within the Canadian context include the criminal law, citizenship and immigration, education, employment, and welfare and social services.

Prerequisite: third-year standing.

Lectures three hours a week.

LAWS 3003 [0.5 credit] (formerly 51.303\*)

**Contracts**

The enforcement of promises and agreements; basic doctrines and underlying principles of the law of contract are studied from formation of the contract to remedies for breach of contract; role of contract for economic and social purposes is also considered.

Prerequisite: LAWS 2003.

Lectures three hours a week.

LAWS 3005 [0.5 credit] (formerly 51.305\*)

**Law and Regulation**

Definitions and goals of regulation; contemporary theories and debates about legal and non-legal approaches to regulation. Approaches studied may include market mechanisms, public agency regulation, self-regulation and governance in co-operation with associations in civil society.

Prerequisite: LAWS 2003 or LAWS 2005.

Lectures three hours a week.

LAWS 3006 [0.5 credit] (formerly 51.306\*)

**Mediation**

Theory and practice of mediation; historical roots and influences; contrasts with formal litigation and other dispute resolution processes; issues of social and legal control; critiques, including feminist, Marxist and critical race theory; issues of power, gender, race and class; application to contemporary issues and disputes.

Prerequisites: LAWS 1000 and one of LAWS 2003, LAWS 2004, LAWS 2005 or BUSI 2601.

Lectures three hours a week.

LAWS 3101 [0.5 credit] (formerly 51.311\*)

**Philosophy of Law: The Nature of Law**

The concept of law, leading theories of law and related concepts such as rules and obligations, power and authority, coercion, and justice. (Also listed as PHIL 3101.)

Prerequisite: third-year standing.

Lectures three hours a week.

LAWS 3102 [0.5 credit] (formerly 51.312\*)

**Philosophy of Law: The Logic of the Law**

The nature of legal reasoning and concepts particularly used in the course of legal reasoning such as rights and duties, ownership and possession, liability and punishment. (Also listed as PHIL 3102.)

Prerequisite: third-year standing.

Lectures three hours a week.

LAWS 3105 [0.5 credit] (formerly 51.315\*)

**Theory of Law and Politics**

Theories of law and politics; prominent thinkers and schools of thought; influence on legal and political institutions. Topics include law and ethics, justice and equity, positivism and natural law, state absolutism, codifications, and anthropological and historical theories of law and society.

Precludes additional credit for LAWS 3105.

Prerequisites: LAWS 1000 and one of LAWS 2003, LAWS 2004, LAWS 2005, LAWS 2105 or PSCI 1000 and PSCI 2300.

LAWS 3106 [0.5 credit] (formerly 51.316\*)

**Sociology of Law**

Development of law in the context of modernity, the West and capitalism. Writings on law by Durkheim, Weber and Marx; their influence on the development of the sociology of law. (Also listed as SOCI 3801.)

Prerequisite: one of LAWS 2003, LAWS 2004, or LAWS 2005.

LAWS 3201 [0.5 credit] (formerly 51.321\*)

**The Legal Framework of Business Enterprises**

Forms of carrying on business activity: proprietorships, partnerships, corporations and Crown entities. The rights and obligations of such business enterprises both internally and in relation with other persons. The relationship between legal form and economic function. The role of state intervention.

Prerequisite: LAWS 2003.

Lectures three hours a week.

LAWS 3202 [0.5 credit] (formerly 51.322\*)

**Information Technology Law and Intellectual Property**

Critical assessment of copyright, patents, trademarks, trade secrets and other forms of intellectual property; regulation and governance of information technology including self-regulation, standard setting, licencing, competition policy and international dimensions.

Prerequisite: one of LAWS 2003 or LAWS 2005.

Lectures three hours a week.

LAWS 3203 [0.5 credit] (formerly 51.323\*)

**The Legal Nature of Property**

An examination of the nature and functions of property as a legal and social institution, with particular reference to theories of property, the scope of property interests, and the relationship between individual property rights and the state.

Prerequisite: LAWS 2003.

Lectures three hours a week.

LAWS 3205 [0.5 credit] (formerly 51.325\*)

**Consumer Law**

Need for consumer protection in the provision of goods and services; traditional legal protection by statute and common law; legislative responses to consumer pressures; judicial response in recent Canadian, English and American law; reform of consumer law.

Prerequisite: LAWS 2003 or BUSI 2602.

Lectures three hours a week.

LAWS 3206 [0.5 credit] (formerly 51.326\*)

**Banking Law**

The law relating to banks and banking; the nature of the legal relationship created; legal rights and duties of the parties involved. Consumer and corporate aspects of banking



(including computerization and electronic funds transfers); regulations of banking.

Prerequisite: LAWS 2003 or BUSI 2602.

Lectures three hours a week.

LAWS 3207 [0.5 credit] (formerly 51.327\*)

#### **International Economic Law: Trade and Investment**

Topics may include: the international sale of goods, finance of transnational transactions, international carriage of goods, insurance, agency and trading houses; other forms of trade, e.g., counter-trade, foreign investment; settlement of international disputes by litigation and arbitration.

Prerequisite: LAWS 2003 or BUSI 2602.

LAWS 3208 [0.5 credit] (formerly 51.328\*)

#### **International Economic Law: International Regulation**

International regulation of trade and investment through bilateral, regional and multilateral treaties and agreements. Topics may include: WTO, NAFTA, the EU, UNCTAD, intergovernmental commodity agreements, dispute settlement.

Prerequisite: LAWS 2003 or LAWS 2005.

Lectures three hours a week.

LAWS 3303 [0.5 credit] (formerly 51.333\*)

#### **Injury, Compensation and the Law**

Problems of injury compensation; legal responses in their economic, historical, comparative, philosophical or sociological contexts; definitions of personal injury; objectives and effectiveness of legal intervention; forms of compensation; relation between private law and state regulation.

Prerequisite: LAWS 2003.

Lectures three hours a week.

LAWS 3305 [0.5 credit] (formerly 51.335\*)

#### **Law, Crime and Society in Historical Perspective**

The history of the relationship between the criminal law system and society. Changing issues in the criminal law and the nature of institutional responses, covering medieval to early nineteenth-century England and nineteenth to early twentieth-century Canada.

Prerequisite: third-year standing.

Lectures three hours a week.

LAWS 3306 [0.5 credit] (formerly 51.336\*)

#### **Criminal Law: Process and Politics**

Criminal law process in Canada; structure and use of the process examined for fairness, defects, and possible reform initiatives. Issues concerning gender, race and class bias in the implementation and application of the criminal law.

Prerequisite: LAWS 2004.

Lectures three hours a week.

LAWS 3307 [0.5 credit] (formerly 51.337\*)

#### **Young Offenders and the Law**

A review of the Young Offenders Act within the framework of the Canadian justice system, with particular emphasis on historical and philosophical developments and objectives. Current topics include: constitutional issues, procedure, confessions, transfers, sentencing options, alternative measures, reviews, and possible amendments.

Prerequisite: LAWS 2004.

Lectures three hours a week.

LAWS 3401 [0.5 credit] (formerly 51.341\*)

#### **Employment Law**

Legal regulation of the employment relationship; its contractual basis; defining employment; rights and duties of employees and employers; termination of employment; statutory regulation through employment standards legislation, human rights codes, workers' compensation acts, occupational health and safety and related statutes.

Prerequisite: LAWS 2003, or LAWS 2005, or BUSI 2601.

Lectures three hours a week.

LAWS 3402 [0.5 credit] (formerly 51.342\*)

#### **Landlord and Tenant Relations**

An examination of the landlord and tenant relationship in Ontario, focusing on the rights and duties under common law and statute, the distinction between residential and commercial tenancies, recent regulation of residential

tenancies, and implications of rent control and security of tenure for housing policy.

Prerequisite: LAWS 2003.

Lectures three hours a week.

LAWS 3405 [0.5 credit] (formerly 51.345\*)

#### **Labour Law**

Role of law in industrial relations; effect of law on collective bargaining relationships; recognition of bargaining agent; regulation of bargaining; administration of the collective agreement; methods of conflict resolution.

Prerequisite: LAWS 2000 or LAWS 2003 or LAWS 2005. Permission may be given to students in Business or Directed Interdisciplinary Studies who have completed LAWS 2301 or BUSI 2601.

Lectures three hours a week.

LAWS 3408 [0.5 credit] (formerly 51.348\*)

#### **Legal Aspects of Sport**

Legal regulation of sporting activities in Canada. Subjects include constitutional power to regulate sport, government involvement in sports administration, sports violence, civil liability for sports injuries, sex discrimination, professional and intercollegiate leagues, player employment contracts, disciplinary proceedings.

Prerequisite: LAWS 2003 or LAWS 2005.

Lectures three hours a week.

LAWS 3500 [0.5 credit] (formerly 51.350\*)

#### **Constitutional Law**

An investigation of the Canadian constitution. Sovereignty, the nature and units of executive, legislative, and judicial power in Canada as interpreted by the courts. The distribution of powers under the Canadian constitution, including an investigation of contemporary problems of federalism. Problems of judicial review.

Prerequisite: LAWS 2005 or a Political Science course in Canadian government.

Lectures three hours a week.

Law LAWS 3501 [0.5 credit] (formerly 51.351\*)

#### **Law in the Information Society**

Legal responses to challenges of the information society. Topics may include privacy, surveillance and monitoring, access to information, freedom of expression, control of objectionable content, Charter and human rights issues, and security.

Prerequisite: one of LAWS 2003, or LAWS 2004, or LAWS 2005 or permission of the Department.

Lectures three hours a week.

LAWS 3502 [0.5 credit] (formerly 51.352\*)

#### **Telecommunications Regulation**

The law regulating Canadian broadcasting and communications industries. Focus on the Canadian Radio-Television and Telecommunications Commission. Topics may include: administrative formulation of policy, ownership rules, program content and quality, access to the media, cablevision licensing and control, alternative sanctions. (Also listed as JOUR 3502 and MCOM 3502.)

Prerequisite: one of LAWS 2003, LAWS 2004 or LAWS 2005; or 1.0 credit at the 2000-level in Journalism or Mass Communication.

Lectures three hours a week.

LAWS 3503 [0.5 credit] (formerly 51.353\*)

#### **Equality and Anti-Discrimination Law**

Human rights issues and law in Canada; history and present day experiences of discrimination; critical exploration of law's effectiveness in responding to discrimination; meaning(s) of equality and discrimination; focus on Human Rights Codes - interpretation, administration, enforcement - some reference to s.15 of the Charter.

Precludes additional credit for 51.353 (no longer offered).

Prerequisite: LAWS 2004 or LAWS 2005.

Lectures and seminars three hours a week.

LAWS 3504 [0.5 credit] (formerly 51.354\*)

#### **Law and Aboriginal Peoples of Canada**

The legal situation of aboriginal peoples in Canada. Topics include status, aboriginal rights, treaties, legislative jurisdiction and the constitutional framework, aboriginal claims, and self-government.

Comparative references to aboriginal policy in other countries.  
Prerequisite: LAWS 2005 or LAWS 3503 or 51.353 (no longer offered), or LAWS 3509.  
Lectures three hours a week.

LAWS 3506 [0.5 credit] (formerly 51.356\*)

**Administrative Law**

Structure and procedure of Canadian administrative authorities; policy, statutory and judicial environments in which they operate. Topics include: techniques for implementing public policy and structuring public authorities; statutory interpretation; procedural safeguards; exercise of statutory discretion; reconciling efficiency and fairness.  
Prerequisites: One of LAWS 2005, LAWS 3005, or LAWS 3502 (JOUR 3502, MCOM 3502), or PSCI 2000.  
Lectures three hours a week.

LAWS 3507 [0.5 credit] (formerly 51.357\*)

**Music, the Law and Morality**

An introduction to the relationships that have developed between music, the law and moral issues. Special attention will be paid to issues of copyright infringement, censorship, obscenity, and to the phenomenon of moral panics. (Also listed as MUSI 3404.)

Prerequisite: second-year standing.  
Lectures three hours a week.

LAWS 3508 [0.5 credit] (formerly 51.358\*)

**Health Law**

Legal/ethical issues in health care regulation. Topics may include: regulation of health professions; economics of health care; informed consent/choice; regulation of drugs, devices and research; medical malpractice and other liability; mental health issues; patient/client records.  
Precludes additional credit for Law 51.355\* and Law 51.493\* B (if taken in 1994-95 or 1995-96).  
Prerequisite: LAWS 2003, LAWS 2004, or LAWS 2005.  
Lectures three hours a week.

LAWS 3509 [0.5 credit] (formerly 51.359\*)

**The Charter of Rights: Selected Topics**

Selected issues in the Canadian Charter of Rights and Freedoms. The topics of this course may vary from year to year, and are announced in advance of registration.  
Precludes additional credit for 51.353 (no longer offered).  
Prerequisite: LAWS 2004 or LAWS 2005.  
Lectures and seminars three hours a week.

LAWS 3603 [0.5 credit] (formerly 51.363\*)

**Public International Law**

Examination of the role of law in contemporary international relations. Nature, history and sources of international law; international personality of states; the status of international organizations and individuals; creation and effect of international obligations; importance and functions of law in the settlement of international disputes.  
Precludes additional credit for 51.363 (no longer offered).  
Prerequisite: LAWS 1000 or LAWS 2005, or P&PM 1000 or a Political Science or History course in international relations.  
Lectures three hours a week.

LAWS 3604 [0.5 credit] (formerly 51.364\*)

**The Law of International Organizations**

Nature, character, legal status and jurisdiction of intergovernmental international organizations. Rights and duties of states arising from membership in international organizations. Distinction between international and supra-national institutions. United Nations system, selected subsidiary organs, and specialized agencies; non-governmental organizations at times of crisis.  
Precludes additional credit for LAWS 4600.  
Prerequisite: LAWS 3603 or 51.363 (no longer offered).

LAWS 3800 [0.5 credit] (formerly 51.380\*)

**Law of Environmental Quality**

Various aspects of environmental law; pollution control, legal actions and remedies; legal foundations for participation in decision-making processes. Social, economic and political forces influencing the formulation and implementation of environmental law. Alternative forms of regulation that may

articulate different demands.  
Prerequisite: LAWS 2003, LAWS 2004 or LAWS 2005.  
Lectures three hours a week.

LAWS 3804 [0.5 credit] (formerly 51.384\*)

**Law of the Family**

Legal framework surrounding the family and family relationships in Canadian society. Topics include marriage and cohabitation, matrimonial support, custody and access, and dissolution of marriage. State interventions through law; law and change in family structures; equality issues; dispute resolution processes. (Also listed as SOWK 3804)  
Precludes additional credit for 51.384 (no longer offered).  
Prerequisite: LAWS 2003.  
Lectures three hours a week.

LAWS 3903 [0.5 credit] (formerly 51.393\*)

**Selected Legal Topics**

The topics of this course may vary from year to year, and are announced in advance of registration.  
Prerequisite: third-year standing.  
Lectures three hours a week.

LAWS 3904 [0.5 credit] (formerly 51.394\*)

**Selected Legal Topics**

The topics of this course may vary from year to year, and are announced in advance of registration.  
Prerequisite: third-year standing.  
Lectures three hours a week.

LAWS 3907 [0.5 credit] (formerly 51.397\*)

**Legal Research Methods**

Basic methods in the design and execution of research projects in law in a social science context. Research principles; theoretical approaches; law-related materials and research procedures. Computer-assisted legal research; problem solving, bibliographic and citation skills.  
Prerequisites: Any two of LAWS 2003, LAWS 2004, or LAWS 2005 and Honours standing.  
Seminars three hours a week.

LAWS 4001 [0.5 credit] (formerly 51.401\*)

**Law, Family and Gender**

Relationship between family law and ideology of the family, gender roles and the reproduction of family structures. Social ramifications of family law; potential for family law reform as an agency of social change.  
Prerequisites: LAWS 3001 or LAWS 3804 and fourth-year Honours standing.  
Seminars three hours a week.

LAWS 4002 [0.5 credit] (formerly 51.402\*)

**Feminist Theories of Law**

The literature comprising feminist perspectives on law; theoretical bases of these perspectives; place of feminist theories within other critiques of law; significance of different feminist theories for equality theory and law reform strategies; unique contributions of the various perspectives.  
Prerequisite: LAWS 3001 or fourth-year Honours standing.  
Seminars three hours a week.

LAWS 4006 [0.5 credit] (formerly 51.406\*)

**Religion and the State in Canada**

Legal nature of the interaction of religion and state within an historical framework. Emphasis on Canada after the Charter of Rights and Freedoms and on religious pluralism and resistance to state intervention in religion. Interdisciplinary readings drawn from legal, historical and theological sources.  
Prerequisite: LAWS 1000.  
Seminars three hours a week.

LAWS 4100 [0.5 credit] (formerly 51.410\*)

**Modern Legal Theory**

Realist and post-realist legal scholarship; emphasis on Canadian, American and British approaches. Topics include the Canadian treatise tradition, American legal realism, empirical approaches to legal problems, the sociological movement in law, critical and Canadian feminist legal scholarship, Marxian theories of law, normative economic theory.  
Prerequisites: Any two of LAWS 2003, LAWS 2004, or LAWS 2005.

LAWS 4101 [0.5 credit] (formerly 51.411\*)

**Contemporary Theories of Justice**

Selected major contemporary theories of justice such as those associated with Rawls, Walzer, and Habermas, with emphasis on both their procedural and substantive elements and their concrete ramifications for law, policy and political practice. Precludes additional credit for 51.494\* A (if taken between 1995-96, and 1997-98).

Prerequisite: fourth-year Honours standing.  
Seminars three hours a week.

LAWS 4102 [0.5 credit] (formerly 51.412\*)

**Contemporary Controversies in Rights Theory**

Selected controversies in rights theories and practices. Illustrative questions may include: Are human rights culturally relative? Can rights be justified after the demise of natural rights philosophy? Do rights undermine "difference"? Do communities benefit from a rights-based culture? Are "rights" forms of governance?

Precludes additional credit for 51.353 (no longer offered).  
Prerequisite: fourth-year Honours standing.

**Seminars three hours a week.**

LAWS 4103 [0.5 credit] (formerly 51.413\*)

**Special Topic in the Philosophy of Law**

Detailed study of a special topic in philosophy of law. (Also listed as PHIL 4407)

Prerequisite: eligibility for fourth-year standing in a Law or Philosophy Honours program or permission of either Department.

Seminar two hours a week.

LAWS 4104 [0.5 credit] (formerly 51.414\*)

**Special Topic in the Philosophy of Law**

Detailed study of a special topic in philosophy of law. (Also listed as PHIL 4408.)

Prerequisite: eligibility for fourth-year standing in a Law or Philosophy Honours program or permission of either Department.

Seminar two hours a week.

LAWS 4107 [0.5 credit] (formerly 51.417\*)

**Law in Modern Society**

Sociological and legal theory accounts of the changing role and function of law in modern society with particular reference to advanced capitalist societies. Topics include: the welfare state and the use of regulatory law; juridification and legalization; counter-trends, deregulation, informalism, legal pluralism. (Also listed as SOCI 4303.)

Prerequisite: LAWS 3101, LAWS 3105, 51.315 (no longer offered), LAWS 3106, or SOCI 3801.

Seminars three hours a week.

LAWS 4200 [0.5 credit] (formerly 51.420\*)

**Advanced International Economic Law**

Selected topics in international economic law. May include: the legal regulation of international economic activity; methods of dispute settlement; standardization and development of an autonomous international trade law; and selected conventions and institutions governing international economic law.

Prerequisite: LAWS 3207 or LAWS 3208.

Seminar three hours a week.

LAWS 4202 [0.5 credit] (formerly 51.422\*)

**Legal Accountability of Management**

Role, function, and legal regulation of persons managing business enterprises. Status, social responsibility, fiduciary obligations and rights. Control and accountability of managers, obligations owed to the enterprise unit itself, constitutional rights of members, standards imposed by statutory regulation.

Prerequisite: LAWS 3201.

Lectures three hours a week.

LAWS 4208 [0.5 credit] (formerly 51.428\*)

**Field Placement in Business Law**

Field placement in an approved business organization or environment. Evaluation consists of assessment by employer and student report graded by the departmental placement supervisor interpreting theoretical and practical experiences in business law.

Prerequisite: fourth-year Honours standing; registration in the Concentration in Business Law; and permission of the Department.

Field placement one day a week.

LAWS 4209 [0.5 credit] (formerly 51.429\*)

**Advanced Topics in Business Law**

Examination of a selected advanced topic in business law. The topics of this course may vary from year to year and are announced in advance of registration.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminars three hours a week.

LAWS 4302 [0.5 credit] (formerly 51.432\*)

**Legal Regulation of Corporate Crime**

Legal, policy and theoretical perspectives on the regulation of corporate crime. Nature and causes of corporate crime. Selected case studies on the role of the state in regulating corporate behaviour. Failure of the criminal justice system to respond to corporate crime.

Prerequisites: LAWS 2004 and one of LAWS 3005, LAWS 3201 or LAWS 3800.

Seminars three hours a week.

LAWS 4305 [0.5 credit] (formerly 51.435\*)

**Criminal Justice Reform: Theory and Practice**

Social transformation and criminal justice reform. Theoretical and practical reasons for the use of criminal law as an instrument of social control. Specific reform initiatives and processes. Alternate responses to social problems.

Prerequisites: LAWS 2004 or LAWS 2304 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4306 [0.5 credit] (formerly 51.436\*)

**Contemporary Issues in Criminal Law**

Selected issues and problems in the area of criminal law. The topics may vary from year to year depending on demand and interest and are announced in advance of registration.

Prerequisite: fourth-year Honours standing.

LAWS 4307 [0.5 credit] (formerly 51.437\*)

**Legal Medical Issues in Criminal Law**

Legal-medical issues, conflicts and relationships in the field of social control. Topics include mental disorder and criminal liability, diversion of offenders to civil commitment in hospital, insanity, automatism, fitness to stand trial, prediction of dangerousness, regulation of psychoactive drugs.

Prerequisites: LAWS 2004 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4308 [0.5 credit] (formerly 51.438\*)

**Sentencing: Theories and Practice**

Theories of sentencing, current sentencing laws and practices, perceptions of sentencing. Data on sentencing practice across Canada. Reforms in other jurisdictions. Critical review of the Canadian Sentencing Commission. Multidisciplinary approach using research and theory in law, criminology, social psychology and sociology.

Prerequisites: LAWS 2004 and fourth-year Honours standing. This course may not be taken by students who have completed the course as a special topics course.

Seminars three hours a week.

LAWS 4309 [0.5 credit] (formerly 51.439\*)

**Criminal Proceedings and Dissent: Political Offences and National Security Measures**

Historical and contemporary analysis of legal responses of Canadian governments to dissent, political opposition, insurrection, etc. Includes trial of political offences (treason, sedition, riot), national security measures (War Measures/Emergencies Act, Official Secrets Act), and other special powers (police, labour, immigration, parliamentary privilege, etc.)

Precludes additional credit for 51.436\* (if taken in 1990-91).

Prerequisites: fourth-year Honours standing, LAWS 3503 or LAWS 3509 or LAWS 3305.

Seminars three hours a week.



LAWS 4402 [0.5 credit] (formerly 51.442\*)

**Employment Dispute Resolution**

Theory and practice of dispute resolution in employment relations; analysis of such techniques as negotiation, grievance and interest arbitration, mediation, investigation and litigation applied to a range of employment disputes such as collective agreements, termination of employment, discrimination, harassment, occupational health and safety, etc.

Precludes additional credit for LAWS 4400.

Prerequisites: fourth-year Honours standing and one of LAWS 3006 or LAWS 3401 or LAWS 3405, or BUSI 2602 and BUSI 3107.

Seminars three hours a week.

LAWS 4501 [0.5 credit] (formerly 51.451\*)

**Selected Problems in Comparative Constitutional Law**

The topics of this course may vary from year to year. Topics may include comparative federalism, comparative study of civil liberties and human rights, comparative bases and theories of judicial review in their social, political, economic or historical contexts.

Prerequisite: LAWS 3500.

LAWS 4504 [0.5 credit] (formerly 51.454\*)

**Aboriginal Peoples and the Canadian Criminal Legal System**

Aboriginal peoples and the administration of Canadian criminal justice including policing, courts, corrections and aftercare. Content and effects of past and present policies, processes and laws. Alternatives such as self-government and self-determination; potential approaches to an appropriate justice system for Aboriginal peoples.

Precludes additional credit for LAWS 4306 (if taken in 1992-94).

Prerequisites: LAWS 2004 and fourth-year Honours standing.

Seminars three hours a week.

LAWS 4507 [0.5 credit] (formerly 51.457\*)

**Administrative Law and Control**

An examination of characteristics and selected problems of control of administrative action. Topics include: varieties of traditional and constitutional, legal and judicial control, impact of the Charter, reforms to administrative law control systems in Canada, and comparisons with developments outside Canada. Also offered at the graduate level, with additional or different requirements, as PADM 5307, for which additional credit is precluded.

Prerequisites: LAWS 2005 or LAWS 3005 or LAWS 3506 or PADM 5306.

Lectures three hours a week.

LAWS 4509 [1.0 credit] (formerly 51.459)

**Internship in Law, Policy and Government**

A one-term, full-time work placement in a government department or governmental or non-governmental organization. Evaluation will be based on a written project report related to the work completed during the Internship and on an assessment from the employer.

Prerequisite: fourth-year Honours standing; and registration in the Internship Option of the Concentration in Law, Policy and Government.

Internship 35 hours a week.

LAWS 4604 [0.5 credit] (formerly 51.464\*)

**Legal Aspects of the International Protection of Human Rights**

The developing international law relating to the protection of human rights. General concepts, rules and institutions. Specific issues include self-determination, aboriginal rights, the refugee problem, and torture. The inherent problems and overall potential of international law.

Prerequisite: LAWS 2105, LAWS 3503, 51.353 (no longer offered), LAWS 3509, LAWS 3603, or 51.363 (no longer offered).

Lectures three hours a week.

LAWS 4605 [0.5 credit] (formerly 51.465\*)

**Contemporary Issues in Public International Law**

Topics vary from year to year and are announced in advance. May include transnational environmental issues; the international law of armed conflict, peacekeeping and neutrality; the law of international treaties and transnational agreements; state responsibility under international law.

Prerequisite: LAWS 3603 or 51.363 (no longer offered).

Seminars three hours a week.

LAWS 4607 [0.5 credit] (formerly 51.467\*)

**Immigration and Refugee Law**

Immigrants and refugees; demographics; Canadian, international and human rights law and policy. The Canadian Immigration Act. Legal and social problems including entry and removal, family reunion, citizenship, remedies, the rights of clandestine migrants; settlement rights; non-discrimination; asylum; a nation's right to determine membership.

Prerequisite: LAWS 2005.

Seminars three hours a week.

LAWS 4701 [0.5 credit] (formerly 51.471\*)

**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced well in advance of registration each year. This course is part of the Summer School in Criminal Justice and Social Policy and is offered by the Department of Law. (Also listed as SOWK 4701 and SOCI 4701.)

Prerequisite: fourth-year Honours standing or permission of the Department.

LAWS 4702 [0.5 credit] (formerly 51.472\*)

**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced well in advance of registration each year. This course is part of the Summer School in Criminal Justice and Social Policy and is offered by the Department of Sociology and Anthropology. (Also listed as SOWK 4702 and SOCI 4702.)

Prerequisite: fourth-year Honours standing or permission of the Department.

LAWS 4703 [0.5 credit] (formerly 51.473\*)

**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced well in advance of registration each year. This course is part of the Summer School in Criminal Justice and Social Policy and is offered by the School of Social Work. (Also listed as SOWK 4703 and SOCI 4703)

Prerequisite: fourth-year Honours standing or permission of the Department.

LAWS 4800 [0.5 credit] (formerly 51.480\*)

**Environmental Regulation and Social Justice**

The potential of environmental law to protect the environment and people while promoting opportunities for informed participation in environmental decision making by groups traditionally excluded from these processes; contemporary issues of social justice raised by legal regulation of the environment.

Precludes additional credit for 51.494\* C (if taken between 1995-96, and 1997-98).

Prerequisite: fourth-year Honours standing.

Seminars three hours a week.

LAWS 4801 [0.5 credit] (formerly 51.481\*)

**Risk and the Legal Process**

Application of risk assessment and management in various legal arenas including insurance, liability and tort, litigation management, environmental protection, and sentencing and parole.

Precludes additional credit for 51.493\* C (if taken in 1996-97 or 1997-98).

Prerequisite: fourth-year Honours standing.

Seminars three hours a week.

LAWS 4806 [0.5 credit] (formerly 51.486\*)

**The Civilist Tradition**

Study of several European legal systems based on Roman law. Development of Roman law, including Justinian's corpus juris civilis. Reception of Roman law by various European legal systems. Comparative analysis of selected articles of the French, Austrian and German codes.

Prerequisites: LAWS 1000 (or its equivalent) and another Law course or a Classics course.

Lectures three hours a week.

LAWS 4900 [1.0 credit] (formerly 51.490)

**Directed Studies**

A reading or research course for selected students who wish to investigate a particular topic of interest. Available to third- and

fourth-year students only.

Prerequisites: Written acceptance by a faculty adviser and permission of the Department.

LAWS 4901 [0.5 credit] (formerly 51.491\*)

**Tutorial in Law**

Members of the Department are prepared to give reading courses in selected fields. Students are encouraged to inquire from individual instructors or the Supervisor of Honours in what fields such reading courses are available.

Prerequisites: Written acceptance by a faculty member and permission of the Department.

LAWS 4902 [0.5 credit] (formerly 51.492\*)

**Tutorial in Law**

Members of the Department are prepared to give reading courses in selected fields. Students are encouraged to inquire from individual instructors or the Supervisor of Honours in what fields such reading courses are available.

Prerequisites: Written acceptance by a faculty member and permission of the Department.

LAWS 4903 [0.5 credit] (formerly 51.493\*)

**Advanced Legal Topics**

The topics of this course may vary from year to year, and are announced in advance of registration.

Prerequisite: fourth-year Honours standing.

LAWS 4904 [0.5 credit] (formerly 51.494\*)

**Advanced Legal Topics**

The topics of this course may vary from year to year and are announced well in advance of the period of registration.

Prerequisite: fourth-year Honours standing.

## Linguistics (LALS)

School of Linguistics and Applied

Language Studies

Faculty of Arts and Social Sciences

LALS 1000 [1.0 credit] (formerly 29.100)

**Introduction to Linguistics**

Elementary principles and methods of descriptive analysis of language; phonetics; phonology; morphology; syntax. Survey of other areas of linguistics: historical linguistics, sociolinguistics, psycholinguistics, semantics, applied linguistics.

Precludes additional credit for FYSM 1206.

Lectures three hours a week.

LALS 1805 [1.0 credit] (formerly 29.185)

**Academic Discourse and Culture**

Language as it is related to disciplinary inquiry. Language and culture of a variety of disciplines. Intended to enhance students' abilities to understand and acquire the culture, discourse, and conventions of their own disciplines.

Precludes additional credit for FYSM 1203.

Lectures three hours a week.

LALS 2001 [0.5 credit] (formerly 29.201\*)

**Phonetics**

Recognition, description, transcription and production of speech sounds; systems of transcription; the nature of the speech-producing mechanism; the acoustics of speech sounds. (Also listed as SOAN 2201.)

Precludes additional credit for Linguistics and Applied Language Studies 29.301\*.

Prerequisite: LALS 1000 or FYSM 1206.

Lectures three hours per week.

LALS 2003 [0.5 credit] (formerly 29.203\*)

**Language Analysis**

Direction and practice in the analysis of grammatical material, including both morphology and syntax. Models for the description of grammatical regularities. Course work consists principally of practical exercises. (Also listed as ANTH 2203.)

Precludes additional credit for Linguistics and Applied Language Studies 29.303\*.

Prerequisite: LALS 1000 or FYSM 1206.

Lectures three hours a week.

LALS 2203 [0.5 credit] (formerly 29.223\*)

**Linguistic Theory and Second-Language Learning**

A critical study of linguistic theory and description applied to second-language learning. Includes a brief consideration of similarities and differences in first- and second-language development, bilingualism and types of linguistic error and their significance.

Lectures three hours a week.

LALS 2401 [0.5 credit] (formerly 29.241\*)

**Language in Education**

Insights from linguistics and applied language studies into the development of English as mother tongue during elementary and/or secondary education. Language, learning and cognitive development.

Precludes additional credit for Linguistics and Applied Language Studies 29.295 and English 18.295.

Lectures three hours a week.

LALS 2504 [0.5 credit] (formerly 29.254\*)

**Language and Communication**

Some of the central topics in the study of language and communication as pursued by linguists and philosophers.

Topics include: the nature of meaning; the connections between language, communication and cognition; language as a social activity. (Also listed as PHIL 2504 and MCOM 2504.)

Precludes additional credit for Linguistics and Applied Language Studies 29.280, Mass Communication 27.280, and Philosophy 32.280.

Prerequisite: second-year standing.

Lectures three hours a week.

LALS 2603 [0.5 credit] (formerly 29.263\*)

**Child Language**

Milestones associated with the development of grammatical, pragmatic and metalinguistic competence from birth to about age ten, and at the relative contributions of the environment, cognitive development and inborn knowledge to this development.

Prerequisite: LALS 1000 or FYSM 1206.

Lectures three hours per week.

LALS 2604 [0.5 credit] (formerly 29.264\*)

**Speech and Language Problems**

Congenital, developmental and acquired disorders of language, speech and voice; prevalences, types, causes and effects; related research.

Lectures three hours a week.

LALS 2701 [0.5 credit] (formerly 29.271\*)

**Sociolinguistics**

The place of language within society; bilingual and multilingual communities; language, social mobility and social stratification; sociolinguistic factors in language change.

Lectures three hours a week.

LALS 2703 [0.5 credit] (formerly 29.273\*)

**Gender and Language**

The influence of gender on language and the way in which language reflects society's view of gender. Topics covered include: gender differences in language use and in discourse, gender-bias in language, and the role of language in socializing for gender.

Prerequisite: second-year standing.

Lectures three hours a week.

LALS 2704 [0.5 credit] (formerly 29.274\*)

**Bilingualism**

The linguistic nature of bilingualism. The structure of bilingual societies and the relation between societal and individual bilingualism. The role of bilingualism in language education.

Prerequisite: second-year standing.

Lectures three hours a week.

LALS 2705 [0.5 credit] (formerly 29.275\*)

**Language, Ideology and Power**

How social conditions engender different linguistic choices. Attention to linguistic resources for expressing ideological beliefs and for maintaining and reinforcing power structures in institutional and social sites. (Also listed as SOAN 2105.)

Lectures three hours a week.

LALS 2706 [0.5 credit] (formerly 29.276\*)

**Conversational Analysis**

Methods and theory for analyzing ordinary talk. Differences between language in conversation and formal spoken and written language. The relation of conversational analysis to other approaches to studying language. The connection between conversational analysis and studies of interaction. (Also listed as SOAN 2106.)

Lectures three hours a week.

LALS 3002 [0.5 credit] (formerly 29.302\*)

**Phonology**

The sound-systems of languages; methods for the analysis and description of phonological structure. The course concentrates on generative theory with comparisons to other theories. (Also listed as ANTH 3002.)

Prerequisite: LALS 2001.

Lectures three hours a week.

LALS 3004 [0.5 credit] (formerly 29.304\*)

**Grammatical Theory**

Comparison of major current schools of linguistics. Theories of grammatical structure. The testing of grammatical hypotheses. Grammatical structure and meaning. Course work consists principally of lectures and readings. (Also listed as ANTH 3004.)

Prerequisite: LALS 2003.

Lectures three hours a week.

LALS 3009 [0.5 credit] (formerly 29.309\*)

**Topics in General Linguistics**

Selected topics in general linguistics not ordinarily treated in the regular course program. Contents of the course vary from year to year.

Prerequisite: LALS 1000 (or FYSM 1206) or permission of the School.

Lectures and discussion three hours per week.

LALS 3101 [0.5 credit] (formerly 29.311\*)

**Historical Linguistics**

Principles and methods of the historical analysis of languages; the comparative method; internal reconstruction; sound change; rule change; the philological method; problems in historical analysis. Precludes additional credit for Linguistics and Applied Language Studies 29.211\*.

Prerequisite: LALS 1000 or FYSM 1206.

Lectures three hours a week.

LALS 3400 [1.0 credit] (formerly 29.340)

**Writing: Theory and Practice**

A study of the process of writing in theory and practice. Readings and discussions focus on the composing process; the development of writing abilities from the elementary years to maturity; the interrelationships between thinking and writing; strategies for encouraging growth in writing. (Also listed as ENGL 2907.)

Precludes additional credit for Linguistics and Applied Language Studies 29.247, ENGL 2907 and 29.297.

Prerequisite: third-year standing and permission of the instructor.

LALS 3504 [0.5 credit] (formerly 29.354\*)

**Pragmatics**

The theoretical study of language use as pursued by linguists and philosophers. Topics include: conversational implicature; deixis; the semantics-pragmatics boundary; speaker's reference; speech acts. (Also listed as MCOM 3504 and PHIL 3504.)

Precludes additional credit for Linguistics and Applied Language Studies 29.280, Mass Communication 27.280, and Philosophy 32.280.

Prerequisite: second-year standing or at least 0.5 credit in Philosophy or Linguistics and Applied Language Studies.

Lectures three hours a week.

LALS 3506 [0.5 credit] (formerly 29.356\*)

**Semantics**

Perspectives on the semantic structure of language. The study of meaning, with special emphasis on lexical and grammatical issues - including sentence and text meaning, as well as issues about reference. (Also listed as PHIL 3506.)

Precludes additional credit for Linguistics and Applied Language Studies 29.232\* and Philosophy 32.232\*.

Prerequisite: LALS 2003, MCOM 2504, LALS 2504, PHIL 2504, or PHIL 2001.

Lectures three hours a week.

LALS 3601 [0.5 credit] (formerly 29.361\*)

**Psycholinguistics**

Language performance and language use; the production and perception of language; psychological processes involved in speech performance; the relevance of these questions to linguistic theory.

Precludes additional credit for Linguistics and Applied Language Studies 29.261\*.

Prerequisite: LALS 1000 or FYSM 1206.

Lectures three hours a week.

LALS 3705 [0.5 credit] (formerly 29.375\*)

**Adult Literacy**

The extent and social contexts of restricted literacy in Canadian society; approaches to and debates surrounding the teaching and learning of adult literacy.

Precludes additional credit for Linguistics and Applied Language Studies 29.496\* (if taken in 1994-95 or 1995-96).

Prerequisite: third-year standing in Linguistics and Applied Language Studies or enrolment in the CTESL program.

Lectures three hours a week.

LALS 3706 [0.5 credit] (formerly 29.376\*)

**Discourse Analysis**

Principles of and studies in discourse analysis, including both conversational and textual/documentary analysis. The major focus is on language use in structuring social relationships.

Precludes additional credit for Linguistics and Applied Language Studies 29.423\*.

Prerequisite: third-year standing in Linguistics and Applied Language Studies or enrolment in the CTESL program.

Lectures three hours a week.

LALS 3900 [1.0 credit] (formerly 29.390)

**Independent Study**

Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics and Applied Language Studies.

Prerequisite: permission of the School.

LALS 3901 [0.5 credit] (formerly 29.391\*)

**Independent Study**

Research under the supervision of a member of the School. Normally available only to third- and fourth-year students in Linguistics and Applied Language Studies.

Prerequisite: permission of the School.

LALS 3903 [0.5 credit] (formerly 29.393\*)

**Special Topics in Applied Language Studies**

Selected topics in Applied Language Studies not ordinarily treated in the regular course program. Contents of this course vary from year to year.

Prerequisite: LALS 1000 or FYSM 1206, or permission of the School.

Lectures and discussion three hours per week.

LALS 3907 [1.0 credit] (formerly 29.397)

**Études dirigées**

Lectures ou recherche et travaux écrits dirigés par un membre de l'école. Les projets de recherche peuvent être organisés soit comme tutorial pour un(e) seul(e) étudiant(e) soit comme séminaire pour un groupe d'étudiants.

For third-year Linguistics and Applied Language Studies students of *Mention: français* only.

Prerequisite: permission of the School.

LALS 4001 [0.5 credit] (formerly 29.401\*)

**Advanced Phonology**

A continuation of LALS 3002. Topics include: the methodological problems of phonology, the problems of markedness and natural rules, ordering, abstractness, and other current theoretical developments.

Prerequisite: LALS 3002 or permission of the School.

Lectures three hours a week.



LALS 4002 [0.5 credit] (formerly 29.402\*)

**Advanced Grammar**

A continuation of LALS 3004. Topics include: global rules, clause movement, constraints, trace theory and other current developments in syntactic analysis.

Prerequisite: LALS 3004 or permission of the School.

Lectures three hours a week.

LALS 4003 [0.5 credit] (formerly 29.403\*)

**Philosophy of Language**

Prerequisite: fourth-year Honours standing in Linguistics and Applied Language Studies or Philosophy or permission of either the School or the Department of Philosophy. (Also listed as PHIL 4001).

LALS 4009 [0.5 credit] (formerly 29.409\*)

**Topics in General Linguistics**

Examination of a topic or more specialized area in linguistics or language study. This course may be taken more than once.

Prerequisite: third- or fourth-year standing in Linguistics and Applied Language Studies or permission of the School.

Lectures three hours a week.

LALS 4201 [0.5 credit] (formerly 29.421\*)

**Language Testing**

The principles of test construction as applied to testing language proficiency, achievement and aptitude. Structural, notional, discrete point and integrative tests are covered. Students are expected to create, analyze and evaluate language tests.

Prerequisite: third-year standing in Linguistics and Applied Language Studies, or enrolment in the CTESL program.

Lectures three hours a week.

LALS 4205 [1.0 credit] (formerly 29.425)

**Teaching English as a Second Language: Methodology**

Classification of classroom teaching methods and materials; adaptation of teaching materials for particular situations; creation of teaching materials; teaching techniques and strategies.

Prerequisite: fourth-year standing in Linguistics and Applied Language Studies, final-year standing in the concurrent CTESL program, or enrolment in the post-graduate CTESL program.

Lectures three hours a week.

LALS 4206 [1.0 credit] (formerly 29.426)

**Practicum in Teaching English as a Second Language: Experience in an ESL Teaching Situation**

Integrates the academic dimension of the program with practical work. Observation in ESL classes and possible assistance with teaching materials or classes. Graded Sat or Uns and normally taken concurrently with LALS 4205.

Prerequisites: fourth-year standing in Linguistics and Applied Language Studies, final-year standing in the concurrent CTESL program, or enrolment in the post-graduate CTESL program.

LALS 4207 [0.5 credit] (formerly 29.427\*)

**ESL Literacy**

The nature of everyday literacy and literacy skills. Analyzing the structure of everyday literacy texts and demands. Issues in literacy for second-language learners.

Prerequisite: third-year standing in Linguistics and Applied Language Studies, or enrolment in the CTESL program.

Lectures three hours a week.

LALS 4401 [0.5 credit] (formerly 29.441\*)

**Rhetoric and Argument in the Human, Social and Natural Sciences**

How rhetorical considerations shape the construction of arguments within disciplinary communities. How disciplinary and socio-historical conditions shape scientific communities' criteria for what will be accepted as persuasive. Reflexive work analyzing students' own fields of inquiry. Also offered at the graduate level, with additional or different requirements, as LALS 5401 for which additional credit is precluded.

Precludes additional credit for Linguistics and Applied Language Studies 29.495 and English 18.495.

Prerequisite: third-year standing.

Lectures three hours a week.

LALS 4402 [0.5 credit] (formerly 29.442\*)

**Learning Across the Disciplines: A Research Practicum**

Theory about and research into the role of language in learning and pedagogic situations which optimize that relationship. Students perform teacher-research related to their teaching, within the context of the theory presented. Also offered at the graduate level, with additional or different requirements, as LALS 5402 for which additional credit is precluded.

Prerequisite: third-year standing.

Lectures three hours a week.

LALS 4602 [0.5 credit] (formerly 29.462\*)

**Second-Language Acquisition**

Current models of second-language acquisition and learning with an emphasis on empirical studies. Universals of second-language acquisition.

Prerequisite: third-year standing in Linguistics and Applied Language Studies, or enrolment in the CTESL program.

Lectures three hours a week.

LALS 4801 [0.5 credit] (formerly 29.481\*)

**Major Structures of English**

This course is intended to familiarize students with the structure of the English language, highlighting important contrasts between English and other languages as well as grammatical difficulties for ESL learners.

Precludes additional credit for LALS 4805.

Prerequisite: third-year standing in Linguistics and Applied Language Studies or enrolment in the concurrent CTESL program, or enrolment in the post-graduate CTESL program.

Lectures three hours a week.

LALS 4802 [0.5 credit] (formerly 29.482\*)

**Language Contact and Language Spread**

Development and spread of creoles and pidgins, introduce principles of language policy and planning, and analyze the emergence of New Englishes.

Precludes additional credit for LALS 4805.

Prerequisites: Enrolment in the CTESL program or fourth-year standing and LALS 1000 or FYSM 1206.

Lectures and discussion three hours a week.

LALS 4900 [1.0 credit] (formerly 29.490)

**Tutorial in Linguistics**

Permits fourth-year Honours students to pursue their interests in a selected area of linguistics and applied language studies.

Prerequisite: permission of the School.

LALS 4901 [0.5 credit] (formerly 29.491\*)

**Tutorial in Linguistics**

Permits fourth-year Honours students to pursue their interests in a selected area of linguistics and applied language studies.

Prerequisite: permission of the School.

LALS 4906 [0.5 credit] (formerly 29.496\*)

**Selected Topics in Applied Language Studies**

Selected topics in applied language studies. Contents of this course vary from year to year.

Prerequisite: Third- or fourth-year standing or enrolment in the CTESL program.

Lectures three hours a week.

LALS 4907 [1.0 credit] (formerly 29.497)

**Études dirigées**

Études spécialisées en linguistique. Préparation d'un travail écrit ou d'un mémoire sur un sujet choisi par l'étudiant(e) en collaboration avec le directeur du tutorial et approuvé par le lécole.

For Fourth-year Linguistics and Applied Language Studies students of *Mention: Français* only.

Prerequisite: permission of the School.

LALS 4909 [1.0 credit] (formerly 29.499)

**Honours Essay**

Subject selected in consultation with the School and carried out under the direction of a faculty supervisor. Scheduled tutorials with supervisor are required.

Prerequisites: fourth-year standing in Linguistics and Applied Language Studies, a GPA or 9.00 or better, and permission of the School.

Tutorial hours arranged.

## Mass Communication (MCOM)

School of Journalism and Communication  
Faculty of Public Affairs and Management

MCOM 1101 [1.0 credit] (formerly 27.111)

### Introduction to Mass Communication

Examines major reasons for the emergence of communication studies in the 20th century. Emphasis on history and structure of mass media, their relationship to social and cultural change, and basic issues of communication and cultural policy.

Precludes additional credit for FYSM 1207.

Lectures and discussion groups three hours a week.

MCOM 2001 [1.0 credit] (formerly 27.201)

### Communication Research

Introduction to quantitative and qualitative methods of communication research: statistical and computer analysis, field research, policy and document analysis, historical/archival research.

Prerequisites: MCOM 1101 or FYSM 1207, or JOUR 1000 as well as B.A. (Honours) or B.A. standing in Mass Communication, or PAMP 1000 and registration in the Bachelor of Public Affairs and Policy Management, or permission of the School.

Lecture two hours a week, laboratory one hour a week.

MCOM 2101 [1.0 credit] (formerly 27.211)

### Communication and Modern Society

Examination of the historical development and current operations of diverse communication institutions in relation to the larger social structure, with emphasis on Canadian society.

Prerequisites: MCOM 1101 or FYSM 1207 as well as second year standing in Mass Communication, or PAMP 1000 and registration in the Communication Information Technology Policy specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School.

Lectures and discussion three hours a week.

MCOM 2300 [0.5 credit] (formerly 27.230\*)

### Communication Policy: Theory and Foundations

Introduction to theoretical perspectives on the role of communication and cultural policy in modern society. Examination of the different approaches to the role of the State in the production and legitimization of communication and cultural policy.

Prerequisites: MCOM 1101 or FYSM 1207, or JOUR 1000 as well as B.A. (Honours) or B.A. standing in Mass Communication, or PAMP 1000 and registration in the Communication Information Technology Policy specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School.

Lecture three hours a week.

MCOM 2302 [0.5 credit] (formerly 27.232\*)

### Communication Policy: Institutions and Practices

Examination of selected policy practices in the domains of communication and culture. Policies developed in these domains are related to the institutions, agencies, actors and social interests that shape their development in Canada and elsewhere.

Prerequisites: MCOM 1101 or FYSM 1207, or JOUR 1000 as well as B.A. (Honours) or B.A. standing in Mass Communication, or PAMP 1000 and registration in the Communication Information Technology Policy specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School.

Lecture three hours a week.

MCOM 2501 [0.5 credit] (formerly 27.251\*)

### Communications Law I

A survey of laws that affect the Canadian media. Specific areas include the development of freedom of expression, the Charter of Rights and Freedoms, and statutory and common-law limitations on freedoms of the press, including publication bans, libel and contempt of court. (Also listed as JOUR 2501.)

Precludes additional credit for 27.351\* and 28.351\* (last offered 1996-97).

Prerequisite: MCOM 1101 or FYSM 1207 or JOUR 1000, or PAMP 1000 and registration in the Communication

Information Technology Policy specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School.

Lectures and discussion three hours a week.

MCOM 2504 [0.5 credit] (formerly 27.254\*)

### Language and Communication

Some of the central topics in the study of language and communication as pursued by linguists and philosophers. Topics include: the nature of meaning; the connections between language, communication and cognition; language as a social activity. (Also listed as LALS 2504 and PHIL 2504.)

Precludes additional credit for LALS 2800, MCOM 2800 and PHIL 2800.

Prerequisite: second-year standing.

Lectures three hours a week.

MCOM 2900 [1.0 credit] (formerly 27.290)

### Truth and Propaganda

Ancient and modern techniques of persuasion from analytical, ethical and jurisprudential perspectives. Objectivity and bias, advertising and public relations ethics, the viability of democracy in the light of pressures on and within the modern mass media. (Also listed as PHIL 2900.)

Prerequisite: at least 0.5 credit in Philosophy or second-year standing.

Lectures and discussion three hours a week.

MCOM 3000 [1.0 credit] (formerly 27.300)

### Survey Research Applications in Public Affairs

A course which involves students in all phases of survey research as it relates to public affairs. Emphasis will be placed on methodological concerns. Students will be involved in the design and implementation of actual public affairs survey research projects or related research.

Prerequisites: MCOM 2001 or PSCI 2700, and either third year Standing in Mass Communication, or registration in the Strategic Public Opinion and Policy Analysis specialization within the Bachelor of Public Affairs and Policy Management, or permission of the School.

Lecture three hours per week including workshops.

MCOM 3005 [0.5 credit] (formerly 27.305\*)

### Media in a Global Context

Examination of the flow of global communication and information and its impact on our views of the world. Attention to the relationship between Canadian media and regional and international media institutions and systems. (Also listed as JOUR 3005.)

Prerequisite: MCOM 2101 as well as Honours or B.A. standing in Mass Communication, or third- or fourth-year B.J.(Honours) standing, or PAMP 2000 and registration in the Communication Information Technology Policy specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School.

MCOM 3006 [0.5 credit] (formerly 27.306\*)

### Comparative Media Studies

The comparative study of one or more of media content, effects, organization, operation, and criticism, and related theoretical perspectives. (Also listed as JOUR 3006.)

Prerequisite: MCOM 2101 as well as Honours or B.A. standing in Mass Communication, or third- or fourth-year B.J.(Honours) standing, or PAMP 2000 and registration in the Communication Information Technology Policy specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School.

MCOM 3101 [1.0 credit] (formerly 27.311)

### Advanced Study of the Mass Media

An examination of the philosophical and theoretical foundations of mass communication studies. The course is an analysis of the content of selected theories with a view to assessing the contributions they make to the understanding of mass communication.

Prerequisites: MCOM 2101 and Honours or B.A. standing in Mass Communication or permission of the School.

Lecture and discussion groups three hours a week.

MCOM 3402 [0.5 credit] (formerly 27.342\*)

### On Television

This course examines the television medium as it was formed historically, both as a social institution and as a technological

form. Various methods by which television texts might be analysed are presented, and different genres are compared and discussed. Prerequisite: MCOM 2101 or permission of the School. Lectures and discussion three hours a week.

MCOM 3403 [0.5 credit] (formerly 27.343\*)

**Communication Technology and Culture**

An examination of the relationship between communication technology and society. The course examines the factors that contribute to changes in the collection, storage and distribution of information and their cultural implications.

Prerequisite: MCOM 2101, or PAMP 2000 and registration in the Communication Information Technology Policy specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School. Seminar three hours a week.

MCOM 3404 [0.5 credit] (formerly 27.344\*)

**Music Industries**

An introduction to the structure and history of the music industries. (Also listed as MUSI 3403.)

Prerequisite: second-year standing. Lectures three hours a week.

MCOM 3406 [0.5 credit] (formerly 27.346\*)

**Media Construction and Social Issues**

Industrial-bureaucratic structures of the news media and their relevance to the reporting of social and political issues; an examination of the dominant discourses on these issues and their relevance for the organization of newswork. The issues vary from year to year.

Prerequisite: MCOM 2101, or PAMP 2000 and registration in the Communication Information Technology Policy specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School. Lectures and discussion three hours a week.

MCOM 3408 [0.5 credit] (formerly 27.348\*)

**Advertising: A Critical Perspective**

Critical analysis of some of the major constructs and basic mechanisms of the advertising system, including an examination of the social, political-economic and cultural implications of advertising.

Prerequisite: MCOM 2101 or permission of the School. Lecture three hours a week.

MCOM 3502 [0.5 credit] (formerly 27.352\*)

**Telecommunications Regulation**

The law regulating Canadian broadcasting and communications industries. Focus on the Canadian Radio-Television and Telecommunications Commission. Topics may include: administrative formulation of policy, ownership rules, program content and quality, access to the media, cablevision licensing and control, alternative sanctions. (Also listed as JOUR 3502 and LAWS 3502.)

Prerequisite: one of LAWS 2003, LAWS 2004 or LAWS 2005, or a 2000-level Journalism or Mass Communication credit. Lectures and discussion three hours a week.

MCOM 3504 [0.5 credit] (formerly 27.354\*)

**Pragmatics**

The theoretical study of language use as pursued by linguists and philosophers. Topics include: conversational implicature; deixis; the semantics-pragmatics boundary; speaker's reference; speech acts. (Also listed as LALS 3504 and PHIL 3504.)

Precludes additional credit for MCOM 2800, LALS 2800 and PHIL 2800.

Prerequisite: second-year standing or at least 0.5 credits in Philosophy or Linguistics and Applied Language Studies. Lectures and discussion three hours a week.

MCOM 3505 [0.5 credit] (formerly 27.355\*)

**Media and Gender**

The role of mass media in shaping our conceptions of gender roles. Evaluation of the social, political and cultural consequences of such conceptions.

Prerequisite: MCOM 2101 or permission of the School. Lectures and discussion three hours a week.

MCOM 3507 [0.5 credit] (formerly 27.357\*)

**Special Topic**

An examination of a special topic in mass communication not covered in depth in other courses. The topic varies from year to year. Possible topics include: communications policy analysis; the political economy of the mass media; and the social impact of new communications technology.

Prerequisite: MCOM 2101 or permission of the School.

MCOM 4000 [0.5 credit] (formerly 27.400\*)

**Advanced Communication Research: Quantitative Methods**

Methodological issues and statistical techniques for investigating theoretical questions concerning mass communication and society. Content varies yearly, but focus is on advanced statistical methods.

Precludes additional credit for MCOM 4001. Prerequisites: MCOM 2001 and MCOM 3101 and Honours standing in Mass Communication, or MCOM 3000 and registration in the Strategic Public Opinion and Policy Analysis specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School.

MCOM 4002 [0.5 credit] (formerly 27.402\*)

**Advanced Communication Research: Qualitative Methods**

Methodological issues appropriate for investigating theoretical questions of mass communications and society. Seminar content varies yearly as selection of appropriate methodologies and models may depend on questions investigated. Topics may include field research methods, policy/document analysis, historical research.

Precludes additional credit for MCOM 4001.

Prerequisites: MCOM 2001 and MCOM 3101 and Honours standing in Mass Communication, or MCOM 3000 and registration in the Strategic Public Opinion and Policy Analysis specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School.

MCOM 4100 [0.5 credit] (formerly 27.410\*)

**Selected Topics in Mass Communication Analysis**

For 2002-2003, the topic for Section A is: **Communication and Modern State**

Critical debates over communication practice and policy in relation to the modern State.

Precludes additional credit for MCOM 4101.

Prerequisite: MCOM 3101 and Honours standing in Mass Communication or permission of the School. Seminar three hours a week.

MCOM 4102 [0.5 credit] (formerly 27.412\*)

**Selected Topics in Mass Communication Analysis**

For 2002-2003, the topic for Section A is: **Communication and the French Connection**. The development of communication and media in society as approached by structuralism, post-structuralism, post-modernism, and others in the work of such French scholars as Bourdieu, Foucault, Derrida, Barthes, Baudrillard, Mattelart.

Precludes additional credit for MCOM 4101.

Prerequisite: MCOM 3101 and Honours standing in Mass Communication or permission of the School. Seminar three hours a week.

MCOM 4200 [0.5 credit] (formerly 27.420\*)

**Children, Youth and Media**

Children and youth as they relate to mass media and popular culture. Historical and theoretical analysis of the emergence of childhood as a category in the media.

Precludes additional credit for MCOM 4102 (if taken in 95-96, 96-97,97-98).

Prerequisite: Honours standing in Mass Communication and MCOM 3101 or permission of the school.

Seminar three hours a week.

MCOM 4305 [0.5 credit] (formerly 27.435\*)

**New Media, New Policies**

Major policy issues arising from media convergence, increased competition within the communication industries, new technologies, and globalization. The rationale, structure, nature and goals of regulation and communication policy for 'new media' are considered.

Prerequisites: MCOM 3101 and Honours standing in Mass



Communication, or PAMP 3000 and registration in the Communication Information Technology Policy specialization of the Bachelor of Public Affairs and Policy Management, or permission of the School.

MCOM 4500 [0.5 credit] (formerly 27.450\*)

**Mass Media and Capitalist Democracy I**

Examination of major interpretive frameworks for understanding the general historical development of mass communication in capitalist democracies such as Canada, Britain, and the United States.

Prerequisites: MCOM 3101 and Honours standing in Mass Communication or permission of the School.

MCOM 4501 [0.5 credit] (formerly 27.451\*)

**Mass Media and Capitalist Democracy II**

Consideration of issues related to the history of mass communication in order to assess current theoretical perspectives on media and culture.

Prerequisite: MCOM 4500 or permission of the School.

MCOM 4907 [1.0 credit] (formerly 27.497)

**Honours Essay**

The Honours Essay, which is a major research essay, is carried out under the direction of a faculty supervisor. The Honours Essay is evaluated by both the supervisor and an appointed reader.

Prerequisite: fourth-year Honours standing in Mass Communication.

## Mathematics (MATH)

School of Mathematics and Statistics

Faculty of Science

**Note**

- Consult the regulations concerning Deferred Examinations in the Academic Regulations section of this Calendar.
- See also the entry for Statistics courses

**Prerequisites for first-year Calculus and Algebra Courses**

1. Pre-university Calculus:  
An OAC in Calculus, or MATH 0007, or equivalent.  
  
Students lacking an OAC in Calculus (or equivalent) must complete successfully MATH 0007 prior to taking a 1000-level Calculus course. For students in any program offered by the School of Mathematics and Statistics, the above requirement of MATH 0007 is in addition to the minimum 15.0 credits in General programs, or 20.0 credits in Honours programs.
2. Pre-university Algebra:  
An OAC in Algebra and Geometry, or MATH 0107, or equivalent.  
  
Students lacking an OAC in Algebra and Geometry (or equivalent) must complete successfully MATH 0107 prior to taking a 1000-level Algebra course. For students in any program offered by the School of Mathematics and Statistics, the above requirement of MATH 0107 is in addition to the minimum 15.0 credits in General programs, or 20.0 credits in Honours programs.

MATH 0007 [0.5 credit] (formerly 69.007\*)

**Introductory Calculus**

Limits and continuity. Differentiation. Trigonometric, logarithmic, and exponential functions and their derivatives; curve sketching; applied problems in maxima and minima, and related rates. Not available for degree credit for students who have successfully completed an OAC in Calculus or an equivalent High School Calculus course.

Prerequisite: Grade 12 Mathematics (Advanced/Academic Level) or MATH 0006 or equivalent. It is strongly recommended that MATH 0107 or the equivalent be taken before MATH 0007. Lectures three hours a week, tutorial one hour a week.

MATH 0107 [0.5 credit] (formerly 69.017\*)

**Algebra and Geometry**

Vectors in the plane and in 3-space. Linear combinations and linear independence. Equations of lines and planes in space. Solution of systems of linear equations. Complex number (including de Moivre's Theorem, and n-th roots). Proofs by induction.

Not available for degree credit for students who have successfully completed an OAC in Algebra and Geometry or an equivalent high school Algebra course.

Prerequisite: Grade 12 Mathematics (Advanced/Academic Level) or MATH 0006 or equivalent.

Lectures three hours a week, tutorial one hour a week.

MATH 1002 [1.0 credit] (formerly 69.102)

**Calculus**

Limits, differentiation, the definite integral, elementary functions, techniques of integration, parametric equations and polar coordinates. Improper integrals, L'Hôpital's rules, sequences and series, Taylor's formulae, introduction to differential equations.

Precludes additional credit for MATH 1004, MATH 1005, MATH 1007, MATH 1009, MATH 2007, and for MATH 2001, MATH 2002.

Prerequisites: i) a pre-university calculus course with a grade of 65 percent or better; and ii) an OAC in Algebra and Geometry, or MATH 0107, or permission of the School. (See Prerequisites for first-year Calculus and Algebra Courses at the beginning of this section.)

Lectures three hours a week and one hour tutorial.

**Note:** Although the main prerequisite for MATH 1002 is a grade of 65 percent or better in a pre-university calculus course, past experience indicates that students with less than 75 percent in their prerequisite calculus have only a small chance of success in MATH 1002.

MATH 1004 [0.5 credit] (formerly 69.104\*)

**Calculus for Engineering Students**

The definite and indefinite integral; numerical approximation. Special functions (trigonometric and inverse trigonometric, logarithm and exponential), their derivatives and integrals. Applications: area, volume, average value. Further techniques of integration: integration by parts, partial fractions, and substitutions. Introduction to differential equations.

Restricted to students in the Faculty of Engineering, or in B.Sc. (Honours) in Applied Physics.

Precludes additional credit for MATH 1002, MATH 1007, MATH 1009.

Prerequisite: an OAC in Calculus, or MATH 0007 (or equivalent).

Lectures three hours a week and one hour tutorial.

MATH 1005 [0.5 credit] (formerly 69.105\*)

**Differential Equations and Infinite Series for Engineering Students**

Further study of first-order differential equations. Linear differential equations with constant coefficients; undetermined coefficients; annihilator operators. Variation of parameters. Euler-Cauchy differential equation. Indeterminate forms. Sequences and series; convergence tests; estimation of sums. Power series, Taylor series, remainders. Use of power series to solve differential equations.

Restricted to students in the Faculty of Engineering, or in B.Sc.(Honours) in Applied Physics.

Precludes additional credit for MATH 1002, MATH 2001, MATH 2002, MATH 2007, MATH 2454, MATH 2404 and MATH 2600.

Prerequisites: i) MATH 1004, or a grade of C- or better in MATH 1007; and ii) an OAC in Algebra and Geometry, or MATH 0107; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 1007 [0.5 credit] (formerly 69.107\*)

**Elementary Calculus I**

Definite and indefinite integrals, differentiation and integration of the elementary functions, techniques and applications of integration.

Precludes additional credit for MATH 1002, MATH 1004, MATH 1009.

Prerequisite: an OAC in Calculus, or MATH 0007 (or equivalent).

Lectures three hours a week and one hour tutorial.

MATH 1009 [0.5 credit] (formerly 69.109\*)

**Calculus: with Applications to Business and Economics**

Definite and indefinite integrals; integration of the elementary functions; some techniques of integration. Functions of several variables; partial differentiation; constrained optimization. Selected applications in business and economics.

Precludes additional credit for MATH 1002, MATH 1004, and MATH 1007.

Prerequisite: an OAC in Calculus, or MATH 0007 (or equivalent).

Lectures three hours a week and one hour tutorial.

MATH 1102 [1.0 credit] (formerly 69.112)

**Algebra**

Fields, complex numbers, vector algebra and geometry in 2 and 3 dimensions, matrix algebra, linear dependence, bases, linear transformations, bilinear and quadratic forms, inner products, eigenvalues, principal axis theorem. Strongly recommended for students intending to specialize in mathematics, statistics, physics, or related areas.

Precludes additional credit for MATH 1104, MATH 1107, MATH 1109, MATH 2107.

Prerequisites: i) a pre-university algebra course with a grade of 65 percent or better, and ii) an OAC in Calculus, or MATH 0007, or permission of the School. (See Prerequisites for first-year Calculus and Algebra Courses at the beginning of this section.)

Lectures three hours a week and one hour tutorial.

MATH 1104 [0.5 credit] (formerly 69.114\*)

**Linear Algebra for Engineering and Computer Science Students**

Systems of linear equations. Matrix algebra. Determinants. Complex numbers. Eigenvalues. Diagonalization and applications.

Restricted to students in the Faculty of Engineering, in the School of Computer Science, or in B.Sc.(Honours) in Applied Physics. Precludes additional credit for MATH 1102, MATH 1107, MATH 1109.

Prerequisite: an OAC in Algebra and Geometry, or MATH 0107 (or equivalent).

Lectures three hours a week and one hour tutorial.

MATH 1107 [0.5 credit] (formerly 69.117\*)

**Linear Algebra I**

Systems of linear equations; vector space of n-tuples, subspaces and bases; matrix transformations, kernel, range; matrix algebra and determinants. Inner products and orthogonality. Eigenvalues, diagonalization and applications. Emphasis throughout this course will be on the computational aspects (and not on theoretical aspects).

Precludes additional credit for MATH 1102, MATH 1104, MATH 1109.

Prerequisite: an OAC in Algebra and Geometry, or MATH 0107 (or equivalent).

Lectures three hours a week and one hour tutorial.

MATH 1109 [0.5 credit] (formerly 69.119\*)

**Linear Algebra: With Applications to Business and Economics**

Algebraic concepts, systems of linear equations, vector algebra; matrix algebra, rank, inversion, determinants; linear programming—geometric approach, simplex method, etc. Applications in the fields of business and economics.

Precludes additional credit for MATH 1102, MATH 1104, MATH 1107, and for MATH 1302 (ARCN 2001).

Prerequisite: An OAC in Algebra and Geometry, or MATH 0107 (or equivalent).

Lectures three hours a week and one hour tutorial.

MATH 1805 [0.5 credit] (formerly 69.185\*)

**Discrete Structures I**

An introduction to discrete mathematics and discrete structures. Topics include: propositional and predicate calculus, Boolean algebra, introduction to complexity of algorithms, mathematical reasoning, counting, recurrences, relations, introduction to graphs. (Also listed as COMP 1805.)

This course is available to Science students only as a free option. Prerequisites: Two OACs in Mathematics, and one of COMP 1005 or COMP 1007 (which may be taken concurrently).

Lectures three hours a week.

MATH 2004 [0.5 credit] (formerly 69.204\*)

**Multivariable Calculus for Engineering Students**

Fourier series; expansions for even and odd functions; half-range expansions. Surfaces in R<sup>3</sup>. Differential calculus of functions of several variables. Extrema and Lagrange multipliers. Exact differentials. Line integrals. Double integrals; polar coordinates; applications. Triple integrals; cylindrical and spherical coordinates; applications.

Restricted to students in the Faculty of Engineering, or in B.Sc.(Honours) in Applied Physics.

Precludes additional credit for: MATH 2001, MATH 2002, MATH 2008, MATH 2009 and MATH 2000.

Prerequisites: i) MATH 1005 or MATH 2007; and ii) MATH 1104 or MATH 1107; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 2007 [0.5 credit] (formerly 69.207\*)

**Elementary Calculus II**

Further techniques of integration, improper integrals, polar coordinates, parametric equations, indeterminate forms, sequences and series, Taylor's formula and series, first order and linear differential equations.

Precludes additional credit for MATH 1002, MATH 1005, and for MATH 2001, MATH 2002.

Prerequisites: i) MATH 1004, or a grade of C- or better in MATH 1007 or MATH 1009; and ii) an OAC in Algebra and Geometry, or MATH 0107, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 2008 [0.5 credit] (formerly 69.208\*)

**Intermediate Calculus**

Partial differentiation, chain rule, gradient, line and multiple integrals with applications, transformations, implicit and inverse function theorems.

Precludes additional credit for MATH 2004, MATH 2009, MATH 2000, and for MATH 2001, MATH 2002.

Prerequisites: MATH 1002 or MATH 2007, and MATH 1102 or MATH 1107.

Lectures three hours a week and one hour tutorial.

MATH 2009 [0.5 credit] (formerly 69.209\*)

**Intermediate Calculus for Science Students**

Differential equations; differential calculus of functions of several variables; multiple integration; introduction to Fourier series.

Precludes additional credit for MATH 2001, MATH 2002, MATH 2004, MATH 2008 and MATH 2000.

Prerequisites: i) MATH 2007, or MATH 1002; and ii) MATH 1107 or MATH 1104 or MATH 1102; or their equivalents, or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 2107 [0.5 credit] (formerly 69.217\*)

**Linear Algebra II**

Finite-dimensional vector spaces (over R and C), subspaces, linear independence and bases. Linear transformations and matrices. Inner product spaces (over R and C); Orthonormal bases. Eigenvalues and diagonalization. Bilinear and quadratic forms; principal axis theorem.

Precludes additional credit for MATH 1102.

Prerequisites: i) MATH 1104, or a grade of C- or better in MATH 1107 or MATH 1109; and ii) a grade of C- or better in MATH 1007 or equivalent; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 2108 [0.5 credit] (formerly 69.218\*)

**Abstract Algebra I**

Sets and relations, number theory, group theory, ring theory, cardinal numbers.

Precludes additional credit for MATH 3101 and MATH 2100. Prerequisite: MATH 1102 or MATH 2107.

Lectures three hours a week and one hour tutorial.

MATH 2404 [0.5 credit] (formerly 69.244\*)

**Ordinary Differential Equations I**

Ordinary differential equations; applications; special first and second order types. Linear homogeneous and non-homogeneous equations with constant coefficients; variation of parameters; simple harmonic motion. Special linear equations with variable coefficients. Series solutions about ordinary points.

Precludes additional credit for MATH 1005, MATH 2001, MATH 2002, MATH 2454 and MATH 2600.

Prerequisites: MATH 1002 and MATH 1102 (or MATH 1107 and MATH 2007).

Lectures three hours a week and one hour tutorial.

MATH 2800 [0.5 credit] (formerly 69.280\*)

**Discrete Mathematics and Algorithms**

An introduction to discrete mathematics and algorithms in the context of the computational sciences. Basic number theory and counting methods, algorithms for strings, trees and sequences. Applications to DNA and protein sequencing problems. Analysis and complexity of algorithms. (Also listed as CMPS 2800.)

Only one of MATH 1805/COMP 1805 or MATH 2800/CMPS 2800 may count for credit in a B.Math. program.

Prerequisites: COMP 1006 and at least one of MATH 1007, MATH 1107, or STAT 2507.

Lectures three hours a week.

MATH 3007 [0.5 credit] (formerly 69.307\*)

**Functions of a Complex Variable**

Analytic functions, contour integration, residue calculus, conformal mapping. Intended for non-engineering students.

Precludes additional credit for MATH 3706, MATH 3057, PHYS 3807 and PHYS 3806.

Prerequisite: one of MATH 2001, MATH 2002, MATH 2004, MATH 2008 or MATH 2009, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3009 [0.5 credit] (formerly 69.309\*)

**Introductory Analysis**

The real number system, sequences and series, functions of a single real variable, derivatives, the definite integral, uniform convergence. Precludes additional credit for MATH 2000.

Prerequisite: one of MATH 2001, MATH 2002, MATH 2004, MATH 2008, MATH 2009, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3101 [0.5 credit] (formerly 69.311\*)

**Algebraic Structures with Computer Applications**

Introduction to algebraic structures: groups, rings, fields, lattices, and Boolean algebras; with applications of interest to students in Computer Science.

This course may not be used to meet the 3000-level course requirements in any Major or Honours program in Mathematics and Statistics.

Precludes additional credit for MATH 2108 and MATH 2100.

Prerequisite: MATH 2107, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3107 [0.5 credit] (formerly 69.317\*)

**Linear Algebra III**

Similarity and unitary triangularization of matrices. Direct methods of solving a system of linear equations. Iterative techniques. Bounds for eigenvalues. Power method and deflation techniques of approximation. Emphasis is primarily on computational aspects.

Prerequisites: i) a grade of C- or better in MATH 1102 or MATH 2107; and ii) credit in MATH 1002 or MATH 2007; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3108 [0.5 credit] (formerly 69.318\*)

**Abstract Algebra II**

Groups and rings. Permutations. Finite symmetry groups. Polynomials, unique factorization domains. Quotient rings, ideals. Field extensions, finite fields. Polynomial equations. Geometric constructions - three famous problems: duplication of the cube, trisection of an arbitrary angle, quadrature of the circle.

Precludes additional credit for MATH 3106, MATH 3158, and MATH 3100.

Prerequisite: MATH 2108, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3205 [0.5 credit] (formerly 69.325\*)

**Euclidean Geometry and its Groups**

Transformations of the Euclidean plane (isometries, similarities); solutions of geometric problems using these transformations;

groups of symmetries of finite plane figures, frieze patterns, and regular polyhedra; inversion and the extension to the inversive plane; problems solved using inversion; orthogonal circles and pencils of coaxial circles.

Prerequisite: MATH 2108.

Lectures three hours a week and one hour tutorial.

MATH 3206 [0.5 credit] (formerly 69.326\*)

**Plane Projective Geometry**

Axioms of Desarguesian geometry, principle of duality; projectivities, perspectivities, and the fundamental theorem; collineations (homologies and elations); correlations (polarities and conics); algebraic model; introduction to finite projective planes.

Precludes additional credit for MATH 3256.

Prerequisite: MATH 2108.

Lectures three hours a week and one hour tutorial.

MATH 3404 [0.5 credit] (formerly 69.344\*)

**Ordinary Differential Equations II**

Series solutions of ordinary differential equations of second order about regular singular points; asymptotic solutions. Systems of ordinary differential equations of first order; matrix methods. Existence and uniqueness theorems. Nonlinear autonomous systems of order 2; qualitative theory. Numerical solutions of ordinary differential equations.

Precludes additional credit for MATH 3008.

Prerequisites: MATH 2404, MATH 2008; and MATH 1102 or MATH 2107.

Lectures three hours a week and one hour tutorial.

MATH 3705 [0.5 credit] (formerly 69.375\*)

**Mathematical Methods I**

Laplace transforms, Fourier series and Fourier transforms, solutions of partial differential equations of mathematical physics, boundary value problems, applications.

This course may be taken for credit as a 3000-level Honours Mathematics course, by students in any Honours program in the School of Mathematics and Statistics.

Precludes additional credit for MATH 3004, PHYS 3808, and PHYS 3806.

Prerequisite: MATH 2001 or MATH 2002; or i) MATH 2404 or MATH 1005, and ii) MATH 2004 or MATH 2008 or MATH 2009; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3800 [0.5 credit] (formerly 69.380\*)

**Modeling and Computational Methods for Experimental Science**

Mathematical modeling in the experimental sciences: design, analysis and pitfalls. Computational methods directly applicable to problems in science will be described, including: function evaluation, interpolation, solution of linear equations, root finding, integration, solution of differential equations, Fourier series and Monte Carlo methods. (Also listed as CMPS 3800.)

Only one of MATH 3806/COMP 3806 or MATH 3800/CMPS 3800 may count for credit in a B.Math. program.

Prerequisites: MATH 1107; MATH 2007 or MATH 2009; and COMP 1006.

Lectures three hours a week.

MATH 3801 [0.5 credit] (formerly 69.381\*)

**Linear Programming**

Formulation of linear programming problems, the simplex method, duality theory, implementations, extensions and applications. Network flow problems and the network simplex method.

Precludes additional credit for ECON 4004, SYSC 3200.

Prerequisite: MATH 1102 or MATH 2107, or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3802 [0.5 credit] (formerly 69.382\*)

**Combinatorial Optimization**

Network flow algorithms: max flow, min cost flow. Connections to linear programming. Optimal matching. Heuristic algorithms for tour problems.

Prerequisite: MATH 1102 or MATH 2107 or permission of the School.

Lectures three hours a week, tutorial one hour a week.



MATH 3804 [0.5 credit] (formerly 69.384\*)

### **Design and Analysis of Algorithms I**

An introduction to the design and analysis of algorithms. Topics include: recurrence relations, sorting and searching, divide-and-conquer, dynamic programming, greedy algorithms, amortized analysis. (Also listed as COMP 3804.)

Prerequisites: COMP 2002, and either COMP 2805 or both of MATH 2007 and MATH 2108 or equivalents.  
Lectures three hours a week.

MATH 3806 [0.5 credit] (formerly 69.386\*)

### **Numerical Analysis**

Elementary discussion of error, polynomial interpolation, quadrature, linear systems of equations and matrix inversion, non-linear equations, difference equations and ordinary differential equations. (Also listed as COMP 3806.)

Prerequisites: i) MATH 1002, MATH 1005 or MATH 2007 (or MATH 2001 or MATH 2002); and ii) MATH 1102 or MATH 2107; and (iii) knowledge of a computer language.  
Lectures three hours a week and one hour tutorial.

MATH 3807 [0.5 credit] (formerly 69.387\*)

### **Mathematical Software**

Incorporation of basic numerical methods into efficient, reliable software. The course includes examination of existing software systems, e.g., linear systems, non-linear systems, optimization, or differential equations. (Also listed as COMP 3807.)

Prerequisite: MATH 3806.

Lectures three hours a week and one hour tutorial.

MATH 3809 [0.5 credit] (formerly 69.389\*)

### **Introduction to Number Theory and Cryptography**

Congruences, distribution of primes, general cryptographic systems, public key cryptographic systems and authentication using number theory, primality testing and factoring in relation to cryptography, continued fractions and diophantine equations.

Prerequisites: MATH 2108 or MATH 3101 or MATH 2100; knowledge of a computer language.

Lectures three hours a week and one hour tutorial.

MATH 3907 [0.5 credit] (formerly 69.397\*)

### **Directed Studies**

Available only to students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

MATH 2000 [1.0 credit] (formerly 70.200)

### **Calculus and Introductory Analysis**

Higher dimensional calculus, chain rule, gradient, line and multiple integrals with applications. Use of implicit and inverse function theorems. Real number axioms, limits, continuous functions, differentiability, infinite series, uniform convergence, the Riemann integral.

Precludes additional credit for MATH 2004, MATH 2008, MATH 2009, MATH 3009, and for MATH 2001, MATH 2002.  
Prerequisites: i) MATH 1002 or MATH 2007 with a grade of C+ or better; and ii) MATH 1102 or MATH 1107 with a grade of C+ or better; or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 2100 [1.0 credit] (formerly 70.210)

### **Algebra**

Set theory, algebraic systems, vector spaces, inner product spaces, linear transformations, determinants, quadratic forms, selected applications.

Precludes additional credit for MATH 2108 or MATH 3101.  
Prerequisite: MATH 1102 or MATH 2107 with a grade of C+ or better.

Lectures three hours a week and one hour tutorial.

MATH 2200 [0.5 credit] (formerly 70.220\*)

### **Co-operative Work Term Report 1**

On completion of the work term, the student must submit to the School of Mathematics and Statistics a written report on the work performed. Graded Sat or Uns.

Prerequisites: Registration in the Co-operative Education Option of an Honours program offered by the School of Mathematics and Statistics, completion of the Co-op preparation classes offered by the Co-op office, and permission of the School.

MATH 2454 [0.5 credit] (formerly 70.244\*)

### **Ordinary Differential Equations**

Ordinary differential equations of the first and second order, existence and uniqueness of solutions; numerical solutions, error analysis; linear systems of first order; difference equations; higher order linear equations. Modeling with differential equations. A mathematical computer software package will be used.

Precludes additional credit for MATH 1005, MATH 2001, MATH 2002, MATH 2404, MATH 2600.

Prerequisites: MATH 1002 (or MATH 2007) with a grade of C+ or better and MATH 1102 (or MATH 2107) with a grade of C+ or better.

Lectures three hours a week, tutorial one hour a week.

MATH 2907 [0.5 credit] (formerly 70.297\*)

### **Directed Studies**

Available only to Honours students whose program requires a 0.5 credit not offered by the School of Mathematics and Statistics.

MATH 3001 [0.5 credit] (formerly 70.301\*)

### **Real Analysis**

Metric spaces; limits, continuity, open and closed sets, compactness, connectedness and completeness. Uniform convergence of sequences of functions, as convergence in metric spaces of bounded and continuous functions. Weierstrass approximation theorem. Contraction mappings and applications to integral and differential equations.

Prerequisite: MATH 2000 or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3002 [0.5 credit] (formerly 70.302\*)

### **Advanced Calculus**

Vector fields on surfaces. The functions div, curl and grad. Line and surface integrals. The divergence theorem and Stokes' theorem. Exterior algebra. Stokes' formula. Functions of bounded variation. The Riemann-Stieltjes integral.

Prerequisite: MATH 2000 or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3008 [0.5 credit] (formerly 70.308\*)

### **Ordinary Differential Equations**

Analytic ordinary differential equations: series solutions of ordinary differential equations about ordinary and regular singular points. Asymptotic solutions. Sturm-Liouville theory. Bessel and Legendre functions. Fourier series.

Precludes additional credit for MATH 3404, PHYS 3808, and PHYS 3806.

Prerequisites: MATH 2000; and MATH 2454 or MATH 2600.  
Lectures three hours a week and one hour tutorial.

MATH 3057 [0.5 credit] (formerly 70.307\*)

### **Functions of a Complex Variable**

Analytic functions, contour integration, residue calculus, conformal mapping. Precludes additional credit for MATH 3007, MATH 3706, PHYS 3807, and PHYS 3806.

Prerequisite: MATH 2000 or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3106 [0.5 credit] (formerly 70.316\*)

### **Introduction to Group Theory**

Homomorphism theorems; groups acting on sets; permutation groups and groups of matrices; Sylow theory for finite groups; finitely generated abelian groups; generators and relations; applications.

Precludes additional credit for MATH 3100 and MATH 3108.  
Prerequisite: MATH 2100, or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3158 [0.5 credit] (formerly 70.318\*)

### **Rings and Fields**

Rings; integral domains; Euclidean and principal ideal domains; polynomial rings over a field; modules over principal ideal domains and applications; fields; algebraic extensions of fields; finite fields; applications.

Precludes additional credit for MATH 3100 and MATH 3108.

Prerequisite: MATH 2100, or permission of the School.

Lectures three hours a week, tutorial one hour a week.

MATH 3200 [0.5 credit] (formerly 70.320\*)

**Co-operative Work Term Report 2**

On completion of the work term, the student must submit to the School of Mathematics and Statistics a written report on the work performed. Graded Sat or Uns.

Prerequisites: Registration in the Co-operative Education Option of an Honours program offered by the School of Mathematics and Statistics, and permission of the School.

MATH 3201 [0.5 credit] (formerly 70.321\*)

**Co-operative Work Term Report 3**

On completion of the work term, the student must submit to the School of Mathematics and Statistics a written report on the work performed. Graded Sat or Uns.

Prerequisites: Registration in the Co-operative Education Option of an Honours program offered by the School of Mathematics and Statistics, and permission of the School.

MATH 3256 [0.5 credit] (formerly 70.326\*)

**Foundations of Projective Geometry**

Definition of a general projective plane and immediate consequences; finite planes (combinatorial results, sub-planes, incidence matrices) and planar ternary rings; collineations, role of Desargues' configuration, examples of types of planes. Precludes additional credit for MATH 3206.

Prerequisite: MATH 2100.

Lectures three hours a week and one hour tutorial.

MATH 3306 [0.5 credit] (formerly 70.336\*)

**Elements of Set Theory**

Axioms of set theory. Development of the systems of natural numbers and the real numbers. Axiom of choice, Zorn's lemma, well-ordering. The Schröder-Bernstein theorem, cardinal numbers, ordinal numbers, transfinite induction, cardinal and ordinal arithmetics.

Prerequisite: MATH 2100 or permission of the School.

Lectures three hours a week and one hour tutorial.

MATH 3406 [0.5 credit] (formerly 70.346\*)

**Autonomous Dynamical Systems**

Basic concepts of dynamical systems. Stability; limit cycles; Lyapunov's direct method. Theory of autonomous dynamical systems. Volterra systems; principle of competitive exclusion in population biology. The threshold theorem of epidemiology. Basic concepts of nonequilibrium statistical mechanics.

Prerequisites: MATH 2000; and MATH 2454 or MATH 2600.

Lectures three hours a week and one hour tutorial.

MATH 3805 [0.5 credit] (formerly 70.385\*)

**Discrete Structures and Applications**

Enumeration: elementary methods, inclusion and exclusion, recurrence relations, generating functions and applications. Graph theory and algorithms: connectivity, planarity, Hamilton and Euler paths. Error-correcting codes. (Also listed as COMP 3805.)

Prerequisite: one of MATH 2108, MATH 3101, or MATH 2100.

Lectures three hours a week and one hour tutorial.

*A selection of courses in the 4000-series will be offered.*

MATH 4003 [0.5 credit] (formerly 70.403\*)

**Functional Analysis**

Banach spaces and bounded linear operators, Hahn-Banach extension and separation, dual spaces, bounded inverse theorems, uniform boundedness principle, applications. Compact operators. Differential calculus in Banach spaces, inverse and implicit function theorems and their application to differential equations. Also offered at the graduate level, with additional or different requirements, as MATH 5008, for which additional credit is precluded.

Prerequisite: MATH 3001 or permission of the School.

Lectures three hours a week.

MATH 4007 [0.5 credit] (formerly 70.407\*)

**Measure and Integration Theory**

Lebesgue measure and integration on the real line; sigma algebras and measures; integration theory;  $L_p$  spaces; Fubini's theorem; decomposition theorems and Radon-Nikodym derivatives. Also offered at the graduate level, with additional or different requirements, as MATH 5007, for which additional credit is precluded.

Prerequisite: MATH 3001 or MATH 3002 or permission of the School.

Lectures three hours a week.

MATH 4105 [0.5 credit] (formerly 70.415\*)

**Rings and Modules**

Fundamental concepts in rings and modules, structure theorems, applications.

Prerequisite: MATH 3158 or MATH 3100 or permission of the School.

Lectures three hours a week.

MATH 4106 [0.5 credit] (formerly 70.416\*)

**Group Theory**

Fundamental principles as applied to abelian, nilpotent, solvable, free and finite groups; representations. Also offered at the graduate level, with additional or different requirements, as MATH 5106, for which additional credit is precluded.

Prerequisite: MATH 3106 or MATH 3100 or permission of the School.

Lectures three hours a week.

MATH 4107 [0.5 credit] (formerly 70.417\*)

**Commutative Algebra**

Fields, including algebraic and transcendental extensions, Galois theory, valuation theory; Noetherian commutative rings, including Noether decomposition theorem and localization.

Prerequisite: MATH 3158 or MATH 3100 or permission of the School.

Lectures three hours a week.

MATH 4108 [0.5 credit] (formerly 70.418\*)

**Homological Algebra and Category Theory**

Axioms of set theory; categories, functors, natural transformations; free, projective, injective and flat modules; tensor products and homology functors, derived functors; dimension theory. Also offered at the graduate level, with additional or different requirements, as MATH 5108, for which additional credit is precluded.

Prerequisite: MATH 3158 or MATH 3100 or permission of the School.

Lectures three hours a week.

MATH 4109 [0.5 credit] (formerly 70.419\*)

**Fields and Coding Theory**

Introduction to field theory, emphasizing the structure of finite fields, primitive elements and irreducible polynomials. The influence of computational problems will be considered. Theory and applications of error-correcting codes: algebraic codes, convolution codes, decoding algorithms, and analysis of code performance.

Prerequisite: MATH 2100, or MATH 3101 or MATH 2108 or equivalent; or permission of the School.

Lectures three hours a week.

MATH 4200 [0.5 credit] (formerly 70.420\*)

**Co-operative Work Term Report 4**

On completion of the work term, the student must submit to the School of Mathematics and Statistics a written report on the work performed. Graded Sat or Uns.

Prerequisites: Registration in the Co-operative Education Option of an Honours program offered by the School of Mathematics and Statistics, and permission of the School.

MATH 4201 [0.5 credit] (formerly 70.421\*)

**Co-operative Work Term Report 5**

On completion of the work term, the student must submit to the School of Mathematics and Statistics a written report on the work performed. Graded Sat or Uns.

Prerequisites: Registration in the Co-operative Education Option of an Honours program offered by the School of Mathematics and Statistics, and permission of the School.

MATH 4205 [0.5 credit] (formerly 70.425\*)

**Introduction to General Topology**

Topological spaces, maps, subspaces, product and identification topologies, separation axioms, compactness, connectedness. Also offered at the graduate level, with additional or different requirements, as MATH 5205, for which additional credit is precluded.

Prerequisite: MATH 3001 or permission of the School.

Lectures three hours a week.

MATH 4206 [0.5 credit] (formerly 70.426\*)

### **Introduction to Algebraic Topology**

An introduction to homotopy theory. Topics include the fundamental group, covering spaces and the classification of two-dimensional manifolds. Also offered at the graduate level, with additional or different requirements, as MATH 5206, for which additional credit is precluded.

Prerequisites: MATH 3106 (or MATH 3100) and MATH 4205; or permission of the School.

Lectures three hours a week.

MATH 4207 [0.5 credit] (formerly 70.427\*)

### **Foundations of Geometry**

A study of at least one modern axiom system of Euclidean and non-Euclidean geometry, embedding of hyperbolic and Euclidean geometries in the projective plane, groups of motions, models of non-Euclidean geometry.

Prerequisite: MATH 3106 (may be taken concurrently) or MATH 3100, or permission of the School.

Lectures three hours a week.

MATH 4208 [0.5 credit] (formerly 70.428\*)

### **Introduction to Differentiable Manifolds**

A study of differentiable manifolds from the point of view of either differential topology or differential geometry. Topics such as smooth mappings, transversality, intersection theory, vector fields on manifolds, Gaussian curvature, Riemannian manifolds, differential forms, tensors and connections are included.

Prerequisite: MATH 3001 or permission of the School.

Lectures three hours a week.

MATH 4305 [0.5 credit] (formerly 70.435\*)

### **Analytic Number Theory**

Dirichlet series, characters, Zeta-functions, prime number theorem, Dirichlet's theorem on primes in arithmetic progressions, binary quadratic forms. Also offered at the graduate level, with additional or different requirements, as MATH 5305, for which additional credit is precluded.

Prerequisite: MATH 3057 or permission of the School.

Lectures three hours a week.

MATH 4306 [0.5 credit] (formerly 70.436\*)

### **Algebraic Number Theory**

Algebraic number fields, bases, algebraic integers, integral bases, arithmetic in algebraic number fields, ideal theory, class number. Also offered at the graduate level, with additional or different requirements, as MATH 5306, for which additional credit is precluded.

Prerequisite: MATH 3158 (may be taken concurrently) or MATH 3100, or permission of the School.

Lectures three hours a week.

MATH 4407 [0.5 credit] (formerly 70.447\*)

### **Tensor Analysis and Relativity Theory**

Development of tensor analysis, application to Riemannian spaces and relativity theory.

Prerequisites: MATH 3405 and MATH 3406 or permission of the School.

Lectures three hours a week.

MATH 4600 [0.5 credit] (formerly 70.460\*)

### **Case Studies in Operations Research**

Applications of the principles of Operations Research to practical problems in business, management, and science. Students present at least one case and analyze cases in the published literature. Cases may also be presented by visiting practitioners.

Note: this course is designed for students in their final year in Honours Operations Research. Students in Honours Mathematics/Statistics programs may only take this course as a free option.

Prerequisites: STAT 2509 (or STAT 2559) and MATH 3801; or permission of the School.

Seminars three hours a week.

MATH 4700 [0.5 credit] (formerly 70.470\*)

### **Partial Differential Equations**

First order linear, quasi-linear, and non-linear equations; second order equations in two and more variables; systems of equations;

the wave equation; Laplace and Poisson equations, Dirichlet and Neumann problems; Green's functions. Also offered at the graduate level, with additional or different requirements, as MATH 5406, for which additional credit is precluded.

Prerequisites: MATH 3008 and one of MATH 3002 or MATH 3057 or permission of the School.

Lectures three hours a week.

MATH 4701 [0.5 credit] (formerly 70.471\*)

### **Topics in Partial Differential Equations**

Theory of distributions, initial-value problems based on 2-dimensions wave equations, Laplace transform, Fourier integral transform, diffusion problems, Helmholtz equation with application to boundary and initial-value problems in cylindrical and spherical coordinates. Also offered at the graduate level, with additional or different requirements, as MATH 5407, for which additional credit is precluded.

Prerequisites: MATH 3008 and one of MATH 3002 or MATH 3057 or permission of the School.

Lectures three hours a week.

MATH 4702 [0.5 credit] (formerly 70.472\*)

### **Integral Transforms**

Laplace, Fourier, Hankel and Mellin transforms, selection of a suitable transform for a given partial differential equation boundary value problem. Operational properties of transforms. Inversion theorems. Approximate evaluation of inversion integrals for small and large values of parameter. Application to the solution of integral equations.

Prerequisite: MATH 3057 or permission of the School.

Lectures three hours a week.

MATH 4703 [0.5 credit] (formerly 70.473\*)

### **Qualitative Theory of Ordinary Differential Equations**

Ordinary differential equations: existence-uniqueness theorems, vector formulation for systems; stability theory, Lyapunov theorems, perturbation theorems and structural stability; Poincaré-Bendixon theory.

Prerequisites: MATH 3001, MATH 3008, MATH 3406.

Lectures three hours a week.

MATH 4801 [0.5 credit] (formerly 70.481\*)

### **Topics in Combinatorics**

An in-depth study of one or more topics from: generating functions, Polya's theory of counting, block designs, coding theory, partially ordered sets and Ramsey theory.

Prerequisites: MATH 2100 and MATH 3805 or permission of the School.

Lectures three hours a week.

MATH 4802 [0.5 credit] (formerly 70.482\*)

### **Introduction to Mathematical Logic**

Symbolic logic, propositional and predicate calculi, set theory and model theory, completeness.

Prerequisite: MATH 2100 or permission of the School.

Lectures three hours a week.

MATH 4803 [0.5 credit] (formerly 70.483\*)

### **Computable Functions**

Recursive functions and computability, algorithms, Church's thesis, Turing machines, computational logic, NP-completeness. (Also listed as COMP 4803.)

Prerequisite: MATH 2100 or MATH 3805 or permission of the School.

Lectures three hours a week.

MATH 4805 [0.5 credit] (formerly 70.485\*)

### **Theory of Automata**

Finite automata and regular expressions, properties of regular sets, context-free grammars, pushdown automata, deterministic context-free languages. Turing machines, the Chomsky hierarchy. Undecidability, intractable problems. Also offered at the graduate level, with additional or different requirements, as MATH 5605, for which additional credit is precluded. (Also listed as COMP 4805.)

Prerequisite: MATH 3805 or MATH 3106 or MATH 3158 (or MATH 3100) or permission of the School.

Lectures three hours a week.



MATH 4806 [0.5 credit] (formerly 70.486\*)

**Numerical Linear Algebra**

Study of matrix inversion techniques; techniques of finding eigenvalues and eigenvectors, solution of systems of linear equations; direct and indirect methods, their comparison and error analysis; applications in optimization and other areas. (Also listed as COMP 4806.)

Prerequisites: MATH 1102 or MATH 2107; and MATH 2000 or MATH 3009, or permission of the School.

Lectures three hours a week.

MATH 4807 [0.5 credit] (formerly 70.487\*)

**Game Theory**

Two-person zero-sum games; infinite games; multistage games; differential games; utility theory; two-person general-sum games; bargaining problem; n-person games; games with a continuum of players. Also offered at the graduate level, with additional or different requirements, as MATH 5607, for which additional credit is precluded.

Prerequisite: MATH 3001 or permission of the School.

Lectures three hours a week.

MATH 4808 [0.5 credit] (formerly 70.488\*)

**Graph Theory and Algorithms**

Paths, circuits, Eulerian and Hamiltonian graphs, connectivity, colouring problems, matching, Ramsey theory, network flows.

Prerequisites: MATH 3805 or MATH 3106 or MATH 3158 (or MATH 3100) or permission of the School.

Lectures three hours a week.

MATH 4809 [0.5 credit] (formerly 70.489\*)

**Mathematical Cryptography**

Topics covered include: a general survey of public key cryptography; classical applications of finite fields and number theory; relevant background in geometry and algebraic curves; computational issues concerning elliptic curves; elliptic curve cryptosystems; security issues.

Prerequisite: MATH 3809, or permission of the School.

Lectures three hours a week.

MATH 4905 [0.5 credit] (formerly 70.495\*)

**Honours Project**

Consists of a written report on some approved topic or topics in the field of mathematics, together with a short lecture on the report.

Prerequisite: B.Math.(Honours) students only.

MATH 4906 [0.5 credit] (formerly 70.496\*)

**Directed Studies**

Prerequisite: B.Math.(Honours) students only.

MATH 4907 [0.5 credit] (formerly 70.497\*)

**Directed Studies**

Prerequisite: B.Math.(Honours) students only.

*The following courses have not been offered in recent years, but may be offered sometime in the future:*

- MATH 3706 Mathematical Methods II
- MATH 3405 Classical Mechanics
- MATH 3900 Mathematical Problem Solving
- MATH 4001 Vector Calculus
- MATH 4405 Analytical Dynamics
- MATH 4406 Hydrodynamics and Elasticity

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## Mechanical Engineering (MECH)

Department of Mechanical and Aerospace Engineering  
Faculty of Engineering

MECH 3002 [0.5 credit] (formerly 88.302\*)

**Machine Design and Practice**

The design of mechanical machine elements is studied from theoretical and practical points of view. Topics covered include: design factors, fatigue, and discrete machine elements. Problem analysis emphasizes the application to practical mechanical engineering problems.

Prerequisites: MAAE 2001, MAAE 3202.

Lectures three hours a week, problem analysis three hours a week.

MECH 3700 [0.5 credit] (formerly 88.370\*)

**Principles of Manufacturing**

Manufacturing processes, materials. Casting: solidification and heat flow theory, defect formation, casting design. Metal forming: elementary plasticity theory, plastic failure criteria, force and work calculations. Bulk and sheet forming. Joining: heat flow and defect formation theory, residual stresses. Machining theory and practice. Hardening: diffusion, wear resistance.

Prerequisite: MAAE 2700.

Lectures and tutorials three hours a week; problem analysis and laboratories one hour a week.

MECH 4003 [0.5 credit] (formerly 88.403\*)

**Mechanical Systems Design**

Design of mechanical systems: establishing design criteria, conceptual design, design economics, value analysis, synthesis and optimization. Mechanical elements/systems: gear and flexible drive systems, fluid power systems. These elements are utilized in group design projects.

Prerequisite: MECH 3002.

Lectures three hours a week, problem analysis three hours a week.

MECH 4006 [0.5 credit] (formerly 88.406\*)

**Vehicle Engineering I**

The course emphasizes the engineering and design principles of road transport vehicles. Topics to be covered include: performance characteristics, handling behaviour and ride quality of road vehicles.

Prerequisites: MAAE 2101, MAAE 3004 (Dynamics of Machinery) and third- or fourth-year registration.

Lectures three hours a week.

MECH 4007 [0.5 credit] (formerly 88.407\*)

**Vehicle Engineering II**

Engineering and design principles of off-road vehicles and air cushion technology. Topics include: mechanics of vehicle-terrain interaction - terramechanics, performance characteristics of off-road vehicles, steering of tracked vehicles, air cushion systems and their performance, applications of air cushion technology to transportation.

Prerequisites: MAAE 2101, MAAE 3004 (Dynamics of Machinery) and third-or fourth-year registration.

Lectures three hours a week.

MECH 4101 [0.5 credit] (formerly 88.411\*)

**Mechanics of Deformable Solids**

Course extends the student's ability in design and stress analysis. Topics include: introductory continuum mechanics, theory of elasticity, stress function approach, Lamé and Mitchell problems, stress concentrations, thermoelasticity and plasticity.

Prerequisite: MAAE 3202.

Lectures three hours a week.

MECH 4103 [0.5 credit] (formerly 88.413\*)

**Fatigue and Fracture Analysis**

Elastic and elasto-plastic fracture mechanics. Fatigue design methods, fatigue crack initiation and growth Paris law and strain-life methods. Fatigue testing, scatter, mean stress effects and notches. Welded and built up structures, real load histories and corrosion fatigue. Damage tolerant design and fracture control plans.

Prerequisite: MAAE 3202 (Mechanics of Solids II)

Lectures three hours a week.

MECH 4104 [0.5 credit] (formerly 88.414\*)

**Vibration Analysis**

Free and forced vibrations of one and two degree-of-freedom systems. Vibration measurement and isolation. Numerical methods for multi-degree-of-freedom systems. Modal analysis techniques. Dynamic vibration absorbers. Shaft whirling. Vibration of continuous systems: bars, plates, beams and shafts. Energy methods. Holzer method.

Prerequisite: MAAE 3004.

Lectures three hours per week.

MECH 4305 [0.5 credit] (formerly 88.435\*)

**Fluid Machinery**

Types of machines. Similarity: performance parameters; characteristics; cavitation. Velocity triangles. Euler equation: impulse and reaction. Radial pumps and compressors: analysis,

design and operation. Axial pumps and compressors: cascade and blade-element methods; staging; off-design performance; stall and surge. Axial turbines. Current design practice. Also offered at the graduate level, with additional or different requirements, as MECH 5401, for which additional credit is precluded.

Prerequisite: MAAE 3300.

Lectures three hours a week.

MECH 4401 [0.5 credit] (formerly 88.441\*)

#### **Power Plant Analysis**

Criteria of merit; selection of power plant for transportation and power generation applications; interrelation among mechanical, thermodynamic and aerodynamic design processes; jet propulsion, turbojets and turbofans; alternative proposals for vehicular power plant; combined cycle applications.

Precludes additional credit for Engineering AERO 4402.

Prerequisite: MAAE 2400.

Lectures three hours a week.

MECH 4403 [0.5 credit] (formerly 88.443\*)

#### **Power Generation Systems**

Energy sources and resources. Basic elements of power generation. Hydro-electric, fossil-fuel and fissile-fuel power plants. Other methods of conversion. Future methods of conversion. Economic and environmental considerations. Power generation systems. Future power needs.

Prerequisite: MAAE 2400.

Lectures three hours a week.

MECH 4406 [0.5 credit] (formerly 88.446\*)

#### **Heat Transfer**

Mechanisms of heat transfer: fundamentals and solutions. Steady and transient conduction: solution and numerical and electrical analog techniques. Convective heat transfer: free and forced convection for laminar and turbulent flows; heat exchangers. Heat transfer between black and grey surfaces, radiation shields, gas radiation, radiation interchange.

Prerequisite: MAAE 3300.

Lectures three hours a week.

MECH 4407 [0.5 credit] (formerly 88.447\*)

#### **Heating & Air Conditioning**

Environmental demands for residential, commercial and industrial systems. Methods of altering and controlling environment. Air distribution. Refrigeration methods, equipment and controls. Integrated year-round air-conditioning and heating systems; heat pumps. Cooling load and air-conditioning calculations. Thermal radiation control. Component matching. System analysis and design.

Prerequisites: MAAE 2400 and third- or fourth- year registration.

Lectures three hours a week.

MECH 4501 [0.5 credit] (formerly 88.451\*)

#### **State Space Modeling & Control**

Review of matrices. Geometric structure and dynamics of linear systems. Controllability and observability. Pole placement design of controllers and observers. Design of regulator and servo systems. Transmission zeros. Eigenstructure assignment. Relationship to frequency or classical control techniques. Computer solutions using MATLAB. Applications.

Precludes additional credit for SYSC 5502.

Prerequisite: MAAE 4500 or MAAE 3502 (taken before 1999-2000).

Lectures three hours a week.

MECH 4503 [0.5 credit] (formerly 88.453\*)

#### **An Introduction to Robotics**

History of robotics and typical applications. Robotic actuators and sensors. Kinematics of manipulators, inverse kinematics, differential relationships and the Jacobian. Manipulator dynamics. Trajectory generation and path planning. Robot control and performance evaluation. Force control and compliance. Applications in manufacturing and other industries.

Prerequisites: MATH 3705 and SYSC 3600.

Lectures three hours a week.

MECH 4604 [0.5 credit] (formerly 88.464\*)

#### **Finite Element Methods**

Finite element methodology with emphasis on applications to stress analysis, heat transfer and fluid flow using the simplest

one- and two-dimensional elements. Direct equilibrium, variational and Galerkin formulations. Computer programs and practical applications. Higher order elements.

Prerequisites: MAAE 3202 and MAAE 3300.

Lectures three hours a week.

MECH 4704 [0.5 credit] (formerly 88.474\*)

#### **Integrated Manufacturing - CIMS**

Overview of the topics essential to CIMS including computer graphics, geometric modeling, numerically controlled machining, and flexible manufacturing with the objective of understanding the fundamental data structures and procedures for computerization of engineering design, analysis and production. Also offered at the graduate level, with additional or different requirements, as MECH 5704, for which additional credit is precluded.

Prerequisite: Engineering AERO 3700 or MECH 3700.

Lectures three hours a week.

MECH 4705 [0.5 credit] (formerly 88.475\*)

#### **CAD/CAM**

Introduction to contemporary computer aided design and manufacturing (CAD/CAM) Topics covered include mathematical representation, solid modeling, drafting, mechanical assembly mechanism design, (CNC) machining. Current issues such as CAD data exchange standards, rapid prototyping, concurrent engineering, and design for X (DFX) are also discussed.

Prerequisite: MAAE 2001 (Engineering Graphics and Design) and Fourth-year registration. Lectures three hours a week.

MECH 4805 [0.5 credit] (formerly 88.485\*)

#### **Measurement and Data Systems**

Experimental data, accuracy and uncertainty analysis. Analog systems. Sensors. Signal conditioning. Op-Amps, instrumentation amplifiers, charge amplifiers, filters. Digital techniques. Encoders, A/D D/A converters. Data acquisition using microcomputers. Hardware and software considerations. Interfacing. Applications to measurement of motion, strain, force/torque, pressure, fluid flow, temperature.

Precludes additional credit for Engineering ELEC 4805.

Prerequisites: STAT 3502, SYSC 3600 and ELEC 3605 or ELEC 2501.

Lectures three hours a week.

MECH 4907 [1.0 credit] (formerly 88.497)

#### **Engineering Project**

Students are required to complete a major project in engineering analysis, design, development or research. Opportunities to develop initiative, self-reliance, creative ability and engineering judgment. The results must be submitted in a comprehensive report with appropriate drawings, charts, bibliography, etc.

Prerequisite: Completion of or concurrent registration in MECH 4003, and fourth-year registration in the Mechanical program.

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## **Mechanical and Aerospace Engineering (MAAE)**

Department of Mechanical and Aerospace Engineering  
Faculty of Engineering

MAAE 2001 [0.5 credit] (formerly 86.201\*)

#### **Engineering Graphical Design**

Engineering drawing techniques; fits and tolerances; working drawings; fasteners. Elementary descriptive geometry; true length, true view, and intersection of geometric entities; developments. Assignments will make extensive use of Computer-Aided Design (CAD) and will include the production of detail and assembly drawings from actual physical models. Precludes additional credit for ECOR 1001.

Prerequisite: ECOR 1000.

Lectures and tutorials two hours a week, laboratory four hours a week.

MAAE 2101 [0.5 credit] (formerly 86.211\*)

#### **Engineering Dynamics**

Review of kinematics and kinetics of particles: rectilinear and

curvilinear motions; Newton's second law; energy and momentum methods. Kinematics and kinetics of rigid bodies: plane motion of rigid bodies; forces and accelerations; energy and momentum methods.

Precludes additional credit for CIVE 2101 or ECOR 2101.  
Prerequisites: ECOR 1101 and MATH 1005 and MATH 1104.  
Lectures three hours a week, problem analysis three hours a week.

MAAE 2202 [0.5 credit] (formerly 86.222\*)

**Mechanics of Solids I**

Review of Principles of Statics; friction problems; Concepts of stress and strain at a point; statically determinate and indeterminate stress systems; torsion of circular sections; bending moment and shear force diagrams; stresses and deflections in bending; stress and strain transformations; buckling instability.

Precludes additional credit for CIVE 2200.  
Prerequisites: ECOR 1101, MATH 1005 and MATH 1104.  
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 2300 [0.5 credit] (formerly 86.230\*)

**Fluid Mechanics I**

Fluid properties. Units. Kinematics, dynamics of fluid motion: concepts of streamline, control volume, steady and one-dimensional flows; continuity, Euler, Bernoulli, steady flow energy, momentum, moment of momentum equations; applications. Fluid statics; pressure distribution in fluid at rest; hydrostatic forces on plane and curved surfaces; buoyancy.  
Prerequisites: MATH 1005, MATH 1104 and ECOR 1101.  
Lectures three hours a week, laboratory and problem analysis three hours a week.

MAAE 2400 [0.5 credit] (formerly 86.240\*)

**Thermodynamics & Heat Transfer**

Basic concepts of thermodynamics: temperature, work, heat, internal energy and enthalpy. First law of thermodynamics for closed and steady-flow open systems. Thermodynamic properties of pure substances; changes of phase; equation of state. Second law of thermodynamics: concept of entropy. Simple power and refrigeration cycles. Introduction to heat transfer: conduction, convection and radiation.

Precludes additional credit for ECOR 2401.  
Prerequisites: CHEM 1101 or CHEM 1000, MATH 1005 and MATH 1104.  
Lectures three hours a week, laboratory and problem analysis three hours a week.

MAAE 2700 [0.5 credit] (formerly 86.270\*)

**Engineering Materials**

Materials (metals, alloys, polymers) in engineering service; relationship of interatomic bonding, crystal structure and defect structure (vacancies, dislocations) to material properties; polymers, thermoplastic, thermosetting; phase diagrams and alloys; microstructure control (heat treatment) and mechanical properties; material failure.

Precludes additional credit for MECH 2701 or CIVE 2700.  
Prerequisites: CHEM 1101 and CIVE 2200 or MAAE 2202.  
Concurrent registration with MAAE 2202 is also permitted.  
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3004 [0.5 credit] (formerly 86.304\*)

**Dynamics of Machinery**

Kinematic and dynamic analysis of mechanisms and machines. Instant Centres and complex algebra techniques. Synthesis of mechanisms. Kinematics and dynamics of Cams. Design and analysis considerations in reciprocating and rotating machinery. Vibrations in machinery. Vibration isolation. Experimental investigation of dynamic systems.

Prerequisite: MAAE 2101.  
Lectures three hours a week, problem analysis and laboratories one hour a week.

MAAE 3202 [0.5 credit] (formerly 86.322\*)

**Mechanics of Solids II**

Torsion of non-circular sections; unsymmetric bending and shear centre; energy methods; complex stresses and criteria of

yielding; elementary theory of elasticity; axisymmetric deformations; elementary plasticity analysis; plastic collapse.

Precludes additional credit for CIVE 3202.  
Prerequisite: MAAE 2202.  
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3300 [0.5 credit] (formerly 86.330\*)

**Fluid Mechanics II**

Review of control volume analysis. Dimensional analysis and similitude. Compressible flow: isentropic flow relations, flow in ducts and nozzles, effects of friction and heat transfer, normal and oblique shocks, two-dimensional isentropic expansion. Viscous flow theory: hydrodynamic lubrication and introduction to boundary layers.

Precludes additional credit for MAAE 3303.  
Prerequisites: MATH 2004 and MAAE 2300.  
Lectures three hours a week, problem analysis and laboratory three hours a week.

MAAE 3400 [0.5 credit] (formerly 86.340\*)

**Applied Thermodynamics**

Gas and vapour power cycles: reheat, regeneration, combined gas/vapour cycles, cogeneration. Heat pump and refrigeration cycles: vapour compression cycles, absorption refrigeration and gas refrigeration. Mixtures of perfect gases and vapours: psychometry and combustion. Principles of turbomachinery.  
Prerequisite: MAAE 2400.

Lectures three hours a week, problem analysis and laboratories one hour a week.

MAAE 3901 [0.5 credit] (formerly 86.391\*)

**Mech & Aero Engineering Lab**

Students perform a series of laboratory exercises dealing with a wide range of mechanical engineering topics. Included in this course is a group design project. Students relate theory and practice and develop experience with modern engineering equipment, measurement techniques and design methodology. Good reporting practice is emphasized.

Precludes additional credit for MAAE 4901.  
Prerequisite: third-year registration.  
Lectures and tutorials one hour a week, laboratory five hours a week.

MAAE 4102 [0.5 credit] (formerly 86.412\*)

**Materials: Strength & Fracture**

Analysis and prevention of failures in metals and composite materials; micro-mechanisms of fracture, conditions leading to crack growth. Mechanisms of fracture and transition temperature effects, fracture mechanics, fatigue, environmentally assisted cracking, non-destructive evaluation and testing. Mechanical properties of structural composites.

Prerequisite: MAAE 2700.  
Lectures three hours a week.

MAAE 4500 [0.5 credit] (formerly 86.450\*)

**Feedback Control Systems**

Introduction to the linear feedback control. Analysis and design of classical control systems. Stability and the Routh-Hurwitz criteria. Time and frequency domain performance criteria, robustness and sensitivity. Root locus, Bode and Nyquist design techniques. Control system components and industrial process automation.

Precludes additional credit for MAAE 3502.  
Prerequisites: MATH 3705 and SYSC 3600.  
Lectures three hours a week.

MAAE 4905 [0.5 credit] (formerly 86.495\*)

**Professional Practice**

Presentations by faculty and external lecturers on the Professional Engineers Act, professional ethics and responsibilities, practice within the discipline and its relationship with other disciplines and to society, health and safety, environmental stewardship, principles and practice of sustainable development. Communication skills are emphasized.

Precludes additional credit for CIVE 4905, SYSC 3905 or ELEC 3905.  
Prerequisite: fourth-year registration.  
Lectures three hours a week.



MAAE 4906 [0.5 credit] (formerly 86.496\*)

**Special Topics: Mech & Aero Eng.**

At the discretion of the Faculty, a course may be offered that deals with selected advanced topics of interest to Aerospace and Mechanical Engineering students.

Prerequisite: permission of the Department.

## Music (MUSI)

School for Studies in Art and Culture  
Faculty of Arts and Social Sciences

**Note:**

The majority of courses are open to non-Majors; students are advised to consult the Discipline.

MUSI 1001 [0.5 credit] (formerly 30.101\*)

**A History of Western Classical Music: Medieval to the Present**

Western classical music from the medieval period to the present. Major historical periods (Medieval, Renaissance, Baroque, Classical, Romantic, Modern, Postmodern) are examined through representative music ranging from Gregorian chant to contemporary experimental trends.

Precludes additional credit for 30.100.

Lectures three hours a week.

MUSI 1002 [0.5 credit] (formerly 30.102\*)

**Introduction to the History of Popular Music**

History of world popular music from the nineteenth century until the present. Topics may include the growth of the music industry, the impact of technology, stardom, world music, the role of the press, copyright, censorship, and sexuality.

Precludes additional credit for 30.100.

Lectures two hours a week, discussion one hour a week.

MUSI 1106 [0.5 credit] (formerly 30.116\*)

**Elementary Materials of Music I**

An introduction to the rudiments of music and aural training. Not available to B.Mus. students or those with sufficient expertise to enrol in MUSI 1701.

Precludes additional credit for 30.115.

Lectures three hours a week.

MUSI 1107 [0.5 credit] (formerly 30.117\*)

**Elementary Materials of Music II**

A continuation of MUSI 1106. Successful completion of this course will fulfil the prerequisite for entry into MUSI 1701. Not available to B.Mus. students or those with sufficient expertise to enrol in MUSI 1701.

Precludes additional credit for 30.115.

Lectures three hours a week.

MUSI 1701 [0.5 credit] (formerly 30.171\*)

**Theoretical Studies I**

An introduction to tonal thinking, with emphasis on the development of aural and written musicianship skills.

Precludes additional credit for 30.150, 30.151\* or 30.170.

Prerequisite: permission of the Discipline.

Lectures, labs and workshops five hours a week.

MUSI 1702 [0.5 credit] (formerly 30.172\*)

**Theoretical Studies II**

A continuation of MUSI 1701.

Precludes additional credit for Music 30.150, 30.151\* and 30.170.

Lectures, labs and workshops five hours a week.

MUSI 1900 [0.5 credit] (formerly 30.190\*)

**Performance I**

Individual vocal or instrumental instruction in classical, traditional or popular idioms, for B.Mus. students only.

Prerequisite: Audition.

Individual tuition ten hours a term.

MUSI 1901 [0.5 credit] (formerly 30.191\*)

**Performance II**

Individual vocal or instrumental instruction in classical,

traditional or popular idioms, for B.Mus. students only.

Prerequisite: MUSI 1900.

Individual tuition ten hours a term.

MUSI 1902 [0.0 credit] (formerly 30.192\*)

**Instrumental Ensemble I**

Participation in an instrumental ensemble, by arrangement with the Supervisor of Performance and Practical Studies. Registration is restricted to students in the B.Mus. program. This course carries a 0.0 credit value and is graded Sat/Uns.

Prerequisite: first-year standing in the B.Mus. program or permission of the Discipline.

Ensemble work approximately two hours a week throughout the year and participation in concerts.

MUSI 1903 [0.0 credit] (formerly 30.193\*)

**Choral Ensemble I**

Participation in a choral ensemble, by arrangement with the Supervisor of Performance and Practical Studies. Registration is restricted to students in the B.Mus. program. This course carries a 0.0 credit value and is graded Sat/Uns.

Prerequisite: first-year standing in the B.Mus. program or permission of the Discipline.

Ensemble work approximately two hours a week throughout the year and participation in concerts.

MUSI 2005 [0.5 credit] (formerly 30.205\*)

**Ragtime and Jazz**

A survey of ragtime and jazz from their roots in pre-twentieth-century black music and white music to contemporary jazz idioms, including an examination of New Orleans jazz and Dixieland, swing, bebop, cool jazz, and free jazz.

Precludes additional credit for 30.225\*.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 2006 [0.5 credit] (formerly 30.206\*)

**Popular Musics before 1945**

Selected aspects of the development of Anglo-American popular musics from their roots in the nineteenth century until the shifts and tensions which led to the advent of rock `n` roll and soul in the 1950s. Genres to be examined include blues, country, the sentimental ballad, and Broadway and film music.

Precludes additional credit for 30.223\*, 30.226\* and 30.228\*.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 2007 [0.5 credit] (formerly 30.207\*)

**Popular Musics after 1945**

An examination of selected aspects of the development of Anglo-American and world popular musics from the advent of rock `n` roll and soul to the present. Genres to be examined include early rock `n` roll, British rhythm `n` blues, Motown, West Coast music, punk, heavy metal, new wave, disco and country.

Precludes additional credit for 30.227\*, 30.228\*, and 30.229\*.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 2008 [0.5 credit] (formerly 30.208\*)

**An Introduction to Ethnomusicology**

The basic techniques in ethnomusicology are introduced and illustrated through case studies of the folk and tribal musics of Europe, Asia, Africa, Australia and Oceania, North and South America.

Precludes additional credit for 30.230\*.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 2009 [0.5 credit] (formerly 30.209\*)

**Music of the Asian High Cultures**

A comparative and analytical study of music in Asian high cultures, including India, China, Korea, Indonesia, Japan, and the Arabic world, through an examination of the music, musical instruments and theoretical systems.

Precludes additional credit for 30.231\*.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 2100 [0.5 credit] (formerly 30.210\*)

**Music in the Middle Ages**

A survey of music in its courtly, national and ecclesiastical

contexts from the fourth to the fifteenth centuries, including the study of secular monophony, medieval polyphony and liturgical music.

Precludes additional credit for 30.200\*.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 2101 [0.5 credit] (formerly 30.211\*)

**Music in the Renaissance**

A survey of music from 1400 to 1650, including examination of works from the Burgundian and Flemish schools, French chanson, sacred Latin music, Italian and Elizabethan madrigal, and dance music. Transitions from the renaissance to baroque style will also be explored.

Precludes additional credit for 30.201\*.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 2102 [0.5 credit] (formerly 30.212\*)

**Music in the Baroque Era**

A survey of the major genres and composers in the period 1600 to 1750. Genres considered will be instrumental music, oratorio, motet, cantata, sonata, concerto, and opera. Some of the composers studied will be Monteverdi, Schütz, Lully, Couperin, Rameau, Vivaldi, Bach, and Handel.

Precludes additional credit for 30.201\*.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 2103 [0.5 credit] (formerly 30.213\*)

**Music in the Classical Era**

European music from the early eighteenth century to the beginning of Romanticism. The evolution of the Classical style in important works of composers from the 1720s and the Viennese school of Haydn, Mozart, and Beethoven.

Precludes additional credit for 30.202\*.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 2104 [0.5 credit] (formerly 30.214\*)

**Music in the Romantic Era**

European classical music from c.1790 to c.1910. Important genres (art song, symphony, opera, etc.) as well as individual and national styles are examined in the context of the socio-political climate of the period.

Precludes additional credit for 30.202\*.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 2105 [0.5 credit] (formerly 30.215\*)

**Twentieth-Century Music to World War II**

A survey of European classical music from c. 1890 to c. 1945. Idioms to be examined in the socio-political climate of the period include Debussyan impressionism, Viennese expressionism, nationalism, and Stravinskian neoclassicism.

Precludes additional credit for 30.203\*.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 2106 [0.5 credit] (formerly 30.216\*)

**Music Since World War II**

A study of selected aspects of the musical avant-garde in the Western classical tradition in the socio-political climate of the post-War period. Aspects to be examined include serialism, colouristic and textural composition, music of political commitment, electronic music, musical theatre, process music and the music of chance.

Precludes additional credit for 30.204\*.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 2601 [0.5 credit] (formerly 30.261\*)

**Introduction to Writing Music I**

An introduction to basic music writing skills (notation, instrumentation, practical arranging), focusing both on the acquisition of technical skills (which will be useful to students for careers in teaching, music productions, etc.) and on creative compositional skills.

Precludes additional credit for 30.260.

Prerequisite: MUSI 1701 and MUSI 1702, or permission of the Discipline.

Lectures and workshops three hours a week.

MUSI 2602 [0.5 credit] (formerly 30.262\*)

**Introduction to Writing Music II**

A continuation of MUSI 2601 but with more emphasis on musical creativity, incorporating workshop performances of student creations.

Precludes additional credit for 30.260.

Prerequisite: MUSI 2601, or permission of the Discipline.

Lectures and workshops three hours a week.

MUSI 2605 [0.5 credit] (formerly 30.265\*)

**Choral Conducting**

A course designed to introduce students to the special stylistic features of choral music from the Renaissance to the present as well as to a variety of practical techniques (vocal production, gesture, conducting patterns, diction, etc.).

Lectures three hours a week.

MUSI 2700 [0.5 credit] (formerly 30.270\*)

**Theoretical Studies III: Common Practice**

A study of the harmonic, melodic, rhythmic and formal structures of music of the common practice period, with emphasis on the development of written musical skills.

Precludes additional credit for 30.250\*.

Prerequisite: MUSI 1701 and MUSI 1702, or permission of the Discipline.

Lectures two hours a week throughout the year.

MUSI 2701 [0.5 credit] (formerly 30.271\*)

**Theoretical Studies IV: Popular Music Practice**

A study of the rhythmic, melodic, harmonic and formal structures of popular musics.

Prerequisite: MUSI 1701 and MUSI 1702, or permission of the Discipline.

Lectures two hours a week throughout the year.

MUSI 2702 [0.5 credit] (formerly 30.272\*)

**Theoretical Studies V: Aural Training**

A practical study of music as an aural phenomenon. Hearing skills and aural concentration are developed through recall, reproduction, aural analysis and transcription. Sound materials are drawn from a wide range of sources, live and recorded.

Precludes additional credit for 30.251\*.

Prerequisite: MUSI 1701 and MUSI 1702, or permission of the Discipline.

Labs and workshops three hours a week through the year.

MUSI 2703 [0.5 credit] (formerly 30.273\*)

**Theoretical Studies VI: Practical Skills**

A practical study of rhythm, harmony and melody on the keyboard, with an emphasis on vocal and instrumental accompaniment and the development of improvisation skills in a variety of styles.

Precludes additional credit for 30.152\*.

Prerequisites: MUSI 1701 and MUSI 1702, or permission of the Discipline.

Labs two hours a week throughout the year.

MUSI 2900 [0.5 credit] (formerly 30.290\*)

**Performance III**

A continuation of MUSI 1901 for B.Mus. students only.

Prerequisite: second-year standing and MUSI 1901, or permission of the Discipline.

Individual tuition ten hours a term.

MUSI 2901 [0.5 credit] (formerly 30.291\*)

**Performance IV**

A continuation of MUSI 2900 for B.Mus. students only.

Prerequisite: second-year standing and MUSI 2900, or permission of the Discipline.

Individual tuition ten hours a term.

MUSI 2902 [0.0 credit] (formerly 30.292\*)

**Instrumental Ensemble II**

Instrumental ensemble, a continuation of MUSI 1902. Registration is restricted to B.Mus. students. This course carries a 0.0 credit value and is graded Sat/Uns.

Prerequisite: second-year standing in the B.Mus. program or permission of the Discipline.  
Ensemble work approximately two hours a week throughout the year and participation in concerts.

MUSI 2903 [0.0 credit] (formerly 30.293\*)

#### **Choral Ensemble II**

Choral ensemble, a continuation of MUSI 1903. Registration is restricted to B.Mus. students. This course carries a 0.0 credit value and is graded Sat/Uns.

Prerequisite: second-year standing in the B.Mus. program or permission of the Discipline.  
Ensemble work approximately two hours a week throughout the year and participation in concerts.

MUSI 3102 [0.5 credit] (formerly 30.312\*)

#### **Music in the United States in the Twentieth Century**

A survey of contemporary American music. Topics include: Ives and the experimental tradition; Copland, Thomson, Harris and the American nationalists; the neoromantics; Gershwin and the third stream; and post-1945 developments in indeterminacy and minimalism.

Precludes additional credit for MUSI 3102.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 3103 [0.5 credit] (formerly 30.313\*)

#### **Aspects of Canadian Musical Heritage**

Canadian music introduced through its roots in First Peoples, Anglo- and Franco-folk and notated musics that provided the foundation for Canada's concert music traditions of the twentieth century.

Precludes additional credit for 30.310.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 3104 [0.5 credit] (formerly 30.314\*)

#### **Popular Musics of Canada**

Popular musics by Canadians including sheet music examples from 1840s on, Canada's successes in Tin Pan Alley, in Afro-Canadian styles, and various popular expressions of the twentieth century (country, rock, rap, bhangra, First Nations contemporary, etc.).

Precludes additional credit for 30.310.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 3106 [0.5 credit] (formerly 30.316\*)

#### **Popular Musics of the World**

Popular musics of the world, including those of Africa, Asia, Central and Eastern Europe, Latin America, the Caribbean and Oceania. Special attention to the interaction between some world popular musics and the Western record industry.

Prerequisite: MUSI 2008 or MUSI 2009.

Lectures three hours a week.

MUSI 3302 [0.5 credit] (formerly 30.332\*)

#### **Music and Gender I**

The role of gender in the theory and practice of music in western and non-western cultures. Attention is directed to women's participation in music to make good their absence from traditional accounts in music's history, significance and development.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 3400 [0.5 credit] (formerly 30.340\*)

#### **A History of Opera before 1800**

A survey of the development of opera from the beginnings to about 1800. The course deals with the major monuments of Italian, French, German and English opera, by such composers as Monteverdi, Cavalli, Scarlatti, Purcell, Lully, Gluck, Rameau, Mozart and Haydn.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 3401 [0.5 credit] (formerly 30.341\*)

#### **A History of Opera from 1800 to 1945**

A study of romantic and contemporary opera through an examination of selected works from Weber's *Der Freischütz* to Britten's *Peter Grimes*, including an investigation of national styles from Wagnerian music drama and Italian verismo to

Russian realism and German expressionism.

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 3402 [0.5 credit] (formerly 30.342\*)

#### **Film Music**

The use of music in film, from the silent era to the present day, studying the techniques, styles and theory of film music through the examination of selected films. (Also listed as FILM 3402.)

Prerequisite: second-year standing.

Lectures three hours a week, screening two hours a week.

MUSI 3403 [0.5 credit] (formerly 30.343\*)

#### **Music Industries**

An introduction to the structure and history of the music industries. (Also listed as MCOM 3404.)

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 3404 [0.5 credit] (formerly 30.344\*)

#### **Music, the Law and Morality**

An introduction to the relationships that have developed between music, the law and moral issues. Special attention will be paid to issues of copyright information, censorship, obscenity, and to the phenomenon of moral panics. (Also listed as LAWS 3507.)

Prerequisite: second-year standing.

Lectures three hours a week.

MUSI 3600 [1.0 credit] (formerly 30.360)

#### **Composition I**

An introductory course in composition designed to enable students to develop abilities in the writing of original music. The study and application of modern and contemporary styles and techniques are emphasized.

Prerequisite: MUSI 2601 and MUSI 2602, or permission of the Discipline.

Seminars two hours a week.

MUSI 3603 [0.5 credit] (formerly 30.363\*)

#### **Computer Music Techniques**

An introduction to the techniques of sound synthesis primarily through practical experience at the digital synthesizer and computer. This course includes the basics of machine operations, software and computer applications to composition and synthesis. Enrolment in this course is limited.

Prerequisite: second-year standing.

Lectures three hours a week, plus individual studio time.

MUSI 3604 [0.5 credit] (formerly 30.364\*)

#### **Computer Music Projects**

A continuation of MUSI 3603. The various applications of digital equipment are examined through the realization of original projects. Students may focus on studio composition, software development or analytic research. Appropriate compositional techniques and problem solving strategies are also discussed. enrolment in this course is limited.

Prerequisite: MUSI 3603 or second-year standing.

Lectures three hours a week, plus individual studio time.

MUSI 3700 [0.5 credit] (formerly 30.370\*)

#### **Theoretical Studies VII: Seminar in Theory Topics**

A study of a selected topic in music theory. Topics will change yearly and may include: methods of music analysis; analysis of selected works; styles and structures of common practice or post common practice period; 16th or 18th century counterpoint; history of music theory.

Precludes additional credit for 30.350\*.

Prerequisite: MUSI 2700 or permission of the Discipline.

Seminars three hours a week.

MUSI 3701 [0.5 credit] (formerly 30.371\*)

#### **Theoretical Studies VIII: Jazz Styles and Structures**

Techniques of arranging and composition for small and large ensembles will be studied through the examination of selected works drawn from the jazz repertoire. Works will be selected for stylistic and theoretical analysis, for exercises in aural recognition, and for arranging purposes.

Precludes additional credit for 30.423\* (taken in 1994-95) or 30.424\* (taken in 1995-96).

Prerequisite: MUSI 2701 or permission of the Discipline.

Workshops three hours a week.



MUSI 3900 [0.5 credit] (formerly 30.390\*)

**Performance V**

A continuation of MUSI 2901 for B.Mus. students only.  
Prerequisite: third-year standing and MUSI 2901, or permission of the Discipline.  
Individual tuition ten hours a term.

MUSI 3901 [0.5 credit] (formerly 30.391\*)

**Performance VI**

A continuation of MUSI 3900 for B.Mus. students only.  
Prerequisite: third-year standing and MUSI 3900, or permission of the Discipline.  
Individual tuition ten hours a term.

MUSI 3902 [0.0 credit] (formerly 30.392\*)

**Instrumental Ensemble III**

Instrumental ensemble, a continuation of MUSI 2902. Registration is restricted to B.Mus. students. This course carries a 0.0 credit value and is graded Sat/Uns.  
Prerequisite: third-year standing in the B.Mus. program or permission of the Discipline.  
Ensemble work approximately two hours a week throughout the year and participation in concerts.

MUSI 3903 [0.0 credit] (formerly 30.393\*)

**Choral Ensemble III**

Choral ensemble, a continuation of MUSI 2903. Registration is restricted to B.Mus. students. This course carries a 0.0 credit value and is graded Sat/Uns.  
Prerequisite: third-year standing in the B.Mus. program or permission of the Discipline.  
Ensemble work approximately two hours a week throughout the year and participation in concerts.

MUSI 4006 [0.5 credit] (formerly 30.406\*)

**Issues in the Study of Popular Music**

An introduction to current issues in the study of popular music. The course will be organized around a series of case studies.  
Seminars three hours a week.

MUSI 4103 [0.5 credit] (formerly 30.413\*)

**Topics in Ethnomusicology**

Issues of anthropological, sociological, and analytical approaches are examined in the context of detailed analyses of selected musical traditions. Also offered at the graduate level, with additional requirements, as MUSI 5103, for which additional credit is precluded.  
Prerequisite: fourth-year standing.  
Seminars two hours a week.

MUSI 4104 [0.5 credit] (formerly 30.414\*)

**Musics of Canada's First Peoples**

The context and significance of musical expressions for representative Nations in each of the Canadian geographical regions, Maritime, Eastern Nomadic, Eastern Sedentary, Plains, Western Subarctic, Plateau, Northwest Coast, and Arctic, are examined from the pre-Contact period to the present. Also offered at the graduate level, with additional requirements, as MUSI 5102, for which additional credit is precluded.  
Prerequisite: fourth-year standing.  
Seminars two hours a week.

MUSI 4109 [1.0 credit] (formerly 30.419\*)

**Specialized Studies**

A course designed for Music Honours students who have acquired an extensive background through courses in theory, musicology or composition. The course offerings change from year to year.  
Prerequisite: permission of the Discipline.  
Lectures and seminars three hours a week.

MUSI 4200 [0.5 credit] (formerly 30.420\*)

**Special Topics**

Courses focusing on one selected aspect of music, in the area of either musicology, theory or composition. The course offerings change from year to year.  
Prerequisite: permission of the Discipline.  
Lectures and seminars three hours a week.

MUSI 4201 [0.5 credit] (formerly 30.421\*)

**Special Topics**

Courses focusing on one selected aspect of music, in the area of either musicology, theory or composition. Course offerings change from year to year.  
Prerequisite: permission of the Discipline.  
Lectures and seminars three hours a week.

MUSI 4205 [0.5 credit] (formerly 30.425\*)

**Specialized Studies**

Courses designed for Music Honours students who have acquired an extensive background through courses in theory, musicology or composition. Course offerings change from year to year.  
Prerequisite: permission of the Discipline.  
Lectures and seminars three hours a week.

MUSI 4206 [0.5 credit] (formerly 30.426\*)

**Specialized Studies**

Courses designed for Music Honours students who have acquired an extensive background through courses in theory, musicology or composition. Course offerings change from year to year.  
Prerequisite: permission of the Discipline.  
Lectures and seminars three hours a week.

MUSI 4209 [1.0 credit] (formerly 30.429\*)

**Specialized Studies**

A course designed for Music Honours students who have acquired an extensive background through courses in theory, musicology or composition. Course offerings change from year to year.  
Prerequisite: permission of the Discipline.  
Lectures and seminars three hours a week.

MUSI 4300 [0.5 credit] (formerly 30.430\*)

**Notation of Medieval and Renaissance Music**

Major paleographic and transcriptional problems encountered in early chant notation, square and Franconian notations, innovations of the Ars Nova and mannerist phrases, white notation, and various lute tablatures. Detailed study and transcription of selected examples from the ninth to sixteenth centuries.  
Prerequisite: MUSI 2100, MUSI 2101 or permission of the Discipline.  
Lectures three hours a week.

MUSI 4303 [0.5 credit] (formerly 30.433\*)

**Music and Gender II**

The relationship between the social and formal organization of music and the social and formal organization of sexual difference. A principal focus of the course is to understand the role of music in the social construction of gender as well as the role of gender in the determination of musical style and taste. Precludes additional credit for 30.333\* or 30.424\* (taken in 1992-93).  
Prerequisite: MUSI 3302 or permission of the Discipline.  
Seminars three hours a week.

MUSI 4402 [1.0 credit] (formerly 30.442)

**Film Music Analysis**

An examination through selected films/programs of approaches to understanding music as an integral dimension of film and television. Emphasis will be placed on theories of signification in both film/television and music, and how they can be understood to relate. (Also listed as FILM 4202.)  
Prerequisite: MUSI 3402 or FILM 3402, or permission of the Discipline.  
Lecture and screening three hours a week, seminar one and one-half hours a week.

MUSI 4600 [1.0 credit] (formerly 30.460)

**Composition II**

A continuation of MUSI 3600 for students who possess a displayed aptitude for composition. The course centres on the writing of original works of substantial proportions and for a variety of media. Students are encouraged to prepare some of their music for public performance.  
Precludes additional credit for MUSI 3600, MUSI 4600, MUSI 4600 or MUSI 4906.  
Prerequisite: MUSI 3600 or permission of the Discipline.  
Seminars two hours a week.

MUSI 4700 [0.5 credit] (formerly 30.470\*)

**Theoretical Studies IX: Seminar in Theory Topics**

A study of a selected topic in music theory. Topics will change yearly and may include: methods of music analysis; analysis of selected works; styles and structures of common practice or post common practice period music; 16th or 18th century counterpoint; history of music theory.

Prerequisite: MUSI 2700 or permission of the Discipline.  
Seminars three hours a week.

MUSI 4701 [0.5 credit] (formerly 30.471\*)

**Theoretical Studies X: Jazz Styles and Structures**

This course is similar to MUSI 3701 and may be taken in lieu of MUSI 3701. Students taking both courses, in any order, will be expected to demonstrate a development of their own techniques throughout their individual course of study.

Prerequisite: MUSI 2701 or permission of the Discipline.  
Workshops three hours a week

MUSI 4703 [0.5 credit] (formerly 30.473\*)

**Performance Practice**

A seminar to examine how music in earlier periods of the Western tradition was performed, the "authentic" movement of the twentieth century, and the boundaries within which compositions of Asian high cultures and jazz and popular music standards can be realized.

Prerequisite: permission of the Discipline.  
Seminars three hours a week.

MUSI 4800 [0.5 credit] (formerly 30.480\*)

**Practicum in Music**

Practical experience in music-specific projects such as recording studios, librarianship, research, multimedia, etc. at local institutions. A maximum of one credit of practicum may be offered in fulfilment of Music requirements.

Prerequisites: Honours Music registration with third- or fourth-year standing and a B+ or better average in Music courses; or permission of the Discipline.

MUSI 4801 [0.5 credit] (formerly 30.481\*)

**Practicum in Music**

Practical experience in music-specific projects such as recording studios, librarianship, research, multimedia, etc. at local institutions. A maximum of one credit of practicum may be offered in fulfilment of Music requirements.

Prerequisites: Honours Music registration with third- or fourth-year standing and a B+ or better average in Music courses; or permission of the Discipline.

MUSI 4900 [1.0 credit] (formerly 30.490)

**Performance VII**

A continuation of MUSI 3901 for B.Mus. students only. This course may not be taken in addition to or concurrently with MUSI 4907.

Prerequisite: fourth-year standing and MUSI 3901, or permission of the Discipline.  
Individual tuition twenty hours a year.

MUSI 4902 [0.5 credit] (formerly 30.492\*)

**Instrumental Ensemble IV**

Instrumental ensemble, a continuation of MUSI 3902. Registration is restricted to B.Mus. students. This course carries a 0.0 credit value and is graded Sat/Uns.

Prerequisite: fourth-year standing in the B.Mus. program or permission of the Discipline.  
Ensemble work approximately two hours a week throughout the year and participation in concerts.

MUSI 4903 [0.5 credit] (formerly 30.493\*)

**Choral Ensemble IV**

Choral ensemble, a continuation of MUSI 3903. Registration is restricted to B.Mus. students. This course carries a 0.0 credit value and is graded Sat/Uns.

Prerequisite: fourth-year standing in the B.Mus. program.  
Ensemble work approximately two hours a week throughout the year and participation in concerts.

MUSI 4906 [1.0 credit] (formerly 30.496)

**Honours Portfolio in Composition**

The course requires the composition of an original work of

substantial proportions, with an accompanying analytical paper. Application to the Discipline for permission to register must be received by September 1. This course will be double weighted in the calculation of the Music GPA.

Precludes additional credit for MUSI 4600.

Prerequisite: fourth-year standing, MUSI 3600 and permission of the Discipline.

MUSI 4907 [1.0 credit] (formerly 30.497)

**Graduating Recital**

The course requires a public recital arranged in consultation with the Supervisor of Performance and Practical Studies and will be double-weighted in calculating GPA. An outline of the program must be submitted one week before the last day for course changes.

Precludes additional credit for MUSI 4900 or 30.490\*.  
Prerequisites: fourth-year standing in the B.Mus. program, MUSI 3901, and permission of the Discipline.

Individual tuition twenty hours a year.

MUSI 4908 [1.0 credit] (formerly 30.498)

**Honours Essay in Musicology**

An Honours research essay of approximately 50 pages. A written outline of the project must be submitted to the Honours committee one week before the last day for course changes. This course will be double-weighted in the calculation of the Music GPA.

Prerequisite: fourth-year standing and permission of the Discipline.

MUSI 4909 [1.0 credit] (formerly 30.499)

**Portfolio in New Media**

The course requires the creation of an original work (or works) of substantial proportions using applications in the electronic studios. This course is restricted to Sonic Design students. Requests to the Discipline for permission to register must be received by September 1.

Prerequisite: permission of the Discipline.

## Natural Sciences (NSCI)

College of Natural Sciences

Faculty of Science

NSCI 1000 [0.5 credit] (formerly 66.100)

**Seminar in Science**

This cross-disciplinary course presents a survey of current issues in science. The course provides new science students with an orientation to the study of science at the university level. The course is structured around seminars, oral and written presentations.

Restricted to students in the first year of B.Sc. programs or B.A. Biology programs.

Lectures and tutorials three hours a week.

## Philosophy (PHIL)

Department of Philosophy

Faculty of Arts and Social Sciences

PHIL 1000 [0.5 credit]

**Introductory Philosophy: Fields, Figures and Problems**

What is metaphysics? Who was Socrates? What is Freedom? This basic introduction sketches many branches of philosophy and the important problems associated with each. It introduces great philosophers, present and past, and traces enduring philosophical themes. Precludes additional credit for PHIL 1100 and FYSM 1208. This course is not suitable for students with previous formal study of philosophy.

PHIL 1001 [0.5 credit] (formerly 32.101\*)

**Ethics and Philosophy of Religion**

An examination of arguments for and against the existence of God; the nature of religious language and the meaning and justification of moral judgments.

Lectures three hours a week.

PHIL 1100 [1.0 credit] (formerly 32.110)

**Looking at Philosophy**

Introduction to philosophy: the nature of logical thinking; the existence of God; the objectivity of values; the meaning of life; free will; determinism and responsibility; the relation between the mind and body; immortality and the possibility of knowledge. This course is not intended for Majors (B.A. or B.A. Honours) in Philosophy.

Precludes additional credit for FYSM 1208.

Lectures three hours a week.

PHIL 1301 [0.5 credit] (formerly 32.131\*)

**Thinking and Being**

An introduction to philosophical issues concerning mind, language, knowledge and the world. Topics may include: the nature of being, the mental, the external, consciousness, perception, experience, meaning, truth, the nature of knowledge, scientific understanding, how language and thought represent the world.

Precludes additional credit for PHIL 1006 or PHIL 1501.

PHIL 1500 [1.0 credit] (formerly 32.150)

**Contemporary Moral, Social and Religious Issues**

Moral theories, atheism or theism, feminism, and free will. Moral arguments concerning abortion, affirmative action, racism, human rights, children's rights, world hunger, capital punishment, euthanasia, censorship, pornography, legal paternalism, animal rights and environmental protection.

Precludes additional credit for FYSM 1209.

Lectures three hours a week.

PHIL 1600 [1.0 credit] (formerly 32.160)

**History of Philosophy**

Major figures and developments in philosophy from the early Greeks to the present. Descriptive and comparative approach, providing an understanding of the place of philosophers in the history of thought. Appreciation of critical reasoning is included for comprehending philosophical developments.

Precludes additional credit for FYSM 1300.

Lectures three hours a week.

PHIL 1804 [0.5 credit] (formerly 32.184\*)

**Introduction to Environmental Ethics**

Major questions in environmental ethics: How should human beings view their relationship to the rest of nature? Is responsible stewardship of the environment compatible with current technology? Must future generations be protected? Do animals, other life forms, endangered species, ecosystems and/or the biosphere have value or rights?

Lectures three hours a week.

PHIL 2001 [0.5 credit] (formerly 32.201\*)

**Introduction to Symbolic Logic**

An introduction to the techniques and philosophical implications of formal logic with emphasis on the following issues: translation of expressions into symbolic form, testing for logical correctness, the formulation and application of rules of inference, and the relation between logic and language.

Open to first-year students.

Lectures three hours a week.

PHIL 2003 [0.5 credit] (formerly 32.203\*)

**Informal Reasoning**

Assessment of reasoning and the development of cogent patterns of thinking. Reference to formal logic is minimal. Practice in criticizing examples of reasoning and in formulating one's own reasons correctly and clearly.

Open to first-year students.

Precludes additional credit for PHIL 1200.

Lectures three hours a week.

PHIL 2006 [0.5 credit] (formerly 32.206\*)

**Greek Philosophy: Plato and Aristotle**

A study, both historical and critical, of some central issues in the philosophy of Plato and of Aristotle. (This course is also listed as CLCV 2006.)

Precludes additional credit for PHIL 2005.

Prerequisite: at least 0.5 credit in Philosophy or second-year standing.

Lectures three hours a week.

PHIL 2007 [0.5 credit] (formerly 32.207\*)

**Hellenistic and Early Medieval Philosophy**

The evolution of western philosophy from the fourth through the twelfth century: theories of human nature, knowledge and reality are traced from the Hellenistic philosophers through the early medieval syntheses of reason with Christianity. Several thinkers (e.g. Plotinus, Augustine and Anselm) are studied in depth. (Also listed as CLCV 2007.)

Precludes additional credit for PHIL 2205.

Prerequisite: PHIL 2006 or permission of the Department.

Lectures three hours a week.

PHIL 2008 [0.5 credit] (formerly 32.208\*)

**Philosophy in the Late Middle Ages, Renaissance and Reformation**

The evolution of western philosophy from the scholasticism of the high Middle Ages to the humanism of the Renaissance and the skepticism and fideism of the Reformation and Counter-Reformation period. Several thinkers such as Aquinas, Montaigne and Francis Bacon are studied in depth.

Precludes additional credit for PHIL 2205.

Prerequisite: PHIL 2006 or permission of the Department.

Lectures three hours a week.

PHIL 2009 [0.5 credit] (formerly 32.209\*)

**Early Modern Philosophy: the Rationalists**

European philosophy of the seventeenth and early eighteenth century. Representative works of writers such as Descartes, Spinoza and Leibniz.

Precludes additional credit for PHIL 2105.

Prerequisite: PHIL 2006, PHIL 2007 or PHIL 2008; or permission of the Department.

Lectures three hours a week.

PHIL 2101 [0.5 credit] (formerly 32.211\*)

**History of Ethics**

An introduction to ethical theories through a study of some of the major figures in moral philosophy, such as Aristotle, Hume, Kant and Mill.

Prerequisite: at least 0.5 credit in Philosophy or second-year standing.

Lectures three hours a week.

PHIL 2102 [0.5 credit] (formerly 32.212\*)

**Contemporary Ethical Theory**

Critical study of the main types of modern ethical theories, their views on the nature of morality and the justification of moral claims. Topics utilitarianism, libertarianism, communitarianism, egoism, neo-Kantianism, virtue ethics, social contract ethics, feminist ethics, and moral rights.

Prerequisite: PHIL 2101 or permission of the Department.

Lectures three hours a week.

PHIL 2103 [0.5 credit] (formerly 32.213\*)

**Philosophy of Human Rights**

Philosophical introduction to human rights sources, concepts, justifications, consequences, and challenges to them. Evolution of selected human rights as a) demands made in political struggles; b) declarations supported by moral or political principles and arguments; c) codes ratified and implemented by governments and international organizations.

Prerequisite: a course in Philosophy or second-year standing.

Lectures three hours a week.

PHIL 2104 [0.5 credit] (formerly 32.214\*)

**Computer Ethics**

Philosophical foundations of computer ethics. The ethical impact of computerization on intellectual property rights, the right to privacy, and freedom of expression; ethical issues of risk management and reliability; professional codes. Ethical problems posed by specific technologies and research areas may also be included. Primarily intended for Computer Science students.

Precludes additional credit for PHIL 2106.

Prerequisite: a course in Philosophy or second-year standing.

Lectures three hours a week.

PHIL 2106 [0.5 credit] (formerly 32.216\*)

**Information Ethics**

Ethical aspects of the influence of information technology on



intellectual property rights, privacy, free speech, work and society. Also included are an introduction to philosophical ethics and discussions of moral responsibilities of IT professionals, codes of professional ethics, hacker ethics, viruses and software piracy.

Precludes additional credit for PHIL 2104.

Prerequisite: a course in Philosophy or second-year standing. Lectures three hours a week.

PHIL 2201 [0.5 credit] (formerly 32.221\*)

#### **Introduction to Marxist Philosophy**

The evolution of Marx's social and political views in the setting of 18th- and 19th- century anarchism, liberalism and conservatism. Themes of humanism, freedom, rights, the state, democracy, alienation, and inequality, primarily as they develop into the theory of historical materialism.

Precludes additional credit for PHIL 2200.

Prerequisite: at least 0.5 credit in Philosophy or permission of the Department.

Lectures three hours a week.

PHIL 2202 [0.5 credit] (formerly 32.222\*)

#### **Topics in Marxist Philosophy**

The dialectical materialism of Marx, Engels, and Lenin is compared with traditional materialist, idealist, and mechanist philosophy. Marxist views on issues such as equality, ethical objectivity, human well-being, matter and mind, the existence of God, knowledge versus skepticism, freedom of the will, and justice.

Precludes additional credit for PHIL 2200.

Prerequisite: PHIL 2201 or at least 0.5 credit in the history of philosophy at the 2000-level or above.

Lectures three hours a week.

PHIL 2203 [0.5 credit] (formerly 32.223\*)

#### **Existentialism and Phenomenology**

A study of the views of such writers as Kierkegaard, Husserl, Merleau-Ponty, Heidegger and Sartre.

Precludes additional credit for PHIL 2700.

Prerequisite: at least 0.5 credit in the history of philosophy at the 2000-level or above or permission of the Department.

Lectures three hours a week.

PHIL 2300 [0.5 credit] (formerly 32.230\*)

#### **Believing and Knowing**

Discussion of fundamental issues concerning the relation between evidence, rationality, and knowledge. Topics may include: skepticism, the nature of belief, the structure of justification, the relative contributions of reason and sense experience to knowledge, innate knowledge, the problem of induction, and the knowledge of other minds.

Prerequisite: A course in philosophy or second year standing.

PHIL 2301 [0.5 credit] (formerly 32.231\*)

#### **Introduction to the Philosophy of Science**

Philosophical issues arising out of the attempt to understand the world scientifically. Topics may include: scientific methodology, revolution, observation, explanation, causation, induction, reduction, the difference between natural and social scientific understanding, realism, instrumentalism, constructivism.

Prerequisite: a course in philosophy or second year standing.

PHIL 2302 [0.5 credit]

#### **Metaphysics**

Introduction to philosophical issues concerning the fundamental nature of being. Topics may include: time and temporality, space, substance, universals/particulars, identity, causation, freedom/determinism, the nature of norms.

Prerequisite: a course in philosophy or second year standing.

PHIL 2306 [0.5 credit] (formerly 32.236\*)

#### **Philosophy and Feminism**

A study of philosophical issues arising from feminism. The course includes discussions of the relations between feminism, reason and ideological commitment, as well as critical evaluation of contemporary views on selected topics (e.g. abortion, pornography and censorship, affirmative action, and beauty).

Prerequisite: at least 0.5 credit in Philosophy or second-year standing.

Lectures two and one half hours a week.

PHIL 2307 [0.5 credit] (formerly 32.237\*)

#### **Topics in Feminist Philosophy**

An examination of issues such as science and gender, feminist epistemology, feminism and post modernism, and feminist ethics. In connection with these issues, practical applications are given consideration.

Prerequisite: PHIL 2306 or permission of the Department.

Lectures two and one half hours a week.

PHIL 2405 [0.5 credit] (formerly 32.245\*)

#### **Philosophy of the Paranormal**

Examination of claims, concepts, theories and methods in parapsychology. Their scientific character and the relation of paranormal phenomena to philosophical issues such as survival of death, human nature, time, space, causality and perception.

Prerequisite: at least 0.5 credit in Philosophy or permission of the Department.

Lectures three hours a week.

PHIL 2501 [0.5 credit] (formerly 32.251\*)

#### **Introduction to Philosophy of Mind**

An introduction to major philosophical issues concerning human cognition. Topics may include: the relation of mind to body, knowledge of other minds, the relation of mental states to personhood and personal identity, mental illness, consciousness, intentionality, action, mental realism. Precludes additional credit for PHIL 2502.

Prerequisite: a course in philosophy or second year standing.

PHIL 2504 [0.5 credit] (formerly 32.254\*)

#### **Language and Communication**

Some of the central topics in the study of language and communication as pursued by linguists and philosophers. The nature of meaning; the connections between language, communication and cognition; language as a social activity. (Also listed as MCOM 2504 and LALS 2504.)

Precludes additional credit for MCOM 2800, LALS 2800 and PHIL 2800.

Prerequisite: second-year standing.

Lectures three hours a week.

PHIL 2601 [0.5 credit] (formerly 32.261\*)

#### **Philosophy of Religion**

A philosophical examination of some characteristic concepts of religion, such as faith, hope, worship, revelation, miracle, God. (Also listed as RELI 3601.)

Prerequisite: a course in Philosophy or second-year standing.

Lectures three hours a week.

PHIL 2804 [0.5 credit] (formerly 32.284\*)

#### **Environments, Technology and Values**

Advanced treatment of ethical issues concerning technologies and environments, including: sustainable development, women and the environment, biological diversity, intrinsic or natural value or rights of non-humans, humans' relation to the rest of the natural world, obligations to future generations, liberty versus equality.

Prerequisite: PHIL 1804 or permission of the Department.

Lectures three hours a week.

PHIL 2806 [0.5 credit] (formerly 32.286\*)

#### **Art and Ideas: From Ancient Greece to the Twentieth Century**

A survey of theories that have shaped the Western approach to art and art criticism, including authors such as Plato, Aquinas, Kant, Hegel and Nietzsche. (Also listed as ARTH 2806.)

Lectures three hours a week.

PHIL 2807 [0.5 credit] (formerly 32.287\*)

#### **Philosophy of Art**

Philosophical approaches to the study of art. Topics such as: the nature of art and artistic value; representation and symbolism in art; art and artifice; art and the emotions; art, culture and ideology; post-structuralism and art; theories of creativity; relationship between artworks and audiences. (Also listed as ARTH 2807.)

Lecture three hours a week.

PHIL 2900 [1.0 credit] (formerly 32.290)

#### **Truth and Propaganda**

Ancient and modern techniques of persuasion from analytical, ethical and jurisprudential perspectives. Objectivity and bias,

advertising and public relations ethics, the viability of democracy in the light of pressures on and within the modern mass media. (Also listed as MCOM 2900.)

Prerequisite: at least 0.5 credit in Philosophy or second-year standing.

Lectures three hours a week.

PHIL 3001 [0.5 credit] (formerly 32.301\*)

**Early Greek Philosophy**

A study of the pre-Socratic Greek philosophers and of the Sophists and Socrates. (Also listed as CLCV 3001).

Precludes additional credit for PHIL 2005.

Prerequisite: PHIL 2006 or permission of the Department.

Lectures three hours a week.

PHIL 3004 [0.5 credit] (formerly 32.304\*)

**Early Modern Philosophy: the Empiricists**

British philosophy of the late seventeenth and eighteenth century. Representative works of writers such as Locke, Berkeley and Hume.

Precludes additional credit for PHIL 2105.

Prerequisite: at least 0.5 credit in the history of philosophy at the 2000-level or above, or permission of the Department.

Lectures three hours a week.

PHIL 3006 [0.5 credit] (formerly 32.306\*)

**German Idealism**

The development of German idealism from Kant to Hegel.

Precludes additional credit for PHIL 3005.

Prerequisite: third-year standing or permission of the Department.

Lectures three hours a week.

PHIL 3007 [0.5 credit] (formerly 32.307\*)

**Reactions to German Idealism**

A comparative study of reactions to German Idealism through examination of authors such as Schopenhauer and Nietzsche.

Precludes additional credit for PHIL 3005.

Prerequisite: at least 0.5 credit in the history of philosophy at the 2000-level or above or permission of the Department.

Lectures and seminar three hours a week.

PHIL 3008 [0.5 credit] (formerly 32.308\*)

**Hermeneutics, Critical Theory and Deconstruction**

A study of the views of such writers as Gadamer, Habermas, Foucault and Derrida.

Precludes additional credit for PHIL 2700.

Prerequisite: at least 0.5 credit in the history of philosophy at the 2000-level or above or permission of the Department.

Lectures and seminar three hours a week.

PHIL 3101 [0.5 credit] (formerly 32.311\*)

**Philosophy of Law: The Nature of Law**

The concept of law, and those concepts commonly associated with it, viz. rules, obligations, authority, coercion, and force. (Also listed as LAWS 3101.)

Prerequisite: at least 0.5 credit in Philosophy or permission of the Department.

Lectures three hours a week.

PHIL 3102 [0.5 credit] (formerly 32.312\*)

**Philosophy of Law: The Logic of Law**

Legal reasoning and analysis of concepts of particular significance to the law, including justice, rights and duties, liability, punishment, ownership and possession. (Also listed as LAWS 3102.)

Prerequisite: PHIL 3101 or permission of the Department.

Lectures three hours a week.

PHIL 3103 [0.5 credit] (formerly 32.313\*)

**Moral Communication and Knowledge**

Moral discourse and language use, focusing on how moral claims may be justified and whether moral knowledge is possible. Topics may include: theories of moral communication and justification; objectivity; realism and relativism; the role of community and culture; Eurocentrism; morality and gender.

Prerequisite: PHIL 2101 or PHIL 2102 or permission of the Department.

Lectures three hours a week.

PHIL 3104 [0.5 credit] (formerly 32.314\*)

**The Roots of Analytic Philosophy**

In the context of the work of such writers as Frege and Bradley, a discussion of early philosophical works of Russell, Moore and Wittgenstein. In addition some early representatives of positivism and pragmatism will be examined.

Precludes additional credit for PHIL 3800.

Prerequisite: at least 2.0 credits in the history of philosophy at the 2000-level or above or permission of the Department.

Lectures and seminar three hours a week.

PHIL 3300 [1.0 credit] (formerly 32.330)

**Social and Political Philosophy**

A critical examination of major perspectives in social and political philosophy, such as classical and contemporary liberalism, theories of solidarity and general will, feminism, contractarianism, Marxism, libertarianism, and communitarianism and their bearing on contemporary issues.

Prerequisite: at least 0.5 credit in Philosophy or permission of the Department.

Lectures two and one half hours a week.

PHIL 3301 [0.5 credit] (formerly 32.331\*)

**Issues in the Philosophy of Science**

Main currents in the philosophy of natural and/or social science. Topics may include: comparative scientific methods in the natural and social sciences, realism, instrumentalism, anti-realism, constructivism, scientific reductions, theories of explanation, naturalism, and the social, political and ethical dimensions of science and scientific institutions.

Prerequisite: PHIL 2301 or permission of the department.

PHIL 3306 [0.5 credit] (formerly 32.336\*)

**Symbolic Logic**

A review of the basic techniques of propositional and predicate logic. Natural deduction and consistency trees. Soundness and completeness. Alternative semantics. Extensions to basic logic: identity, modal logic with possible world semantics, three valued systems, deontic logic.

Precludes additional credit for PHIL 3305.

Prerequisite: PHIL 2001 or permission of the Department.

Lectures three hours a week.

PHIL 3400 [1.0 credit] (formerly 32.340)

**Aesthetics**

Theories of aesthetic norms and valuation from ancient Greece onward. Applications of aesthetic theory to various genres of art. Precludes additional credit for PHIL 2400, PHIL 3401, and PHIL 3402.

Prerequisite: At least 0.5 credit in Philosophy, or HUMS 1000, or ARTH 2806 or ARTH 2807, or permission of the Department.

Seminar two hours a week.

PHIL 3401 [0.5 credit] (formerly 32.341\*)

**Aesthetic Theory**

(First half of PHIL 3400, Aesthetics.) Theories of aesthetic norms and valuation from ancient Greece onward. Examines questions such as: What is beauty? What is the relationship between aesthetic and moral values? Is taste objective or subjective? Are aesthetic values culturally determined? Typical authors include Plato, Hume, Kant, Nietzsche and Heidegger. Precludes additional credit for PHIL 2401 and PHIL 3400.

Prerequisite: At least 0.5 credit in Philosophy, or HUMS 1000, or ARTH 2806 or ARTH 2807, or permission of the Department.

Seminar two hours a week.

PHIL 3402 [0.5 credit] (formerly 32.342\*)

**Applied Aesthetics**

(Second half of PHIL 3400, Aesthetics.) Applications of aesthetic theory to various genres of art. May include issues such as: problems in the description, interpretation and evaluation of works of art, the relationship between artistic and aesthetic value, and the significance of reproduction and communication technologies for traditional aesthetic theory. Precludes additional credit for PHIL 2402 and PHIL 3400.

Prerequisite: At least 0.5 credit in Philosophy, or HUMS 1000, or ARTH 2806 or ARTH 2807, or permission of the Department.

Seminar two hours a week.

PHIL 3408 [0.5 credit] (formerly 32.348\*)

**Bioethics**

Philosophical topics such as the nature and implications of personhood, privacy, and rights in the context of medical practice and health care.

Prerequisite: PHIL 2101 or PHIL 2102; or permission of the Department.

Lectures three hours a week.

PHIL 3501 [0.5 credit] (formerly 32.351\*)

**Philosophy of Cognitive Science and Artificial Intelligence**

Philosophical issues arising from cognitive science. Topics may include: the proper methodology for studying the mind, the very possibility of a "science of mind", the computer model of the mind and reactions to it, philosophical implications of work in artificial intelligence (symbolic and connectionist).

Prerequisite: PHIL 2501 or PHIL 2502 or second year standing in Cognitive Science, or permission of the department.

PHIL 3502 [0.5 credit] (formerly 32.352\*)

**Mind and Action**

Philosophical thought concerning the relation between mentality and agency. Topics may include: the relation between belief, desire, and behaviour; rationality and normativity; representing and doing; subjectivity and intersubjectivity; physical and psychological laws; mental causation. Authors may include; Wittgenstein, Heidegger, Ryle, Sellars, Anscombe, Davidson, Taylor, and McDowell.

Prerequisite: PHIL 2501 or PHIL 2502, or permission of the Department.

PHIL 3504 [0.5 credit] (formerly 32.354\*)

**Pragmatics**

The theoretical study of language use, as pursued by linguists and philosophers. Conversational implicature, deixis; the semantics-pragmatics boundary; speaker's reference; speech acts. (Also listed as MCOM 3504 and LALS 3504.)

Precludes additional credit for MCOM 2800, LALS 2800 and PHIL 2800.

Prerequisite: at least 0.5 credits in Philosophy or Linguistics and Applied Language Studies or second-year standing.

Lectures three hours a week.

PHIL 3506 [0.5 credit] (formerly 32.356\*)

**Semantics**

The study of meaning as a part of the study of communication. Organization of the semantic structure of language, and the relation of this structure to the lexicon. (Also listed as LALS 3506.)

Prerequisite: at least 0.5 credit in Philosophy or Linguistics; or permission of the department.

Lecture three hours a week.

PHIL 3901 [0.5 credit] (formerly 32.391\*)

**Independent Study**

Essays and/or examinations based on a list of readings provided by the instructor.

Prerequisite: normally restricted to students with at least 3.0 credits in Philosophy and with high standing in Philosophy courses and permission of the Department.

PHIL 3902 [0.5 credit] (formerly 32.392\*)

**Independent Study**

Essays and/or examinations based on a list of readings provided by the instructor.

Prerequisite: normally restricted to students with at least 3.0 credits in Philosophy and with high standing in Philosophy courses and permission of the Department.

PHIL 3903 [0.5 credit] (formerly 32.393\*)

**Independent Study**

Essays and/or examinations based on a list of readings provided by the instructor.

Prerequisite: normally restricted to students with at least 3.0 credits in Philosophy and with high standing in Philosophy courses and permission of the Department.

PHIL 3906 [0.5 credit] (formerly 32.396\*)

**Independent Study**

Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.

Prerequisite: normally restricted to students with at least 3.0 credits in Philosophy and with high standing in Philosophy courses and permission of the Department.

PHIL 3907 [0.5 credit] (formerly 32.397\*)

**Independent Study**

Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.

Prerequisite: normally restricted to students with at least 3.0 credits in Philosophy and with high standing in Philosophy courses and permission of the Department.

PHIL 3908 [0.5 credit] (formerly 32.398\*)

**Independent Study**

Essays and/or examinations based on a bibliography constructed by the student in consultation with the instructor.

Prerequisite: normally restricted to students with at least 3.0 credits in Philosophy and with high standing in Philosophy courses and permission of the Department.

PHIL 4003 [0.5 credit] (formerly 32.403\*)

**Seminar in Philosophy Before the Modern Period**

Detailed study of selected philosophers or issues in philosophy before the modern period.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4004 [0.5 credit] (formerly 32.404\*)

**Seminar in Philosophy Before the Modern Period**

Detailed study of selected philosophers or issues in philosophy before the modern period.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4005 [0.5 credit] (formerly 32.405\*)

**Seminar in Modern Philosophy**

Detailed study of selected philosophers or issues in modern philosophy.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4006 [0.5 credit] (formerly 32.406\*)

**Seminar in Modern Philosophy**

Detailed study of selected philosophers or issues in modern philosophy. Also offered at the graduate level, with additional or different requirements, as PHIL 5400, for which additional credit is precluded.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4007 [0.5 credit] (formerly 32.407\*)

**Seminar in Contemporary Philosophy**

Detailed study of selected philosophers or issues in contemporary philosophy.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4008 [0.5 credit] (formerly 32.408\*)

**Seminar in Contemporary Philosophy**

Detailed study of selected philosophers or issues in contemporary philosophy.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.

Seminar two hours a week.

PHIL 4103 [0.5 credit] (formerly 32.413\*)

**Seminar in Philosophy of Action, Mind or Language**

Detailed study of selected issues or the work of selected philosophers in theory of action, or philosophy of mind, or philosophy of language. Also offered at the graduate level, with additional or different requirements, as PHIL 5200, for which additional credit is precluded.

Prerequisite: eligibility for fourth year standing in a Philosophy Honours programme or permission of the Department.



PHIL 4104 [0.5 credit] (formerly 32.414\*)

**Seminar in Philosophy of Language or Mind**

Detailed study of selected issues or the work of selected philosophers in philosophy of language or mind. Also offered at the graduate level, with additional or different requirements, as PHIL 5200, for which additional credit is precluded.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4105 [0.5 credit] (formerly 32.415\*)

**Seminar in Moral or Political Philosophy**

Detailed study of selected issues or the work of selected philosophers in moral or political philosophy. Also offered at the graduate level, with additional or different requirements, as PHIL 5300, for which additional credit is precluded.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4106 [0.5 credit] (formerly 32.416\*)

**Seminar in Moral or Political Philosophy**

Detailed study of selected issues or the work of selected philosophers in moral or political philosophy. Also offered at the graduate level, with additional or different requirements, as PHIL 5300, for which additional credit is precluded.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4201 [0.5 credit] (formerly 32.421\*)

**Special Topic in Epistemology**

Detailed study of a special topic in epistemology.

Prerequisite: fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4202 [0.5 credit] (formerly 32.422\*)

**Special Topic in Epistemology**

Detailed study of a special topic in epistemology.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4203 [0.5 credit] (formerly 32.423\*)

**Special Topic in Feminist Philosophy**

Detailed study of a special topic in feminist philosophy.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4204 [0.5 credit] (formerly 32.424\*)

**Special Topic in Feminist Philosophy**

Detailed study of a special topic in feminist philosophy.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4205 [1.0 credit]

**Special Topic in Metaphysics**

Detailed study of a special topic in metaphysics.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4206 [0.5 credit]

**Special Topic in Metaphysics**

Detailed study of a special topic in metaphysics.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4301 [0.5 credit] (formerly 32.431\*)

**Special Topic in Logic**

Detailed study of a special topic in Logic.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4302 [0.5 credit] (formerly 32.432\*)

**Special Topic in Logic**

Detailed study of a special topic in Logic.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4303 [0.5 credit] (formerly 32.433\*)

**Special Topic in Philosophical Logic**

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4304 [0.5 credit] (formerly 32.434\*)

**Special Topic in Philosophical Logic**

Detailed study of a special topic in Philosophical Logic.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4403 [0.5 credit] (formerly 32.443\*)

**Special Topic in Applied Ethics**

Detailed study of a special topic in applied ethics.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4404 [0.5 credit] (formerly 32.444\*)

**Special Topic in Applied Ethics**

Detailed study of a special topic in applied ethics.

Prerequisite: eligibility for fourth-year standing in a Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4405 [0.5 credit] (formerly 32.445\*)

**Special Topic in Aesthetics or Philosophy of Art**

Detailed study of a special issue or a single author in aesthetics and/or philosophy of art.

Prerequisite: eligibility for fourth-year standing in Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4406 [0.5 credit] (formerly 32.446\*)

**Special Topic in Aesthetics or Philosophy of Art**

Detailed study of a special issue or a single author in aesthetics and/or philosophy of art.

Prerequisite: eligibility for fourth-year standing in Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4407 [0.5 credit] (formerly 32.447\*)

**Special Topic in Philosophy of Law**

Detailed study of a special topic in philosophy of law. (Also listed as LAWS 4103)

Prerequisite: eligibility for fourth-year standing in a Law or Philosophy Honours program or permission of either Department.  
Seminar two hours a week.

PHIL 4408 [0.5 credit] (formerly 32.448\*)

**Special Topic in Philosophy of Law**

Detailed study of a special topic in philosophy of law. (Also listed as LAWS 4104)

Prerequisite: eligibility for fourth-year standing in a Law or Philosophy Honours program or permission of either Department.  
Seminar two hours a week.

PHIL 4503 [0.5 credit] (formerly 32.453\*)

**Special Topic in Philosophy of Computing**

Detailed study of a special topic in philosophy of computing.

Prerequisite: eligibility for fourth-year standing in Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4504 [0.5 credit] (formerly 32.454\*)

**Special Topic in Philosophy of Computing**

Detailed study of a special topic in philosophy of computing.

Prerequisite: eligibility for fourth-year standing in Philosophy Honours program or permission of the Department.  
Seminar two hours a week.

PHIL 4506 [0.5 credit] (formerly 32.456\*)  
**Special Topic in Philosophy of Science**  
 Detailed study of a special topic in philosophy of science.  
 Prerequisite: eligibility for fourth-year standing in Philosophy Honours program or permission of the Department.  
 Seminar two hours a week.

PHIL 4507 [0.5 credit] (formerly 32.457\*)  
**Special Topic in Philosophy of Science**  
 Detailed study of a special topic in philosophy of science.  
 Prerequisite: eligibility for fourth-year standing in Philosophy Honours program or permission of the Department.  
 Seminar two hours a week.

PHIL 4606 [0.5 credit] (formerly 32.466\*)  
**Special Topic in Continental Philosophy**  
 Prerequisite: eligibility for fourth-year standing in Philosophy Honours program or permission of the Department.  
 Seminar two hours a week.

PHIL 4607 [0.5 credit] (formerly 32.467\*)  
**Special Topic in Continental Philosophy**  
 Prerequisite: eligibility for fourth-year standing in Philosophy Honours program or permission of the Department.  
 Seminar two hours a week.

PHIL 4900 [1.0 credit] (formerly 32.490)  
**Tutorial**  
 Prerequisite: permission of the Department.

PHIL 4901 [0.5 credit] (formerly 32.491\*)  
**Tutorial**  
 Prerequisite: permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4902 [0.5 credit] (formerly 32.492\*)  
**Tutorial**  
 Prerequisite: permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4903 [0.5 credit] (formerly 32.493\*)  
**Tutorial**  
 Prerequisite: permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4904 [0.5 credit] (formerly 32.494\*)  
**Tutorial**  
 Prerequisite: permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

PHIL 4906 [0.5 credit] (formerly 32.496\*)  
**Tutorial**  
 Prerequisite: permission of the Department. Note: Students who wish to enrol in a tutorial course must consult the Undergraduate Supervisor, before registration.

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## Physics (PHYS)

Department of Physics  
 Faculty of Science

*Note:*  
 Please consult with the Physics Department for advice on which first year course to take.

PHYS 1001 [0.5 credit] (formerly 75.101\*)  
**Foundations of Physics I**  
 This calculus-based course covers mechanics, gravitation, oscillations, and thermodynamics. The laboratory is an essential and autonomous part of the course. This is a specialist course for students intending to take further courses in Physics. Precludes additional credit for PHYS 1003, PHYS 1005 and PHYS 1007.  
 Prerequisite: OAC's in Physics and Calculus (or equivalents). MATH 1004 or MATH 1007 or MATH 1002 (may be taken concurrently);

or permission of the Department. Although not a requirement, an OAC in Algebra and Geometry is recommended.  
 Lectures three hours a week, tutorial one hour a week, laboratory three hours a week.

PHYS 1002 [0.5 credit] (formerly 75.102\*)  
**Foundations of Physics II**  
 An introduction to relativity, electricity, magnetism, wave motion and quantum mechanics. The laboratory is an essential and autonomous part of the course. This is a specialist course for students intending to take further courses in physics. Precludes additional credit for PHYS 1004, PHYS 1005 and PHYS 1008.

Prerequisites: PHYS 1001, or PHYS 1003, or PHYS 1007 with a grade of B-; MATH 1004 or MATH 1007 or MATH 1002 (may be taken concurrently); or permission of the Department.  
 Lectures three hours a week, tutorial one hour a week, laboratory three hours a week.

PHYS 1003 [0.5 credit] (formerly 75.103\*)  
**Introductory Mechanics and Thermodynamics**  
 This calculus-based course covers mechanics, gravitation, oscillations, and thermodynamics. The laboratory is an essential and autonomous part of the course. Precludes additional credit for PHYS 1001, PHYS 1005 and PHYS 1007.

Prerequisites: OAC's in Physics and Calculus (or equivalents); MATH 1004 or MATH 1007 or MATH 1002 (may be taken concurrently); or permission of the Department. Although not a requirement, an OAC in Algebra and Geometry is recommended.

Lectures three hours a week, tutorial one hour a week, laboratory three hours a week.

PHYS 1004 [0.5 credit] (formerly 75.104\*)  
**Introductory Electromagnetism and Wave Motion**  
 This calculus-based course introduces electricity, magnetism, oscillations, waves and optics. The laboratory is an essential and autonomous part of the course. Precludes additional credit for PHYS 1002, PHYS 1005 and PHYS 1008.

Prerequisites: MATH 1004 or MATH 1007, ECOR 1101 or PHYS 1001 or PHYS 1003 or PHYS 1007 with a grade of B-, or permission of the Department.  
 Lectures three hours a week, tutorial one hour a week, laboratory three hours a week.

PHYS 1007 [0.5 credit] (formerly 75.107\*)  
**Elementary University Physics I**  
 Mechanics, properties of matter, thermodynamics. Applications chosen in part from the life sciences. For students who do not intend to take additional courses in Physics or who lack the prerequisites for PHYS 1001. Precludes additional credit for PHYS 1001, PHYS 1003 and PHYS 1005.

Prerequisite: MATH 0107 (may be taken concurrently).  
 Lectures three hours a week, laboratory three hours a week.

PHYS 1008 [0.5 credit] (formerly 75.108\*)  
**Elementary University Physics II**  
 Electricity and magnetism, DC and AC circuits, wave motion and light. Elements of modern physics. Applications chosen in part from the life sciences. Precludes additional credit for PHYS 1002 and PHYS 1005. Prerequisite: PHYS 1001 or PHYS 1003 or PHYS 1007.  
 Lectures three hours a week, laboratory three hours a week.

PHYS 1901 [0.5 credit] (formerly 75.191\*)  
**Planetary Astronomy**  
 Description of the known stellar, galactic and extra-galactic systems together with the instruments used to study them. Modern ideas concerning the structure, origin and evolution of our own planet. Formation of the Moon - Earth system. Study of the planets in our solar system. A 14" telescope is available for student use. Precludes additional credit for PHYS 2203.  
 Lectures two and one-half hours a week.  
 Note: Science students may only take this as a Free Elective.

PHYS 1902 [0.5 credit] (formerly 75.192\*)

**From our Star to the Cosmos**

Starting with the Sun, the course studies its composition and source of power, then compares our Sun with the other stars in the galaxy and beyond. Modern ideas concerning the structure, origin and evolution of the universe, pulsars and supernovae are examined. A 14-inch telescope is available for student use. Precludes additional credit for PHYS 2203.

Lectures two and one-half hours a week.

Note: Science students may only take this course as a Free Elective.

PHYS 2101 [0.5 credit] (formerly 75.211\*)

**Mechanics and Properties of Matter**

Equations of motion for a single particle. Harmonic oscillation. Noninertial reference frames. Orbits in a central force field. Motion of systems of particles and of rigid bodies. Introduction to special relativity. Laboratory experiments in classical mechanics and properties of matter.

Prerequisites: PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall average of B- or better; MATH 1007 and MATH 1107, or MATH 1002 and MATH 1102.

Lectures three hours a week, laboratory three hours a week, tutorials (optional) once a week.

PHYS 2202 [0.5 credit] (formerly 75.222\*)

**Wave Motion and Optics**

Physical optics based on electromagnetic theory, oscillator model for dispersion, absorption, scattering, Huygen's principle, reflection and transmission as coherent scattering. Interference, coherence length, diffraction, polarization, double refraction. Geometrical optics.

Prerequisites: PHYS 2604.

Lectures three hours a week, laboratory three hours a week.

PHYS 2203 [0.5 credit] (formerly 75.223\*)

**Astronomy**

The observational basis of astronomy. The history of astronomy, properties of light, solar system observations and stellar astronomy. Precludes additional credit for PHYS 1900 and PHYS 2200.

Prerequisites: PHYS 1001 and PHYS 1002 or PHYS 1005 (with a grade of B- or better); PHYS 1002 or PHYS 1004 or PHYS 1008 with a grade of B- or better may also be used if MATH 1004 or MATH 1007 or MATH 1002 have been taken; or permission of the Department.

Lectures three hours a week.

PHYS 2305 [0.5 credit] (formerly 75.235\*)

**Electricity and Magnetism**

Electrostatics, field intensities in various charge configurations, Gauss' law, electrostatic energy. Dielectric materials, dipoles, molecular polarizability. Steady currents, properties of electrical conductors. Magnetic effects of currents and motion of charges in electric and magnetic fields. Time varying currents, electromagnetic induction. Magnetic materials and magnetic measurements.

Prerequisites: PHYS 1001, PHYS 1002, or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall grade of B- or better.

Lectures three hours a week, laboratory three hours a week.

PHYS 2306 [0.5 credit] (formerly 75.236\*)

**Physics of Electrical and Electronic Measurements I**

D.C. and A.C. circuit theory. Resonant circuits. Basic measuring devices, the oscilloscope; impedances, bandwidth, noise; vacuum tubes, transistors, useful approximations for circuit design; feedback, amplifiers, oscillators; operational circuits; digital circuits. Lectures emphasize the physical basis of instrument design. Laboratory emphasizes modern digital instrumentation.

Prerequisites: PHYS 1001, PHYS 1002 or PHYS 1003 and PHYS 1004, alternatively PHYS 1007 and PHYS 1008 with an overall grade of B- or better.

Lectures three hours a week, laboratory three hours a week.

PHYS 2604 [0.5 credit] (formerly 75.264\*)

**Modern Physics I**

The course is designed to provide a logical transition from classical to modern physics. Special relativity. Kinetic theory. Thermal radiation. Rutherford scattering, atomic models. Photoelectric effect, Compton scattering. Bohr theory of the

hydrogen atom. Atomic energy states, optical spectra, lasers. X-rays. Radioactivity. Quantum Mechanics.

Precludes additional credit for PHYS 2101, PHYS 2305, PHYS 2602.

Prerequisites: PHYS 1001 and PHYS 1002, or PHYS 1003 and PHYS 1004 (PHYS 1007 and PHYS 1008 are also acceptable provided a minimum average grade of B- is presented); plus MATH 1004 and MATH 1104, or MATH 1007 and MATH 1107, or MATH 1002 and MATH 1102.

Lectures three hours a week.

PHYS 3000[1.0 credit] (formerly 75.300\*)

**Third-Year Laboratory**

Students complete a small number of independent projects in modern optics, holography, optical spectroscopy, nuclear spectroscopy, cosmic radiation, measurements, etc. Development of skills in laboratory techniques in design/construction of research apparatus.

Precludes additional credit for PHYS 3001, PHYS 3002, PHYS 3007 and PHYS 3008.

Prerequisite: PHYS 2202 and PHYS 2305, or permission of the Department.

Laboratory and seminar six hours a week, workshop three hours a week.

PHYS 3007 [0.5 credit] (formerly 75.307\*)

**Third Year Physics Laboratory: Selected Experiments and Seminars**

Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. An exercise on literature searches and student seminars on experimental and numerical methods are included.

Prerequisites: PHYS 2202 and PHYS 2604, or permission of the Department.

Six hours a week.

PHYS 3008 [0.5 credit] (formerly 75.308\*)

**Third Year Physics Laboratory: Selected Experiments and Workshop**

Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. Instruction on instrumentation building techniques will be given.

Prerequisites: PHYS 2202 and PHYS 2604, or permission of the department.

Six hours a week.

PHYS 3204 [0.5 credit] (formerly 75.324\*)

**Astrophysics and Cosmology**

A discussion of stellar models, in particular stellar evolution and the end states of stars such as neutron stars and black holes. Galaxies and quasars; cosmology.

Precludes additional credit for PHYS 1900, PHYS 2200, PHYS 2204.

Prerequisite: PHYS 2203 or permission of the Department.

Lectures three hours a week.

PHYS 3207 [0.5 credit] (formerly 75.327\*)

**Topics in Biophysics**

An introduction is made to biophysics. Topics in biology: animal movement, food irradiation, DNA damage and repair following irradiation, quantum tunneling in enzyme kinetics. Applications of physics in medicine: radiobiology, cancer treatment, and medical imaging.

Prerequisites: BIOL 1003 and BIOL 1004, either PHYS 1001 and PHYS 1002 or PHYS 1003 and PHYS 1004 or PHYS 1007 and PHYS 1008, plus one of BIOL 2200, CHEM 2101, or PHYS 2604; or permission of the Department.

Lectures three hours a week, tutorial or seminar one hour a week.

PHYS 3308 [0.5 credit] (formerly 75.338\*)

**Electromagnetism**

Electrostatic field and magnetostatics. Examples involving Laplace's and Poisson's equations; vector potential; Faraday's laws of induction; waves in vacuum and dielectric media.

Prerequisites: PHYS 2305 and PHYS 3807, or permission of the Department.

Lectures three hours a week.



PHYS 3402 [0.5 credit] (formerly 75.342\*)

### Heat and Thermodynamics

Zeroth, First, Second and Third Laws of Thermodynamics; enthalpy, Helmholtz and Gibbs functions and the Maxwell relations; phase transitions; thermodynamics of magnetism; cryogenics cooling by Joule-Thompson effect, adiabatic expansion of a gas, adiabatic demagnetization, helium dilution refrigeration; black body radiation; negative temperatures.

Prerequisites: PHYS 2101 and PHYS 2305, MATH 2007, MATH 2008, MATH 2107 and MATH 2401 or permission of the Department.

Lectures three hours a week.

PHYS 3606 [0.5 credit] (formerly 75.366\*)

### Modern Physics II

Elements of condensed matter physics: semiconductors, superconductivity. Modern optics. Elements of nuclear physics, fission and fusion methods for generating energy. Introduction to particle physics. Ionizing radiation: production, interaction with matter, detection. Medical physics: radiation biophysics, cancer therapy, imaging.

Precludes additional credit for PHYS 3604.

Prerequisites: Registration in the Applied Physics or Engineering Physics program and permission of the Department.

Lectures three hours a week, laboratory two hours a week.

PHYS 3701 [0.5 credit] (formerly 75.371\*)

### Elements of Quantum Mechanics

Analysis of interference experiments with waves and particles; fundamental concepts of quantum mechanics, Schrödinger equation; angular momentum, atomic beams; hydrogen atom; atomic and molecular spectroscopy; Pauli principle; simple applications in the physics of elementary particles.

Precludes additional credit for PHYS 3602.

Prerequisite: PHYS 2604 permission of the Department.

Lectures three hours a week.

PHYS 3801 [0.5 credit] (formerly 75.381\*)

### Classical Mechanics

Introduction to Lagrangian and Hamiltonian mechanics: Poisson brackets, tensors and dyadics; rigid body rotations; introductory fluid mechanics coupled systems and normal coordinates; relativistic dynamics.

Prerequisites: PHYS 2101, PHYS 2202, PHYS 2305, MATH 2007, MATH 2008, MATH 2107, MATH 2401 or permission of the Department.

Lectures three hours a week.

PHYS 3802 [0.5 credit] (formerly 75.382\*)

### Advanced Dynamics

Equations of motion for a single particle. Oscillatory Motion. Lagrangian and Hamiltonian formulations of mechanics. Central force motion. Motion of systems of particles and of rigid bodies.

Prerequisites: PHYS 2202, MATH 2004 and MATH 3705 or permission of the Department. Students in the Double Honours Maths Physics program may take these prerequisites, or their equivalents concurrently.

Lectures three hours a week.

PHYS 3807 [0.5 credit] (formerly 75.387\*)

### Mathematical Physics I

Boundary Value problems involving curvilinear coordinates; spherical harmonics, Bessel functions, Green's functions. Functions of a complex variable: analytic functions, contour integration, residue calculus.

Precludes additional credit for MATH 3007, MATH 3706 and MATH 3007.

Prerequisites: PHYS 2202 MATH 2004, MATH 2008, MATH 2107, MATH 3705 or permission of the Department.

Lectures three hours a week.

PHYS 3808 [0.5 credit] (formerly 75.388\*)

### Mathematical Physics II

Solution of second-order total differential equations by Frobenius' method. Sturm-Liouville theory. Special functions: Legendre, Bessel, Hermite, Laguerre and associated functions. Partial differential equations: method of separation of variables, eigenfunctions and eigenvalues and eigenfunction expansions.

Green's function techniques for solving inhomogeneous partial differential equations.

Precludes additional credit for MATH 3004, MATH 3705, and PHYS 3806.

Prerequisites: PHYS 3807 or MATH 3007 or permission of the Department.

Lectures three hours a week.

PHYS 3904 [0.5 credit] (formerly 75.394\*)

### Co-operative Work Term Report 1

Provides practical experience for students enrolled in the Co-operative option. To receive course credit students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns.

Prerequisites: Registration in the Physics Co-operative option and permission of the Department.

Not transferable for academic credit.

PHYS 3905 [0.5 credit] (formerly 75.395\*)

### Co-operative Work Term Report 2

Provides practical experience for students enrolled in the Co-operative option. To receive course credit students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns.

Prerequisites: Registration in the Physics Co-operative option and permission of the Department.

PHYS 3906 [0.5 credit] (formerly 75.396\*)

### Co-operative Work Term Report 3

Provides practical experience for students enrolled in the Co-operative option. To receive course credit students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns.

Prerequisites: Registration in the Physics Co-operative option and permission of the Department.

PHYS 4000 [1.0 credit] (formerly 75.400)

### Fourth-Year Laboratory

The student is expected to complete detailed projects involving some original planning in both concept and experimental technique. Projects are similar to PHYS 3000 but are of a more sophisticated nature.

Precludes additional credit for PHYS 4007 and PHYS 4008.

Prerequisite: PHYS 3000 or PHYS 3007 or PHYS 3008.

Laboratory and seminar six hours a week.

PHYS 4007 [0.5 credit] (formerly 75.407\*)

### Fourth Year Physics Laboratory: Selected Experiments and Seminars

Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. An exercise on literature searches and student seminars on experimental and numerical methods are included.

Prerequisites: PHYS 3008, or PHYS 2202 and PHYS 2604 and permission of the department.

Six hours a week.

PHYS 4008 [0.5 credit] (formerly 75.408\*)

### Fourth Year Physics Laboratory: Selected Experiments and Workshop

Students complete a small number of experiments selected from modern optics, holography, atomic physics, nuclear spectroscopy, radiation, etc. Instruction on instrumentation building techniques will be given.

Prerequisites: PHYS 3007, or PHYS 2202 and PHYS 2604 and permission of the department.

Six hours a week.

PHYS 4201 [0.5 credit] (formerly 75.421\*)

### Topics in Astrophysics and Cosmology

Stellar evolution, including, in particular, stellar modeling, main sequence stars, red giants and the end states of stars. Introduction to general relativity, black holes and related phenomena, big bang cosmology.

Prerequisites: PHYS 2203, PHYS 2204, PHYS 2604, PHYS 3606, PHYS 3701 or permission of the Department.

Lectures three hours a week.

PHYS 4203 [0.5 credit] (formerly 75.423\*)

**Physical Applications of Fourier Analysis**

Laplace transform and its application to electrical circuits. Fourier transform, convolution. Sampling theorem. Applications to imaging: descriptors of spatial resolution, filtering. Correlation, noise power. Discrete Fourier transform, FFT. Filtering of noisy signals. Image reconstruction in computed tomography and magnetic resonance. Integral transforms and their application to boundary value problems.

Precludes additional credit for PHYS 4204.

Prerequisites: MATH 3705, or permission of the Department.

Lectures three hours a week.

PHYS 4208 [0.5 credit] (formerly 75.428\*)

**Modern Optics**

Laser theory: stimulated emission, cavity optics, modes; gain and bandwidth; Gaussian beams; atomic and molecular lasers. Mode locking, Q switching. Diffraction theory, coherence, Fourier optics, holography, laser applications. Optical communication systems: nonlinear effects - devices, fiber optics, fiber sensors, integrated optics.

Precludes additional credit for PHYS 4207.

Prerequisites: PHYS 2202, PHYS 3606, PHYS 3701; ELEC 3105, ELEC 3909 or permission of the Department.

Lectures three hours a week.

PHYS 4307 [0.5 credit] (formerly 75.437\*)

**Electromagnetic Radiation**

Electromagnetic wave propagation in a vacuum, dielectrics, conductors, and ionized gases, reflection, refraction, polarization at the plane boundary between two media; waveguide and transmission line propagation; dipole and quadrupole radiation fields; antenna systems. Electromagnetic mass, radiation pressure. Tensor notation, transformation of the electromagnetic fields.

Prerequisites: PHYS 3308, PHYS 3801, PHYS 3807 and PHYS 3808 (except for Mathematics and Physics Double Honours students), or permission of the Department.

Lectures three hours a week.

PHYS 4407 [0.5 credit] (formerly 75.447\*)

**Statistical Physics**

Equilibrium statistical mechanics and its relation to thermodynamics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics are derived, and applied in appropriate physical situations. Fluctuations. Kinetics and transport processes, including the Boltzmann transport equation and some of its applications.

Prerequisite: PHYS 3402, PHYS 2602 or PHYS 3601, PHYS 3701 or PHYS 3602, PHYS 4707 (may be taken concurrently); or permission of the Department.

Lectures three hours a week.

PHYS 4409 [0.5 credit] (formerly 75.449\*)

**Thermodynamics and Statistical Physics**

The three Laws of Thermodynamics, enthalpy, Helmholtz and Gibbs functions. Equilibrium statistical mechanics and its relation to thermodynamics. Maxwell-Boltzmann, Bose-Einstein and Fermi-Dirac statistics.

Precludes additional credit for PHYS 3402 and PHYS 4407.

Prerequisites: PHYS 3701; MATH 2004 and MATH 3705; permission of the Department.

PHYS 4508 [0.5 credit] (formerly 75.458\*)

**Solid State Physics**

An introduction to solid state physics. Topics include crystal structure, phonons and lattice vibrations, conductors, semiconductors, insulators and superconductivity.

Prerequisites: PHYS 2604, PHYS 3606, PHYS 3701, or permission of the Department.

Lectures three hours a week.

PHYS 4602 [0.5 credit] (formerly 75.462\*)

**Particle Physics**

Properties of leptons, quarks and hadrons. The fundamental interactions, conservation laws, invariance principles and quantum numbers. Resonances in hadron-hadron interactions. Three body phase space. Dalitz plots. Quark model of hadrons, mass formulae. Weak interactions, parity violation, decay of

neutral kaons, CP violation, Cabibbo theory. Also offered at the graduate level, with additional or different requirements, as PHYS 5602, for which additional credit is precluded.

Prerequisite: PHYS 4707 or permission of the Department.

Lectures three hours a week.

PHYS 4608 [0.5 credit] (formerly 75.468\*)

**Nuclear Physics**

Ground state properties of nuclei, nuclear forces, nuclear levels. Qualitative treatment of Fermi gas model, liquid drop model, shell model and collective model. Alpha, beta and gamma radioactivities. Fission. Passage of particles through matter. Particle detectors. Elements of neutron physics and nuclear reactors.

Prerequisites: PHYS 3601 and PHYS 3602 or permission of the Department.

Lectures three hours a week.

PHYS 4707 [0.5 credit] (formerly 75.477\*)

**Introduction to Quantum Mechanics I**

The basic interpretative postulates of quantum mechanics are applied to simple one-dimensional problems, and angular momentum theory.

Prerequisites: PHYS 3606, PHYS 3701, PHYS 3807, or permission of the Department.

Lectures three hours a week.

PHYS 4708 [0.5 credit] (formerly 75.478\*)

**Introduction to Quantum Mechanics II**

Scattering theory and application; bound state problems; approximation methods.

Prerequisite: PHYS 4707 or permission of the Department.

Lectures three hours a week.

PHYS 4807 [0.5 credit] (formerly 75.487\*)

**Computational Physics**

Computational methods used in analysis of experimental data. Introduction to probability and random variables. Monte Carlo methods for simulation of random processes. Statistical Methods for parameter estimation and hypothesis tests. Confidence intervals. Multivariate data classification. Unfolding methods. Examples primarily from particle and medical physics. Also offered at the graduate level, with different requirements, as PHYS 5002, for which additional credit is precluded.

Prerequisite: An ability to program in FORTRAN, Java, C or C++, and permission of the Department.

Lectures three hours a week

PHYS 4901 [0.5 credit] (formerly 75.491\*)

**Special Topics in Physics**

Each year, at the direction of the Department, a course on a special topic may be offered.

Prerequisite: permission of the Department.

PHYS 4905 [0.5 credit] (formerly 75.495\*)

**Cooperative Work Term Report 4**

Provides practical experience for students enrolled in the Co-operative option. To receive course credit students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns.

Prerequisites: Registration in the Physics Co-operative education option and permission of the Department.

PHYS 4906 [0.5 credit] (formerly 75.496\*)

**Cooperative Work Term Report 5**

Provides practical experience for students enrolled in the Co-operative option. To receive course credit students must receive satisfactory evaluations from their work term employer. Written and oral reports will be required. Graded as Sat or Uns.

Prerequisites: Registration in the Physics Co-operative education option and permission of the Department.

PHYS 4907 [0.5 credit] (formerly 75.497\*)

**Fourth-Year Project**

Same as PHYS 4909 except that it extends over the fall term only. (See PHYS 4909 for details.)

Prerequisite: permission of the Department.

A minimum of six hours laboratory or private study a week.

PHYS 4908 [0.5 credit] (formerly 75.498\*)

**Fourth-Year Project**

Same as PHYS 4909 except that it extends over the winter term only. (See PHYS 4909 for details.)

Prerequisite: permission of the Department.  
A minimum of six hours laboratory or private study a week.

PHYS 4909 [1.0 credit] (formerly 75.499)

#### Fourth-Year Project

These are advanced projects of an experimental or theoretical nature with an orientation towards research. A written progress report, by mid-term for PHYS 4907, PHYS 4908, and by mid-year for PHYS 4909, must be submitted to the student's supervisor prior to the last day for withdrawal from the course. A written and an oral report are required at the conclusion of the project.

Prerequisite: permission of the Department.  
A minimum of six hours laboratory or private study a week.

## Political Science (PSCI)

Department of Political Science  
Faculty of Public Affairs and Management

PSCI 1000 [1.0 credit] (formerly 47.100)

#### Introduction to Political Science

Contemporary political issues and problems: political thought, focusing upon the clash of modern ideologies; comparative government, starting from the Canadian system, and including one other western democracy, a post-communist system and a developing country; international politics; methods of inquiry. Precludes additional credit for PSCI 1001 and PSCI 1002. Lectures three hours a week.

PSCI 1001 [0.5 credit] (formerly 47.101\*)

#### Great Political Questions

Introduction to the central ideas and debates shaping the contemporary political world – east, north, west and south. Topics will vary from year to year but may include liberty and equality, state and nation, sovereignty and anarchy, democracy and dictatorship, and political identity and culture. The combination of PSCI 1001 and PSCI 1002 is an alternative Introduction to Political Science to that offered in PSCI 1000. Precludes additional credit for PSCI 1000. Lectures three hours a week.

PSCI 1002 [0.5 credit] (formerly 47.102\*)

#### Global Political Issues

Contemporary political issues in Canada and around the world. Topics will vary from year to year but may include war and peace, human rights, wealth and poverty, Canadian unity, aboriginal politics, nationalism, and globalization. The combination of PSCI 1001 and PSCI 1002 is an alternative Introduction to Political Science to that offered in PSCI 1000. Precludes additional credit for PSCI 1000. Lectures three hours a week.

PSCI 1101 [0.5 credit] (formerly 47.111\*)

#### Global Political Cultures

The political role of culture in a global context. Investigates the integral role of architecture, art, landscape and film in legitimating, popularizing and propagating political endeavours. The imperialism of cultural exchanges between developed and developing countries. Precludes additional credit for FYSM 1301. Lectures three hours a week.

PSCI 1102 [0.5 credit] (formerly 47.112\*)

#### North American Politics

Canadian, U.S. and Mexican political institutions and the impact of the increasing cultural, economic, political and military interdependence of these three countries. Topics may include migration, the environment, gender, development and underdevelopment, sovereignty and democracy. Precludes additional credit for FYSM 1302. Lectures three hours a week.

PSCI 1103 [0.5 credit] (formerly 47.113\*)

#### Social Impact of Transformation in the Post Communist Era

The political, economic and social changes that have accompanied the collapse of the Berlin Wall. Examines the role of the society in these political upheavals and the impact of the end of the Cold War

on reform in Western and developing countries.

Precludes additional credit for FYSM 1002, EURR 1303 and EURR 1103.

Lectures three hours a week.

PSCI 1104 [0.5 credit] (formerly 47.114\*)

#### Politics of Race

This course examines the meaning, sources and practice of racialism, as well as efforts to combat it, in a comparative context. Case studies will include South Africa, the United States, and Canada.

Precludes additional credit for FYSM 1304.

Lectures three hours a week.

PSCI 1105 [0.5 credit] (formerly 47.115\*)

#### Indigenous Politics

Struggles of indigenous peoples against colonial dispossession and for political autonomy, rights to land and resources, protection of sacred sites, language and cultural revival. Case studies will include Australia, Canada, Mexico, New Zealand and the United States. Precludes additional credit for FYSM 1305.

Lectures three hours a week.

### Second Year

PSCI 2001 [1.0 credit] (formerly 47.201)

#### Introduction à la politique canadienne

Une vue générale du processus politique et des institutions politiques au Canada. Travaux peuvent être présentés en français ou en anglais.

Precludes additional credit for PSCI 2000.

Prerequisite: second-year standing.

Lectures three hours a week.

PSCI 2002 [0.5 credit] (formerly 47.202\*)

#### Canadian Political Environment

An examination of the cultural, social, and economic context of Canadian politics, including interest groups and social movements, regionalism, language, ethnicity, and gender.

Precludes additional credit for PSCI 2000.

Prerequisite: second-year standing.

Lectures three hours a week.

PSCI 2003 [0.5 credit] (formerly 47.203\*)

#### Canadian Political Institutions

An examination of Canadian political institutions, including federalism, Parliament, the constitution, political parties and the electoral system.

Precludes additional credit for PSCI 2000.

Prerequisite: second-year standing.

Lectures three hours a week.

PSCI 2101 [0.5 credit] (formerly 47.211\*)

#### Comparative Politics of Industrialized States

An introduction to domestic politics in the industrialized world. States are compared on the basis of regime type (such as liberal democracy, fascism, and communism), processes (such as modernization and revolution), and institutions (such as executives, legislatures, and political parties).

Precludes additional credit for PSCI 2105.

Prerequisite: second-year standing.

Lectures three hours a week.

PSCI 2102 [0.5 credit] (formerly 47.212\*)

#### Comparative Politics of Development and Underdevelopment

An introduction to domestic politics in post-colonial and developing states. Topics may include nationalism, authoritarianism, economic development, revolution, democratization, and the politics of gender, religion, and ethnicity.

Precludes additional credit for PSCI 2105.

Prerequisite: second-year standing.

Lectures three hours a week.

PSCI 2300 [1.0 credit] (formerly 47.230)

#### History of Political Thought

Western political thought from classical times to the nineteenth century: Plato, Aristotle, Machiavelli, Hobbes, Locke, Rousseau and other thinkers.

Precludes additional credit for PSCI 2301.

Prerequisite: second-year standing.

Lectures three hours a week.



PSCI 2400 [1.0 credit] (formerly 47.240)

**Introduction to Public Administration and Public Policy**

The important concepts, institutions, and processes in the fields of public administration and public policy. Theoretical, empirical, and applied foundations of these fields will be considered.

Precludes additional credit for PSCI 3400.

Prerequisite: second-year standing.

Lectures three hours a week.

PSCI 2601 [0.5 credit] (formerly 47.261\*)

**International Relations: Global Politics**

An introduction to theories, concepts and issues in global politics. Topics may include conflict and intervention, peace and security, international institutions, norms and ethics, human rights, gender, culture, and globalization.

Precludes additional credit for PSCI 2600.

Prerequisite: second-year standing.

Lectures three hours a week.

PSCI 2602 [0.5 credit] (formerly 47.262\*)

**International Relations: Global Political Economy**

An introduction to the international political economy. Topics may include contemporary changes in the global political economy, multinational corporations, foreign economic policy, global and regional economic institutions, environmental issues, international development and relations between rich and poor countries.

Precludes additional credit for PSCI 2600.

Prerequisite: second-year standing.

Lectures three hours a week.

PSCI 2700 [1.0 credit] (formerly 47.270)

**Quantitative Political Science Research Methods**

Quantitative research methods used in political science. The logic and nature of the quantitative study of politics, research design, data collection methods, and statistical techniques for data analysis. Packaged computer programs used to analyze political and policy-related data.

Prerequisite: second-year standing.

Lectures three hours a week.

Third Year

PSCI 3000 [0.5 credit] (formerly 47.300\*)

**Canadian Provincial Politics**

A comparative examination of the nature of Canadian provincial politics. Topics include: political culture, history, party systems, electoral systems and voting behaviour.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3001 [0.5 credit] (formerly 47.301\*)

**Canadian Intergovernmental Relations**

The main conceptual approaches to the structures and socio-economic processes of Canadian intergovernmental relations including selected policy fields in intergovernmental relations.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3002 [0.5 credit] (formerly 47.302\*)

**Canadian Municipal Government**

The nature and problems of Canadian municipal government, including metropolitan and regional government and provincial-municipal relations.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3003 [0.5 credit] (formerly 47.303\*)

**Canadian Urban Politics**

The nature and problems of Canadian urban politics.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3004 [0.5 credit] (formerly 47.304\*)

**Political Parties and Elections in Canada**

The evolution of the party system, the growth of major and minor party movements and the electoral process in Canada.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3005 [0.5 credit] (formerly 47.305\*)

**Ontario Government and Politics**

A survey of the political process and political institutions in Ontario.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3006 [0.5 credit] (formerly 47.306\*)

**Social Power in Canadian Politics**

The role of social forces in the Canadian political process, including interest groups, social movements, elites and classes.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3007 [0.5 credit] (formerly 47.307\*)

**Constitutional Politics in Canada**

The politics of the Canadian constitution. Particular attention to historical and contemporary constitutional reform.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3100 [0.5 credit] (formerly 47.310\*)

**Politics of Development in Africa**

The historical background of African independence, and contemporary struggle for democracy and economic development in Africa.

Precludes additional credit for PSCI 3100.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3101 [0.5 credit] (formerly 47.311\*)

**Politics of War in Africa**

The recurrent crises of war, and political instability in Africa, along with regional and international efforts to resolve them.

Precludes additional credit for PSCI 3100.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3102 [0.5 credit] (formerly 47.312\*)

**Politics of Development of China**

The evolving structures and processes of government in (greater) China with particular emphasis on politics in the People's Republic of China and secondary emphasis on Taiwan and Hong Kong.

Precludes additional credit for PSCI 3102.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3103 [0.5 credit] (formerly 47.313\*)

**State, Society and Economy in Northeast Asia**

The relationship between government structures, society and the economy in Northeast Asia with particular emphasis on Japan and Korea.

Precludes additional credit for PSCI 3102.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3106 [0.5 credit] (formerly 47.316\*)

**Revolution**

Theories of revolution from Aristotle through the present era. Revolution as a concept, and as an empirical fact of central importance to our age.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3107 [0.5 credit] (formerly 47.317\*)

**The Causes of War**

Alternate theories of the causes of war. Such alternate perspectives as biological, social and comparative historical approaches, including the results of peace research activities of the past two decades.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3109 [0.5 credit] (formerly 47.319\*)

**The Politics of Law and Morality**

Politics of moral regulation in Canada, the United States and other jurisdictions. The treatment in law and public policy of such human rights issues as: capital punishment, sexual

orientation, euthanasia, abortion, new reproductive technologies, racial discrimination, religious and equality rights. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3200 [0.5 credit] (formerly 47.320\*)

**United States Government and Politics**

American governance, both historical and contemporary. Topics may include constitutional development, Congress, the Presidency, interest groups, parties, elections, power structure analysis, bureaucratic politics, government-press relations, and domestic and foreign policy-making. Precludes additional credit for PSCI 3202. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3201 [0.5 credit] (formerly 47.321\*)

**Issues in United States Politics**

Key issues in American politics, both historical and contemporary: topics may include libertarianism, militarism, race, gender, religion, institutional reform, urban issues, immigration, popular culture, and civic participation. Precludes additional credit for PSCI 3202.

PSCI 3203 [0.5 credit] (formerly 47.323\*)

**Government and Politics in the Middle East**

The evolution and functioning of political systems in the Middle East region, with emphasis on the problems of political stability, the impact of the West, the role of Islam, and war and peace. Precludes additional credit for PSCI 3602. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3204 [0.5 credit] (formerly 47.324\*)

**Politics of Latin America**

An overview of the evolution of Latin American political systems, including the impact of the European conquest, democratization, economic liberalization, state-civil society relations, gender politics, revolutionary movements, and relations with the United States. Precludes additional credit for PSCI 3101. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3205 [0.5 credit] (formerly 47.325\*)

**Mexican Politics**

An introduction to the politics, society and economy of Mexico. Topics include processes of democratization and economic liberalization, human rights, the environment, the role of women, labour, and indigenous peoples, and social policy. Special emphasis on Mexico's role in the North American political economy. Precludes additional credit for PSCI 3101. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3206 [0.5 credit] (formerly 47.326\*)

**The Government and Politics of Western Europe**

Changes in West European states and societies. Major institutions, structures and processes, with an emphasis on how European states are responding to social, political and economic changes. Precludes additional credit for PSCI 3201. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3207 [0.5 credit] (formerly 47.327\*)

**The Government and Politics of European Integration**

The processes of integration and disintegration in Western Europe; the European Union as an emerging political body that is shaping European politics. The evolution of European integration, and examination of the forces driving the move to an ever closer union. Precludes additional credit for PSCI 3201. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3208 [0.5 credit] (formerly 47.328\*)

**Reform and Political Change in the Russian Federation**

The ongoing process of post-Soviet reform in Russia: the implications of market reform; the process of democratization;

and constitutional change in Russia's federal system. Historical perspectives from the Soviet experience, and comparative insights with the other Soviet successor states. Precludes additional credit for PSCI 3200. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3209 [0.5 credit] (formerly 47.329\*)

**Politics, Sovereignty and Identity in Russia and the Soviet Successor States**

Comparative statebuilding and social change in the successor states of former Soviet Union. The contentious processes of political institution-building, the emergence of new social identities, and the importance of ethnicity in the current politics of the region. Precludes additional credit for PSCI 3200. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3300 [0.5 credit] (formerly 47.330\*)

**Politics and Literature**

A study of imaginative prose in which political ideas and/or political settings dominate. Literature as political communication, the impact of literature upon politics, the peculiar value of literature in the study of politics, its shortcomings. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3301 [0.5 credit] (formerly 47.331\*)

**Politics and Psychoanalytic Thought**

The contribution of psychoanalytic thought to political and social theory. Emphasis on the origin and function of culture, instinct modification, perversion, character and political order; the psychoanalytic ethic and the therapeutic state; the Freudian-Marxist dialectic and the critique of society. Prerequisite: PSCI 2300 or permission of the Department. Lectures three hours a week.

PSCI 3302 [0.5 credit] (formerly 47.332\*)

**Comparative Political Thought**

A comparative survey of non-western political thought focusing on the convergences and divergences with Western traditions. Readings are chosen from a range of periods, and may include some of Chinese, Indian, Persian, Muslim, African, Jewish, Latin American, and aboriginal perspectives. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3305 [0.5 credit] (formerly 47.335\*)

**Canadian Political Ideas**

The sources and development of political ideas in French and English Canada. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3306 [0.5 credit] (formerly 47.336\*)

**Canadian Political Culture**

The elements of Canadian political culture: individual beliefs, attitudes and values, the influence of the economy and environment, ideology, political socialization, and regional differences. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3307 [0.5 credit] (formerly 47.337\*)

**Politics of Human Rights**

Politics of human rights in its historical and cultural context, including: early liberal theories of natural rights; utilitarian and Marxist critiques; contemporary rights debates; different generations of rights; feminism and women's rights; cultural relativism; state sovereignty; and, problems of implementation and enforcement. Prerequisite: third-year standing. Lectures three hours a week.

PSCI 3308 [0.5 credit] (formerly 47.338\*)

**Modern Political Thought**

A survey of trends in modern political thought, including some of liberalism, conservatism, neo-conservatism, Marxist and neo-Marxist socialism, communitarianism, postmodernism and globalization.

Precludes additional credit for PSCI 3303.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3309 [0.5 credit] (formerly 47.339\*)

**Modern Ideologies**

A survey of ideologies, mainly since 1900, including some of nationalism, utopian socialism, communism, fascism, populism, environmentalism and feminism.

Precludes additional credit for PSCI 3303.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3401 [0.5 credit] (formerly 47.341\*)

**Canadian Public Administration**

The Canadian bureaucracy as a major state actor in policy development. Selected issues and/or case studies in public sector management with particular attention paid to the process of policy identification through program development and implementation.

Precludes additional credit for PSCI 3400.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3402 [0.5 credit] (formerly 47.342\*)

**Canadian Public Policy**

Policy communities and policy networks in Canada with particular attention paid to policy issues, the political environment, policy instruments, impact and outcomes.

Precludes additional credit for PSCI 4001.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3404 [0.5 credit] (formerly 47.344\*)

**Comparative Public Administration**

Relations between the state bureaucracy or public organizations and civil society in various types of political and economic systems. Consideration of themes relevant to developed and developing countries.

Precludes additional credit for PSCI 4400.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3405 [0.5 credit] (formerly 47.345\*)

**Comparative Public Policy Analysis**

The formation and impact of public policy: a variety of political systems as well as a variety of policy areas. Emphasis on developing skills for the analysis of policy formation and impact.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3406 [0.5 credit] (formerly 47.346\*)

**Public Affairs and Media Strategies**

The public affairs and issue management strategies of corporations, government departments, and other institutions in Canada from a comparative perspective.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3407 [0.5 credit] (formerly 47.347\*)

**Public Opinion and Public Policy**

Consideration of Canadian and comparative quantitative data and literature relating to several areas of public opinion on key policy issues, including value systems and social inequality, work, health, the family, social welfare, national identity and the environment.

Prerequisite: PSCI 2700 or permission of the Department.

Lectures three hours a week.

PSCI 3408 [0.5 credit] (formerly 47.348\*)

**Politics of the Internet**

Use of the Internet by social groups, political parties, and governments to advance political goals. Survey of government policies on censorship and Internet access.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3500 [0.5 credit] (formerly 47.350\*)

**Women in Politics: Liberal Democracies I**

The sex/gender dimension of political theory, culture, mass

and elite participation, and public policy as manifested in selected liberal democracies, including Canada.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3501 [0.5 credit] (formerly 47.351\*)

**Women in Politics: Liberal Democracies II**

A continued examination of the sex/gender dimension of political theory, culture, mass and elite participation, and public policy as manifested in selected liberal democracies, including Canada.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3502 [0.5 credit] (formerly 47.352\*)

**Women in Politics: Third World**

The sex/gender dimensions of development theory and policy, political culture, mass and elite participation, and international agencies as manifested in selected Third World countries.

Precludes additional credit for PSCI 3108.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3600 [0.5 credit] (formerly 47.360\*)

**International Institutions**

Origins, structure and functioning of international institutions with emphasis on the United Nations as well as regional organizations. Topics include peace and security, international aid and development, human rights and the control of global resources.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3601 [0.5 credit] (formerly 47.361\*)

**Theories of International Politics**

Theoretical approaches to the study of international politics including an examination of the major concepts used for analysis and explanation in the field.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3603 [0.5 credit] (formerly 47.363\*)

**Strategic Thought and International Security**

The evolution of U.S., Soviet/Russian, and Chinese approaches to strategy and those of other regional powers, as well as the application of strategic thought to selected issues in international security.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3605 [0.5 credit] (formerly 47.365\*)

**Comparative Study of Foreign Policy**

The utility of comparative analysis in the study of the objectives, strategies and decision-making processes involved in the foreign policies of states.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3606 [0.5 credit] (formerly 47.366\*)

**Canadian Foreign Policy**

The traditions, domestic influences, objectives, capabilities, and decision-making processes, and analysis of selected contemporary issues.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3607 [0.5 credit] (formerly 47.367\*)

**Canadian Defence Policy**

The evolution of Canadian defence policy in the twentieth century. The theory of Canadian defence policy and its operational aspects in a broad comparative context, related to themes such as strategic theory, military culture in a modern state, continentalism and military alliances.

Prerequisite: third-year standing.

Lectures three hours a week.

PSCI 3700 [0.5 credit] (formerly 47.370\*)

**Government and Politics of South Asia**

Patterns of colonialism, evolving political regimes and issues in development and foreign policy in the countries of South Asia, including India, Pakistan, Bangladesh, Sri Lanka, and other



member states of SAARC.  
Precludes additional credit for PSCI 3105.  
Prerequisite: third-year standing.  
Lectures three hours a week.

PSCI 3701 [0.5 credit] (formerly 47.371\*)  
**Government and Politics of South-East Asia**  
Patterns of colonialism, evolving political regimes and issues in development and foreign policy in the countries of Southeast Asia, including Burma, Thailand, Vietnam, Malaysia, Indonesia, the Philippines, and other member states of ASEAN.  
Precludes additional credit for PSCI 3105.  
Prerequisite: third-year standing.  
Lectures three hours a week.

PSCI 3703 [0.5 credit] (formerly 47.373\*)  
**Governing in the Global Economy**  
The main approaches and policy issues in the political economy of advanced industrialized states. The relationship between state and market and the ways in which national states have responded to the pressures of governing in an increasingly interdependent global economy.  
Prerequisite: third-year standing.  
Lectures three hours a week.

PSCI 3704 [0.5 credit] (formerly 47.374\*)  
**Post-Communist Transformation in East/Central Europe**  
A comparative examination of the rise and fall of communism in East/Central Europe and social and institutional transformation in the post-communist period.  
Precludes additional credit for PSCI 3104.  
Prerequisite: third-year standing.  
Lectures three hours a week.

PSCI 3705 [0.5 credit] (formerly 47.375\*)  
**East/Central Europe and the European Union**  
A comparative examination of East and Central European post-communist transformation in the context of European Union enlargement and accession process: questions of identity, security, stability and economic integration as well as political and social challenges.  
Precludes additional credit for PSCI 3104.  
Prerequisite: third-year standing  
Lectures three hours a week.

PSCI 3709 [0.5 credit] (formerly 47.379\*)  
**Ancient and Medieval Political Thought**  
The significance for political theory of the ancient and medieval controversies over nature/convention, power/knowledge, time/eternity, theory/practice, and science/mysticism. Thinkers such as Homer, the pre-Socratics, Plato and Aristotle, the neo-Platonists, Augustine, and the Scholastics.  
Prerequisite: PSCI 2300 or permission of the Department.  
Precludes additional credit for PSCI 3304.

PSCI 3900 [1.0 credit] (formerly 47.390)  
**Études dirigées**  
Une programme de lectures choisies et de travaux écrits dans le domaine de spécialisation d'un membre du département. Consulter le conseiller des études de premier cycle (Undergraduate supervisor) pour les sujets offerts.  
Prerequisite: third-year standing in the Political Science  
*Mention: français program.*

PSCI 3901 [0.5 credit] (formerly 47.391\*)  
**Cooperative Work Term 1**  
Prerequisite: registration in the B.A. Honours Co-operative Program, completion of Co-op preparation classes offered by the Co-op Office and permission of the Department.

PSCI 3902 [0.5 credit] (formerly 47.392\*)  
**Cooperative Work Term 2**  
Prerequisite: registration in the B.A. Honours Co-operative Program and permission of the Department.

PSCI 3903 [0.5 credit] (formerly 47.393\*)  
**Cooperative Work Term 3**  
Prerequisite: registration in the B.A. Honours Co-operative Program and permission of the Department.

PSCI 3904 [0.5 credit] (formerly 47.394\*)  
**Cooperative Work Term 4**  
Prerequisite: registration in the B.A. Honours Co-operative Program and permission of the Department.

Fourth Year: Honours and Graduate

**These courses are normally reserved for Honours students in their fourth year.**

PSCI 4000 [1.0 credit] (formerly 47.400)  
**Topics in Canadian Government and Politics**  
Section A: Political Economy of Canada. Selected issues in Canadian political economy including the role of the state in the Canadian economy, the political aspects of foreign ownership and economic structure and political change.  
Section B: Canadian Political Institutions. Selected topics on institutions of Canadian Government at the federal level.  
Section C: Canadian Political Behaviour. Voting, public opinion, political violence, socialization and other aspects of political behaviour in Canada. Religion, class and region as determinants of political cleavage.  
Prerequisite: fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4002 [0.5 credit] (formerly 47.402\*)  
**Policy Seminar: Problems of Northern Development**  
The issues, the policy processes and the problems of policy implementation in the political and economic development of Canada's northern territories.  
Prerequisite: fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4003 [0.5 credit] (formerly 47.403\*)  
**Politics and the Media**  
The role of the mass media in the Canadian political system from a comparative perspective.  
Prerequisite: fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4005 [0.5 credit] (formerly 47.405\*)  
**Stability, Justice and Federalism**  
Canada's unity crisis in a comparative perspective with particular attention to federalism, nationalism and regionalism.  
Precludes additional credit for PSCI 4005.  
Prerequisite: fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4006 [0.5 credit] (formerly 47.406\*)  
**Legislative Process in Canada**  
The role of Parliament and of the individual M.P. in terms of policy making, representation and the passage of legislation. Also offered at the graduate level, with additional or different requirements, as PSCI 5006, for which additional credit is precluded.  
Prerequisite: fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4007 [0.5 credit] (formerly 47.407\*)  
**The Politics of Law Enforcement in Canada**  
Major issues in the area of law enforcement policy, police administration and the criminal justice system in Canada. Particular emphasis on the role of law enforcement agencies as integral institutions of the Canadian political system.  
Prerequisite: fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4008 [0.5 credit] (formerly 47.408\*)  
**National Security and Intelligence in the Modern State**  
The state's response to foreign espionage, alleged subversion, terrorism, and counterintelligence. Major focus on the Canadian experience, but with extensive use of materials chronicling the practices of KGB, CIA, BIS, ASIO, MOSSAD, etc.  
Prerequisite: fourth-year Honours standing or permission of the Department.  
Seminar three hours a week.

PSCI 4009 [0.5 credit] (formerly 47.409\*)

**Quebec Politics**

Society, culture, economy and politics in Quebec. Special attention to the politically relevant changes since 1960 and the central place of Quebec within the Canadian federation. Prerequisite: fourth-year Honours standing and a reading knowledge or French.

Seminar three hours a week.

PSCI 4100 [0.5 credit] (formerly 47.410\*)

**Canadian and Comparative Local Government and Politics**

A comparative survey of the systems of local government in Canada, Britain and the United States. The emphasis on Canadian or comparative, and the problems chosen for study, vary with the interests of the students.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4101 [0.5 credit] (formerly 47.411\*)

**French-English Relations**

French-English relations in federal politics and in selected provinces, with emphasis on areas of conflict and methods of conflict management.

Prerequisite: fourth-year Honours standing or permission of the Department. Reading knowledge of French.

Seminar three hours a week.

PSCI 4102 [0.5 credit] (formerly 47.412\*)

**Politics of Western Liberal Democracies**

The social structure and politics of advanced capitalist societies, including the historical and contemporary relationship between social classes — groupings, political parties and interest groups. Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4103 [0.5 credit] (formerly 47.413\*)

**The Modern State**

A survey of recent thinking about the state in western societies drawing on perspectives such as those of feminists, Marxists, Weberians, poststructuralists and others. Topics may include: the rise of the modern state, economic governance, the public sphere, citizenship, sovereignty and territoriality.

Prerequisite: fourth-year Honours standing or permission of the department.

Seminar three hours a week.

PSCI 4104 [0.5 credit] (formerly 47.414\*)

**Theory and Practice in Third World Development**

The various theoretical approaches to the analysis of development and underdevelopment, of the historical experience of important models of development and of their application to selected countries in Asia, Africa and Latin America.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4105 [0.5 credit] (formerly 47.415\*)

**Selected Problems in Third World Development**

The nature of international factors that influence Third World development such as multinational corporations, the new international division of labour, the new protectionism, the role of international debt, the politics of the Green Revolution, technology, and development assistance.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4106 [0.5 credit] (formerly 47.416\*)

**Labour and the Canadian State**

A comparative examination of models of labour and the liberal democratic state, with particular attention to the role of the Canadian labour movement in the political process.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4107 [0.5 credit] (formerly 47.417\*)

**Political Participation in Canada**

The causes and implications of political participation by individuals with special reference to Canada. Topics include citizen participation in campaign and party organizations, political protest movements, interest groups, and community associations.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4108 [0.5 credit] (formerly 47.418\*)

**Canadian Provincial Government and Politics**

The political processes and institutions of the provinces.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4109 [0.5 credit] (formerly 47.419\*)

**The Politics of the Canadian Charter of Rights and Freedoms**

The genesis and impact of the Charter of Rights and Freedoms. Particular emphasis on the politics of aboriginal, language, and equality rights.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4200 [0.5 credit] (formerly 47.420\*)

**Policy Making in the United States**

Conflict and co-operation in the United States legislative and executive/bureaucratic arenas; overlapping struggles over policy initiative, innovation and planning. Emphases determined by student needs and interests.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4201 [0.5 credit] (formerly 47.421\*)

**Politics of Influence in the United States**

Parties, interest groups, coalitions, movements and other significant influences upon who gets what, when, how in the United States. Elections, democratic accountability and political uses of mass media. Emphases determined by student needs and interests.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4202 [0.5 credit] (formerly 47.422\*)

**Comparative Constitutional Politics**

The political character of leading western constitutions, with special emphasis on judicial politics and judicial policy-making in the United States; consideration also given to developments in Canada, Britain and France.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4203 [0.5 credit] (formerly 47.423\*)

**Southern Africa After Apartheid**

The pathology of apartheid, the reasons for its end, and prospects for democratization and development in southern Africa in the era of globalization. Also offered at the graduate level, with additional or different requirements, as PSCI 5203, for which additional credit is precluded.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4204 [0.5 credit] (formerly 47.424\*)

**Elections**

The conduct and meaning of elections in contemporary states. Attention to the connection of elections to concepts of representation, policy mandates, and political parties, and to electoral systems and referendums. Also offered at the graduate level, with additional or different requirements, as PSCI 5204, for which additional credit is precluded.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4205 [0.5 credit] (formerly 47.425\*)

**Identity Politics**

The strategies and ideologies of social movements in the Canadian political process, such as the women's movement and the environmental movement.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4206 [0.5 credit] (formerly 47.426\*)

**Indigenous Politics of North America**

Issues of governance regarding the original peoples of Canada, Mexico and the United States since the European invasion. Contemporary movements for restoration of cultural, political, socio-economic, land and self-governance rights, emphasizing domestic and international strategies. Also offered at the graduate level, with additional or different requirements, as PSCI 5100, for which additional credit is precluded.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4207 [0.5 credit] (formerly 47.427\*)

**Globalization, Adjustment and Democracy in Africa**

This course will explore the nature of global pressures in Africa, as states go through a 'second wind' of political and economic change. Also offered at the graduate level, with additional or different requirements, as PSCI 5107, for which additional credit is precluded.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4303 [0.5 credit] (formerly 47.433\*)

**Governmentality and Politics**

Utilizing the work of Foucault and others on 'governmentality', this course will analyze national and international government not only as a set of institutions or processes, but in terms of specific arts and strategies. Topics may include federalism, colonialism, liberalism, but also arts of resistance. Also offered at the graduate level, with different requirements, as PSCI 5303, for which additional credit is precluded.

Prerequisite: fourth-year Honours standing or permission of the department.

PSCI 4304 [1.0 credit] (formerly 47.434)

**Political Inquiry**

Competing theoretical methods of inquiry in the discipline — positivism, functionalism, phenomenology, structuralism, and post-structuralism — with particular attention to the claims made for scientific truth. Weber, Polanyi, Feyerabend, Kuhn, Habermas, Foucault, Rorty and others.

Prerequisite: PSCI 2300 or permission of the Department.

Seminar three hours a week.

PSCI 4305 [1.0 credit] (formerly 47.435)

**Contemporary Political Theory**

Recent work in political theory, stressing major approaches to the understanding of contemporary political life such as historicism, the sociology of knowledge, positivism, phenomenology, critical theory, existentialism, neo-classicism. Works by such thinkers as Gramsci, Mannheim, Popper, Strauss, Cassirer, Habermas, Sartre, and Voegelin.

Prerequisite: PSCI 2300 or permission of the Department.

Seminar three hours a week.

PSCI 4306 [0.5 credit] (formerly 47.436\*)

**Concepts of Political Community I**

Concepts of political community, including the common good, justice, citizenship, statesmanship, democracy and legitimacy from ancient, modern and contemporary political theory. Also offered at the graduate level, with additional or different requirements, as PSCI 5308, for which additional credit is precluded.

Precludes additional credit for PSCI 4300.

Prerequisite: PSCI 2300 or permission of the Department.

Seminar three hours a week.

PSCI 4307 [0.5 credit] (formerly 47.437\*)

**Concepts of Political Community II**

A continued critical survey of concepts of political community, including the common good, justice, citizenship, statesmanship, democracy and legitimacy from ancient, modern and contemporary political theory. Also offered at the graduate level, with additional or different requirements, as PSCI 5309, for which additional credit is precluded.

Precludes additional credit for PSCI 4300.

Prerequisite: PSCI 4306 or permission of the Department.

Seminar three hours a week.

PSCI 4401 [0.5 credit] (formerly 47.441\*)

**Business-Government Relations in Canada**

The theory and practice of business-government relations in Canada. Primary focus on the role of the private sector firm in the Canadian political system and policy process. Case studies addressing issues and problems in the relations of business to government.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4407 [0.5 credit] (formerly 47.447\*)

**Public Policy: Content and Creation**

The content and creation of public policy. Focus on the explanation, prediction and design of policy. Perspectives and examples are drawn from a variety of frameworks and from both Canadian and non-Canadian contexts. Also offered at the graduate level, with additional or different requirements, as PSCI 6407, for which additional credit is precluded.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4408 [0.5 credit] (formerly 47.448\*)

**Public Affairs Management and Analysis**

Theories and practice in the management of public affairs, including the environment and administration of the public sector, public opinion, and public communications. Also offered at the graduate level, with additional or different requirements, as PSCI 6408, for which additional credit is precluded.

Precludes additional credit for PSCI 4406.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminars three hours a week.

PSCI 4409 [0.5 credit] (formerly 47.449\*)

**Issues in Development Management**

An examination of the application of organization theory to policy implementation and evaluation for developing and transitional systems, with an emphasis on the role of cultural differences and divergent value systems in development management. (Also listed as INAF 4202.)

Prerequisites: ECON 3603 and fourth-year standing in the B.P.A.P.M. program and registration in either the International Studies specialization or the Development Studies specialization or permission of the Department.

Lectures or seminars three hours a week.

PSCI 4500 [0.5 credit] (formerly 47.450\*)

**Feminist Political Analysis in Comparative Perspective**

The gendered nature of authority, feminist reconceptions of representation and interests, the relationships between sex/gender regimes and state forms, and the strategic treatments of identity politics, race and class difference and nationalisms by various women's movements.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4505 [0.5 credit] (formerly 47.455\*)

**Transitions to Democracy**

A comparative analysis of processes of democratization. Diverse theoretical approaches to understanding the timing, causes, nature, and limitations of democratization. Examples from Europe and Russia, Latin America, Africa, and Asia.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.



PSCI 4600 [1.0 credit] (formerly 47.460)

**Analysis of International Politics**

Principal issues in international relations; theory building, evaluation of concepts, research design, philosophy of science criteria and policy relevance in ongoing research in international relations theory.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4601 [0.5 credit] (formerly 47.461\*)

**Foreign Policies of Soviet Successor States**

The foreign policies of the USSR and of Russian and selected other successor states, with special emphasis on the search for a new security order.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4602 [0.5 credit] (formerly 47.462\*)

**Bargaining and Negotiation**

The theory and practice of bargaining and negotiation. The seminar includes national and international levels, government and mixed public-private negotiations, and bilateral and multilateral situations. Special attention is given to the needs of weaker parties. Simulations included.

Prerequisite: fourth-year Honours standing or permission of the department.

Seminars three hours a week.

PSCI 4603 [0.5 credit] (formerly 47.463\*)

**Analysis of International Political Economy**

Various theoretical approaches to the study of the international political economy, with a focus on historical development and changing international structures.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4604 [0.5 credit] (formerly 47.464\*)

**Selected Problems in International Political Economy**

Contemporary problems and issues in the international political economy, with particular attention given to advanced industrial countries.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4605 [0.5 credit] (formerly 47.465\*)

**Gender in International Relations**

Analysis of feminist approaches to international relations. Substantive issues include the role of women in war and militarization, the gender dimensions of global political economy and gender issues in international development.

Prerequisite: fourth-year Honours standing or permission of the department.

Seminars three hours a week.

PSCI 4606 [0.5 credit] (formerly 47.466\*)

**American Foreign Policy**

The sources, trends and conflicting interpretations of the international roles of the United States since World War II. Foreign policy machinery and processes assessed in terms of the relative importance of perceptions, ideology, self-interest, and domestic and foreign pressures.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4607 [0.5 credit] (formerly 47.467\*)

**International Politics of North America**

A seminar examining the evolving relationship between Canada, the United States and Mexico, including political, economic, social, environmental and defence aspects. Also offered at the graduate level, with additional or different requirements, as PSCI 5607, for which additional credit is precluded.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4608 [0.5 credit] (formerly 47.468\*)

**European Integration and European Security**

A seminar focusing on issues related to the formation of supranational decision-making structures in Europe. Also offered at the graduate level, with different requirements, as PSCI 5608, and as EURR 4104/5104, for which additional credit is precluded.

Prerequisite: fourth-year Honours standing or permission of the department.

Seminar three hours a week.

PSCI 4609 [0.5 credit] (formerly 47.469\*)

**Selected Topics in European Integration Studies**

A seminar focusing on selected topics related to European integration in the post-World War II period. Also offered as EURR 4106 for which additional credit is precluded.

Prerequisite: fourth-year standing or permission of the department.

Seminar three hours a week.

PSCI 4701 [0.5 credit] (formerly 47.471\*)

**Intermediate Polimetrics for Micro Data**

Research designs and statistical techniques primarily used in analyzing survey data. Selected topics may vary from year to year. Students doing Honours papers based on micro data are advised to take this course. Also offered at the graduate level, with additional or different requirements, as PSCI 5701, for which additional credit is precluded.

Prerequisite: PSCI 2700 or permission of the Department.

Seminar three hours a week.

PSCI 4702 [0.5 credit] (formerly 47.472\*)

**Intermediate Polimetrics for Macro Data**

Research designs and statistical techniques primarily used in analyzing macro or aggregate data. Selected topics may vary from year to year. Students doing Honours papers based on macro data are advised to take this course. Also offered at the graduate level, with additional or different requirements, as PSCI 5702, for which additional credit is precluded.

Prerequisite: PSCI 2700 or permission of the Department.

Seminar three hours a week.

PSCI 4802 [0.5 credit] (formerly 47.482\*)

**International Politics of Africa**

Focus on a particular theme related to the interactions of African states within the African subsystem and with other sectors in the international system.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4803 [0.5 credit] (formerly 47.483\*)

**Foreign Policies of Major East Asian Powers**

The foreign policies of the East Asian powers, with special attention to China and Japan; an analysis of the domestic sources of policy, capabilities, interests, decision-making processes and foreign relations.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4804 [0.5 credit] (formerly 47.484\*)

**International Relations of South and Southeast Asia**

Foreign policy orientations of the regional actors and interaction with non-regional actors. Special emphasis on enduring sources of conflict within the area, and emerging patterns of co-operation, including comparison of ASEAN with SAARC. Also offered at the graduate level, with additional or different requirements, as PSCI 5804, for which additional credit is precluded.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

PSCI 4900 [1.0 credit] (formerly 47.490)

**Tutorial in a Selected Field**

Tutorials or reading courses on selected topics in which seminars are not available arranged.

Prerequisite: permission of the Department and agreement of an instructor.

Tutorial hours arranged.

PSCI 4901 [0.5 credit] (formerly 47.491\*)

**Tutorial in a Selected Field**

Tutorials or reading courses on selected topics in which seminars are not available arranged.

Prerequisite: permission of the Department and agreement of an instructor.

Tutorial hours arranged.

PSCI 4902 [0.5 credit] (formerly 47.492\*)

**Tutorial in a Selected Field**

Tutorials or reading courses on selected topics in which seminars are not available arranged.

Prerequisite: permission of the Department and agreement of an instructor.

Tutorial hours arranged.

PSCI 4903 [0.5 credit] (formerly 47.493\*)

**British Parliamentary Politics**

Parliament and the legislative process. Offered in London, U.K., by faculty members of Leeds University but governed by Carleton regulations and co-ordinated by Carleton's Department of Political Science.

Prerequisite: Selection to the Carleton-Leeds Parliamentary Internship Exchange.

Seminar three and one-half hours a week.

PSCI 4904 [1.0 credit] (formerly 47.494)

**Carleton-Leeds Parliamentary Internships (3.0 credits)**

Parliamentary internships in Ottawa (Fall term) and London, U.K. (Winter term). Academic requirements are met through an essay and an oral examination. Graded Sat or Uns.

Prerequisite: Selection to the Carleton-Leeds Parliamentary Internship Exchange.

Internship four days a week.

PSCI 4908 [1.0 credit] (formerly 47.498)

**Honours Graduation Essay**

The Honours essay is supervised under the direction of a faculty member who is either selected by the candidate or assigned early in the year. The Honours essay is evaluated by both the supervisor and an appointed reader. Students intending to proceed to post-graduate studies are strongly encouraged to complete an Honours essay.

Prerequisite: fourth-year Honours standing in Political Science with a Political Science GPA of 9.00 or better, or permission of the Supervisor of Undergraduate Studies.

Tutorial hours arranged.

PSCI 4909 [1.0 credit] (formerly 47.499)

**Mémoire de recherche**

Un travail de recherche dans le domaine de spécialisation d'un membre du département. Consulter le conseiller des études de premier cycle (Undergraduate supervisor) pour les sujets offerts.

Prerequisite: fourth-year standing in the Political Science *Mention: français* program.\*

\* Students should refer to the Department of Political Science course requirements for the Honours Essay, which may be obtained from the Departmental Office.

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## Psychology (PSYC)

Department of Psychology

Faculty of Arts and Social Sciences

PSYC 1001 [0.5 credit] (formerly 49.101\*)

**Introduction to Psychology I**

A survey of topics associated with psychology's role as a natural science, including neuroscience, cognition, and learning.

Precludes additional credit for PSYC 1000.

Lecture three hours a week.

PSYC 1002 [0.5 credit] (formerly 49.102\*)

**Introduction to Psychology II**

A survey of topics associated with psychology's role as a social

science, including social psychology, personality and abnormal psychology.

Precludes additional credit for PSYC 1000.

Prerequisite: PSYC 1001.

Lecture three hours a week.

PSYC 2001 [0.5 credit]

**Introduction to Research Methods in Psychology**

A general introduction to research methodologies employed within contemporary psychology. Topics covered include research designs (experimental, quasi-experimental) and techniques (observations, surveys), basic descriptive statistics, and how to interpret and report research findings.

Precludes additional credit for STAT 2606, GEOG 2006 or PSYC 2000.

Prerequisite: PSYC 1001 and PSYC 1002, or PSYC 1000, or permission of the Department.

Lecture three hours a week.

PSYC 2002 [0.5 credit]

**Introduction to Statistics in Psychology**

A general introduction to statistical techniques employed within contemporary Psychology. Topics covered include basic data analysis using descriptive and inferential statistics (t-tests, ANOVA, correlation, chi-square).

Prerequisite: PSYC 1001 and PSYC 1002 or PSYC 1000, PSYC 2001 or permission of the Department.

Precludes additional credit for GEOG 2006 or STAT 2606 and PSYC 2000.

PSYC 2100 [0.5 credit] (formerly 49.210\*)

**Introduction to Social Psychology**

Introduction to contemporary theory and research in social psychology. Areas covered include attitude structure and change, small groups and social learning.

Note: Students who wish to substitute SOCI 2100 for PSYC 2100 should consult the Undergraduate Office of the Department of Psychology. Students may not offer both SOCI 2100 and PSYC 2100 for credit.

Prerequisite: PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures three hours a week.

PSYC 2200 [0.5 credit] (formerly 49.220\*)

**Biological Foundations of Behaviour**

A general introduction to the biological basis of behaviour with particular reference to biological mechanisms associated with sensory and perceptual processes, motivation, emotion, learning and cognition.

Prerequisite: PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures three hours a week.

PSYC 2300 [0.5 credit] (formerly 49.230\*)

**Origins of Modern Psychology**

Survey of the evolution of psychology in Europe and North America, with an emphasis on psychology as a specialized area of knowledge and practice in the nineteenth and twentieth centuries.

Prerequisite: PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures three hours a week.

PSYC 2400 [0.5 credit] (formerly 49.240\*)

**Introduction to Forensic Psychology**

Forensic psychology, including a critical review of theories, methods, and research findings. Topics covered may include development of offending, eyewitness testimony, victim studies, risk assessment, offender rehabilitation, offender classification, and police studies.

Prerequisite: PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures three hours a week.

PSYC 2500 [0.5 credit] (formerly 49.250\*)

**Foundations of Developmental Psychology**

Basic principles of developmental psychology with a concentration on theories and methods. Emphasis is on the psychology of childhood and adolescence.

Prerequisite: PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures three hours a week.

PSYC 2600 [0.5 credit] (formerly 49.260\*)

**Introduction to the Study of Personality**

An introduction to the study of personality. Consideration of problems, methods and theories.

Prerequisite: PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures three hours a week.

PSYC 2700 [0.5 credit] (formerly 49.270\*)

**Introduction to Cognitive Psychology**

A general introduction to cognitive processes, including a survey of theories, issues, methods and findings. Topics covered may include pattern recognition, attention, imagery, learning (animal and human), memory, language, and thinking.

Prerequisite: PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures three hours a week.

PSYC 2800 [0.5 credit] (formerly 49.280\*)

**Introduction to Human Factors**

Theoretical foundation, philosophy and practical application of techniques for analyzing from a psychological perspective how people interact with designed environments. A major goal is to determine how these environments should be designed to suit human capabilities.

Prerequisite: PSYC 1001 and PSYC 1002.

Lecture three hours a week.

PSYC 3000 [1.0 credit] (formerly 49.300)

**Design and Analysis in Psychological Research**

Techniques in data analysis, probability theory, sampling distribution theory and the ideas and procedures of estimation, classical and Bayesian approaches to hypothesis testing, linear regression and curve fitting, distribution free hypothesis testing, and the analysis of variance methods in experimental design. Limited enrolment.

Precludes additional credit for ECON 2200, or SOCI 3700.

Prerequisites: PSYC 2000 and permission of the Department. Intended for Honours students in Psychology.

Lectures and tutorial four hours a week.

PSYC 3100 [1.0 credit] (formerly 49.310)

**Social Psychology (Honours Seminar)**

An analysis of historical and contemporary developments in social psychology theory, research and methodology. Students may be required to complete independent research projects. Prerequisites: PSYC 2001 and PSYC 2002 (or PSYC 2000) and PSYC 2100. A GPA of 8.00 or better in all graded Carleton Psychology courses is normally required. Permission of the Department required; limited enrolment; intended for Honours students.

Lectures, seminars and tutorials six hours a week.

PSYC 3101 [0.5 credit] (formerly 49.311\*)

**Social Problems**

An analysis of one or more social problems from the point of view of social psychology. The problems studied vary from year to year and may include war and peace, prejudice and discrimination, gender roles, politics and social change, leisure and quality of working life.

Prerequisite: PSYC 2100.

Lectures and seminars three hours a week.

PSYC 3102 [0.5 credit] (formerly 49.312\*)

**Cognitive Processes in Social Psychology**

In-depth coverage of one or more sub-areas of social psychology introduced in PSYC 2100. Topics may include attitudes, impression formation, attribution of social causality, decision making, and social judgment.

Prerequisite: PSYC 2100.

Lectures and seminars three hours a week.

PSYC 3103 [0.5 credit] (formerly 49.313\*)

**Group Processes in Social Psychology**

In-depth coverage of one or more sub-areas of social psychology introduced in PSYC 2100. Topics may include interaction in the dyad, coalition formation in larger groups, history and theory of small group research, North American, West-European and East-European models of group behaviour, and training groups in industry. (Also listed as SOWK 3103.)

Prerequisite: PSYC 2100 or permission of the Department.

Lectures and seminars three hours a week.

PSYC 3200 [1.0 credit] (formerly 49.320)

**Behavioural Neuroscience (Honours Seminar)**

A detailed consideration of biological approaches to the study of behaviour and of research methods used in behavioural neuroscience.

Prerequisites: PSYC 2001 and PSYC 2002 (or PSYC 2000) and PSYC 2200. A GPA of 8.00 or better in all graded Carleton Psychology courses is normally required. Permission of the Department required; limited enrolment; intended for Honours students.

Lectures, seminars and laboratory tutorials six hours a week.

PSYC 3202 [0.5 credit] (formerly 49.322\*)

**Sensory Processes**

The physiological basis of sensation. Topics include sensory mechanisms, neuropsychological bases of perception and psychological phenomena encountered in the various senses.

Prerequisite: PSYC 2200.

Lectures and seminars three hours a week.

PSYC 3203 [0.5 credit] (formerly 49.323\*)

**Field Course in Animal Behaviour**

Offered in the Department of Biology as BIOL 3605. Only those modules dealing with animal behaviour topics may be offered for Psychology credit.

Prerequisite: permission of the Department.

PSYC 3204 [0.5 credit] (formerly 49.324\*)

**Drugs and Behaviour**

An introduction to synaptic mechanisms and the arrangements of the transmitter-specific brain systems, followed by a discussion of neuro-pharmacological bases of normal and abnormal behaviour and of the behavioural effects of various classes of psychoactive drugs such as stimulants, tranquilizers, opiates.

Prerequisite: PSYC 2200.

Lectures and seminars three hours a week.

PSYC 3205 [0.5 credit] (formerly 49.325\*)

**Psychopharmacology and Behavioural Medicine**

An examination of the relationship between endogenous neurochemical, hormonal and immunological states and various physiological and behavioural pathologies. The contribution of psychological variables to these pathologies will be assessed.

Prerequisite: PSYC 3204 or permission of the Department.

Lectures and seminars three hours a week.

PSYC 3207 [0.5 credit] (formerly 49.327\*)

**Human Neuropsychology**

Human experimental neuropsychology with emphasis on the basic principles and methods used to study brain-behaviour relationships in normal and brain-damaged subjects. Topics include the development and structure of the human nervous system and the principles of neurology.

Prerequisite: PSYC 2200.

Lectures three hours a week.

PSYC 3400 [1.0 credit] (formerly 49.340)

**Forensic Psychology (Honours Seminar)**

Theoretical and research methodologies in the study of forensic psychology are examined through a detailed consideration of selected topics. Students may be required to complete independent research projects.

Limited enrolment.

Prerequisites: PSYC 2001 and PSYC 2002 (or PSYC 2000) and PSYC 2400 and permission of the department. A GPA of 8.00 or better in all graded Carleton Psychology courses is normally required. Intended for Honours students.

PSYC 3402 [0.5 credit] (formerly 49.342\*)

**Criminal Behaviour**

An examination of behavioural approaches to the classification and treatment of offenders. Theories and research relevant to selected patterns of law breaking and selected offender types are reviewed. The value of behaviour modification and counseling programs within prisons is examined.

Prerequisite: PSYC 2100 or PSYC 2400 or PSYC 2600.

Lectures and seminars three hours a week.



PSYC 3403 [0.5 credit] (formerly 49.343\*)

### **Addiction**

A critical review of theories and research on the acquisition and maintenance of addictive behaviour. The rationale and outcome of treatment programs for the abuse of alcohol, tobacco, the opiates and the amphetamines.

Prerequisites: 2.0 credits in Psychology including PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures three hours a week.

PSYC 3405 [0.5 credit] (formerly 49.345\*)

### **Psychology of Motivation and Emotion**

Historical review of the concepts of motivation and emotion. Examination of such current concepts as anxiety, stress and depression, among the emotions, and obesity, sexual behaviour and the need to achieve, among the motivations.

Prerequisite: PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures and seminars three hours a week.

PSYC 3406 [0.5 credit] (formerly 49.346\*)

### **Psychological Factors in Health and Illness**

Topics covered include sociocultural influences on physical health, psychological factors in physical disease, behavioural diagnostic techniques, pain and its regulation, factors affecting compliance to therapy, and behavioural variables in the treatment and management of physical disorders.

Prerequisite: PSYC 1001 and PSYC 1002, or PSYC 1000.

Lectures and seminars three hours a week.

PSYC 3500 [1.0 credit] (formerly 49.350)

### **Developmental Psychology (Honours Seminar)**

The major theoretical and empirical approaches within developmental psychology are examined through a detailed consideration of selected topics. Students may be required to complete independent research projects.

Prerequisites: PSYC 2001 and PSYC 2002 (or PSYC 2000), PSYC 2500. A GPA of 8.00 or better in all graded Carleton Psychology courses is normally required. Permission of the Department required. Limited enrolment, intended for Honours students.

Lectures, seminars and laboratory tutorials six hours a week.

PSYC 3504 [0.5 credit] (formerly 49.354\*)

### **Psychology of Adult Development and Aging**

Development and change after the age of physical maturity.

Prerequisite: PSYC 2500.

Lectures three hours a week.

PSYC 3505 [0.5 credit] (formerly 49.355\*)

### **Exceptional Children**

Selected topics concerning exceptional children such as mentally retarded, brain damaged, physically handicapped, disturbed and gifted children.

Prerequisite: PSYC 2500.

Lectures and seminars three hours a week.

PSYC 3506 [0.5 credit] (formerly 49.356\*)

### **Cognitive Development**

Human cognitive development is examined with a focus on memory, thinking and language through the life span. Topics may include perceptual and language development, emergent literacy, development of strategies and development of reading and arithmetic skills.

Prerequisites: PSYC 2500 and PSYC 2700.

Lectures three hours a week.

PSYC 3507 [0.5 credit] (formerly 49.357\*)

### **Social Development**

The development of the individual is examined with a focus on social cognition and social behaviour. Topics may include the role of temperament in development, the role of parents, siblings and peers in social/emotional development, the development of prosocial and aggressive behaviour, moral development and the development of self and other understanding.

Prerequisite: PSYC 2500.

Lectures three hours a week.

PSYC 3600 [1.0 credit] (formerly 49.360)

### **Personality (Honours Seminar)**

Issues and research methodologies in the study of personality.

Included may be a consideration of research on psychopathology and personality theory, and evaluation of psychotherapy/counseling process and outcome. Students may be required to complete independent research projects.

Prerequisites: PSYC 2001 and PSYC 2002 (or PSYC 2000), PSYC 2600. A GPA of 8.00 or better in all graded Carleton Psychology courses is normally required. Permission of the Department required. Limited enrolment, intended for Honours students.

Lectures, seminars and laboratory tutorials six hours a week.

PSYC 3603 [0.5 credit] (formerly 49.363\*)

### **Psychology of Women**

An examination of the literature on the psychology of women. Topics to be considered include: theories of female personality development, sex differences in ability and personality, biological influences on female behaviour, female sexuality, sex roles, women's roles throughout the life span.

Prerequisite: PSYC 2100 or PSYC 2500 or PSYC 2600.

Lectures three hours a week.

PSYC 3604 [0.5 credit] (formerly 49.364\*)

### **Abnormal Psychology**

History of the concept of behavioural abnormality. Theory and selected research dealing with the nature and etiology of behavioural abnormality.

Prerequisites: PSYC 2600 or PSYC 2500 or both PSYC 1001 and PSYC 1002, or PSYC 1000, and third-year standing.

Lectures three hours a week.

PSYC 3606 [0.5 credit] (formerly 49.366\*)

### **Issues in Personality**

Topics selected from areas of interest in Personality. When offered, detailed topic descriptions are available from the departmental office prior to registration.

Prerequisites: PSYC 2001 and PSYC 2002 (or PSYC 2000) and PSYC 2600; or permission of the Department.

Lectures three hours a week.

PSYC 3700 [1.0 credit] (formerly 49.370)

### **Cognition (Honours Seminar)**

Issues and research methodologies in the study of cognitive processes involved in perception, attention, language, reasoning, problem solving, decision making, human learning, and memory. The major theoretical issues and the empirical studies of human. Limited enrolment.

Prerequisites: PSYC 2001 and PSYC 2002 (or PSYC 2000), PSYC 2700 and permission of the Department. A GPA of 8.00 or better in all graded Carleton Psychology courses is normally required. Intended for Honours students.

Lectures, seminars, and laboratory tutorials six hours a week.

PSYC 3702 [0.5 credit] (formerly 49.372\*)

### **Perception**

A consideration of data and theory concerning perceptual processes. Such topics as psychophysical methodology, perception of form and space and perceptual learning are discussed.

Prerequisites: PSYC 1001 and PSYC 1002, or PSYC 1000, and one of PSYC 2001 and PSYC 2002 (or PSYC 2000) or MATH 1007 and MATH 1107 (or equivalent).

Lectures three hours a week.

PSYC 3800 [1.0 credit] (formerly 49.380)

### **Introduction to Human-Computer Interaction (Honours Seminar)**

The theoretical and practical basis of Human Computer Interaction (HCI) will be covered from a psychological perspective. Topics may include input/output devices, user modeling, the software development life cycle, dialog design, help and documentation, social issues, and usability evaluation. Limited enrolment, intended for Honours students.

Prerequisite: PSYC 2800 (PSYC 2700 recommended) and permission of the Department.

Lecture, seminars and laboratory work, six hours a week.

PSYC 3901 [0.5 credit] (formerly 49.391\*)

### **Practicum in Community Psychology**

Through seven-hour-a-week field placements and regular class forums, students are provided with the opportunity to pursue personal learning objectives concerning the application of psychology within the community. Academic requirements are

satisfied through a term paper, which integrates the experiential knowledge gained in the placement with theoretical and empirical knowledge gained from the literature review.  
 Note: Students registered in the Criminology and Criminal Justice concentration should enrol in PSYC 3903 and/or PSYC 3904.  
 Prerequisite: Open to third- and fourth-year Psychology students with permission of the Department.

PSYC 3902 [0.5 credit] (formerly 49.392\*)

**Practicum in Community Psychology**

Through seven-hour-a-week field placements and regular class forums, students are provided with the opportunity to pursue personal learning objectives concerning the application of psychology within the community. Academic requirements are satisfied through a term paper, which integrates the experiential knowledge gained in the placement with theoretical and empirical knowledge gained from the literature review.  
 Prerequisite: Open to third- and fourth-year Psychology students with permission of the Department.

PSYC 3903 [0.5 credit] (formerly 49.393\*)

**Co-operative Work Term Report 1**

A comprehensive report is due on what was learned during the first work term.  
 Prerequisites: Registration in the Co-op Education Option of the Human-Computer Interaction program of the Psychology department and permission of the Department.

PSYC 4001 [0.5 credit] (formerly 49.401\*)

**Special Topics in Psychology**

Each section of PSYC 4001 deals with a different topic. A list of this year's topics can be obtained from the Psychology Undergraduate office after March 1. Students may register in more than one section of PSYC 4001 but can register in each section only once.  
 Prerequisites: Each section will have its own prerequisites and permission of the Department is required.  
 Lectures three hours a week.

PSYC 4008 [0.5 credit] (formerly 49.408\*)

**Human Assessment**

A critical appraisal of assessment techniques used for research, classification, and clinical/counseling purposes. Topics may include reliability, validity, and utility of tests, individual difference measurement in general psychology, ethical issues in testing, and alternatives to orthodox assessment.  
 Precludes additional credit for PSYC 3800.  
 Prerequisites: PSYC 2001 and PSYC 2002 (or PSYC 2000) and at least one of PSYC 2100, PSYC 2500, PSYC 2600.

PSYC 4207 [0.5 credit] (formerly 49.427\*)

**Neuropsychology of Memory Disorders**

Memory disorders that have a neuropsychological origin will be covered.  
 Prerequisite: PSYC 3207.  
 Lecture and seminar three hours a week.

PSYC 4300 [0.5 credit] (formerly 49.430\*)

**History and Theory of Psychology: Selected Topics**

Among topics that may be covered: the history of a particular period, the history of a content area or issues related to theory in psychology.  
 Prerequisites: third-year standing, and PSYC 2300 or permission of the Department.  
 Lectures and seminars three hours a week.

PSYC 4703 [0.5 credit] (formerly 49.473\*)

**Cognition and Instruction**

General theories of skill and knowledge acquisition as they relate to learning in specific subject matter areas, cognitive analyses of talks and performances that are instructionally relevant, and cognitive-theoretical analyses of instructional interventions.  
 Prerequisites: third-year standing, PSYC 2001 and PSYC 2002 (or PSYC 2000) and PSYC 2700, and permission of the Department.  
 Lectures three hours a week.

PSYC 4704 [0.5 credit] (formerly 49.474\*)

**Psychology and Language**

The perception and production of language will be covered

from a psychological perspective. Topics may include the biology of language, speech perception, word recognition, reading, text comprehension, and language development.  
 Prerequisite: PSYC 2700.  
 Lecture and seminar three hours a week.

PSYC 4800\* [0.5 credit] (formerly 49.480\*)

**Psychological Aspects of Product Design Methodology**

Important issues in designing successful computerized products, including design guidelines, usability testing and user-needs analysis. Experienced designers and researchers from industry participate.  
 Prerequisites: third-year standing and permission of the Department.  
 Lectures three hours a week.

PSYC 4805 [0.5 credit] (formerly 49.485\*)

**Social Aspects of Computer Use**

The challenge of designing computer and communication systems for people working in teams in a range of complex organizational settings will be covered. Topics may include the design and evaluation of training programs, the assessment of attitudes towards computers, and distributed group decision making. Emphasis on the organizational and interpersonal changes resulting from the introduction of computers into work settings. Also offered at the graduate level, with additional or different requirements, as PSYC 5106, for which additional credit is precluded.  
 Prerequisite: PSYC 2800 and PSYC 3800 or permission of instructor. (PSYC 2100 recommended.)  
 Lecture and seminar three hours a week.

PSYC 4900 [0.5 credit] (formerly 49.490\*)

**Independent Study**

A reading or research course for selected students who wish to investigate a particular topic of interest. Available to third- and fourth-year students only. Normally students may not offer more than one credit of independent study in their total program.  
 Prerequisite: permission of the Department.

PSYC 4902 [0.5 credit] (formerly 49.492\*)

**Independent Study**

A reading or research course for selected students who wish to investigate a particular topic of interest. Available to third- and fourth-year students only. Normally students may not offer more than one credit of independent study in their total program.  
 Prerequisite: permission of the Department.

PSYC 4903 [0.5 credit] (formerly 49.493\*)

**Co-operative Work Term Report 2**

A comprehensive report is due on what was learned during the second work term.  
 Prerequisites: Registration in the Co-op Education Option of the Human-Computer Interaction program of the Psychology department, successful completion of PSYC 3903, and permission of the Department.

PSYC 4904 [0.5 credit] (formerly 49.494\*)

**Co-operative Work Term Report 3**

A comprehensive report is due on what was learned during the third work term.  
 Prerequisites: Registration in the Co-op Education Option of the Human-Computer Interaction program of the Psychology department, successful completion of PSYC 4903, and permission of the Department.

PSYC 4905 [1.0 credit] (formerly 49.495)

**Essay for B.A. (Honours) in Psychology**

During the fall term, exercises to develop skills necessary to write and read critically, including time management, literature searches, writing styles, and computer-assisted document preparation. During the winter term a substantial essay is prepared under the supervision and approval of the instructor.  
 Note: Re-registration for this course will not be permitted.  
 Precludes additional credit for PSYC 4907, PSYC 4908 and PSYC 4909.  
 Prerequisites: fourth-year standing in B.A. (Honours) in Psychology, PSYC 3000, 1.0 additional credit in Psychology above the 2000-level, and permission of the Department.  
 Lectures and discussion as scheduled by the instructor.

PSYC 4907 [1.0 credit] (formerly 49.497)

**Thesis for B.Sc. with Honours in Psychology**

Open to all candidates for the B.Sc. degree with Honours in Psychology. A thesis project is conducted under the direct supervision of a Faculty Adviser from the Department of Psychology. Prerequisites: fourth-year Honours standing in Psychology; PSYC 3000 or STAT 2507 and STAT 2509 or MATH 2107 and STAT 2507\*; one of PSYC 3200, PSYC 3500, PSYC 3700 or PSYC 3800; and permission of the Department.

Lectures as scheduled by the Instructor; other hours as arranged with the Faculty Adviser.

PSYC 4908 [1.0 credit] (formerly 49.498)

**Thesis for B.A. with Honours in Psychology**

Open to all candidates for the B.A. (Honours) in Psychology. A thesis project is conducted under the direct supervision of a Faculty Adviser from the Department of Psychology.

Precludes additional credit for PSYC 4905, PSYC 4907 and PSYC 4909.

Prerequisites: fourth-year Honours standing in Psychology, PSYC 3000 or STAT 2507 and STAT 2509 or Mathematics MATH 2107 and STAT 2507, one of PSYC 3100, PSYC 3200, PSYC 3400, PSYC 3500, PSYC 3600, PSYC 3700 or PSYC 3800; and permission of the Department.

Lectures as scheduled by the instructor; other hours as arranged with the Faculty Adviser.

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## Public Affairs and Policy Management (PAPM)

Arthur Kroeger College of Public Affairs  
Faculty of Public Affairs and Management

PAPM 1000 [1.0 credit] (formerly 58.100)

**Introduction to Public Affairs and Policy Management**

The theoretical, philosophical and ethical foundations for the study of public affairs and policy management. Drawing from classic and contemporary texts in political philosophy and theory, students will consider issues relating to the nature of democracy, civic society and social organizations, the public, public affairs and public interest.

Prerequisite: registration in the Bachelor of Public Affairs and Policy Management Program.

Lecture and discussion three hours a week.

PAPM 2000 [1.0 credit] (formerly 58.200)

**Policy: Analysis, Implementation and Evaluation**

The institutions and processes of policy-making, implementation and evaluation. Forces that shape policy deliberations and alternative tools for managing policy action and policy evaluation. Theoretical approaches to understanding the origins of policy, and methods by which programs are designed and assessed.

Prerequisite: PAPM 1000 and good standing in the Bachelor of Public Affairs and Policy Management program.

Lecture and discussion three hours a week.

PAPM 3000 [0.5 credit] (formerly 58.300\*)

**Policy Research**

An examination of the research strategies and techniques relevant to policy analysis and evaluation. Using the case study method, the role of research and research organizations in the policy process is discussed. The issue of ethical dilemmas in policy research is also considered.

Prerequisite: PSCI 2700 or MCOM 2001, or ECON 2200 and good standing in the Bachelor of Public Affairs and Policy Management program.

Lecture and discussion three hours a week

PAPM 3100 [0.5 credit] (formerly 58.310\*)

**Co-operative Work Term**

Prerequisite: registration in the B.P.A.P.M. Co-operative Option, completion of the Co-op preparation classes offered by the Co-op Office and permission of the Arthur Kroeger College.

PAPM 3101 [0.5 credit] (formerly 58.311\*)

**Co-operative Work Term**

Prerequisite: registration in the B.P.A.P.M. Co-operative Option and permission of the Arthur Kroeger College.

PAPM 3102 [0.5 credit] (formerly 58.312\*)

**Co-operative Work Term**

Prerequisite: registration in the B.P.A.P.M. Co-operative Option and permission of the Arthur Kroeger College.

PAPM 4000 [0.5 credit] (formerly 58.400\*)

**Capstone Seminar in Public Affairs and Policy Management**

A policy workshop focusing on the application of public affairs analysis to develop problem solving and research skills. The seminar will be policy-focused and organized by area of Specialization in the program. Students, working in small groups, will examine concrete policy problems, actual or simulated, in specific institutional contexts.

Prerequisite: PAPM 3000 and good standing in the Bachelor of Public Affairs and Policy Management program.

Seminar three hours a week

PAPM 4908 [1.0 credit] (formerly 58.498)

**Honours Research Essay**

The Honours essay, which represents a major research paper in the student's Area of Specialization, is carried out under the direction of a faculty supervisor who is either selected by the candidate or assigned early in the year. The Honours essay is evaluated by both the supervisor and an appointed reader.

Prerequisite: fourth-year standing in the Bachelor of Public Affairs and Policy Management program.

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## Public Policy and Administration (PADM)

School of Public Policy and Administration  
Faculty of Public Affairs and Management

PADM 3105 [0.5 credit] (formerly 50.315\*)

**Management in the Public Sector**

Consideration of constraints and opportunities of public-sector management, including government at all levels and para-statal organizations. Topic may include the accountability regimes, features of the human resource management context, administration of information and material resources, responsibilities and relationships of managers towards citizens.

Prerequisite: third-year standing in the B.P.A.P.M. program.

Seminar three hours a week.

PADM 4008 [0.5 credit] (formerly 50.408\*)

**Environmental Policy**

Canadian environmental policies and programs in a comparative political-economic and institutional context. Also offered as the graduate level, with additional or different requirements, as PADM 5008, for which additional credit is precluded.

Prerequisite: fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Enrolment is limited.

PADM 4009 [0.5 credit] (formerly 50.409\*)

**Health Policy**

An examination of Canadian health policies and programs set in a comparative political-economic and institutional context. Also offered at the graduate level, with additional or different requirements, as PADM 5009, for which additional credit is precluded.

Prerequisite: fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Enrolment is limited.

PADM 4509 [0.5 credit] (formerly 50.459\*)

**Tax Policy**

An examination of Canadian tax policies set in a comparative political-economic and institutional context. Also offered at the graduate level, with additional or different requirements, as PADM 5509, for which additional credit is precluded.

Prerequisite: fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Enrolment is limited.



PADM 4600 [0.5 credit] (formerly 50.460\*)

**Sustainable Development and Industrial and Innovation Policy**

An examination of sustainable development ideas and ethics and their links to Canadian and comparative industrial and innovation policies including policies that affect: Research and Development incentives, intellectual property, trade and competition, and the knowledge-based services delivered by government to business and consumers. Also offered at the graduate level, with additional or different requirements, as PADM 5600, for which additional credit is precluded.

Prerequisite: fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Enrolment is limited.

PADM 4604 [0.5 credit] (formerly 50.464\*)

**Social Policy**

A seminar which will study the nature and historical development of social programs and the welfare state in capitalist countries, with particular focus on Canada. The course will concentrate on developing a critical understanding of the social forces shaping these programs and evaluating the implications of current debate on the future of social policy in Canada. Also offered at the graduate level, with additional or different requirements, as PADM 5604, for which additional credit is precluded.

Prerequisite: fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Enrolment is limited.

PADM 4701 [0.5 credit] (formerly 50.471\*)

**Gender and Public Policy**

An examination of policy and policy-making as they pertain to gender relations within the state as well as in society. The course looks at the negative and positive effects of public policy on gender relations in the family and the labour market. Also offered at the graduate level, with additional or different requirements, as PADM 5701, for which additional credit is precluded.

Prerequisite: fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Enrolment is limited.

PADM 4703 [0.5 credit] (formerly 50.473\*)

**Ethics in Public Service**

Introduction to the ethical assumptions and ambiguities of organizational relationships and situational loyalties of the public service. The role of the state and para-statal organizations in Canadian society will be reviewed, providing an opportunity to consider whether institutions themselves can advance.

Prerequisite: fourth-year standing in the B.P.A.P.M. program. Seminar three hours a week.

PADM 4704 [0.5 credit] (formerly 50.474\*)

**Regional Policy**

Examination of theory and practice of regional policy, using the Canadian experience as a case study. Analysis of regionalism and regional economic concerns; alternative policy approaches, critical review of Canadian efforts. Emphasis on how federalism shapes perceptions, influences the approach to solutions. Also offered at the graduate level, with additional or different requirements, as PADM 5704, for which additional credit is precluded.

Prerequisite: fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Enrolment is limited.

PADM 4806 [0.5 credit] (formerly 50.486\*)

**Aboriginal Policy**

An examination of Canadian policies and programs on aboriginal peoples and aboriginal peoples' own policies as nations set in a comparative political-economic and institutional context. Also offered at the graduate level, with additional or different requirements, as PADM 5806, for which additional credit is precluded.

Prerequisite: fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Enrolment is limited.

PADM 4807 [0.5 credit] (formerly 50.487\*)

**Trade Policy**

An examination of Canadian multilateral and regional trade policies and programs set in a comparative political-economic and institutional context. Also offered at the graduate level, with additional or different requirements, as PADM 5807, for which additional credit is precluded.

Prerequisite: fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Enrolment is limited.

PADM 4809 [0.5 credit] (formerly 50.489\*)

**Education Policy**

An examination of Canadian policies and programs in education set in a comparative political-economic and institutional context. Also offered at the graduate level, with additional or different requirements, as PADM 5809, for which additional credit is precluded.

Prerequisite: fourth-year standing in the Public Policy and Administration Specialization of the B.P.A.P.M. program. Enrolment is limited.

**Religion (RELI)**

College of the Humanities

Faculty of Arts and Social Sciences

RELI 1000 [0.5 credit] (formerly 34.100\*)

**Judaism, Christianity, Islam**

A survey of the basic beliefs and practices of these major religious traditions from their beginnings to the present.

Lecture three hours a week.

RELI 1001 [0.5 credit] (formerly 34.101\*)

**Asian Religions**

A survey of the basic beliefs and practices of these major religious traditions from their beginnings to the present.

Lecture three hours a week.

RELI 1205 [0.5 credit] (formerly 34.125\*)

**Interpretations of Religion**

Modern inquiry into the nature of religion from various perspectives such as anthropology, history, psychology, sociology and theology. Myths, symbols, scriptures, doctrines, codes and rituals of religious traditions.

Precludes additional credit for RELI 1205 or RELI 2002.

Lecture three hours a week.

RELI 1402 [0.5 credit] (formerly 34.142\*)

**Varieties of Religious Experience**

The variety of religious experiences and their interpretations: myth, literature, art and religious doctrine. Topics include time, self, the Other, journey and wisdom. Examples ranging from shamanistic experience to the abstractions of Buddhist philosophy. Restricted to students registered in the Bachelor of Humanities program.

Precludes additional credit for RELI 1205, RELI 1205 and RELI 1206.

Lectures three hours a week.

RELI 2003 [0.5 credit] (formerly 34.203\*)

**Women in Christian Tradition**

An examination of the status of women in Christianity, including such themes as images of women and gender roles in churches, recent feminist theologies, practical questions such as inclusive language and the ordination of women, and alternative approaches to Christian spirituality.

Lecture three hours a week.

RELI 2005 [0.5 credit] (formerly 34.205\*)

**Introduction to Hinduism**

An introduction to the basic beliefs, myths and symbols, methods of meditation and ethical principles developed in the main branches of the Hindu tradition. The study includes a survey of movements stemming from the Hindu tradition such as Transcendental Meditation and Krishna Consciousness.

Precludes additional credit for RELI 1005.

Lecture three hours a week.

RELI 2006 [0.5 credit] (formerly 34.206\*)

**Hinduism: Formative Period**

A historical survey of the formation of the Hindu scriptures, the development of basic philosophic concepts and the establishment of the Shiva, Vishnu and Goddess traditions. Discussions of Hindu practices of meditation and presentations of Hindu religious art.

Prerequisite: second-year standing.

Lecture two hours a week.

RELI 2102 [0.5 credit] (formerly 34.212\*)

**Graeco-Roman Religions**

A study of religion in the ancient Mediterranean, concentrating on the rise of individualism, life after death, mystery religions, hero cults, gnosticism, asceticism, and magic. (Also listed as CLCV 2102.)

Lecture three hours a week.

RELI 2106 [0.5 credit] (formerly 34.216\*)

**Introduction to Buddhism**

An introduction to the basic beliefs and practices of the Buddhist tradition and a brief survey of its development and transformations in India, Sri Lanka, Southeast Asia, Tibet, China and Japan.

Precludes additional credit for RELI 1006.

Lecture three hours a week.

RELI 2206 [0.5 credit] (formerly 34.226\*)

**Judaism: the Biblical Era**

An introduction to the history of Judaism and the Jews as seen through biblical and non-biblical sources. Special emphasis is placed on the evolution of leadership, community, and institutions as the Hebrews move from tribal to national identity.

Precludes additional credit for RELI 1002 and RELI 1200.

Lecture three hours a week.

RELI 2207 [0.5 credit] (formerly 34.227\*)

**Early Christianity**

The rise of the Christian movement as revealed in the New Testament and other early evidence. Topics include the Hellenistic and Jewish context, Jesus, Paul, Jewish Christianity, the Johannine writings, feminist and sociological approaches to the early church.

Precludes additional credit for RELI 1003 and RELI 1200.

Lecture three hours a week.

RELI 2208 [1.0 credit] (formerly 34.228)

**From Christ to Constantine**

The history, literature and thought of early Christianity. The first term will concentrate on the New Testament and its background, the second on subsequent developments that led to the Christianization of the Roman Empire.

Precludes additional credit for RELI 1003 and RELI 2207.

Lectures three hours per week.

RELI 2300 [0.5 credit] (formerly 34.230\*)

**Mysticism**

A historical and functional study of mystical experience in its religious context, relying on examples from selected traditions such as the Christian, Buddhist, Hindu, Jewish and Muslim.

Precludes additional credit for RELI 2300.

Lecture three hours a week.

RELI 2301 [0.5 credit] (formerly 34.231\*)

**Topics in Mysticism**

Contents of this course may vary from year to year.

Lecture three hours a week.

RELI 2305 [1.0 credit] (formerly 34.235)

**Religion and Ethics**

The nature of religious ethics, both the explicit moral principles and rules of various religious traditions, and the general moral perspectives. A selection of contemporary moral issues examined in depth.

Prerequisite: Other Religion course or permission of the Department.

Lecture three hours a week.

RELI 2307 [0.5 credit] (formerly 34.237\*)

**Selected Topics in Religion**

Contents of this course vary from year to year.

Lecture three hours a week.

RELI 2308 [0.5 credit] (formerly 34.238\*)

**Death and Afterlife**

The meaning of death and afterlife in some religious traditions and secular philosophies with emphasis on the Hindu teaching of the immortal soul; the Hebraic idea of collective survival; the Christian doctrine of resurrection of the body; the Buddhist conception of no-soul and nirvana.

Lecture three hours a week.

RELI 2403 [1.0 credit] (formerly 34.243)

**Religion and Society**

Cross-cultural survey of religious institutions, with attention to theories and methodologies in the study of religion. Topics include myth, totemism, cults, ritual, altered states of consciousness, and the relationship of religion to other social institutions and processes. (Also listed as SOAN 2403.)

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lecture three hours a week.

RELI 2507 [0.5 credit] (formerly 34.257\*)

**Christianity**

The range of Christian thought and history from the time of Jesus to the present.

Precludes additional credit for RELI 1007.

Lecture three hours a week.

RELI 2508 [0.5 credit] (formerly 34.258\*)

**Introduction to Judaism**

The history of Judaism and the Jewish people from the Second Temple until the present day. The organization, basic beliefs, social and ethical practices of the Jews and Judaism.

Precludes additional credit for RELI 1008.

Lecture three hours a week.

RELI 2509 [0.5 credit] (formerly 34.259\*)

**Introduction to Islam**

An introduction to the Muslim religious tradition and investigation of its organization, basic beliefs, social and ethical principles and practices.

Precludes additional credit for RELI 1009.

Lecture three hours a week.

RELI 2601 [0.5 credit] (formerly 34.261\*)

**Philosophy of Religion**

A philosophical examination of some characteristic concepts of religion, such as faith, hope, worship, revelation, miracle, God. (Also listed as PHIL 2601.)

Prerequisite: a course in Philosophy or second-year standing.

Lecture three hours a week.

RELI 2701 [0.5 credit] (formerly 34.271\*)

**Judaism: The Early Period**

The history of Judaism and the Jewish people from the Maccabees to the Rabbinic Age. The rise of sectarian movements (Pharisees, Saducees and Qumran Covenanters), the rise of Christianity, revolutionaries such as the Zealots and Bar Kochba, the Jewish responses to Hellenism, the reshaping of Judaism after the destruction of the Second Temple, and Rabbinic Judaism in Palestine and the Diaspora.

Lecture two hours a week.

RELI 2702 [0.5 credit] (formerly 34.272\*)

**Islam in the Modern World**

An examination of Islam in the last two hundred years, including the nature of the Islamic resurgence and the new forms of Islamic vitality.

Precludes additional credit for RELI 2704.

Lecture three hours a week.

RELI 2708 [1.0 credit] (formerly 34.278)

**The Middle East: 1798 to 2000**

Civilization and culture of the Middle East from 1798 to the present with emphasis on the mutual discovery of East and West, the search for identity, the impact of colonialism and international rivalry, and social, religious and cultural change within a continuing tradition. (Also listed as HIST 2708.)

Lecture two hours a week.

RELI 3005 [0.5 credit] (formerly 34.305\*)

**Psychology of Religion: Jung**

Jung's major statements in the Collected Works about the psychogenesis of religion and the implications this has for the understanding of humanity as religious. Precludes additional credit for RELI 3006. Lecture three hours a week.

RELI 3200 [0.5 credit] (formerly 34.320\*)

**Topics in Indian Thought**

Contents of this course vary from year to year. Prerequisite: one course in Buddhism. Lecture three hours a week.

RELI 3205 [0.5 credit] (formerly 34.325\*)

**Topics in Women in Religion**

Descriptive and critical analysis of perspectives on women, sex, and gender in selected religious traditions. Contents of this course may vary from year to year. Prerequisite: second-year standing or higher. Lecture three hours a week.

RELI 3208 [1.0 credit] (formerly 34.328)

**The Life and Teaching of Jesus**

A systematic study of the available records of the life of Jesus. Lectures, readings and discussions on the historical context of the life of Jesus and on the milieu within which the records developed. Precludes additional credit for RELI 2205. Lecture three hours a week.

RELI 3300 [1.0 credit] (formerly 34.330)

**The Life and Thought of Paul**

Paul's relation to the Old Testament, Rabbinic Judaism, and Hellenism; the mission to the Gentiles; the "mysticism" of Paul; central ideas such as justification by faith, predestination, the Holy Spirit, the Church. Consideration of the situation and message of each of Paul's writings. Prerequisite: second-year standing or higher. Lecture three hours a week.

RELI 3301 [0.5 credit] (formerly 34.331\*)

**Theory and Method**

Examination of selected theoretical and methodological models used in the interpretation of religious data. Contents of this course vary from year to year. Prerequisite: second-year standing or higher. Lecture two hours a week.

RELI 3302 [0.5 credit] (formerly 34.332\*)

**Studies on Christianity**

Selected problems in the study of the Christian religion. Prerequisite: one course in Religion. Lecture three hours a week.

RELI 3306 [0.5 credit] (formerly 34.336\*)

**Selected Topics in Religion**

Contents of this course may vary from year to year. Prerequisite: second-year standing or higher. Lecture three hours a week.

RELI 3308 [0.5 credit] (formerly 34.338\*)

**Topics in Early Christianity**

Contents of this course vary from year to year. Prerequisite: second-year standing or higher. Lecture three hours a week.

RELI 3402 [0.5 credit] (formerly 34.342\*)

**Selected Topics in Islam**

Contents of this course vary from year to year. Prerequisite: second-year standing or higher. Lecture three hours a week.

RELI 3505 [0.5 credit] (formerly 34.355\*)

**Topics in Judaism**

Contents of this course vary from year to year. Prerequisite: second-year standing or higher. Seminar three hours a week.

RELI 3605 [0.5 credit] (formerly 34.365\*)

**James, Freud and Jung**

Discussion of religiously significant texts from the works of William James, Sigmund Freud and C.G. Jung. Precludes additional credit for RELI 2605. Prerequisite: second-year standing or permission of the Discipline. Lecture three hours a week.

RELI 3700 [1.0 credit] (formerly 34.370)

**Evolution of Christian Thought**

Historical and cultural development of selected aspects of Christian thought from its origins to the modern period. Cultural shifts, doctrines of God and Christ, the church as an institution; conciliarism and reform; the Protestant Reformation and its aftermath. Precludes additional credit for RELI 2700. Prerequisite: second-year standing. Lecture three hours a week.

RELI 3708 [0.5 credit] (formerly 34.378\*)

**Reformation Europe**

A history of the Protestant and Catholic Reformations of the sixteenth century, with special emphasis on the theological disputes of the protagonists and the impact of these disputes on the social, political and cultural developments of the era. (Also listed as HIST 3708.) Prerequisite: a 2000-level History course. Lecture three hours a week.

RELI 3800 [1.0 credit] (formerly 34.380)

**Modern Religious Thought**

Major currents and developments of religious and philosophical thought among Protestants and Catholics in the nineteenth and twentieth centuries. Protestant developments from the Kantian critique to the present and Catholic thought from its response to the French Revolution up to and beyond Vatican II. Precludes additional credit for RELI 2800. Prerequisite: one course in Religion or Philosophy. Lecture three hours a week.

RELI 3900 [1.0 credit] (formerly 34.390)

**Problems in Interpretation**

A course conducted on a tutorial or seminar basis designed to enable advanced students to pursue interests in selected areas of religion. Prerequisite: permission of the Discipline. Tutorial/seminar three hours a week.

RELI 3901 [0.5 credit] (formerly 34.391\*)

**Problems in Interpretation**

A course conducted on a tutorial or seminar basis designed to enable advanced students to pursue interests in selected areas of religion. Prerequisite: permission of the Discipline. Tutorial/seminar three hours a week.

RELI 4800 [0.5 credit] (formerly 34.480\*)

**Topics in Religious Studies**

A seminar on a topic in religious studies. Topic for 2002-2003: Jews, Christians and Romans. The interaction of Jews, Christians and Romans in the first three centuries CE, including the origins of Christian anti-Semitism, the success and expansion of Christianity, and Roman attitudes towards Jews and Christians. Prerequisite: third-year standing in B.A. (Honours) or Combined B.A. (Honours) in Religion, or in the B.A. or B.A. (Honours) in Classics, Religion and Humanities. Seminar three hours a week.

RELI 4801 [0.5 credit] (formerly 34.481\*)

**Tutorial**

A tutorial on a topic in religious studies. Contents of the tutorial to be arranged with the supervising faculty member. Prerequisite: third-year standing in B.A. (Honours) or Combined B.A. (Honours) in Religion, or in the B.A. or B.A. (Honours) in Classics, Religion and Humanities.

RELI 4908 [1.0 credit] (formerly 34.498)(2.0 credits)

**Honours Essay**

A written proposal in consultation with a Program Director, consisting of title, outline and bibliography must be submitted



to and approved by the Honours Essay Proposal Board. The essay of approximately 16,000 words is jointly evaluated on its completion by the Departmental Director and one other member of the department.

Precludes additional credit for RELI 4909. (Consult Departmental Document for further details.)

Prerequisite: fourth-year standing in the B.A. in Religion, or in the B.A. in Classics, Religion and Humanities and permission of the Discipline.

Seminar three hours a week.

RELI 4909 [1.0 credit] (formerly 34.499)

#### **Honours Essay**

A written proposal in consultation with a Program Director, consisting of title, outline and bibliography must be submitted to and approved by the Honours Essay Proposal Board. The essay of approximately 10,000 words is jointly evaluated on its completion by the Departmental Director and one other member of the department. (1.0 credit) (Consult Departmental Document for further details.)

Precludes additional credit for RELI 4908.

Prerequisite: fourth-year standing in B.A. (Combined Honours) in Religion or in the B.A. in Classics, Religion and Humanities and permission of the Discipline.

Seminar three hours a week.

#### • Language Courses

Language courses are intended for students specializing in a particular religious tradition. They are offered according to the availability of members of the Discipline. Courses taken at the 2000-level or above will be mainly independent study under the supervision of a member of the Discipline. Students interested in taking these courses should consult the Co-ordinator.

RELI 1902 [1.0 credit] (formerly 34.192)

#### **Elementary Language Tutorial**

Elementary study of the language required for studying a religious tradition. Restricted to students registered in a Religion program.

Tutorial two hours a week.

RELI 2902 [1.0 credit] (formerly 34.292)

#### **Intermediate Language Tutorial**

Intermediate study of the language required for studying a religious tradition. Restricted to students registered in a Religion program.

Prerequisite: RELI 1902 or permission of the Discipline.

Tutorial two hours a week.

RELI 3902 [1.0 credit] (formerly 34.392)

#### **Advanced Language Tutorial**

Advanced study of the language required for studying a religious tradition. Restricted to students registered in a Religion program.

Prerequisite: RELI 2902 or permission of the Discipline.

Tutorial two hours a week.

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## Russian (RUSS)

School of Linguistics and Applied

Language Studies

Faculty of Arts and Social Sciences

RUSS 1000 [1.0 credit] (formerly 36.100)

#### **Introductory Russian**

Basic skills in oral comprehension and an adequate grasp of the mechanics of the language. Compulsory attendance.

Precludes additional credit for RUSS 1200.

Offered either intensively in one term (8 hours per week plus out-of-class requirements) or over two terms (4 hours per week plus out-of-class requirements).

RUSS 1200 [2.0 credits] (formerly 36.120)

#### **Intensive Introductory Russian**

For students with no knowledge of Russian. Provides a rapid and thorough grounding in how to read, write and speak Russian. Compulsory attendance.

Precludes additional credit for Russian 36.100, 36.121.

Eight hours per week plus out-of-class requirements.

RUSS 1201 [1.0 credit] (formerly 36.121)

#### **Low Intermediate Russian**

For students with limited prior knowledge of Russian. Continuation of the study of Russian to reach by the end of the course a level of proficiency comparable to that of students who complete RUSS 1200. Compulsory attendance.

Precludes additional credit for RUSS 1200.

Prerequisite: RUSS 1000 or equivalent and permission of the School

Offered either intensively in one term (8 hours per week plus out-of-class requirements) or over two terms (4 hours per week plus out-of-class requirements).

RUSS 2000 [1.0 credit] (formerly 36.200)

#### **Intermediate Russian**

Continuation of the study of Russian to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for RUSS 2001, RUSS 2002, RUSS 2005.

Prerequisite: RUSS 1200 or RUSS 1201, or equivalent.

Four hours per week plus out-of-class requirements.

RUSS 3000 [1.0 credit] (formerly 36.300)

#### **Advanced Russian**

Continuation of the study of Russian to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Precludes additional credit for Russian 36.301\*, 36.302, 36.305\*.

Prerequisite: RUSS 2000 or equivalent.

Four hours per week plus out-of-class requirements.

RUSS 4200 [0.5 credit]

#### **Russian Syntax and Translation**

Fundamental concepts of Russian syntax as applied to the practice of translation from Russian to English. Seminars three hours a week.

Precludes additional credit for Russian 36.307\* and 36.308\*.

RUSS 4201 [0.5 credit]

#### **Russian for the Social Sciences**

Reading, translation and discussion in Russian of documents, reports and articles.

Seminars three hours a week.

Precludes additional credit for Russian 36.420\*.

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## Social Work (SOWK)

School of Social Work

Faculty of Public Affairs and Management

SOWK 1000 [1.0 credit] (formerly 52.100)

#### **Introduction to Social Work and Social Welfare**

Social work practice, principles and knowledge base, current social problems and related fields of practice. Analysis of the relationship between social welfare and Canadian society, and the interrelationship among social work practice, societal change, social problems and social programs.

Lecture three hours a week.

SOWK 2000 [1.0 credit] (formerly 52.200)

#### **Structural Analysis and Social Work**

Establishes framework for the utilization of social science theory in social work practice. Contributions from psychology, social, political and economic theory in contexts of race, gender and class.

Prerequisites: Honours standing in the B.S.W. program and SOWK 1000, or permission of the School.

Lecture three hours a week.

SOWK 2002 [0.5 credit] (formerly 52.202\*)

#### **Social Control and Deviance in Social Work**

Theories of deviance and the structural contexts of deviant labeling and social control are explored in the context of social work practice. Students explore the implications of stigma in their lives and in the lives of those they serve.

Prerequisite: SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School of Social Work.

Lecture three hours a week.

SOWK 2003 [0.5 credit] (formerly 52.203\*)

**Drugs in Society: Theory, Policy and Practice**

An examination of the extent and nature of alcohol and other drug use, theoretical explanations of drug dependence, history of drug policy development and current federal and provincial drug strategies. Strategies for social work practice are outlined. Prerequisite: SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School of Social Work. Lecture three hours a week.

SOWK 2004 [0.5 credit] (formerly 52.204\*)

**Human Sexuality**

Psychosocial and political issues surrounding human sexuality. The influence of culture; the range of individual differences in sexual and reproductive attitudes, values and behaviour; concerns of various sexually oppressed groups; sexual values and norms and social policy affecting sexual behaviour; implications for social work practice. Prerequisite: SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School. Lecture three hours a week.

SOWK 2100 [0.5 credit] (formerly 52.210\*)

**The Political Economy of Social Welfare**

History and theories of welfare. Contemporary issues such as the nature of the labour market, the family, the voluntary sector, and the state as the institutions through which welfare is provided in contemporary society. Prerequisites: Honours standing in the B.S.W. program and SOWK 1000, or permission of the School. Lecture three hours a week.

SOWK 2101 [0.5 credit] (formerly 52.211\*)

**Poverty and Social Policy**

Studies of poverty and the distribution of income and wealth in Canada; origins and persistence of inequality of income and wealth; social policies and poverty. Prerequisite: SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School. Lecture three hours a week.

SOWK 2102 [0.5 credit] (formerly 52.212\*)

**Housing Policy**

Introduction to modes of analysis of housing and policy; current Canadian housing programs and policies; contemporary issues in policy analysis. Prerequisite: SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School. Lecture three hours a week.

SOWK 2201 [0.5 credit] (formerly 52.221\*)

**Working with Children and Youth**

Preventative and protective social work intervention with children and youth. Problems of child neglect, abuse and violence in the context of family, organizational mandate and social political contexts. Programs and services for children and youth. Prerequisite: SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School. Lecture three hours a week.

SOWK 2500 [1.0 credit] (formerly 52.250)

**Research Methods in Social Work**

A range of research methods designs, including quantitative and qualitative. Alternative paradigms include: participatory, feminist, community based. Prerequisite: SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School. Lectures three hours a week.

SOWK 3000 [1.0 credit] (formerly 52.300)

**Foundations of Structural Analysis, Social Welfare and Social Work**

Social work, social welfare policy and social services in Canada. Interactions between personal and social problems, political and state organization, households, and the economy. Precludes additional credit for SOWK 100, and SOWK 2000. Prerequisites: Third-year Honours standing upon admission to the B.S.W. and permission of the School. Lecture three hours a week.

SOWK 3009 [0.5 credit] (formerly 52.309\*)

**Special Topics in Social Work**

Theory, policy or direct practice that is not ordinarily treated in the regular course program. Choice of topics varies from year to year and is announced well in advance. Prerequisite: third-year Honours standing; SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School. Lecture three hours a week.

SOWK 3100 [0.5 credit] (formerly 52.310\*)

**Social Administration and Policy**

Administration, management, social research and planning. Theory and practice of the welfare state and social policy; structure and management of major social programs; social administration as a form of social work practice. Prerequisite: Honours standing in the B.S.W. Program; SOWK 1000, SOWK 2000 or SOWK 3000 and SOWK 2100 or permission of the School. SOWK 3000 may be taken concurrently. Lecture three hours a week.

SOWK 3101 [0.5 credit] (formerly 52.311\*)

**Race and Social Policy**

Theories of racism; race analysis of social welfare issues and social policy; and racism in Canadian society and specifically in the welfare state; racism in the history of Canadian welfare state. Prerequisite: SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School. Lecture three hours a week.

SOWK 3103 [0.5 credit] (formerly 52.313\*)

**Group Processes in Social Psychology**

In-depth coverage of one or more sub-areas of social psychology introduced in PSYC 2100. Topics may include interaction in the dyad, coalition formation in larger groups, history and theory of small group research, North America, West-European and East-European models of groups behaviour, and training groups in industry. (Also listed as PSYC 3103). Prerequisite: PSYC 2100 or permission of the School. Lecture three hours a week.

SOWK 3109 [0.5 credit] (formerly 52.319\*)

**Special Topics in Social Work**

Theory, policy or direct practice that is not ordinarily treated in the regular course program. Choice of topics varies from year to year and is announced in advance of registration. Prerequisite: third-year Honours standing; SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School. Lecture three hours a week.

SOWK 3200 [0.5 credit] (formerly 52.320\*)

**Social Work Practice in Communities and Organizations**

Major theories and practices pertaining to work in communities and human service organizations. Society's contribution to client problems and the impact of agency structures on services. Social change theories and methods for social work practitioners. Prerequisites: Honours standing in the B.S.W. program; SOWK 1000, SOWK 2000, or SOWK 3000 and SOWK 2100; or permission of the School. SOWK 3000 and SOWK 3600 are normally taken concurrently. Lecture three hours a week.

SOWK 3201 [0.5 credit] (formerly 52.321\*)

**Social Work Practice: Individuals, Families and Groups**

Development of practice competency in work with individuals, families and groups. Integration of interpersonal and analytic skills in learning effective strategies within a structural framework. Influence of class, race and gender in shaping personal and social well-being. Prerequisites: Honours standing in the B.S.W. program, SOWK 1000, SOWK 2000, or SOWK 3000 and SOWK 2100; or permission of the School. SOWK 3000 and SOWK 3600 are normally taken concurrently. Lecture three hours a week.

SOWK 3202 [0.5 credit] (formerly 52.322\*)

**Practice Skills in Social Work**

Practice of specific analytical and intervention skills needed for structural Social Work.

Precludes additional credit for SOWK 2202.  
Prerequisite: SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School.  
Lecture three hours a week.

SOWK 3204 [0.5 credit] (formerly 52.324\*)  
**Models of Practice with Individuals and Families**

Contemporary models of social work practice. The strengths and limitations of each model, as well as issues, questions and problems relating to practice.  
Prerequisite: SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School.  
Lecture three hours a week.

SOWK 3205 [0.5 credit] (formerly 52.325\*)

**Strategies of Community Change**

Models and methods of grass-roots organizing for social change. Studying and working with community groups, students learn strategic planning, organizing, and evaluation skills.  
Prerequisite: SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School.  
Lecture three hours a week.

SOWK 3206 [0.5 credit] (formerly 52.326\*)

**Community Development and Social Change**

Introduction to theories, models and methods of grassroots organizing for social change and development; theory and practice of community development as a strategy for social change; models and methods of community organizing; development of a personal approach to ground community organizing practice.  
Prerequisites: Public Affairs and Policy Management 58.200 or SOWK 1000 or SOWK 3000 (which may be taken concurrently); or permission of the School.  
Lecture three hours a week.

SOWK 3207 [0.5 credit] (formerly 52.327\*)

**Human Rights Practice in Civil Society**

Examines the advocacy role and capacity of organizations in civil society to increase popular participation in promoting and protecting human rights; includes transnational and national non-governmental organizations, grassroots movements, community organizations, and virtual or Internet-based organizations.  
Prerequisites: PAPM 1000 or SOWK 1000 or SOWK 3000 (which may be taken concurrently); or Interdisciplinary 03.101 or permission of the School.  
Lecture three hours a week.

SOWK 3501 [0.5 credit] (formerly 52.351\*)

**Statistics for Social Workers**

Concepts and applications of descriptive and inferential statistics relevant to the problems encountered by social workers and other human service practitioners. Selection and utilization of statistical methods in policy making and program development.  
Prerequisites: SOWK 1000; or SOWK 3000; and SOWK 2500; or permission of the School.  
Lecture three hours a week.

SOWK 3502 [0.5 credit] (formerly 52.352\*)

**Qualitative Research Methods in Social Work**

Introduction to qualitative research. How to gather data that exists in terms of lived experience thickly embedded in the historical, interactional, emotional and relational worlds of everyday life. Draws on strategies from feminist research, participatory and social action research, phenomenological research and makes application to social work practice.  
Prerequisites: SOWK 1000; or SOWK 3000, and SOWK 2500 or equivalent; or permission of the School of Social Work.  
Lecture three hours a week.

SOWK 3600 [2.0 credits] (formerly 52.360)

**Field Practice I**

Focus on integrating theory and practice in a community setting supervised by a field supervisor. Monthly seminar included. Graded as Sat/Uns.  
Prerequisites: Honours standing in the B.S.W. and concurrent enrolment in SOWK 3200 or SOWK 3201 in the fall term and SOWK 3200 or SOWK 3201 in the winter term, and permission of the School.  
364 hours of field work over two terms.

SOWK 3804 [0.5 credit] (formerly 52.384\*WW)

**Law of the Family**

Legal framework surrounding the family and family relationships in Canadian society. Topics include marriage and cohabitation, matrimonial support, custody and access, and dissolution of marriage. State interventions through law; law and change in family structures; equality issues; dispute resolution processes. (Also listed as LAWS 3804.)  
Prerequisite: LAWS 2003.  
Lectures three hours a week.

SOWK 4102 [0.5 credit] (formerly 52.412\*)

**Aboriginal Peoples and Social Policy**

Social welfare issues from an Aboriginal perspective (Canadian, international), including child welfare, racism, justice, violence against women and children, substance abuse. Policy issues within a historical and contemporary social, political and economic context. Implications of self-determination for Aboriginal social policy and programs.  
Precludes additional credit for SOWK 3102.  
Prerequisite: third-year Honours standing, SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School.  
Lecture three hours a week.

SOWK 4103 [0.5 credit] (formerly 52.413\*)

**Practice and Policy in Immigration**

Canadian immigration policies and practices. The historical context of immigration policies; direct practice with immigrants and refugees; settlement and integration issues; immigrants and refugee women; intergenerational family relations; resources and community organizing.  
Prerequisite: third-year Honours standing, SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School.  
Lecture three hours a week.

SOWK 4104 [0.5 credit] (formerly 52.414\*)

**International Themes in Social Work and Social Welfare**

Social welfare policy development with a focus on the Third World. Social policies and practices are examined in relation to the needs of the people and the problems inherent in North American models.  
Precludes additional credit for SOWK 3104.  
Prerequisite: third-year Honours standing, SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School.  
Lecture three hours a week.

SOWK 4105 [0.5 credit] (formerly 52.415\*)

**Management of Non-Profit Organizations**

Introduction to theories, models and methods of managing non-profit organizations; role, nature and values of the non-profit sector in a market society; practical knowledge of management in different types of non-profit organizations (e.g. cooperatives, voluntary associations, public advocacy and community service organizations).  
Prerequisites: PAPM 3000; or SOWK 2100 and SOWK 3100 (which may be taken concurrently).  
Lecture three hours a week.

SOWK 4200 [0.5 credit] (formerly 52.420\*)

**Honours Integrative Seminar**

Designed to help students to arrive at a synthesis of theory and practice, and to develop skills of critical self-evaluation.  
Prerequisites: fourth-year Honours standing in the B.S.W. program; SOWK 2100, SOWK 3100, SOWK 3200, SOWK 3201, SOWK 3600 and SOWK 4600, or SOWK 4601 and SOWK 4602.  
Lecture three hours a week.

SOWK 4202 [0.5 credit] (formerly 52.422\*)

**AIDS: Policy, Programs and Practice**

Personal, social and political aspects of Acquired Immune Deficiency Syndrome. Knowledge, skills and values important for social workers in co-ordinating health and social services, program development and political analysis and working in partnership with people living with AIDS.  
Prerequisite: third-year Honours standing, SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School.  
Lecture three hours a week.



SOWK 4203 [0.5 credit] (formerly 52.423\*)

**Social Work Practice from an Aboriginal Perspective**

Cultural identity of the original peoples of Canada, their traditional values, cultural-based behaviour and the effects on them of changing times and relations. Emphasis on culture-specific skills and approaches. Role of the political, legal, and constitutional status of Canadian aboriginal peoples.

Prerequisite: third-year Honours standing, SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4204 [0.5 credit] (formerly 52.424\*)

**Social Work and Aging**

Social perspectives on aging with focus on models of practice that contribute to the independence of elderly people. Social programs and policies, such as social insurance, social services, housing, public health and health care. Social, psychological and political issues related to independence in later life.

Prerequisite: third-year Honours standing, SOWK 1000, or SOWK 3000 (which may be taken concurrently); or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4206 [0.5 credit] (formerly 52.426\*)

**Feminist Counseling**

Examines theory, practice and literature. Commonalities arising from sexism, racism, class oppression, heterosexism, disability, ageism, etc.

Prerequisite: SOWK 3201; or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4209 [0.5 credit] (formerly 52.429\*)

**Special Topics in Social Work**

Theory, policy or direct practice that is not ordinarily treated in the regular course program. Choice of topics varies from year to year and is announced in advance of registration.

Prerequisite: third-year Honours standing; SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School.

Lecture three hours a week.

SOWK 4300 [0.5 credit] (formerly 52.430\*)

**Social Work: Persons with Disabilities**

Social work roles in regards to persons with disabilities. Structural analysis of policies and practices pertaining to such persons: cultural, historical, medical, social, political and economic. The disability rights perspective as it opposes the medical model and "ableist" ideals.

Precludes additional credit for SOWK 3009 (when listed as Social Work with People with Disabilities).

Prerequisite: third-year Honours standing, SOWK 1000; or SOWK 3000 (which may be taken concurrently); or permission of the School of Social Work.

Lecture three hours a week.

SOWK 4600 [2.0 credits] (formerly 52.460)

**Field Practice II**

Development, application, testing and integration of knowledge, theory and skills in practice with individuals, families groups and communities, in research or in social administration and policy. Graded Sat/Uns.

Precludes additional credit for SOWK 4601 and SOWK 4602. Prerequisites: Third-year Honours standing in the B.S.W. program; SOWK 2100, SOWK 3100, SOWK 3200, SOWK 3201, SOWK 3600; and permission of the School.

364 hours of fieldwork and bi-weekly seminars.

SOWK 4601 [1.0 credit] (formerly 52.461)

**Field Practice II A**

Development, application, testing and integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or social administration and policy. Graded Sat/Uns.

Precludes additional credit for SOWK 4600.

Prerequisite: Honours standing in the B.S.W. program, SOWK 2100, SOWK 3100, SOWK 3200, SOWK 3201, SOWK 3600, and permission of the School.

SOWK 4602 [1.0 credit] (formerly 52.462)

**Field Practice II B**

Development, application, testing and integration of knowledge, theory and skills in practice with individuals, families, groups and communities, in research or social administration and policy. Graded Sat/Uns.

Precludes additional credit for SOWK 4600.

Prerequisites: Honours standing in the B.S.W. program. SOWK 2100; SOWK 3100, SOWK 3200, SOWK 3201, SOWK 3600, and SOWK 4601; and permission of the School.

SOWK 4701 [0.5 credit] (formerly 52.471\*)

**Special topic in Criminal Justice and Social Policy**

Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the Department of Law. (Also listed as LAWS 4701 and SOCI 4701).

Prerequisite: fourth-year Honours standing or permission of the School.

SOWK 4702 [0.5 credit] (formerly 52.472\*)

**Special topic in Criminal Justice and Social Policy**

Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the Department of Sociology. (Also listed as LAWS 4702 and SOCI 4702).

Prerequisite: fourth-year Honours standing or permission of the School.

SOWK 4703 [0.5 credit] (formerly 52.473\*)

**Special topic in Criminal Justice and Social Policy**

Selected topic in criminal justice and social policy. Topics announced in advance. Part of the Summer School in Criminal Justice and Social Policy and offered by the School of Social Work. (Also listed as LAWS 4703 and SOCI 4703).

Prerequisite: fourth-year Honours standing or permission of the School.

SOWK 4900 [0.5 credit] (formerly 52.490\*)

**Independent Study**

A reading or research course for students who wish to investigate a particular topic of interest. Students may take a maximum of 1.0 credit of independent study in their total program.

Prerequisite: third- or fourth-year standing in the B.S.W. and permission of the School.

SOWK 4902 [0.5 credit] (formerly 52.492\*)

**Independent Study**

A reading or research course for students who wish to investigate a particular topic of interest. Students may take a maximum of 1.0 credit of independent study in their total program.

Prerequisite: third- or fourth-year standing in the B.S.W. and permission of the School.

SOWK 4908 [1.0 credit] (formerly 52.498)

**Honours Essay**

Research essay undertaken under the supervision of a faculty adviser. The project may take the form of an experiment, a case study, historical research, or such other work as meets with the adviser's approval. Faculty regulations apply.

Prerequisites: third- or fourth-year Honours standing in the B.S.W. and permission of the School.

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## Sociology (SOCI)

Department of Sociology and Anthropology

Faculty of Arts and Social Sciences

SOCI 1000 [1.0 credit] (formerly 53.100)

**Introduction to Sociology**

Introduction to the comparative study of social groups, classes and institutions. The main emphasis is on industrialized societies with special attention given to Canadian society.

Precludes additional credit for SOAN 1000.

Students in any Sociology and/or Anthropology program should consult the departmental Program information in this Calendar. Lectures three hours a week.

SOCI 2003 [1.0 credit] (formerly 53.203)

**Introduction to Sociological Research**

Introduction to general issues in sociological research. Topics include the logic of research, problems of research design, fundamental techniques of data collection in sociology and problems in the ethics of research. Students are introduced to both qualitative and quantitative research methods.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures and workshop three hours a week.

SOCI 2100 [1.0 credit] (formerly 53.210)

**Social Psychology**

Relationship between the individual and the social system. Emphasis on integrating individual and social approaches. Topics include attitudes, cognition, motivations, group processes such as socialization, symbolic interaction, coercion, conformity, leadership, cohesion.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, introductory Psychology, or permission of the Department.

Lectures three hours a week.

SOCI 2400 [0.5 credit] (formerly 53.240\*)

**Sociology of Science and Technology**

Survey of the changing nature of knowledge, information and the social shaping of science and technologies, and their impact on perception, notions of truth, forms of interaction and modes of relations at scales from the local to the global.

Prerequisite: one of SOCI 1000, ANTH 1000 or SOAN 1000 or equivalent, or permission of the Department.

Lecture and discussion three hours a week.

SOCI 2407 [1.0 credit] (formerly 53.247)

**Women in Society**

Inquiry into the historical and contemporary roots of sex-role determination. A comparative analysis of the position of women in various social formations is attempted, in conjunction with an examination of various theoretical perspectives concerning women's societal role. Emphasis is on the Canadian context.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 2501 [0.5 credit] (formerly 53.251\*)

**Introduction to Population Studies**

Introduction to the basic principles of demography. Past and present population growth, and the determinants of population growth, are examined. Interrelations among demographic, social, cultural and economic factors are investigated. Where possible, Canadian demographic material is discussed.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 2502 [0.5 credit] (formerly 53.252\*)

**Sociology of Aging and the Elderly**

Implications of population aging for Canadian social structure. Major issues, theories and research regarding aging and the elderly in contemporary society. Canada's changing age structure and the economy, the polity, social policy, the family, the composition and living conditions of the elderly.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 2504 [0.5 credit] (formerly 53.254\*)

**Urban Sociology**

Issues related to people and the urban environment, including the historical process of urbanization, rural-urban transition, the diffusion of urban values and life styles, contemporary urban problems, such as urban renewal, pollution and the pressures of the urban environment on social institutions.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 2505 [0.5 credit] (formerly 53.255\*)

**Sociology of Deviance**

Analysis of the relation of deviant and criminal behaviour in modern society to the functioning of social systems. Emphasis is given to theories of causation, types of deviance, the creation and evasion of rules and social roles of deviants.

Prerequisite: Grade of C- or better in one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent.

Lectures three hours a week.

SOCI 2506 [0.5 credit] (formerly 53.256\*)

**Police in Society**

Examination of the organization and activities of the police in industrialized societies. Emphasis on Canadian information and the themes of social control, police discretion, and the relations of police to a democratic society.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 2507 [0.5 credit] (formerly 53.257\*)

**The Sociology of Work**

Sociological aspects of work with emphasis on: the changing meaning of work; changing impact of technology; alienation; shift from primary to secondary to tertiary sectors; changing participation rate of men and women; ethnicity and work; impact of social policy; and labour resources problems in developed and developing societies.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 2508 [0.5 credit] (formerly 53.258\*)

**The Sociology of Occupations and Professions**

The social history of occupations and an examination of: occupational choice; recruitment; training and careers in non-professional and professional occupations; traditional and non-traditional views of professions, semi and para professions; and the changing participation and experiences of women in traditional and non-traditional occupations.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 2600 [0.5 credit] (formerly 53.260\*)

**Community**

The community is studied as a localized social system in a larger social setting. This involves analysis of demographic and ecological factors as well as a variety of community-based institutions. Special attention is given to decision-making, community planning and development.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 2701 [0.5 credit] (formerly 53.271\*)

**Criminology**

The relationship of crime and social structure with a special emphasis on policies and programs by which society reacts to crime.

Prerequisite: Grade of C- or better in one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent.

Lectures three hours a week.

SOCI 3001 [0.5 credit] (formerly 53.301\*)

**Alcohol and Other Drugs: Contributions from the Social Context**

Survey of alcohol and other drug use in cross-cultural and sub-group perspectives. Examines relationships between culture, social structure and patterns of use of psychoactive substances. Topics may include: alcohol use and the life cycle, drug policies (national and international) and treatment.

Prerequisite: SOCI 1000 or SOAN 1000, SOCI 2505, third-year standing or permission of the Department.

Lecture and discussion three hours a week.

SOCI 3105 [1.0 credit] (formerly 53.315)

**Sociology of Education**

Examination of educational institutions, their interplay with one another and with other social institutions; educational opportunity; the school and university as organizations; individual and social effects of education; the sociology of learning. Comparative consideration of contemporary critiques of the education system.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

SOCI 3201 [0.5 credit] (formerly 53.321\*)

**Gender and Criminal Justice**

An overview of women as both perpetrators and victims of crime, and the criminal justice system's response to them. Topics may include: woman abuse, sexual assault, federally sentenced women. Prerequisite: SOCI 1000 and SOCI 2701, third-year standing or permission of the Department.

Lecture and discussion three hours a week.

SOCI 3405 [0.5 credit] (formerly 53.345\*)

**Stratification and Mobility**

Principal theoretical and empirical questions in social class and social mobility in complex societies. Bases and forms of inequality are examined with data from Canada, England, the United States, Eastern Europe, China, Japan and other societies. Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 3406 [0.5 credit] (formerly 53.346\*)

**Industrial Sociology**

Inquiry into the development, structure and prospects of industrial society and post-industrial society; the relation of industrial institutions to the rest of society; the internal organization of industrial institutions; problems of management, labour and union relations.

Precludes additional credit for SOCI 2406.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 3407 [0.5 credit] (formerly 53.347\*)

**Power**

The principal concern of the course is the nature of power in human groups - its sources, forms and processes. Particular attention is paid to community and national elites and power structures.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 3408 [0.5 credit] (formerly 53.348\*)

**Collective Behaviour and Social Movements**

Inquiry into the process of collective action as part of social change at various levels. Topics discussed include crowds, fashions, labour, political and religious movements, rebellion and revolution.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

SOCI 3500 [0.5 credit] (formerly 53.350\*)

**Political Behaviour**

Examination of sociological contributions to the study of political behaviour and of the relations between politics and the social structure, both in Canada and in other societies. Emphasis is placed upon political socialization, the class basis of politics, conflict, mass movements and change.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 3501 [0.5 credit] (formerly 53.351\*)

**Methods of Population Analysis**

Introduction to demographic techniques. Problems in the collection and analysis of population data, such as population

censuses and vital registration. Emphasis is placed upon the application of "demographic" methods (e.g., cohort analysis) to other areas of sociological investigation.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

SOCI 3506 [0.5 credit] (formerly 53.356\*)

**Complex Organizations**

Large-scale organizations in industrial and post-industrial societies; their origins; the varieties of forms they may take; various sociological explanations; the relation of organizations to the structure and culture of societies; class, gender and culture within complex organizations.

Precludes additional credit for SOCI 3505.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOCI 3507 [0.5 credit] (formerly 53.357\*)

**Law Enforcement**

A comparative study of contemporary law enforcement practices. Private and public policing are examined in Canada and other societies (in particular the United States and the United Kingdom). May also include the historical development of policing in cross-cultural perspective.

Prerequisites: SOCI 1000 and SOCI 2506, third-year standing or permission of the Department.

Lecture and discussion three hours a week.

SOCI 3700 [1.0 credit] (formerly 53.370)

**Research Design and Data Analysis**

Integrated approach to the problems involved in the analysis of quantitative data. Research design and procedure and statistical inference are studied. It is recommended that Sociology Honours students take this course in the third year of study.

Precludes additional credit for ECON 2200 and PSYC 3000.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures and workshop four hours a week.

SOCI 3703 [0.5 credit] (formerly 53.373\*)

**Criminal Justice Policy**

Description of Canadian criminal justice administration, including prison, parole, probation and community treatment, with an emphasis on conflicting ideologies and the dynamics of policy-making decisions. Consideration is given to the relationship between criminal justice policy and other aspects of social change.

Note: Places in this course are limited; students formally admitted to and registered in the Criminology and Criminal Justice programs will be given priority.

Prerequisites: SOCI 2505, SOCI 2701 (53.270 prior to 1988-89) and third-year standing, or permission of the Department.

Lectures three hours a week.

SOCI 3705 [0.5 credit] (formerly 53.375\*)

**Medical Sociology**

Social factors related to health and illness, the illness role, relationships between patients and health practitioners, and the organization of health services. Social psychology of health and illness and the structure of organizations concerned with health care.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

SOCI 3801 [0.5 credit] (formerly 53.381\*)

**Sociology of Law**

Development of law in the contexts of modernity, the West and capitalism. Writings on law by Durkheim, Weber and Marx; their influence on the development of the sociology of law. (Also listed as LAWS 3106.)

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.



SOCI 3802 [0.5 credit] (formerly 53.382\*)

### **Social Policy**

Introduction to Social Policy in Canadian context. Examines social policy over a broad range of areas. Focus will depend on the specific policy areas that the instructor is researching. The development and outcomes of social policy will be investigated from a number of theoretical perspectives.

Precludes additional credit for SOCI 3800.

Prerequisites: SOCI 1000 and third-year standing or permission of the Department.

Lecture and discussion three hours a week.

SOCI 3803 [0.5 credit] (formerly 53.383\*)

### **Introduction to Evaluation Research**

Program evaluation refers to a set of theories and practices that aid in the rational assessment of the goals and impacts of social programs. Topics may include: current theoretical debates, identification of stakeholders, program monitoring, targeting interventions and impact assessment.

Precludes additional credit for SOCI 3800.

Prerequisites: SOCI 2003 and SOAN 2005 or permission of the Department and third-year standing.

Lecture and discussion three hours a week.

SOCI 3808 [0.5 credit] (formerly 53.388\*)

### **Selected Issues in Criminal Justice**

This course focuses on conflicting goals among components of the criminal justice system, the theory and practice of correctional institutions and their alternatives, and offenders' rights.

Note: Places in this course are limited; students formally admitted to and registered in the Criminology and Criminal Justice programs will be given priority.

Prerequisites: SOCI 2505, SOCI 2701 (53.270 prior to 1988-89) and third-year standing, or permission of the Department.

Lectures three hours a week.

SOCI 4000 [0.5 credit] (formerly 53.400\*)

### **Field Placement: Research and Analysis**

Research experience in a professional research setting. Students spend up to one day a week in a research organization, and prepare an assessment of their placement. Enrolment limited. Consult the Honours Sociology Co-ordinator.

Prerequisites: fourth-year Honours Sociology standing, SOCI 3700, and permission of the Department.

SOCI 4001 [0.5 credit] (formerly 53.401\*)

### **Workshop in Applied Sociological Research**

Application of sociological theories and methods to practical problems. Issues of research design, data collection, ethics, ownership of data and policy implications may be considered. Students will participate in various aspects of the research process including proposal writing, analysis of secondary data, developing research strategies.

Prerequisites: Open only to students in the Applied Social Policy Research Concentration. Other fourth-year students will be admitted if space is available.

Seminar three hours a week.

SOCI 4003 [0.5 credit] (formerly 53.403\*)

### **Workshop in Advanced Research Design**

Research-oriented course that allows students to develop advanced research design skills in qualitative and quantitative techniques. Topics to be covered include philosophy of science, the nature of evidence, strategies of research design and data collection.

Prerequisites: fourth-year Honours standing and SOCI 2003, or permission of the Department.

Seminar three hours a week.

SOCI 4004 [0.5 credit] (formerly 53.404\*)

### **Applied Quantitative Data Analysis**

The course examines advanced quantitative methods of data analysis, with a focus on the development and application of technical skills. Topics to be examined may include data processing, accessing public information systems, multivariate analysis, and advanced regression techniques.

Prerequisites: fourth-year Honours standing and SOCI 3700, or permission of the Department.

Seminar three hours a week.

SOCI 4005 [0.5 credit] (formerly 53.405\*)

### **Workshop in the Use and Abuse of Alcohol and Other Drugs**

Topics may include: definitions of addiction; alcohol, other drugs, and crime; groups especially vulnerable to alcohol problems (youth, gay/lesbians, aboriginals); alcohol use and the life cycle; comparative policies in an international perspective; treatment modes and ideologies of treatment.

Prerequisites: SOCI 3001, fourth-year standing or permission of the Department.

Seminar three hours a week.

SOCI 4006 [1.0 credit] (formerly 53.406)

### **Contemporary Theoretical Sociology**

Analysis of sociological theories since the mid-twentieth century such as structuralist, phenomenology and discourse theories, as well as the contributions of modern Marxist and feminist approaches.

Precludes additional credit for SOCI 3006.

Prerequisites: fourth-year Honours standing in Sociology, and SOAN 2005, (or SOAN 3005), or permission of the Department.

Lectures three hours a week.

SOCI 4007 [0.5 credit] (formerly 53.407\*)

### **Woman Abuse**

Provides a comprehensive, critical overview of sociological perspectives on woman abuse. Particular attention will be paid to conceptual, theoretical, methodological and policy issues related to forms of male-to-female victimization.

Prerequisite: fourth-year standing or permission of the Department.

Seminar three hours a week.

SOCI 4204 [0.5 credit] (formerly 53.424\*)

### **Studies in the Design Professions**

Architecture and industrial design, engineering, interior design and planning. Role in culture and society; education, career and work; comparisons to traditional professions and other art and design occupations; structure of knowledge; nature of design practice. (Also listed as ARCH 4204.)

Prerequisite: For SOCI 4204: fourth-year standing in Sociology or permission of the Department. For ARCH 4204: third-year standing in the B.Arch. program, or fourth-year standing in Sociology or the School for Studies in Art and Culture (in the combined Architecture/Art History program); or permission of the School of Architecture.

Seminar three hours a week.

SOCI 4303 [0.5 credit] (formerly 53.433\*)

### **Law in Advanced Capitalist Society**

The changing role and function of law in modern society with particular reference to advanced capitalist societies. Topics include the welfare state and the use of regulatory law; juridification and legalization; counter-trends, deregulation, informalism, legal pluralism. (Also listed as LAWS 4107.)

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOCI 4304 [0.5 credit] (formerly 53.434\*)

### **Sociology of Law and Morals**

Relations between law and morals in social and historical perspective. Mores; types of law; legitimacy; social operation and effectiveness of law; relation between power and law or morality; human rights; totalitarian law. Theorists include Durkheim, Petrazycki, Weber, Pound, Aubert, Habermas, and Luhmann.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOCI 4400 [0.5 credit] (formerly 53.440\*)

### **Environment, Ideology and Social Policy**

Development of North American environmental movement. Topics may include: public perceptions of the environment, environmental protection policy, sustainable development, alternative energy sources, environmental impact assessment, technology strategies, legal remedies to environmental problems, the "green" consumer products, community recycling programs.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOCI 4401 [0.5 credit] (formerly 53.441\*)

**Social Studies of Scientific Knowledge**

Studies in the generation, validation and maintenance of scientific knowledge claims. Topics may include issues in the practices of science, scientific expertise, the ownership of scientific knowledge, the comparison of science and indigenous knowledge, and knowledge claims that lie outside of Western science.

Prerequisites: third-year standing; one of SOCI 1000, ANTH 1000, or SOAN 1000, or permission of the Department.

Seminar three hours a week.

SOCI 4403 [0.5 credit] (formerly 53.443\*)

**Selected Problems in the Uses of Sociology and Social Policy Analysis**

Selected problems in the relation between sociology and the uses to which it may be put. Topics may include: social criticism, social intervention, social policy and social planning, social engineering, systems analysis and action research.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

**Note**

The following courses, SOCI 4501- 4507, are workshops organized either around a specific research topic or around some policy or interventionist issue. The content is expected to vary from year to year reflecting the current research interests of the instructor. When a workshop is offered, a detailed description will be available. In general, specific area workshops are unlikely to be offered more than once in any two-year period.

SOCI 4501 [0.5 credit] (formerly 53.451\*)

**Workshop in Demography/Human Ecology**

Research- and/or policy-oriented seminar that uses census data or other secondary sources to examine topics in Canadian population, technological development, migration or resource use, depending on the research interests of the instructor.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOCI 4502 [0.5 credit] (formerly 53.452\*)

**Workshop on Work and Organizations**

Research-oriented seminar that, depending on the research interests of the instructor, may examine the occupational distribution in Canada, ethnicity, gender and work, occupational choice, trade unions, professional organizations, the professions or bureaucracy.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOCI 4503 [0.5 credit] (formerly 53.453\*)

**Workshop in Criminology/Deviance**

Seminar that, depending on the research interests of the instructor, may consider crime, criminal justice, social processes relating to the implementation of criminal justice policy, or other aspects of criminality or deviance.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOCI 4504 [0.5 credit] (formerly 53.454\*)

**Workshop on Sociology of Education**

Research- or policy-oriented seminar that, depending on the research interests of the instructor, may examine teacher expectancy effects, student culture, barriers to equality of access or other substantive issues.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOCI 4505 [0.5 credit] (formerly 53.455\*)

**Workshop on Stratification and Mobility**

Research-oriented seminar that, depending on the research interests of the instructor, may examine differentiation over time or comparatively, patterns of inheritance mobility, or the effects of

ethnicity, of gender and past education on the structure of inequality. Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOCI 4507 [0.5 credit] (formerly 53.457\*)

**Workshop in Social Psychology**

Research-oriented seminar that, depending on the research interests of the instructor, may focus on one or more of the following topics: attribution theory, cognitive social psychology, conformity, ethno-methodology, psychoanalysis or victimology. Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOCI 4701 [0.5 credit] (formerly 53.471\*)

**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced in advance each year. (Also listed as LAWS 4701 and SOWK 4701.)

Prerequisite: permission of the Department.

Hours to be arranged.

SOCI 4702 [0.5 credit] (formerly 53.472\*)

**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced in advance each year. (Also listed as LAWS 4702 and SOWK 4702.)

Prerequisite: permission of the Department.

Hours to be arranged.

SOCI 4703 [0.5 credit] (formerly 53.473\*)

**Special Topic in Criminal Justice and Social Policy**

Examination of a selected topic in criminal justice and social policy. Topics to be announced in advance each year. (Also listed as LAWS 4703 and SOWK 4703.)

Prerequisite: permission of the Department.

Hours to be arranged.

SOCI 4704 [0.5 credit] (formerly 53.474\*)

**Youth Culture and Juvenile Justice**

Establishment and development of the youth justice system in Canada; analysis of juvenile justice policy in relation to crime patterns and youth culture; emphasis on the federal Young Offenders Act and its consequences for the juvenile justice system. Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOCI 4800 [0.5 credit] (formerly 53.480\*)

**Masculinity and Power**

Examination of masculinity as a social construct; of relationships between masculinity and femininity as they constitute a field of power relations; and of social and discursive practices by which masculinity is re-constituted, historically, and in contemporary times.

Precludes additional credit for SOCI 4800 and SOCI 4805 (if taken with the topic Men's Studies).

Prerequisite: fourth-year Honours or graduate standing, or permission of the Department.

Seminar three hours a week.

SOCI 4802 [0.5 credit] (formerly 53.482\*)

**Sexuality and Human Reproduction**

Recent feminist contributions to understanding the political economy of women's sexuality and reproduction. State and medical regulatory practices, feminist contributions to theorizing sexual subjectivity and representations of the female body. Precludes additional credit for SOCI 4805 (if taken in 1989-90 and 1990-91).

Prerequisites: fourth-year Honours standing and SOCI 2407 or equivalent, or permission of the Department.

Seminar three hours a week.

SOCI 4805 [0.5 credit] (formerly 53.485\*)

**Contemporary Problems in Sociology**

Selected problems in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

SOCI 4806 [0.5 credit] (formerly 53.486\*)

**Contemporary Problems in Sociology**

Selected problems in sociology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOCI 4901 [0.5 credit] (formerly 53.491\*)

**Tutorial in Sociology**

Consult the Department for information.

SOCI 4902 [0.5 credit] (formerly 53.492\*)

**Tutorial in Sociology**

Consult the Department for information.

SOCI 4903 [1.0 credit] (formerly 53.493)

**Directed Research**

Directed studies to investigate a particular topic.

Prerequisites: fourth-year Honours standing in Sociology and permission of the Department. Enrolment is limited to Honours students with a GPA in Sociology of 9.00 or better and a proposal approved by the Honours Committee.

## Sociology-Anthropology (SOAN)

Department of Sociology and Anthropology  
Faculty of Arts and Social Sciences

SOAN 1000 [1.0 credit] (formerly 56.100)

**Principles of Comparative Social Structure: Sociology and Anthropology**

Introduction to the comparative study of human society from the parallel perspective of sociology and social anthropology. The principal focus is on continuity and change in the development of relatively simple and highly complex societies. Precludes additional credit for SOCI 1000 or for ANTH 1000. Students in any Sociology and/or Anthropology program should consult the departmental Program information in this Calendar. Lectures three hours a week.

SOAN 1001 [1.0 credit] (formerly 56.101)

**Human Rights**

Introductory survey of human rights issues such as: foundations and nature of rights; roots of inequality and oppression; aboriginal rights; racism; women and rights; sexual orientation; state and corporate power; economic exploitation; the environment and rights; warfare; torture; and social movements. (Also listed as ISSC 1001.)

Precludes additional credit for FYSM 1104.

Lecture and discussion groups three hours a week.

SOAN 2002 [1.0 credit] (formerly 56.202)

**Power and Everyday Life**

A thematic investigation of the intersection of relations of power and experience in everyday life. Topics may include: leisure, consumption, identity, fashion, sexuality, tourism, health, skills, pollution, and work.

Prerequisites: SOCI 1000 or ANTH 1000 or SOAN 1000 or permission of the Department. Lecture and discussion three hours a week.

SOAN 2005 [1.0 credit] (formerly 56.205)

**The Development of Sociological and Anthropological Thought**

Sociological and anthropological thought since the end of the eighteenth century. Various theoretical approaches within their historical, social and intellectual contexts. Connections between theoretical traditions and current theoretical debates in sociology and anthropology.

Precludes additional credit for SOAN 3005.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department. Lectures three hours a week.

SOAN 2101 [1.0 credit] (formerly 56.211)

**The Sociology of Media Studies**

Topics in the area of media studies and their relationship to cultures and social structures will be treated.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOAN 2105 [0.5 credit] (formerly 56.215\*)

**Language, Ideology and Power**

This course will examine the ways in which different social conditions determine a variety of properties of language in use. Attention will be paid in particular to the linguistic resources for expressing ideological beliefs and for maintaining and reinforcing existing power structures in different institutional and social sites. (Also listed as LALS 2705.)

Lectures three hours a week.

SOAN 2106 [0.5 credit] (formerly 56.216\*)

**Conversational Analysis**

Methods and theory for analyzing ordinary talk. Differences between language in conversation and formal spoken and written language. The relation of conversational analysis to other approaches to studying language. The connection between conversational analysis and studies of interaction. (Also listed as LALS 2706.)

Lectures three hours a week

SOAN 2200 [1.0 credit] (formerly 56.220)

**Canadian Society**

The course focuses on the study of Canadian society as an ongoing social system. Alternative theoretical perspectives are developed and examined for the interpretation they provide of recurrent social issues. Special attention is given to persistence and change in regional, ethnic, class and sex-role differences. Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOAN 2304 [0.5 credit] (formerly 56.234\*)

**Race, Racism and Ethnicity**

An examination of the impact of racism on social relations utilizing historical critical perspectives. This course explores such phenomena as ethnicity, nationalism, colonialism, diasporic cultures and hybridity. It also addresses the influence of migration on race and ethnic relations in diverse societies. Precludes additional credit for SOAN 2305.

Prerequisite: one of SOCI 1000, ANTH 1000 or SOAN 1000 or equivalent, or permission of the Department.

Lecture and discussion three hours a week.

SOAN 2401 [1.0 credit] (formerly 56.241)

**Kinship, Marriage and the Family**

Examination of contemporary marriage and family life with emphasis on Canadian society, historical and cross-cultural aspects of kinship and family forms, changes in marriage and parenthood and associate social policy.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOAN 2403 [1.0 credit] (formerly 56.243)

**Religion and Society**

Cross-cultural survey of religious institutions, with attention to theories and methodologies in the study of religion. Topics include myth, totemism, cults, ritual, altered states of consciousness, and the relationship of religion to other social institutions and processes. (Also listed as RELI 2403.)

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, or permission of the Department.

Lectures three hours a week.

SOAN 2805 [0.5 credit] (formerly 56.285\*)

**Selected Topics**

Selected topics in sociology and/or anthropology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.



SOAN 2806 [0.5 credit] (formerly 56.286\*)

**Selected Topics**

Selected topics in sociology and/or anthropology not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

SOAN 2901 [0.5 credit] (formerly 56.291\*)

**Course-Related Tutorials**

Consult the department for information.

SOAN 2902 [0.5 credit] (formerly 56.292\*)

**Course-Related Tutorials**

Consult the department for information.

SOAN 3003 [0.5 credit] (formerly 56.303\*)

**Documentary Systems**

The production and management of knowledge in the form of documentary systems by governments and private bodies and their consequences for everyday life. Topics may include: the market for information, data mining and privacy, documentary control as social power, the critical analysis of documentary practices.

Prerequisites: third-year standing or permission of the Department.

Lecture and discussion, three hours per week.

SOAN 3007 [0.5 credit] (formerly 56.307\*)

**Aboriginal Peoples and Governmentality**

Cultural practices of governance and regulation, relations of ruling, and the subordination of aboriginal peoples across types of social formation. Topics may include: registration schemes, definitions of status and affiliation, relations of tutelage, property issues, forms of resistance and non-compliance.

Prerequisite: third-year standing or permission of the Department.

Lectures three hours a week.

SOAN 3008 [0.5 credit] (formerly 56.308\*)

**Sex**

The relations among sex, sexuality and gender; sex and its regulation; and links between discourses of sex and morals. Topics may include: the question of sexual revolution, sexual pluralism, sex and social domination.

Prerequisites: third-year standing or permission of the Department.

Lectures three hours a week.

SOAN 3102 [0.5 credit] (formerly 56.312\*)

**Communication, Architecture and the Social Environment**

Theoretical consideration and applied examination of how fixed and movable elements of architectural design and socio-cultural factors influence interaction. Space and territoriality will be central concerns. Additional topics may include: time, colour, temperature, and sound.

Precludes additional credit for SOAN 3101.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, SOCI 2003 or ANTH 2003, SOAN 2101 and third-year standing or permission of the Department.

Lecture and discussion three hours a week.

SOAN 3103 [0.5 credit] (formerly 56.313\*)

**Distance Communication: Gesture and Vocalities**

Theoretical consideration and applied examination of how the body and non-spoken aspects of language influence interaction. Inter-cultural similarities and variations are considered.

Precludes additional credit for SOAN 3101.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, SOCI 2003 or ANTH 2003, SOAN 2101, SOAN 3102 and third-year standing or permission of the Department.

Lecture and discussion three hours a week.

SOAN 3104 [0.5 credit] (formerly 56.314\*)

**Intimate Interaction I: Odour and Appearance.**

Theoretical consideration and applied examination of how odour and appearance influence inter-personal communication. Inter-cultural similarities and variations are considered.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, SOCI 2003 or ANTH 2003, SOAN 2101, SOAN 3102 and third-year standing or permission of the Department.

Lecture and discussion three hours a week.

SOAN 3106 [0.5 credit] (formerly 56.316\*)

**Children and Childhood**

A socio-historical and cross-cultural examination of the construction and deconstruction of childhood in popular culture and global practices. Issues addressed include: child development theories, child labour, trafficking in and sexualization of children, protection and regulation in law, Kid culture and children's social movements.

Prerequisites: third-year standing or permission of the Department.

Lectures three hours a week.

SOAN 3200 [1.0 credit] (formerly 56.320)

**French Canada and Quebec Society**

Analysis of the economic, cultural and political aspects of present-day French Canada and Quebec society, with special reference to the interplay of class, culture and nation. Reading knowledge of French is helpful, but not required.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

SOAN 3205 [0.5 credit] (formerly 56.325\*)

**Selected Topics in Sociology-Anthropology**

Selected topics in sociology and/or anthropology, not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lecture and discussion three hours a week.

SOAN 3206 [0.5 credit] (formerly 56.326\*)

**Selected Topics in Sociology-Anthropology**

Selected topics in sociology and/or anthropology, not ordinarily treated in the regular course program. The choice of topics varies from year to year. Students should check with the Department regarding the topic offered.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lecture and discussion three hours a week.

SOAN 3300 [0.5 credit] (formerly 56.330\*)

**Selected Topics in Race and Ethnic Studies**

Explores a specific focus in race and ethnic studies taught from a non-Eurocentric perspective.

Precludes additional credit for SOAN 2305.

Prerequisite: one of SOCI 1000, ANTH 1000 or SOAN 1000 or equivalent or permission of the Department.

Lecture and discussion three hours a week.

SOAN 3309 [0.5 credit] (formerly 56.339\*)

**Society and Shelter**

Buildings and shelter as human and social products. Topics may include: the perception and cognition of the built environment and its impact on social processes; the design, construction and use of buildings as social processes; the design professions; shelter and social stratification. (Also listed as ARCH 4203.)

Precludes additional credit for SOCI 3309.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000, or permission of the Department.

Lectures three hours a week.

SOAN 3601 [0.5 credit] (formerly 56.361\*)

**Food**

An examination of food in its relation to socio-political and cultural processes. Topics such as food taboos, restrictions and standards, systems of food production, distribution and consumption, the commodification of food, health, and the body.

Prerequisites: third-year standing or permission of the Department.

Lectures three hours a week.

SOAN 3602 [0.5 credit] (formerly 56.362\*)

**Development and Everyday Life**

The dynamics of survival in third world countries in relation to globalization and development. Issues such as the role of non-governmental organizations, local and regional survival strategies, social equality and political development.

Precludes additional credit for SOAN 3600.

Prerequisites: third-year standing or permission of the Department.

Lectures and discussion three hours a week.

SOAN 3803 [0.5 credit] (formerly 56.383\*)

**Anthropology, Art and Everyday Life**

The range of aesthetic and expressive forms that affect the everyday lives of indigenous peoples. Topics may include: the significance of art-making, effects of colonization on Indigenous Peoples' art-making, debates about the commodification and replication of indigenous arts for global markets.

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or an introductory course in Art History; or permission of the Department.

Lecture three hours a week

SOAN 3805 [0.5 credit] (formerly 56.385\*)

**Introduction to Cultural Studies**

Research and theory in the interdisciplinary area of Cultural Studies. Contemporary cultural change in the advanced industrialized societies and its impact on everyday life.

Precludes additional credit for SOAN 3205 (if taken with the topic "Culture Studies: An Introduction" in 1991-92 and 1992-93).

Prerequisite: eligibility for third-year standing and one of SOCI 1000, ANTH 1000, or SOAN 1000; or permission of the Department.

Lectures three hours a week.

SOAN 3901 [0.5 credit] (formerly 56.391\*)

**Course-Related Tutorials**

Consult the Department for information.

SOAN 3902 [0.5 credit] (formerly 56.392\*)

**Course-Related Tutorials**

Consult the Department for information.

SOAN 4008 [0.5 credit] (formerly 56.408\*)

**The Social Construction of Time**

A comparative analysis of institutions and practices of timing and temporal organization. Topics may include: clocks and the making of the modern world, science, administration and world time systems, non-linear time, generations and biographical time, time discipline in everyday life, techniques and politics of social memory.

Prerequisite: fourth-year standing or permission of the Department.

Seminar three hours a week

SOAN 4009 [0.5 credit] (formerly 56.409\*)

**The Soul and the Self**

The experience of selfhood and identity in social and cultural context. The changing social practices of selfhood and self-formation, such as the confession, the examination, diary-writing, psychiatry. Contemporary medical, moral, religious and psychological practices involved in the definition of the essence of the self.

Prerequisites: fourth-year standing or permission of the Department.

Seminar three hours a week.

SOAN 4102 [0.5 credit] (formerly 56.412\*)

**Social Anatomy of the Body**

Explores the historical sociology of the body. The relationships among the body, sex and gender, and medical and moral discourses. Regimes of bodily regulation such as self-presentation, identity management, exercise, consumption and self-help.

Prerequisites: fourth-year standing or permission of the Department.

Seminar three hours per week.

SOAN 4200 [0.5 credit] (formerly 56.420\*)

**Research Workshop on Aboriginal Peoples and Governmentality**

Cultural practices of governance and regulation of aboriginal

peoples across types of social formation.

Prerequisites: fourth-year standing or permission of the Department. Seminar three hours a week.

SOAN 4305 [0.5 credit] (formerly 56.435\*)

**Intimate Interaction II: Touch**

Theoretical consideration and applied examination of how touch influences inter-personal communication. Topics include forms, frequency and meanings of touch. Inter-cultural similarities and variations are considered.

Precludes additional credit for SOAN 3101.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, SOCI 2003 or ANTH 2003, SOAN 2101, SOAN 3102 and fourth-year standing or permission of the Department.

Seminar three hours per week.

SOAN 4306 [0.5 credit] (formerly 56.436\*)

**Intimate Interaction III: Eyes and Face.**

Theoretical consideration and applied examination of how use of the eyes and face act as media of inter-personal communication and influence that process. Inter-cultural similarities and variations are considered.

Precludes additional credit for SOAN 3101.

Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent, SOCI 2003 or ANTH 2003, SOAN 2101, SOAN 3102\* and fourth-year standing or permission of the Department.

Seminar three hours per week.

SOAN 4404 [0.5 credit] (formerly 56.444\*)

**Globalization and the Transformation of Modern Society**

Examination of the phenomenon of globalization as a re-configuration of economies and states, and as a strategy to legitimate particular forms of power and social change. Theoretical arguments will be assessed with reference to Canadian and international research.

Prerequisite: fourth-year standing or permission of the Department.

Seminar three hours a week.

SOAN 4500 [0.5 credit] (formerly 56.450\*)

**Advanced Qualitative Research Methodology in Sociology and Anthropology**

Study of specific methodological topics in social research. Among the topics that may be included are: archival research, interviewing, observational techniques, content analysis, and life history analysis.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOAN 4506 [0.5 credit] (formerly 56.456\*)

**Urban Cultures**

A research-oriented seminar examining social and cultural aspects of urban life, drawing on the local region as a comparative base. Topics may include: urban-rural mobility, the urban context of social and political theories, the relation between the environment and everyday life.

Precludes additional credit for SOCI 4506.

Prerequisite: fourth-year standing or permission of the Department.

Seminar three hours a week.

**Note**

The following courses, SOAN 4508-4509, are workshops organized either around a specific research topic or around some policy or interventionist issue. The content is expected to vary from year to year reflecting the current research interests of the instructor. When a workshop is offered, a detailed description will be available. In general, specific area workshops are unlikely to be offered more than once in any two-year period.

SOAN 4508 [0.5 credit] (formerly 56.458\*)

**Workshop in Political Sociology-Anthropology**

Research-oriented seminar that, depending on the research interests of the instructor, may examine voting behaviour, political movements and parties, national and community

elites, relations between society and the state, the prehistoric state, and social conflict.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOAN 4509 [0.5 credit] (formerly 56.459\*)

**Workshop in Feminist Research and Analysis**

Research-oriented seminar that focuses on current issues in feminist research, depending on the research interests of the instructor.

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOAN 4600 [0.5 credit] (formerly 56.460\*)

**Studies in Applied Semiology**

Relationship between culture and signs, emphasizing text analysis. The scriptures, myths, folk narratives, modern literature and art, the media, pornography, children's drawings are analyzed to illustrate conflicting views on the nature of language. Precludes additional credit for ANTH 4705 (if taken with the same topic).

Prerequisite: fourth-year Honours standing or permission of the Department.

Seminar three hours a week.

SOAN 4601 [0.5 credit] (formerly 56.461\*)

**Social Citizenship in Post-Industrial Welfare States**

Focuses on the contested nature of social citizenship and using comparative material on post-industrial welfare states, the course explores intellectual traditions and new directions in the argument for equality. Particular attention is paid to the positioning of gender in the conceptualization of social citizenship.

Prerequisite: fourth-year standing or permission of the Department.

Workshop three hours a week.

SOAN 4605 [0.5 credit] (formerly 56.465\*)

**Nation, Race, Gender and Citizenship**

Exploration of the rights, oppressions and empowerment of groups mobilized around national, racial and ethnic identities. The emergence of distinctive 'citizenship' statuses for indigenous, immigrant and racially-ethnically defined groups of men and women.

Prerequisites: fourth-year standing or permission of the Department.

Seminar three hours a week.

SOAN 4707 [0.5 credit] (formerly 56.477\*)

**Selected Topics in Power and Everyday Life**

Examination of a selected topic in power and everyday life. Topics to be announced in advance each year.

Prerequisite: fourth-year standing or permission of the Department.

Seminar three hours a week.

SOAN 4709 [0.5 credit] (formerly 56.479\*)

**Women, the State and Everyday Life in the Middle East**

The role of the state in shaping the everyday lives of women in the Middle East. Emphasis on the articulation of gender, politics, culture and ideology. The role of colonialism, class divisions, state-nationalism, religious fundamentalism and sexuality. Case studies of specific countries.

Precludes additional credit for SOCI 4805.

Prerequisite: fourth-year standing or permission of the Department.

Seminar three hours a week.

SOAN 4904 [0.5 credit] (formerly 56.494\*)

**Directed Research in Power and Everyday Life**

A directed research project to be selected in consultation with a member of faculty. Research projects will focus on aspects of the intersection of power and everyday life.

Prerequisite: fourth-year standing in the Concentration in Power and Everyday Life. Students will normally arrange the project topic in consultation with faculty at the end of their third year.

Contact hours to be negotiated with the research supervisor.

SOAN 4906 [0.5 credit] (formerly 56.496\*)

**Research Placement in Power and Everyday Life**

A supervised research placement. Students undertake a research project directly related to the ongoing activities of an Organized Research Unit at Carleton University or other approved organization. A paper reporting the results of the research project must be submitted. It will be graded as Sat/Uns.

Prerequisite: fourth-year standing in the Concentration in Power and Everyday Life. Students will normally arrange the research placement in consultation with faculty at the end of their third year.

Contact hours to be negotiated with supervisor

SOAN 4907 [0.5 credit] (formerly 56.497\*)

**Senior Seminar in Power and Everyday Life**

A research seminar focused on the theoretical, methodological and ethical issues arising from directed research projects and research placements in the Concentration in Power and Everyday Life.

Prerequisite: fourth-year standing or permission of the Department.

Seminar two hours a week.

## Spanish (SPAN)

College of the Humanities

School of Linguistics and Applied

Language Studies

Faculty of Arts and Social Sciences

SPAN 1105 [1.0 credit] (formerly 38.115)

**Introductory Spanish**

For students with no knowledge of Spanish. Oral skills, reading and writing. Compulsory attendance.

Offered either intensively in one term (8 hours per week plus out-of-class requirements) or over two terms (4 hours per week plus out-of-class requirements).

SPAN 2100 [0.5 credit] (formerly 38.210\*)

**Spanish Civilization**

The cultural (especially the literary) heritage of Spain in its social and geographical contexts. Instruction in English, texts in English translation, with an option to read in Spanish.

Lectures and discussion three hours a week.

SPAN 2101 [0.5 credit] (formerly 38.211\*)

**Spanish-American Civilization**

The cultural (especially the literary) heritage of Spanish America in its social and geographical contexts. Instruction in English, texts in English translation, with an option to read in Spanish.

Lectures and discussion three hours a week.

SPAN 2105 [1.0 credit] (formerly 38.215)

**Intermediate Spanish**

Further study of Spanish to reach a more advanced level of ability in a range of situations. Equal emphasis on oral and written language. Compulsory attendance.

Precludes additional credit for SPAN 2003, 38,204, SPAN 2005, SPAN 2006 SPAN 2200.

Prerequisite: SPAN 1105 or equivalent.

Offered either intensively in one term (8 hours per week plus out of class requirements) or over two terms (4 hours per week plus out-of-class requirements).

SPAN 2605 [1.0 credit]

**Literacy Skills in Spanish**

For native speakers of Spanish with minimal reading and writing abilities. Intensive practice in Spanish composition; reading skills. Seminars three hours a week.

SPAN 3105 [1.0 credit] (formerly 38.315)

**Advanced Spanish**

Continuation of the study of Spanish to reach a more advanced level, including the ability to handle authentic materials and primary texts required for academic studies. Compulsory attendance.

Precludes additional credit for Spanish 38.301\*, 38.302\*, 38.303\*, 38.305.



Prerequisite: SPAN 2105 or equivalent.

Offered either intensively in one term (6 hours per week plus out-of-class requirements) or over two terms (3 hours per week plus out-of-class requirements).

SPAN 3200 [0.5 credit] (formerly 38.320\*)

#### **The Golden Age I**

A study of representative works of Spanish literature of the Renaissance and Early Baroque periods. Texts and assignments in Spanish. Instruction may be in English or Spanish.

Prerequisite: SPAN 2100 or permission of the College of the Humanities.

Lectures and discussion three hours a week.

SPAN 3201 [0.5 credit] (formerly 38.321\*)

#### **The Golden Age II**

A study of representative works of Spanish literature of the Baroque period. Texts and assignments in Spanish. Instruction may be in English or Spanish.

Prerequisite: SPAN 2100 or permission of the College of the Humanities.

Lectures and discussion three hours a week.

SPAN 3300 [0.5 credit] (formerly 38.330\*)

#### **Spanish Literature 1800-1900**

A study of representative works of the major movements (Romanticism, costumbrismo, Realism and Naturalism) and authors of Spanish literature of the nineteenth century. Texts and assignments in Spanish. Instruction may be in English or Spanish.

Prerequisite: SPAN 2100 or permission of the College of the Humanities.

Lectures and discussion three hours a week.

SPAN 3301 [0.5 credit] (formerly 38.331\*)

#### **Spanish Literature 1900-2000**

A study of representative works of Spanish literature from the Generation of 1898 on. Texts and assignments in Spanish. Instruction may be in English or Spanish.

Prerequisite: SPAN 2100 or permission of the College of the Humanities.

Lectures and discussion three hours a week.

SPAN 3500 [0.5 credit] (formerly 38.350\*)

#### **Spanish-American Literature**

A study of representative works of Spanish-American literature of the Colonial Period and the nineteenth century prior to Modernism. Texts and assignments in Spanish. Instruction may be in English or Spanish.

Prerequisite: SPAN 2101 or permission of the College of the Humanities.

Lectures and discussion three hours a week.

SPAN 3501 [0.5 credit] (formerly 38.351\*)

#### **Spanish-American Literature**

A study of representative works of Spanish-American literature since 1888. Texts and assignments in Spanish. Instruction may be in English or Spanish.

Prerequisite: SPAN 2101 or permission of the College of the Humanities.

Lectures and discussion three hours a week.

SPAN 3605 [1.0 credit] (formerly 38.365)

#### **Functional Contemporary Spanish**

Advanced spoken and written Spanish with intensive practice in aural comprehension and speaking in a range of situations and contexts, in reading and in composition in a range of modes and genres. Metalinguistic study.

Precludes additional credit for Spanish 38.301\*, 38.302\*, 38.303\*, 38.305.

Prerequisite: SPAN 3105.

Offered either intensively in one term (6 hours per week plus out-of-class requirements) or over two terms (3 hours per week plus out-of-class requirements).

SPAN 4105 [1.0 credit]

#### **Advanced Spanish for Business Purposes**

Advanced spoken and written Spanish with concentration on applications of the language in international business situations. Seminars three hours a week.

## Statistics (STAT)

School of Mathematics and Statistics

Faculty of Science

#### **Note:**

See regulations concerning Deferred Final Examinations in the Academic Regulations section of this Calendar.

STAT 2507 [0.5 credit] (formerly 69.257\*)

#### **Introduction to Statistics**

Data analysis; introduction to probability theory; some standard discrete and continuous distributions such as the binomial, Poisson, hypergeometric, normal,  $t$ , and chi-square; their application to interval estimation and significance testing; simple linear regression and correlation, contingency tables; testing for goodness-of-fit. Computational aspects of statistics. Precludes additional credit for STAT 2606, STAT 3502, ECON 2200 and GEOG 2006.

Prerequisite: An OAC in Mathematics or equivalent or permission of the School.

Lectures three hours a week and one hour laboratory.

STAT 2509 [0.5 credit] (formerly 69.259\*)

#### **Computational Statistics**

Exploratory data analysis, non-parametric methods, linear regression and correlation, basic experimental designs, related topics. Computer packages are used for statistical analyses.

Precludes additional credit for STAT 2607, STAT 2559, and ECON 2200.

Prerequisites: i) STAT 2507 and ii) an OAC in Algebra and Geometry, or MATH 0107; or equivalents; or permission of the School.

Lectures three hours a week and one hour laboratory.

STAT 2559 [0.5 credit] (formerly 70.259\*)

#### **Statistics: Theory and Practice**

Computational and inferential statistics; basic distributions (normal,  $t$ , chi-square,  $F$ ); maximum likelihood and moment estimators; properties of estimators; confidence intervals (one- and two-sample procedures); testing of simple and composite hypotheses; regression and analysis of variance models; non-parametric procedures; contingency tables. Use of computer packages.

Precludes additional credit for STAT 2509, STAT 2607, ECON 2200.

Prerequisite: STAT 2655 or MATH 2600.

Lectures three hours a week and one hour tutorial/laboratory.

STAT 2605 [0.5 credit] (formerly 69.265\*)

#### **Probability Models**

Introductory probability theory. Introduction to stochastic modeling, Markov chains and queueing theory. Random number generation and Monte Carlo simulation. Statistical methods for fitting and evaluating models; estimation and testing. Applications to computer system performance evaluation, analysis of algorithms, reliability, search and decision problems. Restricted to students in the Bachelor of Computer Science, Computer Mathematics and Computer Statistics programs.

Precludes additional credit for STAT 3502, MATH 2600 and STAT 2655.

Prerequisites: MATH 2007 (or MATH 1002) and MATH 1104 (or MATH 1107).

Lectures three hours a week and one hour tutorial.

STAT 2606 [0.5 credit] (formerly 69.266\*)

#### **Business Statistics I**

Introduction to statistical computing; probability concepts; descriptive statistics; estimation and testing of hypotheses. Emphasis on the development of an ability to interpret results of statistical analyses with applications from business.

Restricted to students in the School of Business. Precludes additional credit for STAT 2507, STAT 3502, ECON 2200 and Geography 45.206.

Prerequisites: either: item (iii); or both of items i) and ii):

i) MATH 1009 with a grade of C- or better; and ii) an OAC in Algebra and Geometry, or MATH 0107; (iii) BUSI 1703 with a grade of C- or better, or BUSI 1704 and BUSI 1705 with an average grade of C- or better; or equivalents.

Lectures three hours a week and one hour laboratory.

STAT 2607 [0.5 credit] (formerly 69.267\*)

**Business Statistics II**

Topics include: experimental design, multiple regression and correlation analysis, covariance analysis, and introductory time series. Use of computer packages.

Restricted to students in the School of Business.

Precludes additional credit for STAT 2509, STAT 2559 and ECON 2200.

Prerequisite: STAT 2606.

Lectures three hours a week and one hour laboratory.

STAT 2655 [0.5 credit] (formerly 70.265\*)

**Introduction to Probability with Applications**

Axioms of probability, basic combinatorial analysis, conditional probability and independence, discrete and continuous random variables, joint and conditional distributions, expectation, central limit theorem, sampling distributions, simulation and applications to descriptive statistics. A statistical software package will be used.

Precludes additional credit for STAT 2605 and MATH 2600.

Prerequisites: MATH 1002 (or MATH 2007) with a grade of C+ or better, and MATH 1102 (or MATH 2107) with a grade of C+ or better.

Lectures three hours a week, tutorial one hour a week.

STAT 3502 [0.5 credit] (formerly 69.352\*)

**Probability and Statistics**

Axioms of probability; conditional probability and independence; random variables; distributions: binomial, Poisson, hypergeometric, normal, gamma; central limit theorem; sampling distributions; point estimation: maximum likelihood, and method of moments; confidence intervals; testing of hypotheses: one and two populations; engineering applications: acceptance sampling, control charts, reliability. Restricted to students in the Faculty of Engineering, or in B.Sc.(Honours) in Applied Physics.

This course may not be used to meet the 3000-level course requirements in any Major or Honours program in Mathematics and Statistics.

Precludes additional credit for STAT 2507, STAT 2605, STAT 2606, ECON 2200 and GEOG 2006.

Prerequisite: MATH 2004, or MATH 2001.

Lectures three hours a week and one hour laboratory.

STAT 3503 [0.5 credit] (formerly 69.353\*)

**Regression Analysis**

Review of simple and multiple regression with matrices, Gauss-Markov theorem, polynomial regression, indicator variables, residual analysis, weighted least squares, variable selection techniques, nonlinear regression, correlation analysis and autocorrelation. Computer packages are used for statistical analyses.

Precludes additional credit for STAT 3505, ECON 4706, and for MATH 3501; PSYC 3000 is precluded for additional credit for students registered in a Mathematics program.

Prerequisites: i) STAT 2509 or STAT 2607, or ECON 2200, or equivalent; and ii) MATH 1102 or MATH 1107 or MATH 1109 or equivalent; or permission of the School.

Lectures three hours a week and one hour laboratory.

STAT 3504 [0.5 credit] (formerly 69.354\*)

**Analysis of Variance and Experimental Design**

Single and multifactor analysis of variance, orthogonal contrasts and multiple comparisons, analysis of covariance; nested, crossed and repeated measures designs; completely randomized, randomized block, Latin squares, factorial experiments, related topics. Computer packages are used for statistical analyses.

Precludes additional credit for STAT 3505, and for MATH 3501; PSYC 3000 is precluded for additional credit for students registered in a Mathematics program.

Prerequisite: STAT 3503 or permission of the School.

Lectures three hours a week and one hour laboratory.

STAT 3505 [0.5 credit] (formerly 70.355\*)

**Regression and Experimental Design**

Linear regression theory and methods; design of experiments; analysis of the completely randomized, randomized block and Latin square designs; multiple comparisons; factorial experiments; related topics.

Precludes additional credit for STAT 3503, STAT 3504, ECON 4706, and for MATH 3501. PSYC 3000 is precluded for additional credit for students registered in a Mathematics program.

Prerequisites: i) STAT 2559 or STAT 2509; and ii) MATH 1102 or MATH 2107; or permission of the School.

Lectures three hours a week and one hour laboratory.

STAT 3506 [0.5 credit] (formerly 70.356\*)

**Stochastic Processes and Queueing Theory**

Stochastic modeling, Markov chains, birth and death processes, renewal theory. Queueing theory: analytical and simulation methods. Applications to computer systems, operations research and social sciences.

Prerequisites: STAT 2655 or MATH 2600; or a GPA of 6.00 or better over the three courses MATH 2007, MATH 2107 (or MATH 1102), and STAT 2605; or permission of the School.

Lectures three hours a week and one hour tutorial.

STAT 3507 [0.5 credit] (formerly 69.357\*)

**Sampling Methodology**

The sample survey as a vehicle for information collection in government, business, scientific and social agencies. Topics include: planning a survey, questionnaire design, simple random, stratified, systematic and cluster sampling designs, estimation methods, problem of non-response, related topics.

Prerequisite: one of STAT 2507, or STAT 2509, STAT 2606, STAT 2607, ECON 2200 or equivalent; or permission of the School.

Lectures three hours a week and one hour laboratory.

STAT 3508 [0.5 credit] (formerly 69.358\*)

**Elements of Probability Theory**

Discrete and continuous distributions, moment-generating functions, marginal and conditional distributions, transformation theory, limiting distributions.

Precludes additional credit for STAT 3500, STAT 3550, and STAT 3558.

Prerequisites: i) MATH 2008 [or one of MATH 2001, MATH 2002, MATH 2004, or MATH 2009]; and ii) one of STAT 2507, STAT 2606, ECON 2200; or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3509 [0.5 credit] (formerly 69.359\*)

**Mathematical Statistics**

Point and interval estimation, sufficient statistics, hypothesis testing, chi-square tests with enumeration data.

Precludes additional credit for STAT 3500, MATH 3550, and STAT 3559.

Prerequisite: STAT 3508 or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3558 [0.5 credit] (formerly 70.358\*)

**Elements of Probability Theory**

Random variables and moment-generating functions, concepts of conditioning and correlation; laws of large numbers, central limit theorem; multivariate normal distribution; distributions of functions of random variables, sampling distributions, order statistics.

Precludes additional credit for STAT 3508, STAT 3500, STAT 3550.

Prerequisites: i) STAT 2655 (or STAT 2605 or MATH 2600); and ii) MATH 2000 (or a grade of C+ or better in MATH 2008); or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3559 [0.5 credit] (formerly 70.359\*)

**Mathematical Statistics**

Empirical distribution functions, Monte Carlo methods, elements of decision theory, point estimation, interval estimation, tests of hypotheses, robustness, nonparametric methods.

Precludes additional credit for STAT 3500, STAT 3509, STAT 3550.

Prerequisite: STAT 3558 or permission of the School.

Lectures three hours a week, tutorial one hour a week.

STAT 3608 [0.5 credit] (formerly 69.368\*)

**Probability in Communications and Electrical Engineering**

Probability models and basic concepts; independence and conditional probabilities; discrete, continuous and multiple random variables; distribution and density functions; expectations and moments; sums of random variables; elementary statistics; introduction to random processes; applications to areas such as

communication systems and networks.  
 Restricted to students in the Faculty of Engineering.  
 Prerequisites: additional credit for STAT 3508 and STAT 3558.  
 Prerequisite: MATH 2004, or equivalent.  
 Lectures three hours a week, tutorial one hour a week.

STAT 4500 [0.5 credit] (formerly 70.450\*)

#### **Parametric Estimation**

Preliminaries on probability theory; exact and asymptotic sampling distributions; unbiasedness, consistency, efficiency, sufficiency and completeness; properties of maximum likelihood estimators; least squares estimation of location and scale parameters based on order statistics and sample quantiles; Best Asymptotically Normal (BAN) estimators. Also offered at the graduate level, with additional or different requirements, as STAT 5600, for which additional credit is precluded.  
 Prerequisite: STAT 3550 or STAT 3559 or permission of the School.  
 Lectures three hours a week.

STAT 4501 [0.5 credit] (formerly 70.451\*)

#### **Probability Theory**

Introduction to probability, characteristic functions, probability distributions, limit theorems.  
 Prerequisites: STAT 3506 and STAT 3558 or permission of the School.  
 Lectures three hours a week.

STAT 4502 [0.5 credit] (formerly 70.452\*)

#### **Survey Sampling**

Basic concepts in sampling from finite populations; simple random sampling; stratified sampling; choice of sampling unit; cluster and systematic sampling; introduction to multistage sampling; ratio estimation; sampling with unequal probabilities and with replacement; replicated sampling; related topics.  
 Prerequisites: i) STAT 2559 or STAT 2509; and ii) either STAT 3559 (or STAT 3550) or a grade of C+ or better in STAT 3509 (or STAT 3550); or permission of the School.  
 Lectures three hours a week.

STAT 4503 [0.5 credit] (formerly 70.453\*)

#### **Applied Multivariate Analysis**

Selected topics in regression and correlation non-linear models. Multivariate statistical methods, principal components, factor analysis, multivariate analysis of variance, discriminant analysis, canonical correlation, analysis of categorical data. Also offered at the graduate level, with additional or different requirements, as STAT 5509, for which additional credit is precluded.  
 Prerequisites: STAT 3505; or STAT 3509 (or STAT 3500) and STAT 3504; or permission of the School.  
 Lectures three hours a week.

STAT 4506 [0.5 credit] (formerly 70.456\*)

#### **Non-Parametric Methods**

Order statistics; rank statistics; permutations; asymptotics; hypothesis of randomness; stochastic ordering; Wilcoxon test; median test; Kolmogorov-Smirnov test; hypothesis of symmetry and random blocks; independence hypothesis; treatment of ties; power and efficiency. Also offered at the graduate level, with additional or different requirements, as STAT 5506, for which additional credit is precluded.  
 Prerequisite: STAT 3509 (or STAT 3550) or permission of the School.  
 Lectures three hours a week.

STAT 4507 [0.5 credit] (formerly 70.457\*)

#### **Statistical Inference**

Sufficient statistics, simple and composite hypotheses, most powerful and similar region test, distribution-free tests, confidence intervals, goodness-of-fit and likelihood ratio tests, large sample theory, Bayesian and likelihood methods, sequential tests. Also offered at the graduate level, with additional or different requirements, as STAT 5501, for which additional credit is precluded.  
 Prerequisite: STAT 4500 or permission of the School.  
 Lectures three hours a week.

STAT 4508 [0.5 credit] (formerly 70.458\*)

#### **Stochastic Models**

Review of discrete Markov chains and Poisson processes; pure jump Markov processes including the Q-matrix approach; the

Kolmogorov equations; classification of states; stationary and limiting distributions; renewal theory. Also offered at the graduate level, with additional or different requirements, as STAT 5701, for which additional credit is precluded.  
 Prerequisite: STAT 3506 or permission of the School.  
 Lectures three hours a week.

STAT 4509 [0.5 credit] (formerly 70.459\*)

#### **Advanced Mathematical Modeling**

Real-life situations in the physical, social, and life sciences are often modeled using mathematical tools. This course will examine various models and techniques used in their analysis, e.g., matrix procedures in connection with population models. Students will use a computer package to obtain numerical results. Also offered at the graduate level, with additional or different requirements, as STAT 5601, for which additional credit is precluded.  
 Prerequisites: i) MATH 2454 and STAT 2655 (or MATH 2600; or MATH 2404 and STAT 2605) and ii) STAT 3506; or permission of the School.  
 Lectures three hours a week.

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## **Systems and Computer Engineering (SYSC)**

Department of Systems and Computer Engineering  
 Faculty of Engineering

#### **Note:**

The Departments of Systems and Computer Engineering and Electronics offer courses in: Communications Engineering, Computer Systems Engineering, Electrical Engineering, Software Engineering and Engineering Physics.

SYSC 1100 [0.5 credit] (formerly 94.110\*)

#### **Introduction to Object-Oriented Computing**

A first course in problem solving in the context of object-oriented programming. Programming with Java: control structures, data abstraction, classes, class relationships, inheritance, polymorphism. Tracing and visualizing program execution. Testing and debugging. Program style, documentation, reliability.  
 Prerequisite: ECOR 1606.  
 Lectures three hours a week, laboratory one hour a week.

SYSC 1101 [0.5 credit] (formerly 94.111\*)

#### **Object-Oriented Software Development**

Principles and practice of three paradigms for developing object-oriented software: developing classes from scratch, reuse of existing classes, and incremental extension of frameworks. Design: identifying classes, responsibilities and collaborations. Introduction to UML for describing program designs.  
 Prerequisite: SYSC 1100.  
 Lectures three hours a week, laboratory one hour a week.

SYSC 1102 [0.5 credit] (formerly 94.112\*)

#### **Foundations of Systems Programming**

Problem solving and program design, emphasizing the computing abstractions underlying real-time system and operating system development. Procedural and data abstraction in C++. Recursion, pointers, linked lists.  
 Prerequisite: SYSC 1100.  
 Lectures three hours a week, laboratory one hour a week.

SYSC 2001 [0.5 credit] (formerly 94.201\*)

#### **Foundations of Computer Systems**

The relationships between high-level languages (including object-oriented languages), operating systems, and computer system architecture. Representation of data; basic computer organization: CPU and memory, instruction encoding and execution; assemblers and linkers; code generated by compilers; runtime support.  
 Prerequisite: ECOR 1606 or SYSC 1102.  
 Lectures three hours a week, laboratory two hours a week.



SYSC 2002 [0.5 credit] (formerly 94.202\*)

**Program Design and Construction**

In-depth experience in the design and construction of computer programs involving data structures and different programming paradigms. Data structures, formal specification, abstract data types, graphs, recursion, finite state machines and object-oriented programming.

Precludes additional credit for SYSC 2100 and SYSC 3002.

Prerequisite: ECOR 1606.

Lectures three hours a week, laboratory two hours a week.

SYSC 2003 [0.5 credit] (formerly 94.203\*)

**Introduction to Real-Time Systems**

Principles of event-driven systems. Review of computer organization. Parallel and serial interfaces, programmable timer. Input/output methods: polling, interrupts. Real-time issues: concurrency, mutual exclusion, buffering. Introduction to concurrent processes, real-time kernels.

Precludes additional credit for SYSC 3003 and SYSC 3006.

Prerequisite: SYSC 2001.

Lectures three hours a week, laboratory two hours a week.

SYSC 2004 [0.5 credit] (formerly 94.204\*)

**Object-Oriented Software Development**

Principles and practice of three software development paradigms with an object-oriented programming language: developing classes from scratch, reuse of existing classes, incremental extension of frameworks. Development of expertise in designing, implementing, and testing industrial-quality, reusable code.

Precludes additional credit for SYSC 1101.

Prerequisite: SYSC 2002.

Lectures three hours a week, laboratory two hours a week.

SYSC 2100 [0.5 credit] (formerly 94.210\*)

**Algorithms and Data Structures**

Specification and design of abstract data types and their implementation as Java classes: stacks, queues, trees, tables, graphs. ADTs as elements of program designs. Common and useful examples: simulation, parsing, and state machines. Introduction to the analysis of algorithms.

Precludes additional credit for SYSC 2002.

Prerequisites: SYSC 1101 and SYSC 1102.

Lectures three hours a week, laboratory two hours a week.

SYSC 2101 [0.5 credit] (formerly 94.211\*)

**Software Systems Development Laboratory**

Development of expertise in designing, implementing, and testing industrial-quality, reusable code through individual and team projects. Applying and extending previously acquired knowledge of patterns, frameworks, UML, iterative and incremental development, Java and C++ to medium- and large-scale systems.

Prerequisite: SYSC 2100 or SYSC 2004.

Lectures two hours a week, laboratory three hours a week.

SYSC 2500 [0.5 credit] (formerly 94.250\*)

**Signals and Systems**

Signals: energy and power signals, discrete-time and continuous. Linear systems and convolution. Fourier Transform; complex Fourier series; signal spectral properties and bandwidth. Laplace transform and transient analysis. Transfer functions, block diagrams. Baseband and passband signals, with applications to communications systems.

Precludes additional credit for SYSC 3600.

Prerequisite: MATH 2004.

Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 3001 [0.5 credit] (formerly 94.301\*)

**Operating Systems and Data Bases**

Operating systems and databases treated from a common perspective. Management of CPU, processes, memory, files, and data. Implications of concurrency. Concurrent programming, including interprocess communication in distributed systems. Data models and query languages.

Precludes additional credit for SYSC 4001.

Prerequisites: SYSC 2002 or SYSC 2100, and SYSC 2003.

Lectures three hours a week.

SYSC 3006 [0.5 credit] (formerly 94.306\*)

**Computer Organization**

Computer organization: processor, memory, input/output, instruction encoding and execution. Representation of data, assembly language programming. Devices: display, parallel and serial interfaces, programmable timer. Input/output methods: polling and interrupts.

Precludes additional credit for SYSC 2001, SYSC 2003, and SYSC 3003. May not be taken for credit by students in Computer Systems Engineering.

Prerequisites: ECOR 1606 and ELEC 2607.

Lectures three hours a week, laboratory two hours a week.

SYSC 3100 [0.5 credit] (formerly 94.310\*)

**Systems Analysis and Design**

Creating requirements specifications prior to designing and implementing complex software systems. Software development lifecycles, role of requirements analysis; functional decomposition, dataflow modeling; database modeling, entity-relationship diagrams; finite state machines; object-oriented analysis; use cases, use case maps; project management; introduction to software design.

Prerequisite: SYSC 2004 or SYSC 2101.

Lectures three hours a week.

SYSC 3101 [0.5 credit] (formerly 94.311\*)

**Programming Languages**

Principles underlying different kinds of programming languages (procedural, functional, logic programming) and their semantics. Overview of machinery needed for language support (compilers, interpreters and run-time systems).

Prerequisite: SYSC 2101.

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3200 [0.5 credit] (formerly 94.320\*)

**Industrial Engineering**

Techniques of operations research for decision-making in complex engineering systems. Linear programming, network models, PERT, integer programming, dynamic programming, queuing systems and inventory models. Problem solving is emphasized.

Precludes additional credit for BUSI 2300, ECON 4004, or MATH 3801.

Prerequisites: MATH 1004 and MATH 1104, and ECOR 1606 or SYSC 1100.

Lectures three hours a week.

SYSC 3303 [0.5 credit] (formerly 94.333\*)

**Real-Time Concurrent Systems**

Principles and practice of a systems engineering approach to the development of software for real time, concurrent, distributed systems. Designing to achieve concurrency, performance, and robustness, using visual notations. Converting designs into programs and viewing programs in design terms. Major team project.

Prerequisites: Engineering SYSC 2003 and SYSC 3001.

Lectures two hours a week, laboratory three hours a week.

SYSC 3501 [0.5 credit] (formerly 94.351\*)

**Communication Theory**

Signals and linear systems; review of Fourier series; Fourier transforms; power spectral density and correlation; sampling theory; amplitude, frequency, and phase modulation systems; representation of narrow-band noise; noise in modulation systems; phase-locked loops; noise figure and temperature; cascaded systems.

Prerequisites: MATH 3705 and SYSC 3600, and STAT 3502 (to be taken concurrently.)

Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3502 [0.5 credit] (formerly 94.352\*)

**Introduction to Communications Software**

Finite state machines and related models. Layered communication models and protocols. Modern programming tools such as C++ and JAVA in programming examples from LAN Logical Link Layer and Medium Access Control Layer Protocols, and the ISO/OSI Physical and Data Link Layer Protocols.

Lectures three hours a week, problem analysis three hours alternate weeks.

SYSC 3503 [0.5 credit] (formerly 94.353\*)

### **Communication Theory II**

Amplitude Modulation. Frequency Modulation. Performance of AM and FM in noise. Digital modulation: ASK, FSK, PSK. Optimal reception, probability of error on the AWGN channel. Precludes additional credit for SYSC 3501 or SYSC 4600. Prerequisite: SYSC 2500 and STAT 2605. Lectures three hours a week, laboratory, three hours alternate weeks.

SYSC 3600 [0.5 credit] (formerly 94.360\*)

### **Systems and Simulation**

Properties of linear systems. Linear dynamic models of engineering systems. Applications of the Laplace transform. Transfer functions. Block diagrams. Frequency and time response. System simulation with digital computers. Precludes additional credit for SYSC 2500. Prerequisites: MATH 1005 and ECOR 1101. Lectures three hours a week, laboratory three hours a week.

SYSC 3601 [0.5 credit] (formerly 94.361\*)

### **Microprocessor Systems**

Microprocessor-based system design for different microprocessor families. Microprocessors: internal organization, instruction sets, address generation, pin-outs, bus cycles, signalling waveforms. Interfacing memory and I/O devices. Interrupt structures, direct memory access. Floating point coprocessors. System bus standards. Introduction to DSPs. Precludes additional credit for ELEC 4601. Prerequisites: ELEC 2607, and SYSC 2003, SYSC 3003, or SYSC 3006. Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 3905 [0.5 credit] (formerly 94.395\*)

### **Professional Practice**

Presentations by faculty and external lecturers on the Professional Engineers Act, professional ethics and responsibilities, practice within the discipline and its relationship with other disciplines and to society, health and safety, environmental stewardship, principles and practice of sustainable development. Communication skills are emphasized. (Also listed as ELEC 3905.) Precludes additional credit for CIVE 4905 and MAAE 4905. Prerequisites: ECOR 1000, ALSS 1000, and third-year registration. Lectures three hours a week.

SYSC 4001 [0.5 credit] (formerly 94.401\*)

### **Operating Systems**

Introduction to operating system principles. Structure of an operating system; management of CPU, processes, and memory; dead-lock problems, file systems. Concurrent programming. Precludes additional credit for SYSC 3001. Prerequisites: SYSC 2002 or SYSC 2100, and SYSC 2003, SYSC 3003, or SYSC 3006. Lectures three hours a week.

SYSC 4005 [0.5 credit] (formerly 94.405\*)

### **Discrete Simulation and its Applications**

Simulation as a problem solving tool. Random variate generation, general discrete simulation procedure: event table and statistical gathering. Analyses of simulation data: point and interval estimation. Confidence intervals. Overview of modeling, simulation, and problem solving using SIMSCRIPT, MODSIM, and other languages. Prerequisite: STAT 2605 or STAT 3502, and Fourth-year registration, or Third-year registration in Software Engineering or permission of the Department. Lectures three hours a week, laboratory one hour a week.

SYSC 4101 [0.5 credit] (formerly 94.411\*)

### **Software Validation, Verification and Testing**

Techniques for the systematic testing of software systems. Software validation and verification, software debugging, quality assurance, measurement and prediction of software reliability. Emphasis on the treatment of these topics in the context of real-time and distributed systems. Prerequisites: SYSC 2101 and SYSC 3100. Lectures three hours a week.

SYSC 4102 [0.5 credit] (formerly 94.412\*)

### **Performance Engineering of Computer and Software Systems**

Techniques based on measurements and models, for predicting and evaluating the performance of computer systems. Instrumentation. Simple queueing models and approximations. Techniques for modifying software designs to improve performance. Prerequisites: STAT 3502, SYSC 3001 or SYSC 4001, and SYSC 4005.

SYSC 4105 [0.5 credit] (formerly 94.415\*)

### **Engineering Management**

Introduction to engineering management: management of new products, management of manufacturing processes, management of the linkages between new products and manufacturing processes. Current theories, concepts and techniques are stressed, using a combination of readings, cases and guest speakers. Prerequisite: fourth-year registration. Lectures three hours a week.

SYSC 4106 [0.5 credit] (formerly 94.416\*)

### **Software Product Management**

Stages of the life cycle of software products and their implications for architecture definition, requirements specification, variety, target market segmentation, adoption, roll-out plans, documentation, maintenance, skills, building prototypes, testing, feature prioritization, quality and tools infrastructures. Prerequisite: SYSC 3100 or equivalent. Lectures three hours a week.

SYSC 4107 [0.5 credit] (formerly 94.417\*)

### **Software Business**

Establishing and growing businesses anchored on software design and development. Models for software business; partnerships with suppliers and customers; distribution; raising money; intellectual property protection; evolving core products and sources of competitive advantage; alignment among the business model, infrastructures, and software development. Prerequisite: fourth-year registration in Engineering or Computer Science. Lectures three hours a week.

SYSC 4405 [0.5 credit] (formerly 94.445\*)

### **Introduction to Digital Signal Processing**

Discrete time signal and system representation: time domain, z-transform, frequency domain. Sampling theorem. Digital filters: design, response, implementation, computer-aided design. Spectral analysis: the discrete Fourier transform and the FFT. Applications of digital signal processing. Prerequisite: SYSC 2500 or SYSC 3600. Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4504 [0.5 credit] (formerly 94.454\*)

### **Distributed Network Processing**

Software aspects of distributed networks. Client-server systems. Internet and the WWW. LAN's and WAN's, routing protocols. Transportable software, JAVA applets. Use of modern software tools in communication network monitoring and analysis. Network management. Prerequisite: SYSC 3502. Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4505 [0.5 credit] (formerly 94.455\*)

### **Automatic Control Systems I**

Review of Laplace transform techniques. Effects of feedback: frequency response, pole-zero positions. Compensation: root locus, Bode plots. State variables: formulation, solution of linear systems, examples of simple second-order non-linear systems. Discrete time systems: z-transforms. Signal reconstruction. Prerequisites: MATH 2004, and SYSC 2500 or SYSC 3600. Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4507 [0.5 credit] (formerly 94.457\*)

### **Architecture of Computer Systems**

History of computers: evolution of concepts, influence of technology, techniques to increase performance. Detailed

analysis and design of ALUs, control units, memory systems. Multiprocessor systems, pipeline and array processing. Scalable, superscalar, RISC, CISC, fault tolerant, and digital signal processing architectures.  
Prerequisite: ELEC 2607 or ELEC 3607.  
Lectures three hours a week.

SYSC 4600 [0.5 credit] (formerly 94.460\*)

**Digital Communications**

Review of probability, random variables, signal representation. Pulse code modulation, other digital waveform coding techniques. Physical layer of data communications. Baseband data transmission: Nyquist criterion, filtering, optimal receiver, probability of error. Digital modulation techniques, performance. Synchronization. Introduction to information theory. Error detection and correction.  
Precludes additional credit for SYSC 3503 and SYSC 4604.  
Prerequisite: SYSC 3501 and STAT 3502.  
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4602 [0.5 credit] (formerly 94.462\*)

**Introduction to Computer Communications**

Layered protocol architectures, OSI. Physical media, physical layer interfaces, data transmission. Data-link protocols, multiplexing, polling. LANs, IEEE 802 standards, performance. Switched Ethernet, FDDI, bridges. Wide area networks, packet-switching networks, X.25. Frame relay, internetworking, DoD protocols, TCP, UDP. ATM LANs, adaptation layers, traffic issues.  
Prerequisite: STAT 2605 or STAT 3502 and fourth-year registration in Electrical, Computer Systems, Software, or Communications Engineering.  
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4604 [0.5 credit] (formerly 94.464\*)

**Digital Communication Theory**

Advanced topics in digital communications. Error control coding. Bandwidth-efficient modulation. Trellis coding. Synchronization, phase locked loops. Selected topics of current interest: spread spectrum; digital wireless communications.  
Precludes additional credit for SYSC 4600.  
Prerequisite: SYSC 3503.  
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4700 [0.5 credit] (formerly 94.470\*)

**Telecommunications Engineering**

Telecommunications as a national and international infrastructure. Systems view of network architecture: transmission, switching, signalling, and teletraffic; ISDN; network planning, management and control; global telecommunications, International Telecommunication Union; telecommunications industry as business enterprise (R & D, manufacturing, operations, human factors); standards: role of government, regulation and competition.  
Prerequisites: SYSC 3501 or SYSC 3503.  
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4701 [0.5 credit] (formerly 94.471\*)

**Communication Systems Analysis and Design**

Project-oriented level experience in the design of communication systems to meet user requirements. Lectures on queuing theory and teletraffic analysis; system specification and design: requirements analysis, solution alternatives, evaluation of alternative technologies, design, costing, implementation, test.  
Prerequisite: registration in fourth-year Communications Engineering.  
Lectures two hours a week, laboratory four hours a week.

SYSC 4800 [0.5 credit] (formerly 94.480\*)

**Software Engineering**

Review of software lifecycles and requirements analysis. Software design, with emphasis on methods for real-time systems. Testing, verification and validation, quality assurance and control. Project planning and management. Maintenance and configuration management. Software reuse during design and maintenance.  
Prerequisites: SYSC 3303 (can be taken concurrently) and SYSC 3100.  
Lectures three hours a week, laboratory three hours alternate weeks.

SYSC 4805 [0.5 credit] (formerly 94.485\*)

**Computer Systems Design Laboratory**

Developing professional-level expertise in selected, important areas of the field by applying, honing, integrating, and extending previously acquired knowledge in team projects in the laboratory. Lecture periods are devoted to new knowledge required for the selected areas, to project-related issues, and to student presentations.  
Prerequisites: SYSC 3303, SYSC 3601 or ELEC 4601, and SYSC 4800 and registration in fourth-year Computer Systems Engineering (students are encouraged to enrol in both SYSC 4800 AND 4805 in the same academic year).  
Lectures two hours a week, laboratory four hours a week.

SYSC 4806 [0.5 credit] (formerly 94.486\*)

**Software Engineering Laboratory**

Applying the full spectrum of engineering and programming knowledge acquired in the program through team projects in the laboratory. Practice in doing presentations and reviews. Lectures will discuss software engineering issues as they relate to the projects, from a mature point of view.  
Prerequisite: SYSC 3303 and SYSC 4800.  
Lectures two hours a week, laboratory four hours a week.

SYSC 4905 [1.0 credit] (formerly 94.495)

SYSC 4907 [1.0 credit] (formerly 94.497)

SYSC 4908 [1.0 credit] (formerly 94.498)

SYSC 4909 [1.0 credit] (formerly 94.499)

**Engineering Project**

Student teams develop professional-level experience by applying, honing, integrating and extending previously acquired knowledge in a major design project. Lectures are devoted to discussing project-related issues and student presentations. A project proposal, interim report, oral presentations, and a comprehensive final report are required.  
Prerequisites: Fourth-year registration and SYSC 3905 (may be taken concurrently). Certain projects may have additional prerequisites or corequisites.  
Lecture one hour a week, laboratory seven hours a week

SYSC 4906 [0.5 credit] (formerly 94.496\*)

**Special Topics in Electrical and Computer Engineering**

At the discretion of the Department, a course dealing with selected advanced topics of interest to students in Communications, Computer Systems, Electrical and Software Engineering and Engineering Physics may be offered. (Also listed as ELEC 4906.)  
Prerequisite: permission of the Department.

**Technology, Society and Environment Studies (TSES)**

Technology, Society and Environment Studies Committee  
Faculty of Science

TSES 2006 [0.5 credit]

**Ecology and Culture**

Cultural adaptations to the environment are set within globalization processes. New ecologies – symbolic, historical and political – arise out of the hubris of classical models. The advocacy role of applied ecological anthropology and the consequences of Western cultures’ adaptive capacities will be examined. (Also listed as ANTH 2006.)  
Prerequisite: one of SOCI 1000, ANTH 1000, SOAN 1000 or equivalent.  
Lectures three hours a week.

TSES 2305 [1.0 credit] (formerly 59.235)

**Ancient Science and Technology**

Development of science and technology in the ancient world and their practical application. The craftsman and artisan in society; the attitude of intellectuals to science and manual labour. Effects of the institution of slavery. Suitable for students with no previous knowledge of Greece or Rome. (Also listed as CLCV 2305.)  
Prerequisite: second-year standing or equivalent.  
Lectures two hours a week.



TSES 3001 [0.5 credit] (formerly 59.301\*)

**Technology-Society Interactions**

Ethical issues in introducing technology; historical review of technology and human development; effects on society of medical and communications technologies; automation and its effects on society, especially work; impact of technology on international affairs, especially through multinational enterprises. Guest lecturers.

Precludes additional credit for TSES 3000 and TSES 3500.

Prerequisite: at least second-year standing.

Lectures and workshops three hours per week.

TSES 3002 [0.5 credit] (formerly 59.302\*)

**Energy and Sustainability**

History of energy use by humans; utilization of renewable energy sources; energy and agriculture; energy and mineral resources; options for electricity generation; nuclear energy; risks of accidents in large systems, e.g. nuclear plants, hydroelectric dams. Guest lecturers.

Precludes additional credit for TSES 3000 and TSES 3500.

Prerequisites: at least second-year standing.

Lectures and workshops three hours per week.

TSES 3500 [0.5 credit] (formerly 59.350\*)

**Interactions in Industrial Society**

Ethical issues involving technology; effects on society of automation, medical and communications technologies; technology and international affairs; energy use by humans; renewable energy sources; energy in agriculture and mineral extraction; electricity generation; nuclear energy; accidents in large systems, e.g. nuclear plants and hydroelectric dams. Guest lecturers. Lectures in common with TSES 3001 and TSES 3002. Precludes additional credit for TSES 3001, TSES 3002 and TSES 3000.

Prerequisites: at least second-year standing.

Lectures three hours per week for both terms.

TSES 4001 [0.5 credit] (formerly 59.401\*)

**Technology and Society: Risk**

Examines the complex practice of evaluating technology's impact on society and the environment; risk analysis; cost-benefit analysis; technology regulation; retrospective project assessment; necessary aspects of assessment and assessment examples. Guest lecturers. Prerequisite: third-year standing or equivalent. Lectures and workshops three hours a week.

TSES 4002 [0.5 credit] (formerly 59.402\*)

**Technology and Society: Forecasting**

Methods used for forecasting technological and social change; factors involved in such change. Guest lecturers.

Prerequisite: third-year standing or equivalent.

Lectures and workshops three hours a week.

TSES 4003 [0.5 credit] (formerly 59.403\*)

**Technology and Society: Innovation**

Technological and social innovation, especially in Canada: historical examples; the relation of innovation to economic development; analysis of the steps involved; effect on employment; impediments and incentives. Guest lecturers.

Prerequisite: third-year standing or equivalent.

Lectures and seminars three hours a week.

TSES 4005 [0.5 credit] (formerly 59.405\*)

**Information Technology and Society**

Investigation of the human and social impacts of electronic information and communication on our working, educational, and personal lives from various disciplinary perspectives; problem issues and competing values in the creation, manipulation, dissemination, and control of information are identified; resolution initiatives encouraged. Guest lecturers.

Prerequisite: third-year standing or equivalent.

Lectures and seminars three hours a week.

TSES 4006 [0.5 credit] (formerly 59.406\*)

**Technology and Society: Work**

Explores the relationship between technology, employment and the individual; work organizations; employment restructuring; rural/urban split; the impact of information technologies; demographic impacts and globalization;

Canadian issues and public policy explored. Guest lecturers.

Prerequisite: third-year standing or equivalent.

Lectures and workshops three hours a week.

TSES 4007 [0.5 credit] (formerly 59.407\*)

**Product Life Cycle Analysis**

Life cycle analysis of products and processes, from resource extraction through design and use to waste management or recycling; social and environmental implications of product design and use; how we value material objects and the environment; consumerism; evolution of design. Guest lecturers.

Prerequisite: third-year standing or equivalent.

Lectures and workshops three hours a week.

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## Women's Studies (WOMN)

Pauline Jewett Institute of Women's Studies

Faculty of Arts and Social Sciences

WOMN 1808 [1.0 credit] (formerly 09.188)

**Introduction to Women's Studies**

This survey course provides an overview of the major issues in Women's Studies. Topics include the social construction of femininity and masculinity, violence, sexuality, representations of women, the treatment of women in the workplace and in education, women and the arts, and women's health.

Precludes additional credit for WOMN 2808.

Lectures and discussion three hours a week.

WOMN 2800 [0.5 credit] (formerly 09.280\*)

**Gender and Diversity**

This course examines the ways gender interacts with race, class, ethnicity, sexual orientation, ability and other axes of difference to affect women's experiences. The course incorporates the voices of many women and analyses the challenges these voices raise for key institutions in Canadian society.

Prerequisite: WOMN 1808 or FYSM 1402 or FYSM 1403 or SOAN 1001 or permission of the Institute of Women's Studies.

Lectures and discussion three hours a week.

WOMN 2801 [0.5 credit] (formerly 09.281\*)

**Interdisciplinary Perspectives on Women's Activism**

A comparative, interdisciplinary examination of women's attempts to effect social and political change in the modern era. A range of perspectives and materials are used to examine the objectives, scope and impact of women's activism in different historical, cultural and national settings.

Prerequisite: second-year standing.

Lectures and discussion three hours a week.

WOMN 2802 [0.5 credit] (formerly 09.282\*)

**Topics in Women's Studies**

An interdisciplinary analysis of one or more topics in Women's Studies.

Prerequisite: WOMN 1808 or FYSM 1402 or FYSM 1403.

Lectures and discussion three hours a week.

WOMN 3002 [1.0 credit] (formerly 09.302)

**Gender and Literature**

Study of autobiographical writing, novels, short stories, and poetry by women writing in the 1970s, 1980s, and 1990s in a variety of cultural settings. Cross-cultural point of view informed by poststructuralist feminist criticism. All texts available in English translation. Also listed as CLST 3002.

Prerequisite: second-year standing or permission of the Institute of Women's Studies.

Seminar three hours a week.

WOMN 3003 [0.5 credit]

**Selected Topics in Gender and Women's Studies**

An interdisciplinary analysis of one or more topics in Gender and Women's Studies.

Prerequisite: third-year standing and 1.0 credit in courses with substantial gender or women's studies material.

Seminar three hours a week.

WOMN 3808 [1.0 credit] (formerly 09.388)

**Theory and Methods from a Feminist Perspective**

Exploration of emerging feminist literatures in the humanities and in the social, natural and applied sciences. Feminist critiques of prevailing approaches to knowledge and feminist contributions to the development of theory and method are considered.

Prerequisites: third-year standing, and WOMN 1808 or FYSM 1402 or FYSM 1403.

Lectures and discussion three hours a week.

WOMN 4900[0.5 credit] (formerly 09.490\*)

**Independent Study**

Reading or research course supervised by a faculty member. Written proposal approved by the supervisor must be submitted before last day of course changes. Normally, only 0.5 credit of independent study may be counted in the program.

Prerequisites: third-year standing or above and permission of the Institute of Women's Studies.

WOMN 4901[0.5 credit] (formerly 09.491\*)

**Selected Topics in Women's Studies I**

Prerequisite: permission of the Institute of Women's Studies.

Seminar three hours a week.

WOMN 4902 [0.5 credit] (formerly 09.492\*)

**Selected Topics in Women's Studies II**

Prerequisite: permission of the Institute of Women's Studies.

Seminar three hours a week.

WOMN 4903 [0.5 credit]

**Women's Studies Practicum**

Experience in research through a combination of classroom seminars and a field placement. Each project will be negotiated individually as a contract between the student, instructor and institutional partner.

Precludes additional credit for WOMN 4904.

Prerequisite: fourth-year standing in Women's Studies and permission of the Institute.

WOMN 4904 [1.0 credit]

**Women's Studies Practicum**

Experience in research through a combination of classroom seminars and field placement. Each project will be negotiated individually as a contract between the student, instructor and institutional partner. This full-credit course is offered intensively in one term.

Precludes additional credit for WOMN 4903.

Prerequisite: fourth-year standing in Women's Studies and permission of the Institute.

WOMN 4905 [0.5 credit]

**Advanced Research Project in Women's Studies**

Students will undertake a major research project on some aspect of Women's Studies and will participate regularly in a seminar focused on theoretical, methodological and ethical research issues.

Prerequisite: WOMN 3808 and fourth-year standing in Women's Studies.