This section presents the descriptions of all courses offered at the University of Victoria. Courses are listed in alphabetical order by course abbreviation (BIOL, EDUC). The course abbreviations for all courses offered within each faculty are listed on page 248. A list of the course abbreviations and their corresponding subject areas is presented on page 249.

Please note that not all courses listed are necessarily offered every year; students should consult the department or faculty concerned for an official listing of the courses that will be offered in a given session. Registration and current timetable information is also available on the web at <uvic.ca/course-registration>.

Students must ensure that they are familiar with the program requirements and restrictions noted in the entry for each academic unit.
Courses by Faculty

Division of Medical Sciences
NRSC Neuroscience

Faculty of Education
ED-D Educational Psychology and Leadership Studies
EDCI Curriculum and Instruction Studies
EPHE Exercise Science, Physical and Health Education
IED Indigenous Education

Faculty of Engineering
CIVIE Civil Engineering
CSC Computer Science
ELEC Electrical Engineering
MECH Mechanical Engineering

Faculty of Fine Arts
AHVS Art History and Visual Studies
ART Visual Arts
CH Cultural Heritage Management
MUS Music
THEA Theatre
WRIT Writing

Faculty of Graduate Studies
GS Graduate Studies by Special Arrangement
IN Indigenous Nationhood

Faculty of Human and Social Development
ADMN Public Administration
CD Community Development
CYC Child and Youth Care
DR Dispute Resolution
HINF Health Information Science
HSD Human and Social Development

Faculty of Law
IN Indigenous Nationhood

Faculty of Science
ICDG Indigenous Community Development and Governance
IGOV Indigenous Governance
IN Indigenous Nationhood
INGH Indigenous Health Studies
NUED Nursing, Advanced Practice: Nurse Educator Option
NUHI Nursing and Health Information Science
NUNP Nursing, Advanced Practice: Nurse Practitioner Option
NURA Nursing, Advanced Practice: Nurse Leadership Option
NURP Nursing Policy and Practice
NURS Nursing
PADR Public Administration Dispute Resolution
PHSP Public Health and Social Policy
SOCW Social Work

Faculty of Humanities
DHUM Digital Humanities
ENGL English
FRAN French
GMST Germanic Studies
HSTR History
ITAL Italian
LING Linguistics
PAAS Pacific and Asian Studies
PHIL Philosophy
SLST Slavic Studies
SPAN Spanish

Faculty of Science
| COURSES OF INSTRUCTION | UVIC GRADUATE CALENDAR MAY 2017 | 243 |

<table>
<thead>
<tr>
<th>ASTR</th>
<th>Astronomy</th>
<th>MGB</th>
<th>Master of Global Business</th>
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<tbody>
<tr>
<td>BCBM</td>
<td>Biochemistry and Microbiology</td>
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<tr>
<td>BIOC</td>
<td>Biochemistry</td>
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<td>BIOL</td>
<td>Biology</td>
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<td>CHEM</td>
<td>Chemistry</td>
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<tr>
<td>EOS</td>
<td>Earth and Ocean Sciences</td>
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<td>FORB</td>
<td>Forest Biology</td>
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<td>MATH</td>
<td>Mathematics</td>
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<td>MICR</td>
<td>Microbiology</td>
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<td>MRNE</td>
<td>Marine Science</td>
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<td>PHYS</td>
<td>Physics</td>
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<td>STAT</td>
<td>Statistics</td>
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**Faculty of Social Sciences**

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<thead>
<tr>
<th>ANTH</th>
<th>Anthropology</th>
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<tr>
<td>CSPT</td>
<td>Cultural, Social and Political Thought</td>
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<tr>
<td>ECON</td>
<td>Economics</td>
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<tr>
<td>ES</td>
<td>Environmental Studies</td>
</tr>
<tr>
<td>GEOG</td>
<td>Geography</td>
</tr>
<tr>
<td>IN</td>
<td>Indigenous Nationhood</td>
</tr>
<tr>
<td>POLI</td>
<td>Political Science</td>
</tr>
<tr>
<td>PSYC</td>
<td>Psychology</td>
</tr>
<tr>
<td>SDH</td>
<td>Social Dimensions of Health</td>
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<tr>
<td>SOCI</td>
<td>Sociology</td>
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**Sardul S. Gill Graduate School of Business**

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<thead>
<tr>
<th>BUS</th>
<th>International Management and Organization</th>
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<tbody>
<tr>
<td>ENTC</td>
<td>Entrepreneurship Certificate</td>
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<tr>
<td>ENTD</td>
<td>Entrepreneurship Diploma</td>
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<tr>
<td>MBA</td>
<td>Master of Business Administration</td>
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<tr>
<td>MBME</td>
<td>Master of Business Administration + Master of Engineering</td>
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<tr>
<td>MBMS</td>
<td>Master of Business Administration + Master of Science (CSC)</td>
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Courses by Subject Area

Anthropology ................................................................. ANTH
  Faculty of Social Sciences
Art History and Visual Studies........................................ AHVS
  Faculty of Fine Arts
Astronomy ........................................................................................................................... ASTR
  Faculty of Science
Biochemistry ...................................................................................................................... BIOC
  Faculty of Science
Biochemistry and Microbiology......................................... BCMB
  Faculty of Science
Biology .............................................................................................. BIOL
  Faculty of Science
Chemistry ....................................................................................................................... CHEM
  Faculty of Science
Civil Engineering ................................................................. CIVE
  Faculty of Engineering
Child and Youth Care ......................................................... CYC
  Faculty of Human and Social Development
Community Development .................................................. CD
  Faculty of Human and Social Development
Computer Science ........................................................... CSC
  Faculty of Engineering
Cultural Heritage Management ........................................ CH
  Faculty of Fine Arts
Cultural, Social and Political Thought ................................ CSPT
  Faculty of Social Sciences
Curriculum and Instruction Studies .................................... EDCI
  Faculty of Education
Digital Humanities ........................................................... DHUM
  Faculty of Humanities
Dispute Resolution ............................................................. DR
  Faculty of Human and Social Development
Earth and Ocean Sciences ................................................... EOS
  Faculty of Science
Economics .............................................................................. ECON
  Faculty of Social Sciences
Educational Psychology and Leadership Studies ................ ED-D
  Faculty of Education
Electrical Engineering ......................................................... ELEC
  Faculty of Engineering
English .................................................................................... ENGL
  Faculty of Humanities
Entrepreneurship Certificate .............................................. ENTC
  Sardul S. Gill Graduate School of Business
Entrepreneurship Diploma .................................................. ENTD
  Sardul S. Gill Graduate School of Business
Environmental Studies ....................................................... ES
  Faculty of Social Sciences
Exercise Science, Physical and Health Education ................ EPHE
  Faculty of Education
Forest Biology ................................................................................ FORB
  Faculty of Science
French ....................................................................................... FRAN
  Faculty of Humanities
Geography .................................................................................. GEOG
  Faculty of Social Sciences
Germanic Studies ................................................................. GMST
  Faculty of Humanities
Graduate Studies by Special Arrangement .......................... GS
  Faculty of Graduate Studies
Greek and Roman Studies .................................................. GRS
  Faculty of Humanities
Health Information Science ................................................ HINF
  Faculty of Social Sciences
History ....................................................................................... HSTR
  Faculty of Humanities
Human and Social Development ....................................... HSD
  Faculty of Human and Social Development
Indigenous Education ............................................................. IED
  Faculty of Education
Indigenous Governance ...................................................... IGOV
  Faculty of Human and Social Development
Indigenous Health Studies .................................................... INGH
  Faculty of Human and Social Development
Indigenous Nationhood ......................................................... IN
  Faculty of Graduate Studies
  Faculty of Human and Social Development
  Faculty of Law
  Faculty of Social Sciences
Interdisciplinary Program ..................................................... INTD
  Faculty of Graduate Studies
International Management and Organization ..................... BUS
  Sardul S. Gill Graduate School of Business
Italian ...................................................................................... ITAL
  Faculty of Humanities
Law ........................................................................................ LAW
  Faculty of Law
Linguistics ............................................................................... LING
  Faculty of Humanities
Marine Science ........................................................................ MRNE
Faculty of Science
Master of Business Administration .............................. MBA
  Sardul S. Gill Graduate School of Business
Master of Business Administration + Master of Engineering ...... MBME
  Sardul S. Gill Graduate School of Business
Master of Global Business ............................................. MGB
  Sardul S. Gill Graduate School of Business
Mathematics ................................................................. MATH
  Faculty of Science
Mechanical Engineering ................................................ MECH
  Faculty of Engineering
Microbiology ............................................................... MICR
  Faculty of Science
Music ............................................................................ MUS
  Faculty of Fine Arts
Neuroscience ............................................................... NRSC
  Division of Medical Sciences
Nursing ....................................................................... NURS
  Faculty of Human and Social Development
Nursing and Health Information Science ....................... NUHI
  Faculty of Human and Social Development
Nursing Policy and Practice ......................................... NURP
  Faculty of Human and Social Development
Nursing, Advanced Practice: Nurse Educator Option ........ NUED
  Faculty of Human and Social Development
Nursing, Advanced Practice: Nurse Leadership Option ...... NURA
  Faculty of Human and Social Development
Nursing, Advanced Practice: Nurse Practitioner Option ...... NUNP
  Faculty of Human and Social Development
Pacific and Asian Studies ............................................. PAAS
  Faculty of Humanities
Philosophy ..................................................................... PHIL
  Faculty of Humanities
Physics ........................................................................... PHYS
  Faculty of Science
Political Science ........................................................... POLI
  Faculty of Social Sciences
Psychology ................................................................. PSYC
  Faculty of Social Sciences
Public Administration .................................................. ADMN
  Faculty of Social Sciences
Public Administration Dispute Resolution ....................... PADR
  Faculty of Human and Social Development
Public Health and Social Policy .................................... PHSP
  Faculty of Human and Social Development
Slavic Studies ............................................................. SLST
  Faculty of Humanities
Social Dimensions of Health ....................................... SDH
  Faculty of Social Sciences
Social Work ................................................................. SOCW
  Faculty of Social Sciences
Sociology ................................................................. SOCI
  Faculty of Social Sciences
Spanish ......................................................................... SPAN
  Faculty of Humanities
Statistics ................................................................. STAT
  Faculty of Science
Theatre ........................................................................... THEA
  Faculty of Fine Arts
Visual Arts ..................................................................... ART
  Faculty of Fine Arts
Writing .......................................................................... WRIT
  Faculty of Fine Arts
Course Abbreviation and Number
Courses are listed alphabetically by course abbreviation of up to four letters (e.g., ANTH for Anthropology) and course number (e.g., 100). Three numbers are used for course number plus a letter as appropriate. The first number indicates the year level (0 for university-level upgrading, 1 to 4 for undergraduate level, 5 and 6 for graduate level, 7 for Education Professional Year and 8 for co-op work terms). See page 249 for the subject area corresponding to the course abbreviation.

Cross-listed Courses
The same course may be offered by two different departments. Such courses are listed twice, once under each department course abbreviation. Students may obtain credit for the course from either department, but not both.

Former Course Abbreviation and Number
If a course was previously offered at UVic under another abbreviation and number, the former abbreviation and number are shown here.

Prerequisites and Corequisites
Prerequisites are courses or other requirements that must be completed before a student may register in a course. Corequisites are courses or other requirements that must be completed at the same time as a specific course.

For more information on how to read prerequisites, please see <www.uvic.ca/prereq>.

Grading
Courses that are not graded using standard letter grades will include the alternative classifications for evaluation. See page 38 for an explanation of grading abbreviations.

SAMP 101 Units: 1.5 Hours: 3-0-1
Sample Course Name
Also: CD 100
Formerly: SAMP 100A and 100B
This sample course description illustrates the notations commonly found in the course descriptions. Not all course descriptions include all the information shown in this sample. For clarification on any information presented in a course description, contact the department or faculty offering the course.

Course descriptions may also include sub-courses offered under the same course number.

Note: Up-to-date information is available from department offices and from the Undergraduate Registration Guide and Timetable, which is available after June from Undergraduate Admissions and Records.

Prerequisites: Admission to UVic
Grading: INP/COM, N or F

Units of Credit
This figure is the number of units of credit assigned to each course. Some courses are listed with a range of units (1.5-3). Further information on the unit value of the course will usually be found in the course description. Students may also contact the department or faculty offering the course for information on variable credit courses.

Hours of Instruction
The numbers refer to the hours of instruction per week:
– first digit: hours assigned for lectures or seminars
– second digit: hours assigned for laboratory or practical sessions
– third digit: hours assigned to tutorials

Notes
Notes provide information about any restrictions on the assignment of credit in cases where courses overlap, as well as the maximum allowable credit for courses that may be taken more than once. Notes may also provide special information about a course.

Grading
Courses that are not graded using standard letter grades will include the alternative classifications for evaluation. See page 38 for an explanation of grading abbreviations.

Course descriptions do not include information on when courses will be offered. That information is available online at <www.uvic.ca/timetable>.
ADMN

Public Administration
School of Public Administration
Faculty of Human and Social Development
Students enrolled in the MPA On Campus program should also see courses listed as PADR.

ADMN 502A Units: 1.5
Surveying, Appraising and Commissioning Information
Understanding how research is structured and conducted is a vital skill in the public sector. Introduces students to essential skills and components of the research process, weaknesses and strengths. Key issues in research ethics and design are explored, including: research and data validity, measurement, qualitative methods, sampling, survey research techniques, questionnaire design, research design, measures of central tendency, dispersion, correlation, and computer-based analyses.

ADMN 502B Units: 1.5
Data Analysis & Interpretation
Develops skills in understanding, evaluating and applying techniques of data analysis relevant to policy analysis and management research. Topics include: descriptive and inferential statistics; techniques of estimation in the context of opinion polls and related survey research methods; statistical testing using data collected from survey research, correlational studies, and experimental and quasi-experimental research designs. The computer lab component will allow students to further develop spreadsheet skills using EXCEL.
Pre-requisite(s):
• ADMN 502A or PADR 502A; or
• permission of the school.

ADMN 504 Units: 1.5
Government and Governance
 Provides a foundation that helps students build and refine their understanding of Canadian public sector governance. Focus is on key governance institutions and processes, the efforts made to reform them, and theories behind those reform initiatives and changes. Specifically, examines strategic governance challenges and reforms in areas such as service delivery, regulation, policy making, budgeting, citizen engagement, federal-provincial relations, public sector ethics and accountability.

ADMN 507 Units: 1.5
Leadership and Ethics in the Public Sector
Public leadership requires an understanding of others and one’s self in order to mobilize effort in challenging environments. Provides frameworks and practical strategies for understanding personal capacity, team dynamics, and working with others within and across organizational boundaries. Introduces students to competing values and ethics, and equips them with skills and strategies for analyzing, motivating and managing change and the challenges they may face.

ADMN 509 Units: 1.5
Microeconomics for Policy Analysis
Provides a foundation in microeconomic principles, the rationale for public sector interventions in the market, and essential tools for economic policy analysis. Students will be introduced to rational choice theory, resource allocation methods, supply and demand, efficiency and equity, elasticity, income redistribution, externalities, public goods, and imperfect information. Relies on practical problem-based learning. Contemporary themes include behavioral and nudge economics, economic inequality, and the moral economy.
Pre-requisite(s):
• One of ADMN 502A, PADR 502, PADR 502A; and
• ADMN 504; or
• permission of the department.

ADMN 512 Units: 1.5
Public Financial Management and Accountability
Explores the budgeting cycle: budget preparation and execution, internal and external auditing, financial statements, and performance budgeting and reporting. Examines management tools that support resource allocation decisions and accountability. Considers the rationale for alternative goods and services provision arrangements. Reviews evidence-based approaches for efficient resource allocation decisions, benchmarking performance, and incentives to motivate employees and contractors. Explores public sector fiscal challenges.
Pre-requisite(s):
• ADMN 502A or PADR 502A; and
• ADMN 509; or
• permission of the department.

ADMN 523 Units: to be determined
Special Topics in Public Sector Management
Provides a unique chance to study selected topics drawn from the current literature in public sector management or related fields and an excellent opportunity to explore the academic theory underpinning current public sector functions.
Note: May be taken more than once for credit in different topics.

ADMN 530 Units: 1.5
Increasing Organizational Effectiveness: Working with Consultants
An introduction to the challenges of improving the effectiveness of public sector programs. The dynamics of work and consulting teams are studied, and students will review literature and participate in exercises in how to introduce lasting changes in organizations, and the complementary roles of leadership and management in ensuring more effective organizations.
Recommendation(s): ADMN 504, and ADMN 507 or PADR 504 recommended prior to ADMN 530.

ADMN 531 Units: 1.5
Performance and Strategic Human Resource Management
Students explore the critical role of human capital in public organizations and how to align it with strategic objectives. Students learn about human resource management functions - planning, staffing, training and development, performance management, compensation, and labour relations - and theories and approaches to improving organizational performance. Considers some of the contemporary challenges, such as high public expectations, constrained budgets, demographic turnover, and technological change.
Note: Credit will be granted for only one of ADMN 531, ADMN 431.
Prerequisite(s):
• ADMN 507 or PADR 504; or
• permission of the school.

ADMN 537 Units: 1.5
Program Evaluation and Performance Measurement
Examines program evaluation and performance measurement in public and nonprofit organizations. Emphasis is placed on acquiring skills needed to model programs, measure key constructs, select appropriate research designs, and conduct both quantitative and qualitative program evaluations. Issues involved in designing and implementing program performance measurement systems are introduced.
Note: Credit will be granted for only one of ADMN 537, ADMN 437.
Prerequisite(s):
• One of ADMN 502A, PADR 502, PADR 502A; and
• ADMN 502B; or
• permission of the school.

ADMN 544 Units: 1.5
Economic Evaluation Methods and Applications
A practical introduction to the theory and methods of economic evaluation, including cost-benefit analysis, cost-effectiveness analysis, and cost-utility analysis, with emphasis on public sector applications.
Prerequisite(s):
• For students admitted to MPA program:
  • one of ADMN 502A, PADR 502, PADR 502A; and
• ADMN 502A and ADMN 509.
• For students not admitted to MPA program:
  • permission of the school.

ADMN 547 Units: 1.5
Intergovernmental Relations in Canada
Examines the impact on public policy of relations between governments resulting from the distribution of powers among federal, provincial, and municipal governments in Canada. Topics will include the interpretive role of the courts, the instruments of fiscal federalism, administrative relationships, and the concepts of “executive federalism” and “intergovernmental governance”. Individual and team projects will explore how policy issues are handled at different stages and in different arenas of the intergovernmental process.
Note: Credit will be granted for only one of ADMN 547, ADMN 462, POLI 462.
Recommendation(s): ADMN 504 recommended prior to ADMN 547.
### ADMN 548 Units: to be determined
**Special Topics in Public Policy**
A study of selected special topics in Public Policy drawn from the current literature in Public Administration or related fields.  
**Note:** May be taken more than once for credit in different topics.

### ADMN 550 Units: 1.5
**Strategic Communication and Engagement**
Communicating with and engaging stakeholders about policy priorities, problems, the design of policy and services, and implementation are crucial features of modern public and non-profit sector governance. Reviews theories, research, and practical strategies for identifying, analyzing and involving diverse groups in policy and program development, and developing multi-faceted communications strategies in the digital era. Students will also develop engagement and communications strategies.  
**Note:** Credit will be granted for only one of ADMN 550, ADMN 470 (if taken with same topic).

### ADMN 551 Units: 1.5
**Administrative Justice System in Canada**
Examines constitutional and administrative law structures and principles that underlie Canada's administrative justice system. Students develop critical understanding of (1) characteristics of federal and provincial systems, (2) legal principles under which statutory decision-making is done, (3) process and principles applied to development of administrative justice system legislation, (4) breadth and influence of tribunal decisions on activities of Canadians. Examples are drawn from federal and provincial levels; comparisons to US, UK and France as appropriate.  
**Note:** Credit will be granted for only one of ADMN 551, ADMN 551A, ADMN 551B.

### ADMN 553 Units: 1.5
**Understanding Cities**
Cities are a basic building block to society, and offer an interesting opportunity to study political, social and economic issues. Examines European and North American/Canadian cities using academic and government resources to analyze and compare their various aspects.

### ADMN 554 Units: 1.5
**Responsible Public Management**
Designed to give students the opportunity to: understand the value dimensions of public management; reflect upon and enhance their own ethical reasoning skills; critically examine existing behavioural standards and guidelines for public managers; work with colleagues to establish what actions would be morally defensible in real administrative and policy making situations; and consider what steps can be taken to enhance responsible public management.  
**Note:** Credit will be granted for only one of ADMN 554, ADMN 422, PADR 503.

### ADMN 556 Units: 1.5
**Managing Public Policy**
Examines the theory and practice of public policy emphasizing the strategic aspects of problem identification, policy design, decision making, implementation and evaluation. Designed to provide students a thorough understanding of public policy and dynamics of the policy process and to apply this knowledge to important policy issues. Policy development is examined within the context of multi-level and multi-sector governance, and addresses the involvement of key players such as the courts, media, and other prominent stakeholders.  
**Note:** Credit will be granted for only one of ADMN 556, PADR 505.  
**Prerequisite(s):**  
- All of ADMN 502A, ADMN 504, ADMN 509, ADMN 512, ADMN 550; or  
- permission of the department.

### ADMN 557 Units: 1.5
**Strategic Planning and Implementation**
Examines the concepts and practice of strategic planning and project management. Students will explore how to negotiate strategic planning initiatives, construct mandates, mission and vision statements, analyze the environment, conduct stakeholder analyses, and prepare the organization for implementation of the plan. Students will develop competencies in implementing strategic plans through the design and management of projects flowing from the strategies outlined in the plan. Familiarizes students with the key components of project management including definition of the project, its scope and life cycle, the maintenance of quality control, scheduling, critical path analysis and the management of human resources involved in project management.  
**Note:** Credit will be granted for only one of ADMN 557, ADMN 477, ADMN 411.

### ADMN 558 Units: 1.5
**European Union Urban Region Policies**
Compares issues associated with the politics, policy analysis, and policy environment of cities and urban regions in the European Union (EU), including integration issues and Canada. Considers ways in which the EU intervenes to improve the policy capacity of urban/regional governments, looking at broad issues of economic development and growth, equity and redistribution in comparative perspective. Focuses on the responsibilities, functions, resources, bureaucracy, and multilevel governance issues linking the federal/state/local governments.  
**Note:** Credit will be granted for only one of ADMN 578, ADMN 478, ADMN 548 (if taken in the same topic).

### ADMN 559 Units: to be determined
**Directed Studies**
**Notes:**  
- May be taken more than once for credit in different topics with permission of the school.  
- Pro Forma required.

### ADMN 560 Units: 1.5
**Qualitative Evaluation Methods and Applications**
Explores the principles and practices of effective qualitative evaluation methods: planning; design strategies; data collection, analysis and reporting. coursework includes: selecting appropriate design strategies and sampling methods; collecting data using in-depth, open-ended interviews, fieldwork-based observations, participant observation, and documents; analyzing large volumes of qualitative data to produce clear, credible and relevant findings. The course will also examine strategies for integrating multiple lines of qualitative findings in evaluations.

### ADMN 561 Units: 1.5
**Quantitative Methods for Public Policy Analysis and Program Evaluation**
Building on the knowledge acquired in 502B, describes the logic behind various quantitative methodologies used in conducting retrospective quantitative evaluations in public policy programs and research. Demonstrates the application of these methodologies using real world policy applications. Topics may include: simple and multiple regression, endogeneity, limited dependent variables, panel data, and experimental methods.  
**Note:** Credit will be granted for only one of ADMN 581, ADMN 681.  
**Prerequisite(s):**  
- ADMN 502B; or  
- permission of the school.

### ADMN 562 Units: 1.5
**Topics in Program Evaluation, Performance Measurement, Performance Management and Knowledge Management**
Designed to explore contemporary issues and problems in the field of evaluation and performance management. Topics will be selected for each offering of the course; examples of topics to be included are: contribution analysis; gaming of performance measurement; professionalizing evaluation; managing knowledge creation and its uses in complex organizations; understanding and influencing organization cultures to increase and sustain knowledge utilization; audit and evaluation; comparative evaluation; and evaluation in developing countries.

### ADMN 590 Units: to be determined
**Directed Studies**
**Notes:**  
- May be taken more than once for credit in different topics with permission of the school.  
- Pro Forma required.

### ADMN 596 Units: 4.5
**Evaluation Project**
The evaluation project is a substantial evaluation of a policy or program designed and conducted for a public sector or non-profit organization. Each evaluation project will have a client and will be supervised by a faculty member in the School of Public Administration. The completed project report will be assessed by a committee consisting of the academic supervisor, a second reader (both members of the School of Public Administration), and the client for the project.  
**Grading:** INP, COM, N.F.
ADMN 598 - Units: 4.5
Master's Project
Requires a substantial analysis of a management, policy, or program problem for a client in the nonprofit or public sector. The Master's Project is completed in consultation with the client and an academic supervisor in the School of Public Administration and must be both practical and academically rigorous. A written project report is defended in an oral examination. For more information, please refer to the School of Public Administration website.
Grading: INP, COM, N, F

ADMN 599 - Units: 6.0
Master's Thesis
Requires a substantial contribution to the knowledge in the field of Public Administration. An MPA Thesis will demonstrate a student's mastery of a substantive body of scholarly or practice literature as well as using appropriate and academically defensible methodologies to analyze research questions, test hypotheses or contribute new theoretical knowledge. Individual students will work with an academic supervisor in the School of Public Administration.
Grading: INP, COM, N, F

ADMN 600 - Units: 0
Doctoral Seminar
The doctoral seminar supports the advancement of research and writing skills. Students will develop competencies in preparing and publishing research. Students are asked to register in this course each term during their PhD program.
Grading: INP, COM, N, F

ADMN 602 - Units: 1.5
Research Methods in Public Administration
An overview of the most prominent research methods employed in public administration, concentrating on procedures for collecting and analyzing empirical data. Students are introduced to key methodological issues and debates and are required to critically appraise examples of applications of methods in the literature.

ADMN 604 - Units: 1.5
Also: POLI 610
Theories of Public Management
Explores different theories and approaches to understanding public administration and reform. Considers variations in three areas: political and constitutional authority, accountability and responsibility, and the roles of elected and non-elected officials; government structures, responsibilities for policy and service delivery, and distributed governance, and patterns and trends in central decision-making, budgeting, control, transparency, and citizen engagement. Students will review seminal comparative studies on administrative practice and reform and undertake a comparative study on a selected topic.
Note: Credit will be granted for only one of ADMN 604, POLI 610.

ADMN 605 - Units: 1.5
Also: POLI 607
Comparative Policy and Governance
Focuses on the study of diverging governance practices and policy outcomes in different jurisdictions. Examines: policy determinants such as history, culture, institutions, and the economy; policy dynamics and processes such as agenda-setting and decision-making, networks and communities, and policy change; and policy styles and transfer, referring to the state's ability to design, coordinate, implement, and learn from policy interventions. Students will review seminal studies and undertake a comparative policy project.
Note: Credit will be granted for only one of ADMN 605, POLI 507, POLI 607.

ADMN 607 - Units: 1.5
Organizational Behaviour and Analysis
A review of the origins, analytic traditions, and evolution of the study of organizations, focusing on exploring and analyzing the behaviour of public organizations. Topics include goal formation, tasks, technology, formal structure, informal organization, motivation, perception, values, culture, information, decision making, group dynamics, conflict, leadership, empowerment, creativity, learning and innovation. Concepts and theories are complemented by reviewing seminal literature on private, public, and nonprofit organizations, and by undertaking field research.

ADMN 620 - Units: 1.5
Policy and Institutional Design and Analysis
A review of the interdisciplinary foundations of the analysis and design of public policy, and the institutions and strategies for implementing them. Examines the rational, comparative advantage, and combinations of government hierarchies, markets, networks, and policy instruments. Considers how to meld different disciplinary and professional perspectives and techniques for addressing design and implementation challenges, and how to draw lessons from different policy domains and jurisdictions, through case studies and projects in selected policy domains.

ADMN 621 - Units: 1.5
Policy and Program Evaluation and Performance
Evaluates and compares different sources of information and methodologies that policy-makers and policy analysts use to inform policy debates and decisions, implementation and management strategies, accountabilities, and program reviews. Topics include meta-analysis, cost-benefit analysis, quasi-experiments, program evaluation, performance measurement, smart practices, and other quantitative and qualitative methodologies. Explores the challenges of securing reliable and valid data, the trade-off between high quality and timely information, and conveying complex findings. These approaches and challenges are explored through intensive assessments of existing studies, cases and projects.

ADMN 645 - Units: 1.5
Organizational Change and Development
Examines the philosophy, history, and evolving approaches associated with organizational change and development, with special focus on initiating and managing change in the public sector. Reviews the diverse perspectives on change and the special roles of those who seek to change and develop organizations. Includes topics such as planned and unplanned change, alternative interventions, resistance, leadership, and incremental versus radical change. Students will undertake case studies and assessments of organizational change initiatives.

ADMN 681 - Units: 1.5
Quantitative Methods for Public Policy Analysis and Program Evaluation
Describes the logic behind various quantitative methodologies used in conducting retrospective quantitative evaluations in public policy programs and research. Demonstrates the application of these methodologies using real-world policy applications. Topics may include: simple and multiple regression, endogeneity, limited dependent variables, panel data and experimental methods.
Note: Credit will be granted for only one of ADMN 681, ADMN 581.

ADMN 690 - Units: 1.0-3.0
Directed Studies
Notes:
• May be taken more than once for credit in different topics with permission of the school.
• Pro Forma required.

ADMN 693 - Units: 3.0
PhD Candidacy Examination
Students enrol in ADMN 693 for the duration of their preparation for their candidacy examinations. This begins at the time a student first enrolls in the PhD program and continues until candidacy requirements have been completed.
Grading: INP, COM, N, F

ADMN 699 - Units: 30.0
Dissertation
Prerequisite(s): ADMN 693.
Grading: INP, COM, N, F

AHVS
Art History and Visual Studies
Department of Art History and Visual Studies
Faculty of Fine Arts

AHVS 501 - Units: 1.5
Formerly: HA 501
Colloquium in Theories and Practices
Notes:
• Credit will be granted for only one of AHVS 501, HA 501.
• A compulsory seminar for all master's students.

AHVS 502 - Units: 1.5
Formerly: HA 502
Special Topics in Art History and Visual Studies
Note: Credit will be granted for only one of AHVS 502, HA 502.
AHVS 509  Units: 1.5
Formerly: HA 509
Workshop in Art Historical Writing
Notes:
• Credit will be granted for only one of AHVS 509, HA 509.
• A compulsory workshop.
Prerequisite(s): AHVS 501 or HA 501.

AHVS 520  Units: 1.5
Formerly: HA 520
Seminar in Medieval Art
Note: Credit will be granted for only one of AHVS 520, HA 520.

AHVS 530  Units: 1.5
Formerly: HA 530
Seminar in the Contemporary Art of South and Southeast Asia
An intensive examination of selected themes, histories and case studies in the contemporary arts and art worlds of South and/or Southeast Asia.
Note: Credit will be granted for only one of AHVS 530, HA 530.

AHVS 535  Units: 1.5
Seminar in Late Medieval and Early Renaissance Art, c. 1200-1500
Note: May be taken more than once for credit in different topics.

AHVS 540  Units: 1.5
Formerly: HA 540
Seminar in Renaissance Art
Note: Credit will be granted for only one of AHVS 540, HA 540.

AHVS 545  Units: 1.5
Formerly: HA 545
Seminar in Early Modern Art, c. 1500-1750
Note: Credit will be granted for only one of AHVS 545, HA 545.

AHVS 549  Units: 1.5
Formerly: HA 549
Seminar in Orientalism in Art and Architecture
Note: Credit will be granted for only one of AHVS 549, HA 549.

AHVS 550  Units: 1.5
Formerly: HA 550
Seminar in Islamic Art and Civilization
Note: Credit will be granted for only one of AHVS 550, HA 550.

AHVS 552  Units: 1.5
Formerly: HA 552
Seminar in the Arts of Mughal India
Note: Credit will be granted for only one of AHVS 552, HA 552.

AHVS 553  Units: 1.5
Formerly: HA 553
Seminar in the Arts of Safavi Iran
Note: Credit will be granted for only one of AHVS 553, HA 553.

AHVS 554  Units: 1.5
Formerly: HA 554
Seminar in 19th- and/or 20th-Century Architecture
Note: Credit will be granted for only one of AHVS 554, HA 465, HA 554.

AHVS 555  Units: 1.5
Formerly: HA 555
Seminar in Canadian Art
Note: Credit will be granted for only one of AHVS 555, HA 555.

AHVS 560  Units: 1.5
Formerly: HA 560
Seminar in Modern Art I (1870-1945)
Note: Credit will be granted for only one of AHVS 560, HA 560.

AHVS 561  Units: 1.5
Formerly: HA 561
Seminar in Modern Art II (1945-1990)
Note: Credit will be granted for only one of AHVS 561, HA 561.

AHVS 563  Units: 1.5
Formerly: HA 563
Seminar in Political Art
Note: Credit will be granted for only one of AHVS 563, HA 563.

AHVS 564  Units: 1.5
Formerly: HA 564
Seminar in Contemporary Art
Note: Credit will be granted for only one of AHVS 564, HA 564.

AHVS 565  Units: 1.5
Formerly: HA 565
Seminar in Contemporary North American Indigenous Arts
Note: Credit will be granted for only one of AHVS 565, HA 565.

AHVS 570  Units: 1.5
Formerly: HA 570
Seminar in East Asian Art
Note: Credit will be granted for only one of AHVS 570, HA 570.

AHVS 571  Units: 1.5
Formerly: HA 571
Seminar in the Arts of China
Note: Credit will be granted for only one of AHVS 571, HA 571.

AHVS 578  Units: 1.5
Formerly: HA 578
Seminar in Theory & Film Culture
Note: Credit will be granted for only one of AHVS 578, HA 578.

AHVS 580  Units: 1.5
Formerly: HA 580
Topics in Cultural Resource Management
Note: Credit will be granted for only one of AHVS 580, HA 580.
Prerequisite(s): Permission of the department.

AHVS 582  Units: 1.5
Formerly: HA 582
Seminar in Indigenous Arts
Note: Credit will be granted for only one of AHVS 582, HA 482, HA 582.

AHVS 584  Units: 1.5
Formerly: HA 584
Seminar in Contemporary Art: The Pacific Northwest
An intensive study of a selected aspect of Pacific Northwest art. Content will vary from year to year.
Notes:
• Credit will be granted for only one of AHVS 584, HA 584.
• May be taken more than once with permission of the department.

AHVS 590  Units: 1.5
Formerly: HA 590
Directed Studies MA Level
Notes:
• Credit will be granted for only one of AHVS 590, HA 590.
• Pro Forma required.

AHVS 593  Units: 1.5
Formerly: HA 593
Seminar on the Williams Collection
An intensive study of selected aspect of the Williams Collection. Topics will vary.
Notes:
• Credit will be granted for only one of AHVS 593, HA 593.
• May be taken more than once with permission of the department.
• Several classes may be taught at area museums and galleries.

AHVS 598  Units: 4.5
Formerly: HA 598
Research Paper
An extended research paper of approx. 10,000 words which will also be presented to a public audience.
Notes:
• Credit will be granted for only one of AHVS 598, HA 598.
• Required for MA students who elect the Research Paper Option.
Grading: INP, COM, N, F

AHVS 599  Units: 7.5
Formerly: HA 599
MA Thesis
Note: Credit will be granted for only one of AHVS 599, HA 599.
Grading: INP, COM, N, F

AHVS 601  Units: 1.5
Formerly: HA 601
Colloquium in Theories and Practices
Notes:
• Credit will be granted for only one of AHVS 601, HA 601.
• A compulsory course for all doctoral students, except for students who have credit for AHVS 501.

AHVS 609  Units: 1.5
Formerly: HA 609
Workshop in Art Historical Writing
Notes:
• Credit will be granted for only one of AHVS 609, HA 609.
• A compulsory workshop.
AHVS 690 - ANTH 651

COURSE LISTINGS ANTH

ANTH 500 Units: 1.5
Seminar in Anthropological Theory

ANTH 510H Units: 1.5
Medical Anthropology

ANTH 511 Units: 1.5
Advanced Research Seminar in Inequality, Culture and Health

ANTH 516 Units: 1.5
Seminar in Anthropological Research Methods

ANTH 520 Units: 1.5
Specialized Themes in Anthropology

ANTH 520A Units: 1.5
Themes in Sociocultural Anthropology

ANTH 520B Units: 1.5
Themes in Archaeology

ANTH 520C Units: 1.5
Themes in Biological Anthropology

ANTH 530 Units: 1.5
Ethnology of Selected Areas

ANTH 540 Units: 1.5
Advanced Research Seminar in Indigenous Peoples in Historic and Contemporary Contexts

ANTH 541 Units: 1.5
Formerly: S40
Advanced Research Seminar in Inequality, Culture and Health

ANTH 542 Units: 1.5
Archaeology of a Selected Area

ANTH 550 Units: 1.5
Advanced Research Seminar in Ecology and Evolution

ANTH 551 Units: 1.5
Formerly: S50
Advanced Research Seminar in Ecology and Evolution

ANTH 552 Units: 1.5
Selected Topics in Biological Anthropology

ANTH 552A Units: 1.5
Applied Topics in Osteological Methods

ANTH 552B Units: 1.5
Primateology

ANTH 552C Units: 1.5
Advanced Topics in Biological Anthropology

ANTH 552D Units: 1.5
Advanced Research Seminar in Visual Anthropology and Materiality

ANTH 559 Units: 7.5
Thesis

ANTH 590 Units: 1.5-3.0
Directed Studies

ANTH 597 Units: 0.0-3.0
Thesis Proposal Development

ANTH 598 Units: 0
Comprehensive Examinations

ANTH 599 Units: 7.5
Thesis

ANTH 600 Units: 1.5
Professional Development in Anthropology

ANTH 611 Units: 1.5
Advanced Research Seminar in Inequality, Culture and Health

ANTH 612 Units: 1.0
Graduate Colloquium

ANTH 631 Units: 1.5
Advanced Research Seminar in Indigenous Peoples in Historic and Contemporary Contexts

ANTH 641 Units: 1.5
Advanced Research Seminar in Ecology and Evolution

ANTH 651 Units: 1.5
Advanced Research Seminar in Ecology and Evolution

Prerequisite(s): Permission of the program.

Ahvs 690 - ANTH 651

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ANTH 671 Units: 1.5
Advanced Research Seminar in Visual Anthropology and Materiality
In-depth and critical survey of current issues, topics, theory and method relating to visual anthropology and materiality in historical and contemporary contexts.

ANTH 690 Units: 1.5
Specialized Directed Study
Intended to prepare students to participate in and contribute to research and knowledge development in one or more of their particular areas of specialization within the discipline. PhD students must take any one of the following:

ANTH 690A Units: 1.5
Specialized Directed Study in Contemporary Indigenous Peoples

ANTH 690C Units: 1.5
Specialized Directed Study in Inequality, Culture, Health

ANTH 690D Units: 1.5
Specialized Directed Study in Evolution and Ecology

ANTH 690E Units: 1.5
Specialized Studies in Method and Theory

ANTH 690F Units: 1.5
Specialized Directed Study in Visual Anthropology and Materiality

ANTH 693 Units: 3.0
PhD Candidacy Examinations
Students enroll in ANTH 693 while completing their candidacy requirements. In addition to completing their coursework, PhD students must fulfill the language requirement, pass their comprehensive examinations, and defend their dissertation proposal in order to advance to candidacy.

Grading: INP, COM, N, F

ANTH 699 Units: 20
PhD Dissertation
Prerequisite(s): ANTH 693.
Grading: INP, COM, N, F

ART

Visual Arts
Department of Visual Arts
Faculty of Fine Arts

ART 500 Units: 9.0
First Year Drawing

ART 501 Units: 9.0
Second Year Drawing

ART 511 Units: 9.0
First Year Painting

ART 512 Units: 9.0
Second Year Painting

ART 521 Units: 9.0
First Year Sculpture

ART 522 Units: 9.0
Second Year Sculpture

ART 541 Units: 9.0
First Year Photography

ART 542 Units: 9.0
Second Year Photography

ART 551 Units: 9.0
First Year Digital Media

ART 552 Units: 9.0
Second Year Digital Media

ART 570 Units: 3.0
Directed Study
An independent study course normally taken during the term between the student’s first and second year.

ART 580 Units: 6.0
First Year Seminar

ART 581 Units: 6.0
Second Year Seminar
The graduate seminar meets weekly, serving as a forum for active investigation of contemporary art practices as they pertain to student and faculty research areas. The seminar also serves as an occasional forum for visiting artists and critics. Students are expected to make presentations based on their work and research, to participate actively in discussion and to demonstrate their critical and analytical abilities in dealing with the material presented.

ART 598 Units: 0
MFA Degree Exhibition
This final exhibition will be the major source of evaluation for the student’s attainment of the MFA and should be regarded as the equivalent of the scholarly thesis of an academic discipline. The degree exhibition will be evaluated by the student’s committee which will submit its decision to the department for approval. Graduating students will speak to their work and answer questions from the examining committee. The committee may ask questions about the cultural, social and theoretical relations apparent in the student’s work. Students are required to provide documentation of their graduating exhibition which will be on file in the department. This documentation will take the form of slides, photographs, videotapes or other forms appropriate to the student’s production.

Grading: INP, COM, N, F

ASTR

Astronomy
Department of Physics and Astronomy
Faculty of Science

ASTR 501 Units: 1.5
Stellar Interiors and Evolution
The physics of stars and stellar explosions. Interior structure and evolution including the origin of the elements. Stellar properties as a function of mass and metallicity. Computational simulations of stars and stellar physics processes, such as mixing, and corresponding observables.

ASTR 503 Units: 1.5
The Interstellar Medium
Spectral line formation and notation. Processes in the interstellar medium including collisional excitation/ ionization, line transfer effects (e.g., resonance and fluorescence), continuum and recombination processes. The theory of photoionized regions. Dust and metals - formation, measurement and chemistry. The application of these physical processes to current research topics, including the composition of the Milky Way and Local Group galaxies and the interstellar media of high redshift galaxies.

ASTR 504 Units: 1.5
A Theoretical Perspective on Galaxies
The current theoretical framework for understanding the formation and evolution of galaxies and galaxy systems. Topics may include the origin of the initial density perturbations during inflation, the hierarchical clustering paradigm, the physics driving the evolution of cosmic baryons, and the latest tools used by theorists to study structure formation.

ASTR 505 Units: 1.5
An Observational Perspective on Galaxies
The formation and evolution of galaxies from a modern research perspective. Topics may include the observed properties of galaxies, the growth of galaxies from initial conditions, the development of galactic scaling relations, the relationship between galaxies and large-scale structure and the physical evolution of galaxies.
ASTR 506 - Units: 1.5
Stellar Populations
The properties of star clusters and their use in improving our understanding of stellar evolutionary theory. The use of star clusters and theoretical stellar models to study the formation of galaxies in the early Universe in addition to the chemical and dynamical evolution of galactic systems.

ASTR 507 - Units: 1.5
Stellar Archaeology
The properties of stars and stellar populations in the Milky Way Galaxy. Topics may include stellar chemistry and the analysis of model atmosphere, stellar and cluster kinematics, astronomical instrumentation, and big data surveys.

ASTR 508 - Units: 1.5
Cosmology
Modern research problems in cosmology. Topics may include the measurement of cosmological parameters, universal expansion, large-scale structure, big bang nucleosynthesis and the cosmic microwave background.

ASTR 511 - Units: 1.5
Advanced Topics in Astronomy
Advanced topics covering research in the fields of extra-galactic and stellar astronomy. Note: May be taken more than once for credit in different topics.

ASTR 512 - Units: 1.5
Astronomical Instrumentation
A multi-wavelength overview of astronomical instrumentation. Practical optics and signal processing (e.g., spread functions, resolution, aberrations, sampling, sources of noise, calibrations). Multiwavelength techniques, including interferometry and adaptive optics. Astronomical detectors. Spectroscopy (long and multi-slit, echelle, Fabry-Perot and integral field units). An overview of current and future ground and space facilities, their design and objectives. Application of theory to practice: designing your own observations and writing telescope proposals.

ASTR 560 - Units: 0
Colloquium
Weekly physics and astronomy colloquium. Grading: INP, COM, N, F.

ASTR 561 - Units: 1.5
Student Seminar (MSc)
Seminar participants take turns hosting the meeting, typically by presenting a paper on recent or ongoing astronomical research. This is a continuing course that is taken throughout the MSc program, but credit is not granted until completion of the program. Grading: INP, COM, N, F.

ASTR 580 - Units: 1.0-3.0
Directed Studies
Notes:
- May be taken more than once for credit in different topics.
- Pro Forma required.

BCMB 500 - Units: 1.5
Critical Thinking in Biochemistry and Microbiology
Allows students to develop their oral presentation and written communication skills and provides students with training in critical analysis of data and peer-reviewed publications.

BCMB 531 - Units: 0.5
Scientific Writing for Biomedical Research
Exploration of the techniques and strategies of effective scientific writing for knowledge dissemination, grant submission, and peer-reviewed journals. Class time will be used to discuss examples from the current literature, from the popular press and from fellow students.

BCMB 532 - Units: 0.5
Regulation of Eukaryotic Gene Expression
Detailed review of current topics in eukaryotic gene regulation with emphasis on the practical aspects of gene expression and chromatin conformation analysis using molecular biology and biophysics techniques such as DNA arrays, QPCR, ChIP, next generation sequencing, analytical ultracentrifuge, FRAP, FRET. Given in a journal club format with class discussion.

BCMB 533 - Units: 0.5
Cell Signalling
Students will develop an understanding of the tools and methods used to dissect eukaryotic signalling pathways, and learn how diverse approaches can be used to determine molecular mechanisms of signalling. Taught from the primary literature.

BCMB 534 - Units: 0.5
Fundamentals of Crystallography
An exploration of the connection between x-ray diffraction and electron density, including concepts of unit cell, scattering factor, structure factor, anomalous scattering and fluorescence. Data collection strategies will be discussed, including Bragg angles, the direct and reciprocal lattices, the Ewald sphere, single crystal x-ray diffractometers, area detectors, Laue photography, synchrotron radiation, MAD, SAD and MIR.

BCMB 535 - Units: 0.5
Practical Crystallography
Detailed review of the practical aspects of analysis of x-ray diffraction data collected from protein crystals. Includes techniques for growing and mounting crystals, data collection and reduction, and modern software packages for analysis and presentation. Hands-on experience in solving real structures will be given in a workshop atmosphere, and students are encouraged to bring their laptop computers to class.

BCMB 537 - Units: 0.5
Experimental Origins of Molecular Biology
Examination of the historical development of the guiding paradigms of modern molecular biology. Classic investigations to be examined include the Luria-Delbruck fluctuation test, the Meselson-Stahl experiment, the fine structure mapping of bacteriophage T4, the Jacob and Monod elucidation of the function of the lac operon, and the deciphering of the genetic code.

BCMB 538 - Units: 0.5
Bacterial Pathogen Alteration of Eukaryotic Host Cell Functions
The mechanism of action of bacterial pathogens and their effector molecules in altering biochemical processes in host cells. Various topics will be discussed, including detailed study of the six specialized secretion systems of gram-negative bacteria and modern biological and biochemical approaches for studying bacterial pathogenesis.

BCMB 539 - Units: 0.5
Practical Bioinformatics
Aspects of bioinformatics will be reviewed, including searching for distant homologues of proteins with similarity search tools, use of modern web-based motif searching tools, gene prediction and annotation tools, dot plots of proteins and genomes. Given in a journal club format with class discussion.

BCMB 540 - Units: 0.5
Cancer Immunology from Bench to Bedside
Students are exposed to data and concepts of the immune response to cancer and clinical immunotherapy - specifically cancer vaccines and T cell therapy - with a broad perspective from basic research through to clinical practice. Includes lectures and student-led presentations of primary literature.

BCMB 541 - Units: 0.5
An Introduction to Clinical Oncology for Cancer Researchers
Intended for graduate students with an interest in cancer research. Students are exposed to concepts of modern oncology from a clinical perspective, including pathology, radiation therapy, systemic therapy, and even psychological support. The goal is to provide a "real world" view of the progress and challenges associated with cancer diagnosis and treatment. Includes lectures by practicing physicians and other clinical staff, as well as student-led presentations of primary literature.
### BCMB 580 - BIOL 532

<table>
<thead>
<tr>
<th>Course</th>
<th>Units</th>
<th>Notes</th>
<th>Prerequisite(s)</th>
<th>Corequisite(s)</th>
<th>Corequisites</th>
<th>Grading</th>
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<tbody>
<tr>
<td><strong>BCMB 580</strong></td>
<td>0.0</td>
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<tr>
<td>Formerly: BIOL and MICR 580&lt;br&gt;&lt;br&gt;Research Seminar</td>
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<td>Requires attendance and participation at all departmental seminars, and the formal presentation of the research that comprises the major portion of the student's MSc thesis in biochemistry or microbiology, or the major portion of the currently completed and proposed research for students intending to transfer to the PhD program.</td>
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<tr>
<td><strong>BCMB 589</strong></td>
<td>0.5-1.5</td>
<td>Special Topics in Biochemistry or Microbiology</td>
<td>Instruction in a specific or highly specialized aspect of biochemistry or microbiology not otherwise offered in the department's graduate programs.</td>
<td>May be taken more than once for credit in different topics to a maximum of 1.5 units.</td>
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<tr>
<td><strong>BCMB 680</strong></td>
<td>0.0</td>
<td>Advanced Research Seminar</td>
<td>Requires attendance and participation at all departmental seminars, and the formal presentation of the research that comprises the major portion of the student's PhD thesis work in biochemistry or microbiology.</td>
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<tr>
<td><strong>BCMB 693</strong></td>
<td>3.0</td>
<td>PhD Candidacy Examination</td>
<td>Students enrol in BCMB 693 upon provisional transfer to the BIOC or MICR PhD program and remain enrolled until all candidacy requirements are complete.</td>
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<td><strong>BIOL 500</strong></td>
<td>1.5</td>
<td>History of Biology</td>
<td>The historical development of the major techniques and ideas of biology, including the significance of the important historical contributors to biology.</td>
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<td><strong>BIOL 509D</strong></td>
<td>1.5</td>
<td>Ion Channels: Structure and Function</td>
<td>Electrical signals in neurons are produced by voltage-gated and ligand-gated ion channels. Any disturbance in the function of ion channels can lead to major neurological disorders. This course will allow students to learn the structure and function of some of the major voltage- and ligand-gated ion channels. Mechanisms of ligand binding, gating and ion selectivity will be covered. The structure of the course will be based primarily on critical discussion of research papers.</td>
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<tr>
<td><strong>BIOL 513</strong></td>
<td>1.5</td>
<td>Developmental Biology</td>
<td>Cellular and molecular mechanisms underlying animal development: fertilization, gastrulation, body axis formation and patterning, formation of the eye, nervous system, neural crest, limb, germ cells and gonads. Emphasis on human developmental disorders, experimental design and hypothesis testing.</td>
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<td><strong>BIOL 516</strong></td>
<td>1.5</td>
<td>Neuroethology</td>
<td>Examination of the neural basis of behaviour. Insights into the neuronal organization of behaviour through examination of neural solutions that have evolved in animals to solve problems encountered in their particular environments. Examples in individual species will be used to illustrate how neuronal systems integrate information to shape behaviour in a real-world context. Critical evaluation of research papers and seminar presentations based on the primary literature will be emphasized.</td>
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<td><strong>BIOL 518</strong></td>
<td>1.5</td>
<td>Electron Microscopy for the Biological Sciences</td>
<td>An introduction to the principles and basic techniques of biological electron microscopy emphasizing common preparative methods for transmission and scanning electron microscopy of biological samples. A final report illustrated by the student's electron photomicrographs is required.</td>
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<td><strong>BIOL 521</strong></td>
<td>1.5</td>
<td>Advanced Topics in Marine and/or Freshwater Algae</td>
<td>Phytoplankton eco-physiology, and connections between phytoplankton physiology and broad oceanographic issues, such as the dynamics of nutrient cycling, carbon export, paleoceanographic proxies, ocean warming and marine ecosystem changes.</td>
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<tr>
<td><strong>BIOL 522</strong></td>
<td>1.5</td>
<td>Sensory Biology</td>
<td>Cellular and molecular mechanisms underlying sensory systems: sensory receptor coding logic, signal transduction, neuronal circuitry, developmental biology, comparative analysis of model organisms, related clinical disorders and therapeutic strategies. Focus placed on recent advances in the primary literature and on promoting skills for developing hypotheses and designing experiments.</td>
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<tr>
<td><strong>BIOL 532</strong></td>
<td>1.5</td>
<td>Molecular Endocrinology</td>
<td>Basic and molecular aspects of endocrinology. Brain hormones and their precursors, insulin and its receptor, gene-associated peptides, new glycoprotein hormones, growth factors, steroids, the superfamily of steroid and thyroid receptors, pheromones, oncogenes, immunoenocrinology and environmental endocrinology.</td>
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**BCMB 580**<br><br>Units: 0.0<br><br>Formerly: BIOC and MICR 580<br><br>Research Seminar<br><br>Requires attendance and participation at all departmental seminars, and the formal presentation of the research that comprises the major portion of the student’s MSc thesis in biochemistry or microbiology, or the major portion of the currently completed and proposed research for students intending to transfer to the PhD program. <br><br>Grading: INP, COM, N, F

**BCMB 589**<br><br>Units: 0.5-1.5<br><br>Special Topics in Biochemistry or Microbiology<br><br>Instruction in a specific or highly specialized aspect of biochemistry or microbiology not otherwise offered in the department's graduate programs.<br><br>Note: May be taken more than once for credit in different topics to a maximum of 1.5 units.<br><br>Grading: INP, COM, N, F

**BCMB 680**<br><br>Units: 0.0<br><br>Formerly: BIOC and MICR 680<br><br>Advanced Research Seminar<br><br>Requires attendance and participation at all departmental seminars, and the formal presentation of the research that comprises the major portion of the student’s PhD thesis work in biochemistry or microbiology.<br><br>Prerequisite(s):<br>- One of BCMB 580, BIOL 580, MICR 580; or<br>- permission of the department.<br><br>Grading: INP, COM, N, F

**BCMB 693**<br><br>Units: 3.0<br><br>PhD Candidacy Examination<br><br>Students enrol in BCMB 693 upon provisional transfer to the BIOC or MICR PhD program and remain enrolled until all candidacy requirements are complete.<br><br>Grading: INP, COM, N, F

**BIOL 500**<br><br>Units: 1.5<br><br>History of Biology<br><br>The historical development of the major techniques and ideas of biology, including the significance of the important historical contributors to biology.<br><br>Note: Credit will be granted for only one of BIOL 500, BIOL 400.<br><br>A combined undergraduate and graduate course.<br><br>Please contact instructor for more information.

**BIOL 509B**<br><br>Units: 1.5<br><br>Neurobiology: Molecules to Behaviour<br><br>Cellular and molecular biology of excitable cells and mechanisms of intercellular communication. Evolution and functional organization of central nervous systems. Motor systems and mechanisms of coordination. Sensory biology. Interactions of genes, development, and experience in molding nervous systems and behaviour.<br><br>Note: Credit will be granted for only one of BIOL 509B, BIOL 409A, BIOL 367.<br><br>A combined undergraduate and graduate course.<br><br>Please contact instructor for more information.

**BIOL 509D**<br><br>Units: 1.5<br><br>Ion Channels: Structure and Function<br><br>Electrical signals in neurons are produced by voltage-gated and ligand-gated ion channels. Any disturbance in the function of ion channels can lead to major neurological disorders. This course will allow students to learn the structure and function of some of the major voltage- and ligand-gated ion channels. Mechanisms of ligand binding, gating and ion selectivity will be covered. The structure of the course will be based primarily on critical discussion of research papers.<br><br>**BIOL 513**<br><br>Units: 1.5<br><br>Developmental Biology<br><br>Cellular and molecular mechanisms underlying animal development: fertilization, gastrulation, body axis formation and patterning, formation of the eye, nervous system, neural crest, limb, germ cells and gonads. Emphasis on human developmental disorders, experimental design and hypothesis testing.<br><br>Note: Credit will be granted for only one of BIOL 513, BIOL 309.<br><br>A combined undergraduate and graduate course.<br><br>Please contact instructor for more information.

**BIOL 516**<br><br>Units: 1.5<br><br>Neuroethology<br><br>Examination of the neural basis of behaviour. Insights into the neuronal organization of behaviour through examination of neural solutions that have evolved in animals to solve problems encountered in their particular environments. Examples in individual species will be used to illustrate how neuronal systems integrate information to shape behaviour in a real-world context. Critical evaluation of research papers and seminar presentations based on the primary literature will be emphasized.<br><br>Note: Credit will be granted for only one of BIOL 516, BIOL 448.<br><br>A combined undergraduate and graduate course.<br><br>Please contact instructor for more information.

**BIOL 518**<br><br>Units: 1.5<br><br>Electron Microscopy for the Biological Sciences<br><br>An introduction to the principles and basic techniques of biological electron microscopy emphasizing common preparative methods for transmission and scanning electron microscopy of biological samples. A final report illustrated by the student's electron photomicrographs is required.<br><br>Prerequisite(s): Permission of the department.

**BIOL 521**<br><br>Units: 1.5<br><br>Advanced Topics in Marine and/or Freshwater Algae<br><br>Phytoplankton eco-physiology, and connections between phytoplankton physiology and broad oceanographic issues, such as the dynamics of nutrient cycling, carbon export, paleoceanographic proxies, ocean warming and marine ecosystem changes.

**BIOL 522**<br><br>Units: 1.5<br><br>Sensory Biology<br><br>Cellular and molecular mechanisms underlying sensory systems: sensory receptor coding logic, signal transduction, neuronal circuitry, developmental biology, comparative analysis of model organisms, related clinical disorders and therapeutic strategies. Focus placed on recent advances in the primary literature and on promoting skills for developing hypotheses and designing experiments.<br><br>Note: Credit will be granted for only one of BIOL 522, BIOL 404.<br><br>A combined undergraduate and graduate course.<br><br>Please contact instructor for more information.

**BIOL 532**<br><br>Units: 1.5<br><br>Molecular Endocrinology<br><br>Basic and molecular aspects of endocrinology. Brain hormones and their precursors, insulin and its receptor, gene-associated peptides, new glycoprotein hormones, growth factors, steroids, the superfamily of steroid and thyroid receptors, pheromones, oncogenes, immunoenocrinology and environmental endocrinology.<br><br>Note: Credit will be granted for only one of BIOL 532, BIOL 432.<br><br>A combined undergraduate and graduate course.<br><br>Please contact instructor for more information.
B I O L 5 3 5  Units: 1.5
Formerly: BIOL 555
Topics in Evolutionary Biology
A lecture and discussion course dealing with the processes of evolution. Topics vary, and may include one or more of the following: microevolutionary and macroevolutionary processes, speciation mechanisms, phylogeny reconstruction, molecular evolution, genetic basis of morphological change. Areas of current controversy will be explored.
Note: Credit will be granted for only one of BIOL 535, BIOL 555.

B I O L 5 3 6  Units: 1.5
Human Molecular Genetics
An advanced study of the supramolecular organization, structures and functions of the human genome, and their implications in genetic diseases, including cancer. Topics will include current advances in genomics, animal models of diseases, molecular pathology and gene therapies.
Notes: • Credit will be granted for only one of BIOL 536, BIOL 438.
• A combined undergraduate and graduate course.
• Please contact instructor for more information.

B I O L 5 3 8  Units: 1.5
Also: FORB 538
Nutrient Cycling and Prokaryotes
An introduction to prokaryotes (bacteria and archaea) and their role in nutrient cycling in forests, lakes and oceans. Diversity and evolution of populations and communities of prokaryotes and their role in the major biogeochemical cycles: carbon, nitrogen, sulfur. Genetic, biochemical, physiological and ecological aspects of processes such as nitrogen fixation and methanogenesis; design of experimental approaches to assess cycling of elements in forests, lakes and oceans by prokaryotes.
Notes: • Credit will be granted for only one of BIOL 538, BIOL 438, FORB 538.
• A combined undergraduate and graduate course.
• Please contact instructor for more information.

B I O L 5 4 0  Units: 1.5
Molecular Epidemiology
Basic principles and applications of molecular epidemiology in epidemiological research on infectious and chronic diseases as well as risk factors in human populations. An overview of terminology and definitions, the use of statistics, and ethical consideration.
Notes: • Credit will be granted for only one of BIOL 540, BIOL 439.
• A combined undergraduate and graduate course.
• Please contact instructor for more information.

B I O L 5 4 4  Units: 1.5
Molecular Evolution
Using population genetic and evolutionary principles to understand how and why genes and genomes change, and to reconstruct the evolutionary history of genes, genomes, and organisms.
Notes: • Credit will be granted for only one of BIOL 544, BIOL 435.
• A combined undergraduate and graduate course.
• Please contact instructor for more information.

B I O L 5 5 0  Units: 1.0-6.0
Directed Studies
Notes: • May be taken more than once in any of the below areas under the appropriate faculty member.
• Pro Forma required.

B I O L 5 5 0 A  Evolution
Units: 1.0-6.0
Notes: • May be taken more than once for credit in different topics with permission of the department.
• Pro Forma required.

B I O L 5 5 0 B  Ecology
Units: 1.0-6.0
Notes: • May be taken more than once for credit in different topics with permission of the department.
• Pro Forma required.

B I O L 5 5 0 C  Physiology
Units: 1.0-6.0
Notes: • May be taken more than once for credit in different topics with permission of the department.
• Pro Forma required.

B I O L 5 5 0 D  Cell Biology
Units: 1.0-6.0
Notes: • May be taken more than once for credit in different topics with permission of the department.
• Pro Forma required.

BIOL 550E - Units: 1.0-6.0
Molecular Biology
Notes: • May be taken more than once for credit in different topics with permission of the department.
• Pro Forma required.

B I O L 5 6 0  Units: 1.0
Annual Biology Graduate Symposium
Required of all graduate students every year of their degree program except by permission of the department. Shall be treated, in its grading, as the thesis or the dissertation and shall be given one unit of credit upon completion.
Grading: INP, COM, N, F

B I O L 5 6 1  Units: 1.5 Hours: 3-0-1
Fisheries Ecology and Management
An examination of the basic principles of fisheries ecology and population dynamics and how they are used as the basis for stock assessment and fisheries management. Topics include: current issues in BC, Canadian and global fisheries; growth, mortality, reproduction and recruitment; stock-recruitment and age-structured fisheries models; fisheries management tactics and strategies.
Prerequisite(s): Permission of the department.

B I O L 5 6 3  Units: 1.5
Also: STAT 563
Topics in Applied Statistics
Survival analysis, generalized linear models, multivariate normal models, resampling methods, nonparametric and robust methods, meta-analysis, miscellaneous techniques.
Note: Joint with STAT 563.
BUS 603 | Units: 1.5
Strategy
Examines the current state of knowledge in strategic management. Topics may include the sources of competitive advantage, the role of industry evolution and technology, the organization of top management, and managerial decision-making and cognition. Introduces alternative theoretical perspectives and available empirical evidence related to these topics.

BUS 604 | Units: 1.5
Business and Sustainability
Changing societal and ecological dynamics, from global to local levels, are rapidly shaping new landscapes for the management of organizations - affecting their institutional contexts, interactions with an expanding range of stakeholders, strategic priorities and operational realities. Rethinking the role of business in society has added new concepts to organization theory, including corporate social responsibility, ecological sustainability and resilience, triple-bottom line management, natural capital, shared or sustainable value creation and social entrepreneurship.

BUS 605 | Units: 1.5
Comparative Human Resource Management
Focuses on human resource management (HRM) practices and outcomes in international organizations, as well as identifies causal factors accounting for differences across nations in HRM structures, practices and outcomes.

BUS 606 | Units: 1.5
Micro Organizational Behaviour
Focuses on the behaviour of individuals and groups in organizations. Introduces several key topics in the field and aims for a critical analysis of each topic to develop a framework for understanding the breadth and depth of the research done to date in each topic and to identify the gaps in the literature. Covers the major theories and empirical research, including conceptual and methodological issues.

BUS 607 | Units: 1.5
Macro Organizational Theory
Introduces the major schools of thought in organization and management theory. Considers the development of the field, major and foundational works in these schools of thought, and provides a cognitive map with which to evaluate contemporary research and debates. Provides understanding of the strengths and weaknesses of each major perspective.

BUS 640 | Units: 1.5
Research Methods Fundamentals
Builds methodological foundation for organizational research and provides an overview of a broad range of research methodologies for organizational research. Topics include an overview of quantitative and qualitative research methods, theory building process, reliability and validity, mediation and moderation, survey research design, and a brief introduction to Structural Equation Modeling and Experimental Design.

BUS 641 | Units: 1.5
Mixed-Methods Research Design
Provides a conceptual and practical understanding of combining traditional quantitative research methods with ethnographic, qualitative and other non-traditional research methodologies to advance theory in management research. Develops skills in evaluating the appropriateness of the research design to the research question, the adequacy of the methodology and evidence used to support claims made, and the persuasiveness of the arguments. Prerequisite(s): BUS 640 or permission of the program.

BUS 650 | Units: 0.5-4.5
Selected Topics in Research Methods and Analysis
Course content will reflect faculty members’ research expertise and current Management research methodological approaches. Topics may include advanced statistical techniques and research methodologies. The content, credit value and method of evaluation must be approved by the PhD Program Director. Note: May be taken more than once for credit in different topics to a maximum of 9 units. Grading: INP, COM, N, F.

BUS 655 | Units: 1.5
Global Management and Society I
Provides an overview of international business and management with special emphasis on the environmental and societal impact of global organizations over two semesters. Covers a team-taught, integrative survey of selected topics introducing students to a variety of theoretical and disciplinary perspectives laying down a strong foundation for understanding today’s complex global organizational realities.

BUS 656 | Units: 1.5
Global Management and Society II
Further develops topics covered in BUS 655. Prerequisite(s): BUS 655 or permission of the program.

BUS 670 | Units: 3.0
Academic Career Development
Provides a holistic viewpoint on the life and work of a management professor towards a fulfilling academic career. Focuses on professional development skills and understandings, including research, teaching, presenting, and being a positive contributing member of the academic community. Grading: INP, COM, N, F.

BUS 687 | Units: 0
Teacher Training
Under guidance of a senior faculty member, PhD students will participate in training as teachers. Grading: INP, COM, N, F.

BUS 688 | Units: 0
International Fellowship Outgoing
Students register in this course while participating in an international residency with a university outside of Canada. Grading: INP, COM, N, F.

BUS 689 | Units: 1.5-4.5
International Fellowship Incoming
Students register in this course while participating in an international residency from a university outside of Canada. Note: May be taken more than once for credit in different topics. Grading: INP, COM, N, F.

BUS 690 | Units: 1.5-4.5
Directed Studies for Business PhD Program
The content, credit value and method of evaluation must be approved by the PhD Program Director as well as the instructor offering the area of individual study prior to registration. Notes: May be taken more than once for credit in different topics. Pro Forma required.

BUS 694 | Units: 0
Dissertation Proposal Defence
Grading: INP, COM, N, F.

BUS 695 | Units: 0.5-4.5
Special Topics in Business Administration
The content, credit value and method of evaluation must be approved by the PhD Program Director. Note: May be taken more than once for credit in different topics to a maximum of 20 units. Grading: INP, COM, N, F.

BUS 699 | Units: 15
PhD Dissertation
Prerequisite(s): BUS 693. Grading: INP, COM, N, F.

CD 501 | Units: 1.5
Anchoring a Change Agenda: Foundations
Grounds students in a solid understanding of the multiple historical, theoretical and conceptual frameworks of the role of civil society and the social economy in advancing progressive economic, political and social change, including the economics of social justice. The powerful intersection of theory and practice will be examined and critically assessed in the context of the capacity of co-operatives, non-profits and community development organizations to respond to key contemporary societal issues, global trends, and to consider implications for the future. Prerequisite(s): Admission to MA program in Community Development; or permission of the program.
CD 504  
**Practices and Perspectives onForging Change**

The ideologies, assumptions, and practices of diverse models of change that engage citizens, organizational and institutional stakeholders for social benefit will be explored. Introduces a range of models, their strengths, limits and applications with particular focus on governance, power, influence and socioeconomic innovation. Challenges students to analyze and assess the relevance and value to their fields of interest, whether community economic development, co-operatives or non-profits. Uses a range of readings, case studies and practice experience drawing upon Canadian and international settings.

CD 505  
**Community-Based Research: Foundations**

Explores the values, goals and assumptions of community-based research and its methodologies. Participatory action research methods and lessons learned from best practices will be introduced. Students will experience a variety of approaches and develop the capacity to evaluate appropriate methods and their application for practice settings. This course will help shape the student’s major project.

CD 506  
**Enterprise Development for Community Benefit**

Analyzes the strategy, models and processes of planning and decision making for developing enterprises that link social and economic benefit to the community. Students will develop a clear understanding of key concepts within financial, information and community technologies, leadership and community capacity building elements that accompany organizational and community enterprise development. Stream-specific readings and practices will complement the core content.

CD 507  
**Development Finance**

A review of the current conventional sources (governments, banks, credit unions, etc.) of capital: how they are accessed, obstacles and opportunities. Considers specialized investment sources that have been created, how to match funds/investments and ideas for new institutional arrangements. The field will be explored from both the point of view of those seeking investment and those who make the investment (e.g. community investment loan funds).

CD 509  
**Developing Capacities to Lead and Manage in the Non-Profit Sector**

Focuses on developing the capacities of strategic planning, strategy and program management, resource generation, financial and human resource management, performance, information and communication technology, communications management, and ensuring accountability to multiple stakeholders. Students will develop an in-depth understanding of leading edge management frameworks and examine their relevance to leading and managing in the community sector.

CD 510  
**Leadership, Management and Governance within Organizations**

Develops the competencies required to effectively lead and manage organizations from the ‘inside’, focusing on leadership capacities, human resources (staff, boards and volunteers), governance, internal and external stakeholder relations. Through a blend of theory, practice and experiential simulations, students will integrate their learning as well as appreciate the unique dimensions of co-operatives, social enterprises and non-profit organizations.

Prerequisite(s):
- Admission to MA program in Community Development;
- permission of the program.

CD 512  
**Program and Project Design, Management and Evaluation**

Examines the various perspectives and approaches to program and project design, management and evaluation. Highlights the analytical activities and decisions involved in effective design, planning, implementation, reporting, and evaluation focusing on innovative and practical tools and processes that ensure effective outcomes and accountability. Attention will be paid to managing the complexity of multiple and collaborative projects and programs.

CD 514  
**The Comprehensive Development System**

Explores the complexities and trade-offs that must be confronted and resolved in all community economic development activity and strategy. These include analyzing and choosing among the different tools for fulfilling key functions, integrating, staffing and managing complex programs, information management, creating multi-sectoral alliances, building community support, and a sustainable funding structure.

CD 515  
**Critical Issues in Co-op Governance and Management**

Provides participants a deeper understanding of governance and management issues that arise throughout the development cycle of co-operatives. Students will examine a number of challenges and their potential solutions within co-operatives and co-op movements, including co-operative governance, stakeholder engagement, marketing strategies, employee relationships, capital formation, sector relationships, legislative frameworks, community responsibilities, and public policy affecting co-operative development.

CD 516  
**Government, Business and Non-profit Sector Relations**

Examines the historical roots and the social, political, economic and legal framework that set the context for current and future organizational and sectoral influence and capacity. Explores the public policy process and its relation to leadership, management and collaborative ventures in Canada particularly. The evolving role of the private sector and inter-sectoral relations will be examined in the context of rapidly shifting attitudes and belief systems (local to global).

CD 518  
**Citizen Participation and Democratic Governance**

Introduces students to concepts of citizenship, democracy and governance and addresses different histories and forms of democracy. The meanings of citizenship and its relationship to identity, engagement and participation are discussed. Explores different models of governance and reviews governance practices and structures at multiple levels in different jurisdictions. Also investigates the role of accountability in democratic governance, including forms and techniques of accountability.

CD 522  
**Understanding and Mainstreaming Gender**

Considers a range of conceptual and practical issues faced in the quest for a gender-just society. Topics include: definition and understanding of gender, gender based violence, gender in institutions as well as the creation of gender-sensitive environments. Course material and online discussions encourage critical analysis of diverse contemporary debates and perspectives. Also includes exercises and questions to stimulate critical thinking and reflection upon gender attitudes and perceptions.

CD 523  
**Adult Learning and Education for Change**

Aims to build basic understandings of key issues, theories and principles of adult education and its connections to community development and social change. Draws upon intensive and extensive fieldwork enriched by the writings, analysis and research by both scholars and practitioners. Includes historical foundations, philosophical approaches, and theoretical underpinnings.

CD 524  
**Leadership and Organizational Development for Communities**

Explores leadership beliefs, values, and attitudes, and analyzes perspectives in shaping leadership in civil society, community development and the social economy. Introduces management, assessment, concepts and tools for developing strategic priorities and planning frameworks for organizations and communities. Includes scenario based exercises set in a variety of practice contexts relevant to students’ experience and systems.

Note: Credit will be granted for only one of CD 524, CD 502, CD 503.

Prerequisite(s):
- Admission to MA program in Community Development;
- permission of the program.

CD 525  
**Managing Organizations, Systems and Community Transformations**

Develops key competencies for personal, group, organizational and community leadership in: teamwork, facilitation, presentation skills, negotiation, conflict resolution, group dynamics and collaboration. Examines systemic factors that encourage and challenge innovation. Analysis of cases that demonstrate successful scaling, practices or particular innovations.

Note: Credit will be granted for only one of CD 525, CD 511, CD 513.

Prerequisite(s):
- Admission to MA program in Community Development;
- permission of the program.
CD 526  
**Units:** 1.5

**Agenda for Social Change: Moving Forward**

Surveys the key leverage points for exercising strategic leadership for addressing key trends at the local and regional level. Exemplary practice and understanding of key policy innovations are drawn from local and international sources. Provides an opportunity for students to engage in generative dialogue to explore learning that strategically advances civil society, social economy and strengthens communities. Understanding local and international key policy innovations are linked with the formulation of recommendations for action for moving forward.

*Note:* Credit will be granted for only one of CD 526, CD 517, CD 520.

*Prerequisite(s):*

- Admission to MA program in Community Development;
- or
- permission of the program.

CD 590  
**Units:** 1.5

**Directed Studies**

An international or local exchange, a study tour, self-directed reading, or an innovative personal learning design. Must be applicable to the field of study. Primary consideration will be given to its role and relevance in deepening skills and knowledge to strengthen the capacity of the student to provide leadership in the future.

*Note:* May be taken more than once for credit in different topics with permission of the faculty.

CD 591  
**Units:** 1.5

**Selected Topics Course**

A study of selected topics drawn from the current literature and practices in the social economy or related fields.

*Note:* May be taken more than once for credit in different topics with permission of the faculty.

CD 596  
**Units:** 4.5

**Group Project**

A substantial analysis of a management, policy or program problem for a client in the community development sector. This group project is prepared in consultation with the client and an academic supervisor drawn from regular university faculty and qualified practitioners and must be both practical and academically rigorous. The group project is defended in an oral examination.

*Grading:* INP, COM, N, F

CD 598  
**Units:** 4.5

**Master’s Project**

Expected to be a substantial analysis of a management, policy or program problem for a client in the community development sector. This major project is prepared in consultation with the client and an academic supervisor drawn from regular university faculty and qualified practitioners and must be both practical and academically rigorous. The Master’s Project is defended in an oral examination.

*Grading:* INP, COM, N, F

CH 560  
**Units:** 1.5

**Cultural Heritage Stewardship and Sustainability**

Explores cultural heritage in all its diverse forms, along with the critical roles it plays in defining, reinforcing and contributing to a sustainable world. Discusses the scope and meaning of cultural heritage in contemporary society, and analyzes how diverse approaches to the conservation, access to and management of cultural heritage are continuing to evolve in response to philosophical changes and social, economic, cultural and environmental needs.

*Notes:*

- Credit will be granted for only one of CH 560, CH 561, AHVS 488W.
- A combined undergraduate and graduate course.

CH 561  
**Units:** 1.5

**Social Engagement**

Explores the profound social changes that are reshaping the nature and purposes of museums and other cultural heritage organizations in a pluralistic society. Considers the implications for all aspects of their specialized functions with a particular focus on how such organizations serve as dynamic social spaces for community engagement and action.

*Notes:*

- Credit will be granted for only one of CH 561, AHVS 488W.
- A combined undergraduate and graduate course.

CH 562  
**Units:** 1.5

**Curatorial Planning and Practice**

Considers how traditional concepts of curatorship have shifted significantly in the face of more democratic relations with community, more subjective perspectives of knowledge, and increasing emphasis on the museum’s social and educative roles. Explores the nature and scope of contemporary critical curatorial theory and practice and focuses on the ways in which curators engage with cultural heritage resources, develop sustainable collections, and generate and share associated knowledge to meet the needs of diverse communities.

*Notes:*

- Credit will be granted for only one of CH 562, AHVS 488X.
- A combined undergraduate and graduate course.

CH 563  
**Units:** 1.5

**Visitor Experiences**

Explores the evolving concept and implications of an holistic approach to visitor engagement in museums and other cultural heritage institutions, and focuses on museums’ relationships with their publics, their capacity to serve as social spaces, strategies for audience research, the characteristics of visitors, communications, exhibitions, formal and informal learning activities, and evaluation strategies.

*Notes:*

- Credit will be granted for only one of CH 563, CH 488Y.
- A combined undergraduate and graduate course.

CH 567  
**Units:** 1.5

**Heritage Conservation In Context**

Addresses the complex range of principles and practices that influence heritage preservation and conservation planning and decision-making. The implications of international and national charters, principles, standards and guidelines, are discussed, along with legal, programmatic and financial incentives and constraints.

*Notes:*

- Credit will only be granted for one of CH 570, CH 589L, CH 489K.
- A combined undergraduate and graduate course.

CH 570  
**Units:** 1.5

**Determining Significance of Heritage Resources**

Focuses on the determination of the heritage value or significance of a historic place or resource as a key step in the management of cultural heritage resources. Explores the range of historical aesthetic, social and scientific values that establish the character-defining elements of historic resources, including buildings, structures, historic districts and cultural landscapes. Various methods of inventory and evaluation are discussed along with their roles in guiding subsequent conservation planning and decision-making.

*Notes:*

- Credit will only be granted for one of CH 571, CH 589C, CH 489C.
- A combined undergraduate and graduate course.

CH 571  
**Units:** 1.5

**Heritage Conservation Planning**

Focuses on approaches to planning and heritage conservation decision-making, and discusses the components of the heritage conservation planning process, including alignment with local and regional planning priorities, community involvement and consultation, the acquisition and integration of technical and regulatory information and professional expertise, and the integration of planning in the long-term management of heritage resources.

*Notes:*

- Credit will only be granted for one of CH 572, CH 489L, CH 489L.
- A combined undergraduate and graduate course.

CH 588  
**Units:** 1.5

**Special Studies in Museum Studies**

May be taken in conjunction with a Cultural Resource Management course in the AHVS 488 series with permission of the Program Adviser.

*Note:* This course may be taken more than once for credit in different topic areas.

*Prerequisite(s):* Permission of the program.

CH 589  
**Units:** 1.5

**Special Studies in Heritage Conservation**

May be taken in conjunction with a Cultural Resource Management course in the AHVS 488 series with permission of the Program Adviser.

*Note:* This course may be taken more than once for credit in different topic areas.

*Prerequisite(s):* Permission of the program.

CH 591  
**Units:** 1.5

**Practicum in Cultural Heritage**

A placement in a cultural heritage setting, designed to build knowledge and skills in a specialized area of practice.

*Grading:* INP, COM, F, N
CHEM 509 - CIVE 545

CHEM

Chemistry
Department of Chemistry
Faculty of Science

CHEM 509  Units: 1.0
Seminar
Grading: INP, COM, N, F

CHEM 511  Units: 1.5
Topics in Instrumental Analysis

CHEM 521  Units: 1.5
Advanced Inorganic Chemistry
Advanced topics in inorganic chemistry from across the periodic table, building on principles established in 222, 324 and 353. Topics may include: main group organometallics, novel structures and reactivity, catalysis, inorganic polymers, zeolites, fullerenes, metal-metal and metal-ligand multiple bonding, bioinorganic chemistry, metal clusters, or chemistry of the lanthanides and actinides. 

Note: Credit will be granted for only one of CHEM 521, CHEM 524, CHEM 526 (if taken in the same topic).

CHEM 523  Units: 1.5
Organometallic Chemistry

CHEM 526  Units: 1.5
Topics in Advanced Inorganic Chemistry
Notes: 
- May be taken more than once for credit in different topics.
- Pro Forma required.

CHEM 533  Units: 1.5
Organic Synthesis

CHEM 537  Units: 1.5
Biological and Medicinal Chemistry
An introduction to medically important biological systems and the small molecules that perturb them. Topics will include: chemical aspects of proteomics, biological target identification, mechanisms of action for important drugs, lead identification and development, and enzyme inhibitor design.

CHEM 555  Units: 1.5
Statistical Thermodynamics

CHEM 556  Units: 1.5
Topics in Advanced Physical Chemistry
Notes: 
- May be taken more than once for credit in different topics.
- Pro Forma required.

CHEM 560  Units: 0.5
Research Tools and Special Topics
This course will be offered as multiple 0.5-unit modules that count as graduate lecture courses for the purposes of Chemistry graduate program requirements. Consult the course coordinator for offerings in a particular year.
Notes: 
- May be taken more than once for credit in different topics.
- Pro Forma required.

CHEM 590  Units: 0.5-3.0
Directed Studies
Notes: 
- May be taken more than once for credit in different topics.
- Pro Forma required.

CHEM 599  Units: 15.0
MSc Thesis
Grading: INP, COM, N, F

CHEM 633  Units: 1.5
Topics in Advanced Organic Chemistry
Notes: 
- May be taken more than once for credit in different topics.
- Pro Forma required.

CHEM 647  Units: 1.5
Materials Science

CHEM 670  Units: 1.5
Property-Directed Synthesis Discussion
Note: May be taken more than once for credit in different topics.

CHEM 676  Units: 1.5
Polymer Science

CHEM 680  Units: 1.5
Reactivity, Dynamics and Spectroscopy Discussion
Note: May be taken more than once for credit in different topics.

CHEM 693  Units: 3.0
PhD Candidacy Examination
Students enrol in 693 concurrently with 699 until 693 is passed. If the candidacy examination cannot be completed until the following term, an INP (in progress) grade will be entered.
Grading: INP, COM, N, F

CHEM 699  Units: 37.5 - 39.0
PhD Dissertation
Pre- or Corequisite(s): CHEM 693.
Grading: INP, COM, N, F

CIVE

Civil Engineering
Faculty of Engineering

CIVE 510  Units: 1.5
Industrial Metabolism
Methods of material and substance flow analysis in the context of technology and environmental change. Topics include: evolution of technology, environmental footprints, impacts and boundaries; industrial / societal use of dominant elements and compounds; critical metals; resource decoupling; transformation of global infrastructure systems.

CIVE 511  Units: 1.5
Methods in Life Cycle Assessment
A variety of methods and applications of life cycle assessment (LCA) including process-based methods and input-output (IO) techniques. Topics include: consequential and attributional LCA; streamlined LCA; life cycle sustainability assessment; environmentally extended IO analysis; multi-regional and multi-scale IO analysis; applications of environmental LCA in product design and policy.

CIVE 512  Units: 1.5
Industrial Symbiosis and Recycling
Reducing costs, adding value and improving the environment through the sharing of services, utility, and by-products between industries. The historical development and future prospects of industrial symbiosis at the eco-park, municipal and regional scales. Advances in waste management, recycling technologies and limits to the circular economy.

CIVE 513  Units: 1.5
Sustainable Cities
Urban metabolism and sustainable infrastructure development. Design of the built environment based on energy and material flows through cities. Sustainable transportation, green buildings, urban climatology, vegetation, water systems and energy supply in urban neighbourhood designs. Measuring urban metabolism to account for greenhouse gas emissions and other environmental impacts of cities.

CIVE 540  Units: 1.5
Uncertainty in Water Resources
Basic and advanced methods in uncertainty analysis in water resources modelling. Bayesian statistics, fuzzy sets and fuzzy numbers are used with applications to water resources. Typical methods used in physically-based modelling including GLUE.

CIVE 541  Units: 1.5
Hydrologic Modeling
Analytical, numerical, statistical and physical approaches from local to global scales including surface water - groundwater interactions; analysis and prediction; discuss different approximations of hydrologic process equations and limitations and uncertainty associated with different process representations.

CIVE 542  Units: 1.5
Environmental Modeling
Basic and advanced methods in spatial statistics for point, areal and continuous variables. All the levels from visual to analytical of possible spatial analysis techniques for each type of variable and applications in environmental modelling are used to illustrate the concepts.

CIVE 544  Units: 1.5
Groundwater Hydrology
CIVE 546  Units: 1.5
Urban Water Systems
The planning and management of urban water systems; handling of wastewaters; drainage and flood prevention; urban agriculture and nutrient recycling; and recreational water uses. All elements of urban water infrastructure from water source, pumping, storage, transmission and distribution, to the hydraulics and network design of sewerage and drainage. Maintenance and repair of pipe networks, adaptation to climate change and sustainable approaches such as low impact development, grey-water systems, rainwater harvesting.

CIVE 547  Units: 1.5
Water Treatment Processes
Theory and application of physical, chemical and biological processes for the treatment of water and wastewater. Topics include sedimentation, coagulation, filtration, and disinfection, activated sludge, biological nutrient removal, and anaerobic processes for waste treatment. Lecture material is supported by laboratory experiments.

CIVE 550  Units: 1.5
Green Building Design
Definition of green building, design and construction concepts, site selection, materials and origin, water resource, energy use and generation, retrofit and recycling, indoor environment, occupant behaviour, durability, life cycle analysis, net-zero buildings, green building rating systems.

CIVE 551  Units: 1.5
Advanced Building Science
Scope and definition, heat-air-moisture transport mechanisms, hygrothermal properties, test methods, climate characterization, moisture management, durability index, energy efficient building envelopes, whole building energy performance, application of numerical simulation tools, forensic investigations.

CIVE 552  Units: 1.5
Sustainable Construction
Sustainability in urban and remote communities, case studies to highlight some of the recent trends in sustainable construction in North America and around the globe. Topics for case studies will include (but not limited to): light-gauge steel technology for mass construction, insulated stay-in-place formwork technology for mass construction, shotcrete, precast and prestressed construction, and rammed earth construction. Will also include an introduction to use of BIM for managing construction projects.

CIVE 553  Units: 1.5
Advanced Mechanics of Materials
This mechanics of materials course covers advanced topics including beams on elastic foundations, unsymmetrical bending, curved beams, shear flow and torsion in closed and open sections, elastic stability and shells of revolution.

CIVE 556  Units: 1.5
Advanced Concrete Technology
Microstrucure of hydration products and its effect on properties of concrete. Mechanisms and interaction of chemical admixtures and industrial wastes to produce sustainable and durable concrete. Evaluation of fresh and hardened properties of conventional and cement-based composites. Will include a project component focussing on special concrete not limited to Fiber Reinforced Concrete, Self-consolidating concrete, High Strength Concrete, Light Weight Concrete, and Carbon Negative Concrete.

CIVE 557  Units: 1.5  Hours: 3-1.5*-0
Behaviour and Design of Steel Structures
The behaviour and design of trusses, frames, members and connections in steel building and bridge structures. Ultimate strength, stability, and postbuckling are emphasized in topical examples including: plate girders, composite steel/concrete girders, second-order frame behaviour, high-strength bolted and welded framing connections. Special topics including concrete filling, fire protection and plastic analysis of hallow structural section connections are also covered. Canadian design standards and the Limit States Design concepts are used.
* Indicates a 3-hour laboratory taken by students on alternate weeks.

CIVE 560  Units: 1.5
Urban Transportation Planning
The full suite of skills required in urban transportation planning including travel demand modeling, analysis of transportation land-use interactions, quantification of social and environmental impacts, and project evaluation in the context of broader planning issues and policies. Focus is primarily given to passenger transportation, including walking and cycling, with introduction to freight transport. Theoretical foundations of disaggregate choice models and other techniques in travel demand modeling are introduced.

CIVE 561  Units: 1.5
Urban Transit
Focuses on the planning and operation of public transit systems, covering the hierarchy of modes from buses and bus-rapid transit through streetcars and light-rail to subways and heavy rail. Topics include: factors affecting transit performance and demand; design of networks and mode interchanges; station design; vehicle operations and scheduling; design of transit priority; use of information technology and other innovations in transit planning; project evaluation.

CIVE 580  Units: 1.5
Selected Topics
Note: May be taken more than once for credit in different topics.

CIVE 590  Units: 1.5
Directed Studies
A wide range of topics will be available.
Note: Pro Forma required.

CIVE 599  Units: 9.0
MSc Thesis
Grading: INP, COM, N, F.
CSC 520  Units: 1.5
Analysis of Algorithms
General techniques for designing and analyzing algorithms; an in-depth examination of several problems and algorithms with respect to their time and space requirements; advanced data structures; sorting and searching; graph algorithms; geometric algorithms; backtracking; NP complete problems; approximation algorithms.

CSC 522  Units: 1.5
Graph Algorithms
Detailed study, from the algorithmic point of view, of some tractable and intractable graph problems. Some tractable problems are path problems, spanning trees, network flows, matchings, and planarity testing. Some intractable problems are clique, independent set, vertex cover, Hamiltonian cycle, and colouring problems. Various strategies for handling intractable problems are presented including intelligent backtracking, distributed and parallel computing, parameterized complexity, restrictions to graph sub-classes, randomized and approximation algorithms.

CSC 523  Units: 1.5
Randomized Algorithms
Basic techniques in design and analysis of randomized algorithms: moments and deviations, Markov chains and random walks, martingales, and algebraic techniques. Other topics include: the probabilistic method; random structures and complexity. Applications are selected from: parallel algorithm, routing networks, combinatorial optimization, data structure, approximate solutions to intractable problems, cryptography, pattern matching, and computational geometry.

CSC 524  Units: 1.5
Computational Complexity
Elements of the theory of computational complexity. Topics covered include: the distinction between tractable and intractable problems; definition of computational models and complexity classes; techniques for comparing the complexity of problems; the classes P and NP; completeness; auxiliary pushdown automata; alternating Turing machines; the polynomial time hierarchy; the classes Polynomial Space and Logarithmic Space; probabilistic complexity classes; models of parallel computation; randomized computation.

CSC 525  Units: 1.5
Computational Biology Algorithms
The design, analysis and implementation of algorithms used in Computational Biology. Typical topics include algorithms for sequence alignment, database searching, gene finding, phylogeny and structure analysis.

CSC 526  Units: 1.5
Computational Geometry
An introduction to algorithms and data structures which are used to solve geometrical problems. Topics include geometric searching, convex polygons and hulls, Voronoi diagrams, plane sweep algorithms, proximity and intersections. Application areas discussed include computer graphics, VLSI design and graph theory.

CSC 528  Units: 1.5
Combinatorial Algorithms
Focuses on the interfaces between combinatorics and Computer Science: Algorithms and data structures that are used to manipulate, generate, and randomly select combinatorial objects are studied. Such objects include sets, permutations, combinations, trees, graphs. Methods for analyzing combinatorial algorithms such as recurrence relations, asymptotics, and amortized complexity are presented.

CSC 529  Units: 1.5
Cryptography
Paradigms and principles of modern cryptography. Topics include: review of classical and information-theoretic cryptography; block ciphers; DES, Cryptanalysis of DES, modes of operation, AES, Cryptographic hash functions and message authentication codes; public key cryptography, RSA, ElGamal and other public key systems, signature schemes; introduction to security protocols; secret sharing schemes and zero knowledge techniques.

CSC 535  Units: 1.5
Compiler Construction
An introduction to important topics in the design and implementation of a compiler for a modern programming language such as Java. Topics include parsing, syntax directed translation, intermediate code representation, static single assignment form, dataflow analysis, simple optimizations, and code generation for a simple architecture.

CSC 540  Units: 1.5
Numerical Analysis I
Numerical Linear algebra. Topics include: Gaussian elimination and its variants; sparse positive definite linear systems; sensitivity of linear systems; condition and stability; orthogonal matrices and least squares; eigenvalues and eigenvectors; the QR algorithm; the singular value decomposition.

CSC 545  Units: 1.5
Operations Research I
Linear programming and its applications. Topics discussed include the following: the simplex method; the revised simplex method; computer implementation of linear programming; duality, dual simplex and primal dual algorithms, parametric analysis and postoptimality analysis. Applications are selected from: the transportation problem, the assignment problem, blending problems, inventory problems, activity analysis, game theory and network analysis.

CSC 546  Units: 1.5
Operations Research II
An introduction to model design using queueing theory and simulation techniques. Topics covered include a brief introduction to queueing theory, basic ideas in simulation, random number generators, sampling, critical event and time slice methods, organization of a simulation study, and basic concepts of simulation programming.
CSC 564 - CSC 582C

CSC 564  Units: 1.5
Concurrency
Introduction to the foundations of concurrency theory and the issues of specification and verification of concurrent systems. Topics include models of concurrency such as Petri nets, labelled transition systems, and traces; specification of concurrent systems/programs in formalisms including process algebra, statecharts, Petri nets and temporal logics; verification techniques such as bisimulation and model checking, verification using existing research tools. Case studies will be taken from coordination problems, controller design, communication and security protocols, hardware and user interface design.

CSC 565  Units: 1.5
Massive Data Sets, Scalability and Concurrency
A cross section of topics from computer science disciplines, including databases, operating systems, architecture, programming languages and theory, and considers challenges associated with concurrency from multiple perspectives. Students will be exposed to research involving programming paradigms and software practices for concurrent systems, algorithmic techniques for new paradigms, low level mechanisms for the implementation of practical primitives, applications including data mining and cloud computing, systems support for multicore computation, and pedagogy for concurrency in modern curriculum.

CSC 567  Units: 1.5
Switching, Network Traffic and Quality of Service

CSC 569  Units: 1.5
Wireless and Mobile Networks
The recent developments and advanced research topics in wireless and mobile networks. Topics include: radio propagation models, mobility models, location management, protocols particularly tailored for wireless and mobile networks, and analytical performance evaluation of wireless and mobile networks.

CSC 571  Units: 1.5
Advanced Databases
Important and recent developments in databases are covered in detail. Topics include: storage technology, data structures adapted to secondary storage, query optimization, advanced transaction management, parallel or distributed databases, databases and grid computing, multidimensional data and indexes, On-Line Analytic Processing (OLAP), information integration, streaming data, SML and semistructured data, fine-grained access control and anonymization techniques.

CSC 575  Units: 1.5
Music Retrieval Techniques
A comprehensive advanced overview of the emerging research area of Music Information Retrieval (MIR). Topics include techniques from signal processing, machine learning, information retrieval, human-computer interaction and software engineering that are applied in the design and development of MIR algorithms and systems. Integration of knowledge from different research areas to solve concrete problems.

CSC 578A  Units: 1.5
Formerly: 578
Topics in Software Applications
Notes:
• Credit will be granted for only one of CSC 578A, CSC 578 (if taken in the same topic), CSC 578B (if taken in the same topic), CSC 578C (if taken in the same topic), CSC 578D (if taken in the same topic).
• May be taken more than once for credit in different topics.

CSC 579  Units: 1.5
Overlay and Peer-to-Peer Networking
Focuses on the recent developments and advanced research topics in Layer 3 and above and the control plane of the Internet. Topics include: overlay network architectures, peer-to-peer application models, end-to-end control mechanisms, inter- and intra-domain routing protocols, service provisioning, network measurement, and related best current practices on the Internet.

CSC 581A  Units: 1.5
Formerly: 581
Topics in Artificial Intelligence
Notes:
• Credit will be granted for only one of CSC 581A, CSC 581 (if taken in the same topic), CSC 581B (if taken in the same topic), CSC 581C (if taken in the same topic), CSC 581D (if taken in the same topic).
• May be taken more than once for credit in different topics with permission of the department.

CSC 581B  Units: 1.5
Formerly: 581
Topics in Artificial Intelligence
Notes:
• Credit will be granted for only one of CSC 581B, CSC 581 (if taken in the same topic), CSC 581A (if taken in the same topic), CSC 581C (if taken in the same topic), CSC 581D (if taken in the same topic).
• May be taken more than once for credit in different topics with permission of the department.

CSC 581C  Units: 1.5
Formerly: 581
Topics in Artificial Intelligence
Notes:
• Credit will be granted for only one of CSC 581C, CSC 581 (if taken in the same topic), CSC 581A (if taken in the same topic), CSC 581B (if taken in the same topic), CSC 581D (if taken in the same topic).
• May be taken more than once for credit in different topics with permission of the department.

CSC 581D  Units: 1.5
Formerly: 581
Topics in Artificial Intelligence
Notes:
• Credit will be granted for only one of CSC 581D, CSC 581 (if taken in the same topic), CSC 581A (if taken in the same topic), CSC 581B (if taken in the same topic), CSC 581C (if taken in the same topic).
• May be taken more than once for credit in different topics with permission of the department.

CSC 582A  Units: 1.5
Formerly: 582
Topics in Theoretical Computer Science
Notes:
• Credit will be granted for only one of CSC 582A, CSC 582 (if taken in the same topic), CSC 582B (if taken in the same topic), CSC 582C (if taken in the same topic), CSC 582D (if taken in the same topic).
• May be taken more than once for credit in different topics with permission of the department.

CSC 582B  Units: 1.5
Formerly: 582
Topics in Theoretical Computer Science
Notes:
• Credit will be granted for only one of CSC 582B, CSC 582 (if taken in the same topic), CSC 582A (if taken in the same topic), CSC 582C (if taken in the same topic), CSC 582D (if taken in the same topic).
• May be taken more than once for credit in different topics with permission of the department.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Units</th>
<th>Former Code(s)</th>
<th>Topics</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSC 582D</td>
<td>1.5</td>
<td>Formerly: S82</td>
<td>Topics in Theoretical Computer Science</td>
<td>Notes: Credit will be granted for only one of CSC 582D, CSC 582 (if taken in the same topic), CSC 582A (if taken in the same topic), CSC 582B (if taken in the same topic), CSC 582C (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>CSC 583A</td>
<td>1.5</td>
<td>Formerly: S83</td>
<td>Topics in Programming Languages</td>
<td>Notes: Credit will be granted for only one of CSC 583A, CSC 583 (if taken in the same topic), CSC 583B (if taken in the same topic), CSC 583C (if taken in the same topic), CSC 583D (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>Formerly: S83</td>
<td>Topics in Programming Languages</td>
<td>Notes: Credit will be granted for only one of CSC 583B, CSC 583 (if taken in the same topic), CSC 583A (if taken in the same topic), CSC 583C (if taken in the same topic), CSC 583D (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>Formerly: S83</td>
<td>Topics in Programming Languages</td>
<td>Notes: Credit will be granted for only one of CSC 583C, CSC 583 (if taken in the same topic), CSC 583A (if taken in the same topic), CSC 583B (if taken in the same topic), CSC 583D (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>Topics in Programming Languages</td>
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<td>CSC 584A</td>
<td>1.5</td>
<td>Formerly: S84</td>
<td>Topics in Numerical Analysis and Operations Research</td>
<td>Notes: Credit will be granted for only one of CSC 584A, CSC 584 (if taken in the same topic), CSC 584B (if taken in the same topic), CSC 584C (if taken in the same topic), CSC 584D (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>CSC 584B</td>
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<td>Formerly: S84</td>
<td>Topics in Numerical Analysis and Operations Research</td>
<td>Notes: Credit will be granted for only one of CSC 584B, CSC 584 (if taken in the same topic), CSC 584A (if taken in the same topic), CSC 584C (if taken in the same topic), CSC 584D (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>CSC 584C</td>
<td>1.5</td>
<td>Formerly: S84</td>
<td>Topics in Numerical Analysis and Operations Research</td>
<td>Notes: Credit will be granted for only one of CSC 584C, CSC 584 (if taken in the same topic), CSC 584A (if taken in the same topic), CSC 584B (if taken in the same topic), CSC 584D (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>Formerly: S84</td>
<td>Topics in Numerical Analysis and Operations Research</td>
<td>Notes: Credit will be granted for only one of CSC 584D, CSC 584 (if taken in the same topic), CSC 584A (if taken in the same topic), CSC 584B (if taken in the same topic), CSC 584C (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>CSC 585A</td>
<td>1.5</td>
<td>Formerly: S85</td>
<td>Topics in Hardware and Computer Architecture</td>
<td>Notes: Credit will be granted for only one of CSC 585A, CSC 585 (if taken in the same topic), CSC 585B (if taken in the same topic), CSC 585C (if taken in the same topic), CSC 585D (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>CSC 585B</td>
<td>1.5</td>
<td>Formerly: S85</td>
<td>Topics in Hardware and Computer Architecture</td>
<td>Notes: Credit will be granted for only one of CSC 585B, CSC 585 (if taken in the same topic), CSC 585A (if taken in the same topic), CSC 585C (if taken in the same topic), CSC 585D (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>Formerly: S85</td>
<td>Topics in Hardware and Computer Architecture</td>
<td>Notes: Credit will be granted for only one of CSC 585C, CSC 585 (if taken in the same topic), CSC 585A (if taken in the same topic), CSC 585B (if taken in the same topic), CSC 585D (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>Topics in Hardware and Computer Architecture</td>
<td>Notes: Credit will be granted for only one of CSC 585D, CSC 585 (if taken in the same topic), CSC 585A (if taken in the same topic), CSC 585B (if taken in the same topic), CSC 585C (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<tr>
<td>CSC 586A</td>
<td>1.5</td>
<td>Formerly: S86</td>
<td>Topics in Computer Systems and Software</td>
<td>Notes: Credit will be granted for only one of CSC 586A, CSC 586 (if taken in the same topic), CSC 586B (if taken in the same topic), CSC 586C (if taken in the same topic), CSC 586D (if taken in the same topic), CSC 586E (if taken in the same topic), CSC 586F (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>CSC 586B</td>
<td>1.5</td>
<td>Formerly: S86</td>
<td>Topics in Computer Systems and Software</td>
<td>Notes: Credit will be granted for only one of CSC 586B, CSC 586 (if taken in the same topic), CSC 586A (if taken in the same topic), CSC 586C (if taken in the same topic), CSC 586D (if taken in the same topic), CSC 586E (if taken in the same topic), CSC 586F (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>Formerly: S86</td>
<td>Topics in Computer Systems and Software</td>
<td>Notes: Credit will be granted for only one of CSC 586C, CSC 586 (if taken in the same topic), CSC 586A (if taken in the same topic), CSC 586B (if taken in the same topic), CSC 586D (if taken in the same topic), CSC 586E (if taken in the same topic), CSC 586F (if taken in the same topic). May be taken more than once for credit in different topics with permission of the department.</td>
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<td>Formerly: S86</td>
<td>Topics in Computer Systems and Software</td>
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</table>
CSC 586E Units: 1.5
Formerly: 586
Topics in Computer Systems and Software
Notes:
• Credit will be granted for only one of CSC 586E, CSC 586 (if taken in the same topic), CSC 586A (if taken in the same topic), CSC 586B (if taken in the same topic), CSC 586C (if taken in the same topic), CSC 586D (if taken in the same topic), CSC 586F (if taken in the same topic).
• May be taken more than once for credit in different topics with permission of the department.

CSC 589D Units: 1.5
Formerly: 589D
General Topics in Computer Science
Notes:
• Credit will be granted for only one of CSC 589D, CSC 589 (if taken in the same topic), CSC 589A (if taken in the same topic), CSC 589B (if taken in the same topic), CSC 589C (if taken in the same topic), CSC 589D (if taken in the same topic).
• May be taken more than once for credit in different topics with permission of the department.

CSC 591 Units: 1.5
Directed Studies
Individual studies under the direct supervision of a faculty member.
The content and evaluation must be approved by the department.
Note: May be taken more than once for credit in different topics.

CSC 595 Units: 1.5
Research Skills
The main objective is to teach critical skills in order to be a successful researcher. This includes: choosing a research method, preparing for and presenting a research seminar talk, preparing a research proposal, doing literature search, and evaluating constructively research papers, proposals and/or presentations.
Prerequisite(s): Registration in a graduate program in Computer Science.
Grading: INP, COM, N, F

CSC 597 Units: 1.5
Industrial Master's Project
Grading: INP, COM, N, F

CSC 598 Units: 3.0
Master's Project
Grading: INP, COM, N, F

CSC 599 Units: 6.0
Master's Thesis
Grading: INP, COM, N, F

PhD Candidacy
Grading: INP, COM, N, F

CSC 693 Units: 3.0
PhD Dissertation
Prerequisite(s): CSC 693
Grading: INP, COM, N, F

CSPT 500 Units: 1.5
Topics in Cultural, Social and Political Thought
An interdisciplinary seminar on topics such as language and social theory, tradition and modernity, democracy and freedom, global order and disorder, structuralism and poststructuralism, feminism, Marxism.
Notes:
• May be taken more than once for credit in different topics to a maximum of 6 units.
• Content will vary from term to term.
Prerequisite(s):
• Admission to a graduate program in Social Sciences or Humanities; and
• permission of the program.

CSPT 501 Units: 1.5
Contemporary Cultural Social and Political Thought I
An exploration of contemporary themes and issues in cultural, social, and political thought. The emphasis will be on relating currents of thought in various disciplines to one another and to exploring 20th and 21st century thinkers whose influence has transcended cultural and disciplinary boundaries.

CSPT 590 Units: 1.5 or 3
Directed Readings
Individual study, under the direction of a participating faculty member, of a topic or topics in cultural, social, and political thought.
Notes:
• May be taken more than once for credit in different topics.
• A student in the Program may substitute POLI 590 or SOCI 590 for CSPT 590, with permission of the Director of the program.

CSPT 600 Units: 1.5
Advanced Topics in Cultural, Social and Political Thought
An interdisciplinary PhD Seminar on selected topics in Cultural, Social and Political Thought.
Notes:
• May be taken more than once for credit in different topics with permission of the faculty to a maximum of 6 units.
• Content will vary from term to term.
Prerequisite(s):
• Admission to a graduate program in Social Sciences or Humanities; and
• permission of the program.

CSPT 601 Units: 1.5
Contemporary Cultural Social and Political Thought II
A continuation of 501, this seminar is designed for students proceeding to a doctoral candidacy examination in Cultural Social and Political Thought. The focus will be on themes and thinkers important to contemporary cultural social and political thought but as yet unfamiliar to the students participating in the seminar.

CSPT 690 Units: 1.5
Directed Readings
Individual study, under the direction of a participating faculty member, of a topic or topics in cultural, social, and political thought.
Notes:
• May be taken more than once for credit in different topics.
• A student in the Program may substitute POLI 690 or SOCI 690 for CSPT 690, with permission of the Director of the program.
COURSE LISTINGS CYC

**CYC 541** Units: 1.5
**Historical and Contemporary Theoretical Perspectives in Child and Youth Care**
An exploration of historical and contemporary perspectives in child and youth care, including selected works of international pioneers across a range of child and youth care areas of practice. The theoretical and applied elements of the child and youth care perspective will be examined in relation to direct practice. Significant issues and trends will be investigated. All analyses will include critiques informed by cross-cultural and gender sensitive perspectives.

**CYC 542** Units: 1.5
**Ethics in Practice**
The primary purpose of this course is to enable students to expand their thinking by critically reflecting on professional and applied ethics from multiple perspectives and traditions. Developing a familiarity with various conceptual resources and ethical decision-making frameworks, discerning the morally relevant features of various ethical dilemmas, appreciating the complexity, plurality and uncertainty of everyday CYC practice, and critically appraising the adequacy of decision-making tools for responding to ethical concerns and challenges are key course objectives.

**CYC 543** Units: 1.5
**Qualitative Research Methods in Child and Youth Care**
An overview of approaches to qualitative research that are applicable to child and youth care practice. Students will explore the underlying theoretical assumptions of qualitative research design, compare and apply a range of methodological and conceptual approaches, and practice techniques for generating, analyzing and engaging with various forms of qualitative data.

**CYC 544** Units: 1.5
**Practicum in Child and Youth Care**
The supervised field placement is designed to provide CYC students with an opportunity to apply their skills working with children, youth, families and communities in a supervised setting. Placements which involve individual, family and/or group counseling, can only be undertaken with qualified (i.e. Master's level) supervisors, and require a minimum commitment of 300 hours (3.0 units).

**CYC 545** Units: 1.5
**Quantitative Research Methods in Child and Youth Care**
Students will be expected to learn and be able to apply the techniques of quantitative research methodology to the field of child and youth care. Topics will include: research design and problem formulation, sampling, measurement and scaling, research ethics, and data analysis.

**CYC 546** Units: 1.5
**Human Change Processes: From Theory to Practice**
A practice-based course that requires students to work with individuals and families in simulated role play scenarios. It begins with the micro contexts of families and moves outward to understand how change occurs in communities and organizations. Human change theory and processes form the foundation of the course in order to explore traditional and contemporary theories of change that highlight gendered and cultural differences and similarities.

**CYC 547** Units: 1.5
**Professional Leadership in Child and Youth Care**
Aspects of professional leadership, including ethical practice, teams and teamwork, change management and managing transitions, diversity and cultural competence, transformational learning, learning organizations and environments, strategic thinking and participative management will be explored with special emphasis on the multidisciplinary evolution and transformation of child and youth care settings and programs.

**CYC 548** Units: 1.5
**Applied Research Seminar**
Engages students in the process of proposal writing in preparation for either their master's research thesis or applied research project. Students focus on developing their own topic area in conjunction with their supervisor and supervisory committee, through writing that includes a consideration of the Human Research Ethics application, specialized information literacy training, and other issues of writing and research. Students are expected to produce a draft of their research or project proposal.

**Note:** CYC 553 Practicum in CYC can be taken concurrently.

**Prerequisite(s):** All of program core courses.

**CYC 549** Units: 1.5
**Program Design and Development in Child and Youth Care**
Learners will engage in exploring a range of issues relevant for program planners and implementers in contemporary human services. Issues such as managing complexity, evidence-based practices, outcome measures, budget restraints, leadership of change and creating organizational cultures will be explored.

**CYC 550** Units: 1.5
**Special Topics in Child and Youth Care**
Explores specialized areas of theoretical interest in the field of Child and Youth Care.

**Note:** May be taken more than once for credit in different topics.

**CYC 551** Units: 1.5
**Special Topics in Child and Youth Care Intervention**
Students will study models of intervention in child and youth care which are specific to their area of specialization.

**Note:** May be taken more than once for credit in different topics.

**CYC 552** Units: 1.5
**Applied Research Project**
The student will undertake an applied research project which could, for example, include: (1) program development, (2) program needs assessment, (3) development of an assessment tool/protocol for clients, (4) evaluation of an existing program, (5) cost/benefit analysis of program models, or (6) secondary analysis of existing agency data. The research project should be developed in consultation with the student’s supervisory committee.

**Note:** Students who have completed CYC 590 may request permission to register in the course.

**Prerequisite(s):**
- CYC 558, or
- permission of the school

**Grading:** INP, COM, N, F
CYC 599 - DHUM 505

CYC 599  Units: 4.5
Thesis
Specialized research on a topic chosen in consultation with the student’s supervisory committee. The thesis should be an original piece of research that would be suitable for publication in a professional journal or presentation at a professional meeting.

Note: Students who have completed CYC 590 may request permission to register in the course.

Prerequisite(s):
- CYC 558 or
- permission of the school

Grading: INP, COM, N, F

CYC 641  Units: 3.0
Generating Knowledge in Child and Youth Care
This doctoral seminar invites students to start “thinking with theory” when considering policy, research and practice in the field of Child and Youth Care. Students will be exposed to a range of contemporary social, political and psychological theories. Throughout the course students will be invited to explore how theory provides different lenses, tools, and approaches, for taking action in the world.

CYC 643  Units: 1.5
Qualitative Research in Child and Youth Care
This course examines the theoretical underpinnings and strategies commonly used in qualitative methods, with an emphasis on understanding the relationship between the research question and the methodological decisions involved in choosing approaches for data gathering and analysis. Methodologies that will be considered include but are not restricted to: grounded theory, critical theory, ethnography, phenomenology, and narrative research and their epistemological and ontological similarities and differences.

Note: Students who have completed 3 units of graduate-level research coursework (covering research designs, qualitative data analysis, statistical data analysis and reporting) may request permission to register in the course.

Prerequisite(s): Permission of the school.

CYC 645  Units: 1.5
Quantitative Research in Child and Youth Care
Students explore and apply quantitative methods for studying issues related to child and youth care such as clinical practice and program evaluation. Statistical techniques include approaches for use with small sample sizes as well as parametric and nonparametric statistical techniques.

Note: Students who have completed 3 units of graduate-level research coursework may request permission to register in the course.

Prerequisite(s): Permission of the school.

CYC 671  Units: 1.5
Social and Cultural Contexts of Child and Youth Care Policy, Practice and Pedagogy
The course places contemporary CYC issues into social, historical and cultural contexts. Each student identifies a key issue in CYC policy, practice and/or pedagogy and, first, provides a critical perspective on the issue, before developing a change agenda designed to transform the issue and its implications.

Prerequisite(s): CYC 641.

CYC 682A  Units: 1.5
Formerly: CYC 682.
Internship in Child and Youth Care Research
Learners may be involved in an ongoing research project in CYC or a closely related field in which they will play an active role in some aspect(s) of conducting the research. Learners will be expected to spend a minimum of 10 hours per week in the practicum and to meet with a faculty supervisor on a regular basis for a minimum of 150 hours.

Note: Learners may not be paid for work on this research project during the time that they are undertaking the practicum course for university credit.

Grading: INP, COM, N, F

CYC 682B  Units: 1.5
Formerly: CYC 682.
Practice Internship in Child and Youth Care
A practice Internship provides opportunities for the student to be actively involved and supervised in a practice setting. Practice settings may include teaching environments, face to face counselling settings, international contexts, or work in policy development with a specific Ministry. Normally students will work for 10 hours a week per a maximum of 150 hours. In addition, students will meet with the practicum co-ordinator throughout the term.

Note: Learners may not be paid for work on this research project during the time that they are undertaking the practicum course for university credit.

Grading: INP, COM, N, F

CYC 690  Units: 1.5 or 3.0
Directed Studies in Child and Youth Care
Individual study at the doctoral level under the direct supervision of one or more faculty members. The content, credit value and method of evaluation must be approved by the instructor and School of Child and Youth Care graduate adviser prior to registration in the course.

Notes:
- May be taken more than once for credit in different topics.
- Pro Forma required.

CYC 693  Units: 3.0
Candidacy Exams
Students will be expected to complete two candidacy papers (one focused on the substantive area of interest including related theories, and the other on methodology related to their area and topic of interest) and an oral examination before qualifying to undertake PhD research and a dissertation. Within thirty-six months of registration as a provisional doctoral student and at least six months before the final oral examination, a student must pass a candidacy examination.

Grading: INP, COM, N, F

CYC 699  Units: 16.5
PhD Dissertation
Prerequisite(s): CYC 693
Grading: INP, COM, N, F

DHUM 501  Units: 1.5
Hours: 3-0
Introduction to Digital Humanities
Surveys and explores intellectual traditions and emergent concerns associated with computing in the arts and humanities. Topics include digital representation, analysis, communication and creation, and involve theoretical considerations and pragmatic approaches.

Notes:
- Credit will be granted for only one of DHUM 501, ENGL 507.
- Typically offered the week before the Digital Humanities Summer Institute (see www.dhsi.org).

DHUM 502  Units: 1.5
Hours: 3-0
Core Concepts and Skills
Focuses on fundamental concepts and skills in the Digital Humanities, with curriculum offered by the Digital Humanities Summer Institute (see www.dhsi.org) or equivalent topical seminars listed annually by the Faculty of Humanities. Typical offerings include DHIS’s Textual Encoding Fundamentals, Digitisation Fundamentals, Fundamentals of Programming/Coding for Human(s)ists.

Note: Credit will be granted for only one of DHUM 502, ENGL 509 (if taken in the same topic).

DHUM 503  Units: 1.5
Hours: 3-0
Remediation and Curation
Focuses on intellectual traditions, emergent concerns, and applications related to digital remediation and curation, with curriculum offered by the Digital Humanities Summer Institute (see www.dhsi.org) or equivalent topical seminars listed annually by the Faculty of Humanities. Examples include XSLT, Databases, Drupal, Digital Editions, Pre-Digital Book.

Note: Credit will be granted for only one of DHUM 503, ENGL 509 (if taken in the same topic).

DHUM 504  Units: 1.5
Hours: 3-0
Creation, Communication and Dissemination
Focuses on intellectual traditions, emergent concerns, and applications related to creation, communication, and dissemination, with curriculum offered by the Digital Humanities Summer Institute (see www.dhsi.org) or equivalent topical seminars listed annually by the Faculty of Humanities. Examples include Multimedia, Social Media, Mobile Computing, Physical Computing.

Note: Credit will be granted for only one of DHUM 504, ENGL 509 (if taken in the same topic).

DHUM 505  Units: 1.5
Hours: 3-0
Analysis, Teaching, and Administration
Focuses on intellectual traditions, emergent concerns, and applications pertinent to analysis, teaching, and administration, with curriculum offered by the Digital Humanities Summer Institute (see www.dhsi.org) or equivalent topical seminars listed annually by the Faculty of Humanities. Examples include GIS, Text Analysis, Augmented Reality, Computer Gaming, SEASR, Digital Pedagogy, Large Project Planning and Administration.

Note: Credit will be granted for only one of DHUM 505, ENGL 509 (if taken in the same topic).
Dispute Resolution
School of Public Administration
Faculty of Human and Social Development
Students enrolled in the MA in Dispute Resolution program should also see courses listed as PADR.

DR 502  Units: 1.5
Conflict, Culture, and Diversity
Cross-cultural conflicts involve navigating among diverse identities, meanings and ever-changing perceptions. Uses experiential education and dialogue to explore processes, capacities, and tools to bridge cultural conflicts that draw on multiple intelligences. Develops fluency with ways of naming, framing, and taming conflict across cultural contexts; and fluency with culture as it animates and offers creative ways through conflict. Participants will apply theory and research to interpersonal, intercommunal, and international conflicts.

Note: Credit will be granted for only one of DR 503, LAW 372.

DR 503  Units: 1.5
Public Policy, Law, and Dispute Resolution
Looks at the nature and scale of conflict in civil society and at the primary strategies that society employs to cope with it. Examines a range of contemporary issues of governance. Focuses on the interaction of legislative, judicial, and administrative institutions around two major themes: how programs and public policy are developed and how conflict is managed.

Note: Credit will be granted for only one of DR 502, DR 503, DR 506, DR 509 recommended prior to DR 511.

DR 506  Units: 1.5
Mediation Processes and Skills
This course couples mediation processes with practice in communication skills needed for effective third party facilitative intervention. Using the paradigm of Attitude, Process and Skills, students learn and practice mediation as a dispute resolution tool, integrated with prior learning in conflict analysis and diagnosis. Through lectures, clinical exercises, demonstrations, coached role play, reflective listening skills practice, and group discussions, students connect skills with theoretical and philosophical foundations of mediation required to satisfactorily conclude mediated agreements.

Note: Credit will be granted for only one of DR 506, DR 510 (if taken in the same topic).

Prerequisite(s): DR 501 or PADR 501.

DR 507  Units: 1.5
International Human Rights and Dispute Resolution
Explores linkages between international human rights law, conflict analysis and dispute resolution. Participants explore literature from several disciplines including international law, history, philosophy, anthropology, political science and conflict studies. United Nations, regional and national human rights instruments and mechanisms are examined for their efficacy in human rights protection. Concerns of individuals, including women and children, non-state groups and indigenous peoples are addressed. Students develop skills in human rights analysis, advocacy and dialogue.

DR 508  Units: 1.5
Dispute Resolution and Indigenous Peoples
Explores the theory and practice of negotiation and mediation within the context of public issues and disputes involving indigenous peoples. Includes a comparative examination of perspectives on negotiation of dominant society and indigenous peoples in Canadian and other settings. A critical approach it taken to the application of dominant society models of negotiation and mediation to conflict situations involving indigenous people, including the examination of historical factors, dynamics of power, and cross-cultural factors.

Prerequisite(s):
• DR 501 or PADR 501; and
• DR 502; or
• Permission of the department

DR 509  Units: 1.5
Dispute Resolution System Design and Public Interest Disputes
Introduction to designing, assembling and implementing systems to prevent, manage and/or resolve a series or stream of disputes arising out of a single organization and/or relationships. Examines models of conflict intervention and the design process within organizations. Introduces the theory and practice of negotiating public-interest issues and managing stakeholder conflicts.

DR 510  Units: 1.5
Special Topics in Dispute Resolution
A study of selected special topics in Dispute Resolution drawn from the current literature and practice.

Note: May be taken more than once for credit in different topics.

Prerequisite(s): Set by department depending upon topic.

DR 511  Units: 1.5
Conflict Specialists as Leaders
A role of a conflict specialist is to support organizations and/or groups to replace traditional public policy decision-making processes with collaborative governance processes. As change agents, both dispute resolution process and leadership competencies are required. Students will build and bridge these competencies by learning communication skills, design analysis, and implementation strategies for deliberation and engagement, as well as leadership skills to support change.

Recommendation(s): All of DR 502, DR 503, DR 506, DR 509 recommended prior to DR 511.

DR 516  Units: 1.5
Access to Justice
Examines the fact of diminishing access to justice and its implications for the public, professionals, the justice system and society as a whole. Provides a theoretical framework and practical ideas to help students recognize, understand and respond to access issues. Topics include: the causes, scale and consequences of unmet legal needs; strategies and initiatives to enhance access; and how access issues are forcing the justice system to rethink professional roles, responsibilities and ethics.

Note: Credit will be granted for only one of DR 516, DR 510 (if taken in the same topic), LAW 325 (if taken in the same topic), LAW 343 (if taken in the same topic).

DR 517  Units: 1.5
Issues in Dispute Resolution: Working in the Community
Through classroom and experiential learning and critical reflection, students will gain dispute resolution work experience while learning of the character, structure and dynamics of community groups and agencies. Topics and skill building will include personal and strategic awareness, critical analysis, engagement, communication, professionalism and leadership. Provides critical understanding of processes of social change, group dynamics, activism, and agency-stakeholder relations. Requires a minimum of 40 hours in an approved community voluntary work placement.

DR 590  Units: 1.5-3.0
Directed Studies
Individual studies under the supervision of a faculty member, with permission of the Graduate Adviser.

Notes:
• May be taken more than once for credit in different topics.
• Pro Forma required.

DR 598  Units: 4.5
Master's Project
The non-thesis option requires students to complete a major project in consultation with the student’s supervisor and the Graduate Adviser. The project is expected to be a substantial analysis of a conflict situation or process, policy issue, or other relevant topic approved by the Graduate Adviser. It will have a practical application and is generally prepared in consultation with a client, as well as the supervisor. A written project report will be prepared and submitted to an oral examination committee.

Grading: INP, COM, N, F

DR 599  Units: 6.0
Master's Thesis
The thesis option requires original research on a topic chosen in consultation with the student's supervisor and the Graduate Adviser.

Grading: INP, COM, N, F
ECON 500 - ECON 552

Economics
Department of Economics
Faculty of Social Sciences

ECON 500  Units: 1.5
Microeconomic Analysis
An introduction to consumer demand, production and market organization. Topics covered will generally include: consumer demand; duality; choice under uncertainty; intertemporal choice; measuring welfare change; the competitive firm; the two sector model; properties of competitive equilibrium; market structure; and externalities.

ECON 501  Units: 1.5
Macroeconomic Analysis
An introduction to macroeconomic analysis. Long-run growth, business cycles, trade, and fiscal policy are analyzed using dynamic general equilibrium models. Classical and Keynesian models are used to examine inflation, unemployment, the open economy, and monetary policy. Limitations and extensions of the models are discussed and developed.

ECON 506  Units: 1.5
Monetary Theory and Policy
The examination of selected contributions to contemporary monetary theory and policy, and their relationship to macroeconomics.

ECON 510  Units: 1.5
Industrial Organization and Public Policy
Provides a framework in which to examine policy issues with respect to industrial competition and regulation. Begins with the firm and its relation to the market, and then examines issues relating to market structure and regulation. Topics may include: durable goods monopoly; price discrimination; product differentiation; product quality; advertising; predatory pricing; mergers; and the natural monopoly.

ECON 515  Units: 1.5
Labour Economics
Introduction to contemporary empirical and applied theoretical research into labour markets. Topics may include: labour supply; labour demand; human capital; discrimination; labour market dynamics; unemployment; and behaviour of the household.

ECON 516  Units: 1.5
Cost-Benefit Analysis
Methods of cost-benefit analysis with applications to public policy. Develops a normative foundation for policy analysis, addressing issues of efficiency and wealth redistribution together with the techniques of cost-benefit analysis. Focuses on contemporary Canadian policy issues.

ECON 520  Units: 1.5
Economic Development
The processes and problems of development in the economies of the Developing World. Topics may include: theories of economic development; poverty and inequality; gender and development; nutrition and food policies; agricultural and rural development; employment and migration.

ECON 523  Units: 1.5
Formerly: 517
The Economics of Canadian Health Care
Analysis of the structure, function and performance of the medical market with emphasis on physician and hospital services.

ECON 524  Units: 1.5
Health Economics
An overview of selected issues in contemporary health economics. Topics may include: microeconomic models of physician and patient behavior, econometric methods relevant to the analysis of health data, health insurance, social determinants of health, and the economics of health-affecting behaviors such as smoking and alcohol use.

ECON 525  Units: 1.5
Public Finance and Fiscal Policy
Seminar in selected topics in fiscal policy and public finance including the incidence and effects of taxation, government expenditure programs and public debt operations.

ECON 529  Units: 1.5
Economics of Finance
The basic theory of finance under uncertainty. Topics include expected utility maximization, state preference theory, analysis of capital asset pricing, and option pricing.

ECON 530  Units: 1.5
Economics of Natural Resources
Seminar in the economics of natural resources including a survey of relevant theoretical literature and selected topics covering problems of resource industries.

ECON 531  Units: 1.5
Environmental Economics
An introduction to environmental economics and policy. Develops a normative foundation for policy analysis, addressing issues of efficiency, intergenerational equity and sustainability. A range of policy regimes are covered, including command-and-control regulation, market-based instruments, and legal liability, with applications to a variety of domestic and international environmental issues.

ECON 545  Units: 1.5
Econometric Analysis
The basics of estimation and hypothesis testing in the classical linear regression model, with empirical exercises using economic data. Topics typically include: testing and imposing linear restrictions; dummy variables; specification error; multicollinearity; measurement error; serial correlation; heteroskedasticity; and simultaneity.

ECON 546  Units: 1.5
Themes in Econometrics
A systematic presentation of the principal themes in econometric inference, such as Maximum Likelihood, Instrumental Variables, Method of Moments, Bayesian Inference, Likelihood Ratio, Wald, and Lagrange Multiplier tests. A discussion of Nonparametric and Semiparametric inference, asymptotic distribution theory and Monte Carlo simulation methods. Application of these methods in empirical projects.

ECON 547  Units: 1.5
Time-Series Econometrics
Time-series theory and its application. Topics may include: ARMA modelling; detecting non-stationarity; structural breaks; multiple unit roots; seasonality; cointegration tests VAR and VECM models.

ECON 548  Units: 1.5
Applied Econometric Modelling
Explores a range of practical estimation and testing issues in the context of different types of econometric models. Topics may include: panel models, nonparametrics and semiparametrics; latent variable models; simultaneous equations models; resampling methods, and the methodology-practice gap.

ECON 549  Units: 1.5
Computational Methods in Economics and Econometrics
An introduction to numerical methods and their application in economics and econometrics. Topics will typically include: iterative fixed point methods; methods for solving problems of nonlinear equations; methods for solving initial value problems and boundary value problems; methods for solving static and dynamic optimization problems; Monte Carlo methods; resampling techniques; and Gibbs sampling.

ECON 550  Units: 1.5
Game Theory in Economics
Provides a game theoretic perspective on interactions between economic agents, covering a variety of game-theoretic modelling techniques and their applications. Topics will generally include: normal and extensive form games; Nash equilibrium and refinements; repeated and sequential games; learning and evolution in games; the Nash bargaining solution; and co-operative games.

ECON 551  Units: 1.5
Information and Incentives
Introduction to the incentive problems that arise from asymmetric information in a game-theoretic framework. Assumes a knowledge of basic game theory. Topics covered include moral hazard, adverse selection and mechanism design, illustrated in the context of applications drawn from a variety of areas, including industrial organization, public economics and labour.

ECON 552  Units: 1.5
Macroeconomic Issues
An exploration of contemporary macroeconomic issues using advanced modelling techniques. Topics may include: search and matching theory; unemployment; endogenous innovation; worker displacement due to technological change; the macroeconomic implications of imperfect competition; international macroeconomics; multiple equilibria; coordination; stability; inflation; and finance issues.
ECON 556  Units: 1.5
Experimental Economics
An introduction to the theory and practice of experimental economics using laboratory and field experiments. Topics include: state of the art methods in experimental economics including experimental design, subject sampling, laboratory techniques, and the use of financial incentives. The objectives will be pursued through the development of experiments and a review of the method’s application to a number of topics of interest to economists.

ECON 565  Units: 1.5
The Econometrics of Cross-Section Data
An overview of the models, estimation techniques and tests used when analyzing cross-section data. The methods studied are particularly applicable to labour and health economics and industrial organization. Theory and empirical applications are covered. Topics may include binary and multinomial logit and probit models, limited dependent variable models, count data, and duration analysis.

ECON 575  Units: 1.5
Advanced Topics in Econometrics
Advanced topics in econometric theory and practice. Topics may include: recent developments in time-series analysis; estimation and testing with panel data; the use of nonparametric and semiparametric techniques; limited and qualitative dependent variables models; modelling financial data; switching-regimes models; specification analysis and model selection; and applications of Bayesian inference.

ECON 595  Units: 1.5
Directed Studies in Economics
Individual titles will be assigned to each lettered section A-Z.
Note: Pro Forma required.

ED-D 500  Units: 1.5
Learning Principles
A survey of the literature on commonly stated principles of instrumental and classical conditioning, generalization, transfer and retention.

ED-D 501  Units: 1.5
Theory of Measurement
A study of the main psychometric theories, concepts and procedures associated with the development and analysis of educational and psychological measurement, and the application of these to the development and use of tests in educational and research situations.

ED-D 503  Units: 1.5
Program Development and Evaluation
An examination of the issues, practices, and methods of program evaluation at the institutional, organizational, and classroom levels.

ED-D 505  Units: 1.5
Basic Concepts in Human Development
An introduction to the science of human development. Reviews and evaluates historically important theories and research methods, and provides an overview of major content areas and developmental periods.

ED-D 506  Units: 1.5
Topics in Human Development
This rotating series of courses expands on content areas and developmental periods introduced in 505.

ED-D 506A  Units: 1.5
Cognitive Development
A survey of what is currently known about cognitive development in the first two decades of life. Topics may include biological bases of cognition, perception, memory, conceptual thought, social cognition, language, reading, mathematics, scientific thinking and intelligence.

ED-D 506B  Units: 1.5
Social and Emotional Development
A survey of normative and individual differences in social-emotional development. Topics covered may include biological bases, temperament, attachment, emotion understanding and regulation, theory of mind, and family, peer, school, and cultural influences.

ED-D 506C  Units: 1.5
Adolescent Development
A survey of current theory, research, and societal issues in pre-adolescence through emerging adulthood. Biological, familial, social, educational, cultural, and historical influences on adolescent development are explored.

ED-D 506D  Units: 1.5
Early Childhood and Middle Years Development
A survey of current theory, research, on development from birth through the first decade of life. Biological, familial, social, educational, cultural, and historical influences on child development are explored.

ED-D 508  Units: 1.5
Theories of Learning
A survey of psychological interpretations of learning, comparing modern Behaviourist and Cognitive approaches; historical perspective also given.

ED-D 509  Units: 1.5
Psychology of Learning and Instruction
An in-depth analysis of selected issues and contemporary research in the application of psychology to instruction including: motivation, problem solving, learning processes and strategies, and instructional interventions.

ED-D 514  Units: 1.5
Assessment in Counselling
The use of testing, diagnosis, and other aspects of assessment within a counselling perspective for adults, adolescents and children. Topics addressed include: basic concepts in assessment, the relationship between counselling and assessment, ethical issues, diversity, reliability and validity, test selection and administration, test evaluation, a variety of assessments and assessment reports.

Notes:
• Credit will be granted for only one of ED-D 514, ED-D 591 (if taken in the same topic).

ED-D 515  Units: 1.5
Advanced Assessment in Special Education
An intensive course specializing in Level B assessment techniques and intervention-based academic assessment methods, including curriculum-based measurement, to support the educational programming of students with special needs.

Prerequisite(s):
• ED-D 420 or ED-D 422; and
• ED-D 402 or ED-D 415; or
• permission of the department.

ED-D 516  Units: 1.5
Advanced Intervention in Special Education
An intensive course specializing in Level B assessment techniques and intervention-based academic assessment methods, including curriculum-based measurement, to support the educational programming of students with special needs.

Prerequisite(s):
• ED-D 420 or ED-D 422; and
• ED-D 402 or ED-D 415; or
• permission of the department.
ED-D 518 Advanced Seminar in Theories of Counselling Psychology
Contemporary theories and approaches to counselling and psychotherapy for individuals, couples, and families across the lifespan.
Prerequisite(s):
• permission of the department.

ED-D 519 Advanced Seminars in Counselling Psychology
Note: Credit will be granted for only one of the following courses:
Prerequisite(s):
• Admission to MA program in Counselling Psychology; or
• permission of the department.

ED-D 519A Child and Adolescent Development and Counselling
A study of issues and counselling interventions with children and adolescents. Topics include developmental context, identity, assessment, counsellor roles; consultation with teachers, other professionals and parents or guardians; family issues; career/educational planning; and individual and group interventions.
Note: Credit will be granted for only one of ED-D 519A, ED-D 519C, ED-D 519D, ED-D 519H, ED-D 519L, ED-D 519N, ED-D 519P, ED-D 519R, ED-D 519S, ED-D 519T, or ED-D 519U (if taken in the same topic).
Prerequisite(s):
• Admission to MA program in Counselling Psychology; or
• permission of the department.

ED-D 519C Ethics and Legal Issues in Counselling
An examination of professional, ethical, and legal issues related to practice and research in counselling. Personal beliefs, values, and biases will be examined, as well as the professional codes and literature of the discipline.
Note: Credit will be granted for only one of ED-D 519C, ED-D 519D, ED-D 519H, ED-D 519L, ED-D 519N, ED-D 519P, ED-D 519R, ED-D 519S, or ED-D 519T (if taken in the same topic).
Prerequisite(s):
• Admission to MA program in Counselling Psychology; or
• permission of the department.

ED-D 519D Creative Arts Therapy
The study and practice of creative and artistic approaches to counselling. Specific focus may include counselling using art, movement, writing, play, drama and bibliotherapy.
Note: Credit will be granted for only one of ED-D 519D, ED-D 519H, ED-D 519L, ED-D 519N, ED-D 519P, ED-D 519R, and ED-D 519S (if taken in the same topic).
Prerequisite(s):
• Admission to MA program in Counselling Psychology; or
• permission of the department.

ED-D 519H Career Development and Counselling Across the Lifespan
Lifespan and career development as a dynamic and holistic enterprise. Theories and techniques of career development, assessment, and consultation are explored. The practice of career counselling for diverse populations including work-related issues.
Note: Credit will be granted for only one of ED-D 519H, ED-D 519P, ED-D 519Q, ED-D 519S, ED-D 519T, ED-D 519U, ED-D 519V, ED-D 519W, or ED-D 519X (if taken in the same topic).
Prerequisite(s):
• Admission to MA program in Counselling Psychology; or
• permission of the department.

ED-D 519L Group Counselling
The conceptualization and practice of group counselling and therapy. Leadership skills will be examined. Particular attention will be given to leadership skills and exploring the foundation and application of experiential learning in groups.
Note: Credit will be granted for only one of ED-D 519L, ED-D 519M, ED-D 519N, ED-D 519O, ED-D 519P, ED-D 519Q, ED-D 519R, ED-D 519S, or ED-D 519T (if taken in the same topic).
Prerequisite(s):
• Admission to MA program in Counselling Psychology; or
• permission of the department.

ED-D 519N Diversity, Culture, and Counselling
Theory and practice of counselling diverse clientele: Specific emphasis on awareness, knowledge and strategies for developing cultural competencies.
Note: Credit will be granted for only one of ED-D 519N, ED-D 519P, ED-D 519Q, ED-D 519R, ED-D 519S, or ED-D 519T (if taken in the same topic).
Prerequisite(s):
• Admission to MA program in Counselling Psychology; or
• permission of the department.

ED-D 519P Trauma Counselling
Theoretical and practical understanding of issues related to treatment of psychological trauma. Topics typically include definitions, safety/stabilization, symptoms, disorders, assessment/diagnosis and outcomes.
Note: Credit will be granted for only one of ED-D 519P, ED-D 519Q, ED-D 519R, ED-D 519S, ED-D 519T, ED-D 519U, ED-D 519V, ED-D 519W, or ED-D 519X (if taken in the same topic).
Prerequisite(s):
• Admission to MA program in Counselling Psychology; or
• permission of the department.

ED-D 519R Indigenous Development and Counselling across Generations
Indigenous concepts and theories of development and growth across the lifespan. Exploration of intergenerational models of development and identity. Topics include child, adolescent and adult growth and change in family, community, and work contexts.
Note: Credit will be granted for only one of ED-D 519R, ED-D 519S, ED-D 519T, ED-D 519U, ED-D 519V, ED-D 519W, ED-D 519X, ED-D 519Y, or ED-D 519Z (if taken in the same topic).
Prerequisite(s):
• Admission to MA program in Counselling Psychology; or
• permission of the department.

ED-D 519S Addictions Counselling
A study of addictive behaviour and the change process to understand how addictions develop and how addicted people recover. Topics include concepts and theories of addiction, brain physiology, specific substance and process addictions, controversies, challenges, interventions and treatments for addiction in counselling contexts.
Note: Credit will be granted for only one of ED-D 519S, ED-D 519T, ED-D 519U, ED-D 519V, ED-D 519W, ED-D 519X, ED-D 519Y, or ED-D 519Z (if taken in the same topic).
Prerequisite(s):
• Admission to MA program in Counselling Psychology; or
• permission of the department.

ED-D 520 Educational Research Apprenticeship
An individualized opportunity for students to develop their research skills by assisting with faculty research or engaging in their own research. Students are expected to spend a minimum of 9 hours a week participating in research activities. Includes a range of potential activities, including but not limited to: data collection, coding, and entering; management of computerized databases; completion of ethics applications; analysis of data; literature search and review; and preparation of materials for publication.
Note: Students may repeat this course, but credit will be granted only once.
Prerequisite(s): Admission to MA program in Counselling Psychology.
Grading: I/NP, COM, N, F

ED-D 521 Theory and Practice in Family Counselling
Theoretical approaches and intervention strategies related to family counselling with diverse clientele. Through discussion, experiential activities, and role playing, students will become familiar with current concepts and techniques.
Prerequisite(s):
• ED-D 522 or permission of the department; and
• admission to MA program in Counselling Psychology; or
• permission of the department.
ED-D 522  Units: 3.0
Skills and Practice for Counselling
Provides basic counselling interventions with an emphasis on the therapeutic relationship. Extensive opportunity to role play and to self-reflect on role as counsellor and issues related to boundaries and power. Sequenced skill training, with extensive counselling simulation and supervision of practice in a field setting. Includes direct client contact under the supervision of a qualified professional with diverse client populations.

Note: Students may repeat this course until practicum hourly requirements are met but credit will be granted only once.

Prerequisite(s): Admission to MA program in Counselling Psychology.
Corequisite(s): Either ED-D 518 and ED-D 519N, or ED-D 519C and ED-D 519L.
Grading: INP, COM, N, F

ED-D 523  Units: 3.0
Internship in Counselling
Provides intensive practice in advanced counselling techniques and approaches under the supervision of a professional counsellor in community settings. Lectures focus on case presentations, models of consultation, supervisor-supervisee relationship, roles and responsibilities of health professionals, counsellor identity, professional organizations, record keeping. Two term course.

Note: Students may repeat this course until practicum hourly requirements are met but credit will be granted only once. Enrolment is limited due to availability of placements.

Prerequisite(s): ED-D 522; and admission to MA program in Counselling Psychology.
Grading: INP, COM, N, F

ED-D 524  Units: 1.5
Facilitation of Counselling Practicum
Preparation for future work as trainer, facilitator, or instructor through practice in facilitating 414 or 417 under the supervision of course instructor. Integration of theory and practice of helping, development of skills through modelling, observing, and coaching, enhancement of relationship and group processes.

Notes: • May be taken more than once to include facilitation practicum with both a ED-D 414 and ED-D 417 instructor normally to a maximum of 3 units.
• Cannot be used to fulfill elective requirements for program.
Prerequisite(s): Admission to MA program in Counselling Psychology.
Grading: COM, N, F

ED-D 525  Units: 1.5
Indigenous Healing and Spirituality
Indigenous values, worldviews, and spirituality as the foundation for helping and healing. Topics include traditional knowledge, holistic healing, role of elders, and Indigenous spiritual practices.

Prerequisite(s):
• Admission to a master’s program in Indigenous Communities Counselling; or
• permission of the department.
Grading: COM, N, F

ED-D 531  Units: 1.5 or 3.0
Formerly: ED-B 531
Concepts and Theory of Organization
Critical examination of the classical, modern, and emerging literature of administrative studies in the organizational context, with emphasis on philosophy of leadership, decision making processes, power and authority, leadership studies, and contemporary issues and perspectives.

Note: Credit will be granted for only one of ED-D 531, ED-B 531.

ED-D 532A  Units: 1.5
Formerly: part of 532
Educational Program Leadership
Models for program design and review range from external, objective-based processes to participatory action research. Examines issues of implementation, collaboration, accountability, inclusiveness and responsiveness to community. Offers practical experiences in a range of evaluative methods.

Note: Credit will be granted for only one of ED-D 532A, ED-D 532, ED-B 532.

ED-D 533  Units: 1.5
Concepts and Theories of Leadership in Learning Contexts
Note: May be taken once for credit in each of the areas listed below.

ED-D 533A  Units: 1.5
Politics in Organizations
An examination of politics in educational and related organizations: concepts of influence, authority, power, and control, frameworks for analyzing and understanding politics and policy; actors and agendas; interest and pressure groups; conflict and conflict resolution; the interface of leadership and politics; implications for governance and administrative practice.

Note: Credit will be granted for only one of ED-D 533A, ED-B 533A.

ED-D 533B  Units: 1.5
Decision-Making and the Law
Develops awareness of the legal considerations and principles which apply to decision-making in school and other workplaces. Contains introductions to the interface between law, legislation and policy; statutes and the delegation of powers to decide, and the common law principles which govern decision-making by those with statutory authority. An array of case studies is used.

Note: Credit will be granted for only one of ED-D 533B, ED-B 533B.

ED-D 533C  Units: 1.5
Servant Leadership
An inquiry into the philosophy of servant-leadership as a vehicle for the development of moral literacy in democratic, caring, serving institutions with an investment in the common good.

Note: Credit will be granted for only one of ED-D 533C, ED-D 5391 (if taken in the same topic).

ED-D 533D  Units: 1.5
Leadership
An examination of general leadership concepts, and practices as they apply to educational institutions, other workplaces, organizations and the community.

Note: Credit will be granted for only one of ED-D 533D, ED-B 533D, ED-B 537C.

ED-D 534  Units: 1.5 or 3.0
Formerly: ED-B 534
Leadership for School Improvement
Surveys contemporary thinking about professional learning communities and learning teams, emphasizing how leaders can build and support collaborative and inclusive learning environments in order to effect positive school change.

Note: Credit will be granted for only one of ED-D 534, ED-B 534.

ED-D 535  Units: 1.5
Formerly: 535A and 535B
Global Comparative Perspectives on Leadership and Education
Explores diverse leadership and education theories and practices in school, institutions, workplaces, and/or community across Canada and around the world.

Note: Credit will be granted for only one of ED-D 535, ED-D 535A, ED-D 535B.

ED-D 536  Units: 1.5 or 3.0
Formerly: ED-B 536
Philosophy of Leadership
An examination of the relevant interaction of philosophy and leadership, with a view to clarifying philosophical concepts and theories and their application to the analysis, by individuals in leadership positions, of their own and others’ actions.

Note: Credit will be granted for only one of ED-D 536, ED-B 536.

ED-D 537  Units: 1.5 or 3.0
Formerly: ED-B 537
Functions and Processes of Leadership
Note: May be taken once for credit in each of the areas listed below.

ED-D 537A  Units: 1.5 or 3.0
Formerly: ED-B 537A
Educational Change
An analysis of change theory and the processes associated with change in education, with a view to assisting school leaders to facilitate reforms.

Note: Credit will be granted for only one of ED-D 537A, ED-B 537A.

ED-D 537D  Units: 1.5 or 3.0
Formerly: ED-B 537D
Instructional Supervision
Through an analysis of literature in leadership, communication, change and activation, as well as through an analysis of classroom observation techniques, the development of rational organizational patterns of supervision for educational administrators.

Note: Credit will be granted for only one of ED-D 537D, ED-B 537D.
ED-D 537G Units: 1.5 or 3.0
Formerly: ED-D 537G
Leadership in Educational Administration
Analysis of the roles and functions of the school principal, with emphasis upon educational leadership, understanding the breadth and diversity of the position, legal status, designated administrative and managerial responsibilities, and contemporary challenges.
Note: Credit will be granted for only one of ED-D 537, ED-D 538, ED-D 537G.

ED-D 538A Units: 1.5
Formerly: 538
Community Leadership and Adult Learning
Focuses on leadership and learning strategies in communities and schools that work towards educational, social, environmental, and cultural change. Topics include: inter-connections between school and community; relations of power and social inequity; just learning societies; concepts of democracy, citizenship and governance; critical pedagogy/theory, feminist theory and leadership, aboriginal perspectives on leadership, cross-cultural and anti-racist dialogues; ethics and values in leadership; social learning, collectivity and collaboration.
Note: Credit will be granted for only one of ED-D 538A, ED-D 538B, ED-D 539 (if taken in the same topic).

ED-D 538B Units: 1.5
Cultural Leadership and Social Learning through the Arts
An exploration of the historical and contemporary contributions of arts-based education activities to cultural leadership, activism, and social justice and change across Canada and world-wide.
Note: Credit will be granted for only one of ED-D 538B, ED-D 539, ED-D 591 (if taken in the same topic).

ED-D 539A Units: 1.5
Formerly: 539
Leadership, Learning and Social Justice
Concepts of social justice and their relationship to leadership in schools, institutions and organizations and community. Focuses on issues of race/ethnicity, gender, class, sexual orientation and ability as enacted in everyday practice. Conceptions of democracy, privilege, power, and citizenship are central. Discussions extend to ecological and global issues of social justice.

ED-D 539B Units: 1.5
Leadership, Education and Diversity
An exploration of the social, cultural, and political complexity of contemporary education in a pluralistic society. Focuses on issues of racism, homophobia, sexism, ableism and how they affect schools, workplaces, and/or communities and society as a whole.
Note: Credit will be granted for only one of ED-D 539B, ED-D 590, ED-D 591 (if taken in the same topic).

ED-D 540 Units: 1.5
Women, Learning and Leadership
Explores women’s leadership in diverse contexts such as the women’s movement(s), the voluntary sector, community organizations and government.
Note: Credit will be granted for only one of ED-D 540, ED-D 591 (if taken in the same topic).

ED-D 541 Units: 1.5
Leadership in Rural Education
An examination of the historical contexts, unique issues, and recent developments surrounding leadership in rural and remote education, globally, nationally, and provincially, including First Nations. Focus is on issues of equitable educational opportunities, recruitment and retention of educators, multi-grade classes, professional isolation, and demands of community-based lifestyle and the benefits of technology. The depth of rural education research is explored.
Note: Credit will be granted for only one of ED-D 541, ED-D 590 (if taken in the same topic).

ED-D 542 Units: 3.0
A Comprehensive Investigation of Servant Leadership
An inquiry, identification and application of the servant leadership-followship philosophy in all formal educational and community organizations. Servant Leadership-followship is a vehicle for the development of moral literacy in democratic, caring institutions and an investment toward the common good.
Note: Credit will be granted for only one of ED-D 542, ED-D 533, ED-D 591 (if taken in the same topic).

ED-D 544 Units: 1.5
Methods in Educational Research
An introduction to descriptive and inferential statistics to provide the understanding and competence to read and interpret the statistics reported in relevant research and to be able to conduct analyses on educational research data.

ED-D 545 Units: 1.5
Research Methods in Education
An introduction to quantitative and qualitative research designs, the research process, the selection and design of data collection instruments and methods, writing and reporting findings, and systematically evaluating and critiquing the quality of research studies. Useful for students preparing to conduct thesis research as well as students who wish to become better readers and consumers of research.
Note: Credit will be granted for only one of ED-D 545, ED-D 551A, ED-D 551.

ED-D 551B Units: 1.5
Research Methods in Leadership
Designed to prepare students in Leadership Studies to undertake independent, scholarly research so that they might fulfill the research requirements for the MEd degree in Leadership Studies. Students will become familiar with different lines of inquiry, appropriate methodologies, proposal preparation and the ethics involved in doing research. Other graduate level research methods courses may be substituted with permission from the Graduate Adviser.
Note: Students must complete their ED-D 598 project within the two-term 3.0 unit allotment.
Prerequisite(s): 7.5 units of coursework.
Corequisite(s): ED-D 561A and ED-D 598.

ED-D 562 Units: 1.5
Advanced Statistical Methods in Education
To advance understanding of and competence in handling multivariate data - both the manipulation of data files for use within a statistical program, and the use of statistical programs for exploratory and inferential analyses such as regression, MANOVA and factor analysis.
Note: Students who have completed equivalent prerequisites may request permission to register in the course.
Prerequisite(s):
• ED-D 560, or
• permission of the department.

ED-D 563 Units: 1.5
Qualitative Research Methods
Introduction to various modes of qualitative inquiry, identification and examination of qualitative research methods in a variety of contexts and settings.
Note: Credit will be granted for only one of ED-D 563, ED-D 580.

ED-D 564 Units: 1.5
Indigenous Research and Program Evaluation
Indigenous worldviews, approaches to research, methodologies, practices and protocols are examined within the context of Indigenous community engagement. Specific topics include community partnerships, research ownership, research process, program evaluation, methods and outcomes. Ethics, reciprocity, and culturally respectful research will be explored.
Prerequisite(s):
• Admission to a master’s program in Indigenous Communities Counselling, or
• permission of the department.

ED-D 568 Units: 1.5
Inductive Education in the 21st Century
A consideration of historical perspectives and present trends in Special Education theory and practice. Topics considered include the context of special education, economic and legislative issues, families, classification and other assessment issues, teaching practices, social competency, early intervention, quality of life, and ethical and policy issues.
Note: Credit will be granted for only one of ED-D 568, ED-D 568A.

ED-D 569 Units: 1.5
Formerly: 566B
Developmental Psychopathology and Disorders
Empirical and theoretical approaches to childhood disorders, including issues in their classification, etiology, developmental course, and presentation within the school setting. Emphasis will be placed on thinking about childhood disorders within both a developmental and school context. Assessment profiles and intervention strategies will be discussed.
Note: Credit will be granted for only one of ED-D 569, ED-D 566B.
ED-D 570  Units: 1.5
Instruction and Technologies to Promote Self-Regulated Learning and Strategy Use
An introduction to contemporary theory and research about self-regulated learning and learning strategies. Emphasis is placed on the application of theory and research to the design of computer based instructional tools and environments.
Notes:
• Credit will be granted for only one of ED-D 570, ED-D 591 (if taken in the same topic).
• Students who complete this course may be eligible to apply for a lab instructor position for ED-D 101 (Learning Strategies for University Success).

ED-D 571  Units: 1.5
Advanced Assistive Technology in the Inclusive Classroom
Focuses on the research and application of a range of assistive technologies, assessment frameworks, instructional approaches and strategies, and resources to support active student engagement and participation in inclusive classrooms.
Note: Credit will be granted for only one of ED-D 571, ED-D 591 (if taken in the same topic).

ED-D 590  Units: to be determined
Directed Studies in Educational Psychology and Leadership Studies
These individual reading and study courses are designed by students in collaboration with an instructor to provide intensive study in an area of interest to the student.
Note: May be taken more than once for credit in different topics with permission of the department to a maximum of 4.5 units; however, no more than 3 units of credit from the same instructor will be accepted except under exceptional circumstances.

ED-D 591  Units: 1.5
Selected Topics in Education
The content of these courses varies depending upon student interests and faculty areas of expertise. Courses often focus on timely issues and topics in the field.
Note: May be taken more than once for credit in different topics.

ED-D 591A  Units: 1.5
Selected Topics in Learning and Development

ED-D 591C  Units: 1.5
Selected Topics in Special Education

ED-D 591D  Units: 1.5
Selected Topics in Counselling

ED-D 591E  Units: 1.5
Selected Topics in Leadership Studies

ED-D 597  Units: 1.5
Comprehensive Examination - Educational Psychology and Leadership Studies
A required element of all MEd programs. Typically held within one month of completion of all coursework. Examination format may be either written or oral, as decided upon by the program supervisor in consultation with the candidate. Areas of examination and examiners are established by each program area (counselling, educational psychology, special education, leadership studies).
Grading: INP, COM, N, F

ED-D 598  Units: 3.0
Project - Educational Psychology and Leadership Studies
Evidence of independent research work in the form of a project, extended paper(s), work report, etc., as determined within the department. Planned and carried out with a project supervisor.
Grading: INP, COM, N, F

ED-D 599  Units: 6.0
Thesis - Educational Psychology and Leadership Studies
Grading: INP, COM, N, F

ED-D 600  Units: 1.5
Learning and Teaching in Higher Education
Explores instructional research and contemporary practices in higher education. Topics include using effective teaching strategies, developing course curriculum, and exploring various instructional models and media. Content is guided by recent research in the psychology of learning and instruction.
Note: Students who are not in the LATHE Program and wish to take a course in this area may consider ED-D 614. With permission of the department, students who have taken ENGL 502 or WRIT 509 may obtain credit for ED-D 600.
Prerequisite(s): Admission to Graduate Certificate in Learning and Teaching in Higher Education (LATHE).
Grading: INP, COM, N, F

ED-D 605  Units: 3.0
Educational Psychology: Apprenticeship in Teaching in Higher Education
Explores research and rhetoric associated with numerous models of instruction found frequently in post-secondary contexts such as lecture, recitation, small-group discussion and on-line learning. Each instructional model is examined, students will practice supporting instructional skills and strategies.
Prerequisite(s): Admission to Graduate Certificate in Learning and Teaching in Higher Education (LATHE).
Pre- or Corequisite(s): ED-D 600 or EDCI 560.
Grading: COM, N, F

ED-D 610  Units: 1.5
Contemporary Issues in Higher Education
Critically examines the problems and issues that dominate current thought and discussion in higher education in Canada and internationally. Topics considered will include globalization and internationalization, university governance, teaching and learning, the nature of academic work, corporatization of postsecondary institutions, credentialism, and relations between higher education and the state.
Prerequisite(s): Permission of the department.

ED-D 614  Units: 1.5
University Teaching
An extensive review of research and instructional practices at the post-secondary level. Topics include models of instruction, teaching strategies, course development principles, and assessment practices.
Prerequisite(s): Admission to a graduate program.

ED-D 615  Units: 1.5 or 3.0
Individual Apprenticeship in University Teaching
Students undertake an individualized apprenticeship experience with a sponsoring faculty member. The broad aim of the apprenticeship is to offer students guided practice in university instruction.
Note: May be taken more than once for credit in different topics with approval of the student's supervisory committee.
Prerequisite(s): Admission to a graduate program.
Grading: COM, N, F

ED-D 620  Units: 1.5
Educational Psychology: Doctoral Apprenticeship in Research
Individualized opportunity for doctoral students to develop advanced research skills by apprenticing in faculty research or extra-to dissertation research. Students are expected to spend approximately 9-10 hours a week participating in research activities. The apprenticeship typically involves a range of activities including organization and training of research assistants, submission of an ethics application, management of research databases, data analysis, and preparation and submission of materials for publication and/or presentation.
Note: Students may repeat this course, but credit will be granted only once.
Prerequisite(s):
• Admission to a doctoral program; or
• permission of the department.
Grading: INP, COM, N, F

ED-D 660  Units: 1.5
Doctoral Seminar in Contemporary Issues in Educational Psychology
A seminar for doctoral students examining contemporary issues in educational psychology. Attention is also given to guidelines for scholarly and professional practice.
### ED-D 690 - EDCI 532

**ED-D 690**  
Units: to be determined  
Advanced Directed Studies in Educational Psychology  
These individual reading and study courses are designed by students in collaboration with an instructor to provide intensive study in an area of interest to the student.  
**Note:** May be taken more than once for credit in different topics with permission of the department to a maximum of 4.5 units; however, no more than 3 units from the same instructor will be accepted except under exceptional circumstances.

**ED-D 691**  
Units: 1.5 or 3.0  
Advanced Special Topics in Educational Psychology  
The content of these courses varies depending upon student interests and faculty areas of expertise. Courses often focus on timely issues and topics in the field.  
**Note:** May be taken more than once for credit in different topics.

**ED-D 693**  
Units: 3.0  
Doctoral Candidacy Exam in Educational Psychology  
PhD students write candidacy examinations in research methodology and in their area of focus within educational psychology. The format will consist of two written papers followed by an oral examination. In the oral examination, the candidate will be examined in both research methodology and his/her area of focus.  
Normally, within thirty six months of registration as a provisional doctoral student and at least six months before the final oral examination, a student must pass the candidacy examination.  
**Grading:** INP, COM, N, F

**ED-D 699**  
Units: to be determined  
PhD Dissertation  
Prerequisite(s): ED-D 693.  
**Grading:** INP, COM, N, F

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### EDCI 511 - EDCI 532

**EDCI 511**  
Units: 1.5  
Hours: 3-0  
Formerly: ED-A 571  
Research in Drawing and Studio Development  
Review of literature on the development of drawing; analysis of theory and current teaching practices; an investigation of ideas and approaches through actual engagement in drawing.  
**Note:** Credit will be granted for only one of EDCI 511, ED-A 571.

**EDCI 512A**  
Units: 1.5  
Formerly: half of 512  
Digital Arts  
An extensive exploration of digital studio processes focusing on visual expression, graphics, and fine art. Working in the digital studio, students will learn to generate creative ideas, collect resources, produce artwork, and integrate digital and traditional processes using industry-standard software packages. Emphasis on the production and teaching of digital arts for creative, educational and studio environments. No previous computer experience is required.  
**Note:** Credit will be granted for only one of EDCI 512A, EDCI 512.

**EDCI 512B**  
Units: 1.5  
Formerly: half of 512  
Digital Presentation  
An extensive exploration of the tools and processes used in presenting studio media in digital formats. Students will learn how to organize existing studio materials, processes, ideas, and resources into dynamic presentation structures using still/motion visuals, text and audio. A strong focus will be given to the production formats required for final graduate presentations.  
**Note:** Credit will be granted for only one of EDCI 512B, EDCI 512.

**EDCI 513**  
Units: 3.0  
Community Art Education  
Issues related to community art programs that play a role in sociocultural development and raising awareness about aesthetics.

**EDCI 514**  
Units: 1.5  
Educational Discourses  
An opportunity for engagement in the research community, advancing the development of student’s own capacity for research, and a critical examination of contemporary literature on functional educational concepts, research issues and implications for curriculum and instruction.

**EDCI 515**  
Units: 1.5  
Formerly: ED-B 515  
e-Research: Harnessing and Understanding Technology in Research  
A blended multi-media/research course that focuses on relevant issues involved in using information and communication technologies (ICT) and the Internet for research purposes. In addition to developing some foundational skills, students will learn about methods, techniques, as well as ethical and practical issues.  
**Note:** Credit will be granted for only one of EDCI 515, ED-B 515.

**EDCI 517**  
Units: 1.5  
Formerly: 542A, 542, half of ED-B 542  
Reading Processes in the School Curriculum: Research and Processes  
Examines and analyzes research and models of reading, and the processes of reading and reading development.  
**Note:** Credit will be granted for only one of EDCI 517, EDCI 542A, EDCI 542, ED-B 542.

**EDCI 518**  
Units: 1.5  
Formerly: 540A, 540, half of ED-B 540  
Research in Language and Literacy: Curriculum Development  
A critical analysis of theories and research related to curriculum development and implementation in language and literacy.  
**Note:** Credit will be granted for only one of EDCI 518, EDCI 540, EDCI 540A, ED-B 540.

**EDCI 520**  
Units: 1.5 or 3.0  
Seminar in Contemporary Educational Issues in Philosophical Perspective  
A survey of issues selected from leading contemporary thinkers and how they relate to the basic values, purposes and problems of education.  
**Note:** Credit will be granted for only one of EDCI 520, ED-B 520.

**EDCI 521**  
Units: 1.5  
Formerly: 521A and 521B  
Contemporary Educational Issues in Historical Perspective  
Historical examination of significant educational writings, the social context in which they were written, and their influence on contemporary educational issues. Special emphasis is placed on writings that illuminate themes of educational change and that illustrate the relationship between the character of a society and the nature of its educational institutions.  
**Note:** Credit will be granted for only one of EDCI 521, EDCI 521A, EDCI 521B, ED-B 521A, ED-B 521B.

**EDCI 523**  
Units: 1.5  
Diverse Voices and Visions in Education  
An examination of diverse educational and cultural perspectives in education and ways of knowing not usually encompassed in other courses. Students will explore how these diverse perspectives shape, challenge, and enrich established educational methodologies.

**EDCI 531**  
Units: 1.5  
Formerly: 531A and 531B  
Introduction to Curriculum as Discourse  
An overview of the field of curriculum studies from the early 20th century forward. Invites students to reflect on implications of curriculum as discourse within their own educational concepts and practices and to imagine new possibilities.  
**Note:** Credit will be granted for only one of EDCI 531, EDCI 531A, EDCI 531B, ED-B 555A, ED-B 555B.

**EDCI 532**  
Units: 1.5  
Emerging Trends and Topics in Curriculum Studies  
An examination of recent publications, presentations and conference proceedings to identify and discuss emerging trends and topics in the field of curriculum studies.
### COURSE LISTINGS EDCI

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<tr>
<th>Course Code</th>
<th>Units</th>
<th>Description</th>
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| **EDCI 533** | 1.5 | Formerly: ED-B 556 and ED-B 557  
Theory and Practice in Curriculum Design and Change  
Description of traditional and alternative approaches to curriculum planning and implementation in terms of origins, underlying assumptions, utility in various settings and effects. Invites students to identify and characterize their own approaches to curriculum planning and implementation.  
Note: Credit will be granted for only one of EDCI 533, ED-B 556, ED-B 557. |
| **EDCI 536** | 1.5 | Formerly: 543, half of ED-B 543, 543A  
Language Processes in the School Curriculum: Oracy  
An examination of processes through which competence in listening and speaking is developed. Includes analysis of research, methods and materials relevant to oracy.  
Note: Credit will be granted for only one of EDCI 536, EDCI 543, EDCI 543A, ED-B 543. |
| **EDCI 546** | 1.5 | Formerly: ED-B 546  
Literacies Research  
A critical review of research methodologies used in the general area of language arts. Consideration of the appropriateness of specific methodologies to research in classroom problems.  
Note: Credit will be granted for only one of EDCI 546, ED-B 546. |
| **EDCI 548** | 1.5 | Formerly: ED-B 558  
Development and Implementation of the Curriculum  
Application of relevant theories and models to the design and development of school curricula in a specific area.  
Note: Credit will be granted for only one of EDCI 548, EDCI 548A, EDCI 548B, EDCI 548C, ED-B 558. |
| **EDCI 549** | 1.5 | Gender and Pedagogy  
Draws upon historical and contemporary perspectives to provide lenses for analyzing various research issues and concerns in relation to educational policy and classroom practice. Inclusion and transformation are critical elements of the concepts developed in this course. Issues of gender influencing educational policy and practices will be examined, including areas such as curriculum development, teaching strategies, selection of curricular materials, professional interactions, and selection of teaching specialty areas.  
Note: Credit will be granted for only one of EDCI 549, EDCI 591 (if taken in the same topic). |
| **EDCI 550** | 1.5 | Formerly: ED-B 550  
Seminar: Research in Early Childhood Education  
Analysis, interpretation, and evaluation of selected research in early childhood education through study of its conceptual and methodological bases.  
Note: Credit will be granted for only one of EDCI 550, ED-B 550.  
Prerequisite(s):  
- 1.5 units of EDCI course numbered 500 or higher; or  
- permission of the department. |
| **EDCI 551** | 1.5 | Formerly: ED-B 551  
The Young Child in Today's Society  
An exploration of topics related to young children (birth through age 9) and their education in the context of Canadian society. Addresses several major questions, including: Who are today's young children? What are the issues and challenges facing Canadian children and families? How can early childhood programs address these challenges?  
Note: Credit will be granted for only one of EDCI 551, ED-B 551. |
| **EDCI 552** | 1.5 | Formerly: ED-B 552  
Contemporary Trends in Early Childhood Education  
An examination of perspectives that influence early childhood education in national and international contexts. Topics include: the inclusion of children's knowledge in early childhood settings; the potential role of families in early years' programming; the creation of programs that support children's holistic development; the impact of cultural values on young learners; and the commonalities and differences of global, early learning settings.  
Note: Credit will be granted for only one of EDCI 552, ED-B 552. |
| **EDCI 554** | 1.5 | Formerly: ED-B 549  
Comparative Early Childhood Education: Curriculum, Context and Culture  
Analysis and evaluation of approaches to curriculum, administration, and assessment in programs for preschool, kindergarten, and primary-aged children in cross-cultural contexts.  
Note: Credit will be granted for only one of EDCI 554, ED-B 549. |
| **EDCI 555** | 1.5 | Formerly: 543B, 543, half of ED-B 543  
Language Processes in the School Curriculum: Writing and Representing  
An examination of processes through which skills and competence in composition are developed. Includes analysis and evaluation of research, methods and materials relevant to instruction in composition.  
Note: Credit will be granted for only one of EDCI 555, EDCI 543, EDCI 543B, ED-B 543. |
| **EDCI 558** | 1.5 | Differentiated Instruction: Needs of Diverse Learners  
Examines research and practice of differentiated instruction across the curriculum, with an emphasis on literacy at all levels. Investigates the philosophy and theory behind differentiated instruction and exemplary practices. Focuses on flexibility in how curriculum content, processes and representations of knowledge are designed within a differentiated model. Discussion of differentiated instructional models in relation to current trends in Canadian curriculum.  
Note: Credit will be granted for only one of EDCI 558, EDCI 591 (if taken in the same topic). |
| **EDCI 565** | 1.5 | Research and Practice of Learning Design  
An in-depth look at the research and practice of learning design and its application to technology-enabled interactive learning environments. Students will critically examine theories and principles of learning design; explore how they can maximize the effectiveness, efficiency and appeal of learning experiences for learners; and teach for understanding. |
| **EDCI 566** | 1.5 |  
EDUCoaching for Technology Integration  
An exploration of principles and models of educational change through professional development coaching within the context of technology adoption theories. Students will actively coach or be coached during this course. |
| **EDCI 567** | 1.5 | Interactive and Multimedia Learning Theories  
An in-depth analysis of theories and applications of multimedia learning in interactive learning environments. Students will explore the latest research, compare, and critique current practices and emerging technologies such as touch input devices, for creating rich educational experiences. |
| **EDCI 568** | 1.5 |  
Discourse on Social Media for Connected and Personalized Learning  
Exploration of current research on communities of learning to situate discussion on connected practices for both personalized and professional learning. Critical discourse will focus on the balance of opportunities afforded by connected learning as well as issues such as cyber bullying, safety, and privacy in online environments. |
| **EDCI 569** | 1.5 |  
The Distributed, Blended and Open Classroom  
An examination of current research and models of distributed learning and the theories that drive successful learning experiences in a variety of configurations such as online, blended, multi-access, and open learning. |
| **EDCI 570** | 1.5 | Formerly: ED-E 540  
Research in Curriculum and Instruction in the Elementary Grades  
Review of the critical issues; analysis of significant research on curriculum development at the elementary school level.  
Note: Credit will be granted for only one of EDCI 570, EDCI 570A, EDCI 570B, EDCI 570C, EDCI 570D, EDCI 570E, EDCI 570F, ED-E 540. |
| **EDCI 571** | 1.5 | Formerly: ED-E 541  
Research in Curriculum and Instruction in the Secondary Grades  
Review of the critical issues; analysis of significant research on curriculum development at the secondary level.  
Note: Credit will be granted for only one of EDCI 571, EDCI 571A, EDCI 571B, EDCI 571C, EDCI 571D, EDCI 571E, EDCI 571F, ED-E 541. |
EDCI 572  
Units: 1.5  
Formerly: ED-E 558  
Development and Implementation of the Curriculum  
Application of relevant theories and models to the design and development of school curricula in a specified area.  
Note: Credit will be granted for only one of EDCI 572, EDCI 572A, EDCI 572B, EDCI 572C, EDCI 572D, EDCI 572E, EDCI 572F, ED-E 558.

EDCI 574  
Units: 1.5  
Formerly: ED-E 574  
Environmental Education Perspectives  
A multi-disciplinary approach to exploring goals for environmental and outdoor education; cultural differences in perceptions of community-environment relationships; the traditional ecological knowledge and wisdom of First Nations Peoples; current issues and trends; the research related to students’ environmental knowledge, attitudes and values; teaching strategies; and assessment techniques. Selected field trips.  
Note: Credit will be granted for only one of EDCI 574, ED-E 574.

EDCI 575  
Units: 1.5  
Formerly: ED-E 546  
Global Education  
Explores critical global issues through the strands of environment, development, peace and human rights. Pedagogical concerns vary with student interests and include values education, teaching controversial issues, and dealing with children’s despair about the future.  
Note: Credit will be granted for only one of EDCI 575, ED-E 546.

EDCI 576  
Units: 1.5  
Ecology, Pedagogy, and Practice  
Theoretical examination of discourses that may include: the Deep Ecology Movement, Systems Theory, Eco-justice, and Cognitive Science to identify and discuss key issues in a variety of disciplinary areas as these relate to pedagogy and practice.  
Note: Credit will be granted for only one of EDCI 576, EDCI 591.

EDCI 578  
Units: 1.5  
Science, Technology, Society and the Environment: Implications for Teaching  
An exploration of the nature and relationships between science, technology, environment and society towards helping learners find possibilities that ensure a continuing future for humankind. Topics include a critical examination of contemporary issues of science and technology; social responsibility and environmental stewardship; how science is experienced in the schools, and expanding the notions of technology and environment encouraging an interdisciplinary STSE approach in education.

EDCI 579  
Units: 1.5  
Formerly: ED-E 545  
Knowing and Learning in Everyday Contexts  
Designed to look into the nature of knowing and learning in school and everyday settings and from a variety of perspectives. These perspectives include traditional information processing, Heideggerian cognitive science and artificial intelligence, anthropology, cognitive anthropology, sociology of scientific knowledge, ethnmethodology, and historical and philosophical approaches to the study of human knowing and learning. Reflects recent developments in the understanding of knowing and learning in real-world (non-laboratory) settings.  
Note: Credit will be granted for only one of EDCI 579, ED-E 545.

EDCI 580  
Units: 1.5  
Formerly: ED-B 580  
Qualitative Research Methods  
Provides a survey of a variety of qualitative methods, and opportunities for learners to develop competencies in research practices common to qualitative inquiry.  
Note: Credit will be granted for only one of EDCI 580, ED-B 580.

EDCI 581  
Units: 1.5  
Research Methodologies in Education  
An opportunity for students to become familiar with various approaches to research, especially those relevant to their inquiries with special emphasis on the intellectual, social, and cultural contexts and ethics of research.  
Note: Credit will be granted for only one of EDCI 581, ED-B 582.

EDCI 582  
Units: 1.5  
Formerly: ED-B 582  
Writing as Research  
Writing as a mode of inquiry, with particular emphasis on the practice of writing. Includes all forms of interpretive inquiry, especially narrative, phenomenological, hermeneutic and autobiographical inquiry.  
Note: Credit will be granted for only one of EDCI 582, ED-B 582.

EDCI 583  
Units: 1.5  
Researching with Aboriginal Peoples: Aboriginalizing Research  
Research from a First Nations positioning. Aboriginal methodologies, practices and protocols are discussed to illustrate the importance to Aboriginal Peoples and their communities of having control over every aspect of research projects involving them. Students are encouraged to reflect on their own research projects so that their work is ethical, reciprocal and culturally respectful.

EDCI 584  
Units: 1.5  
Analysis of Quantitative and Mixed Methods Research  
An introduction to the understanding, critical analysis, and evaluation of the theoretical and practical issues related to published quantitative or mixed methods research in the field of education.

EDCI 590  
Units: to be determined  
Formerly: ED-A, ED-B and ED-E 590  
Directed Study - Curriculum and Instruction  
Notes:  
• May be taken more than once for credit in different topics.  
• Pro Forma required.  
Prerequisite(s): Permission of the faculty.

EDCI 591  
Units: 1.5 or 3.0  
Formerly: ED-A, ED-B and ED-E 591  
Selected Topics in Curriculum and Instruction  
A variable content course. Normally restricted to course offerings and not individual study.  
Note: May be taken more than once for credit in different topics.

EDCI 597  
Units: 1.5  
Formerly: ED-A, ED-B and ED-E 597  
Comprehensive Examination  
A written and/or oral comprehensive examination, which must be passed as required for individual Master of Education programs.  
Note: Credit will be granted for only one of EDCI 597, ED-A 597, ED-B 597, ED-E 597.

Grading: INP, COM, N, F

EDCI 598  
Units: 3.0  
Formerly: ED-A, ED-B and ED-E 598  
Project - Curriculum and Instruction  
Grading: INP, COM, N, F

EDCI 598A  
Units: 1.5  
Project Proposal and Literature Review  
Encourages discussion of alternate approaches to project topics as well as examine the components of a project proposal, especially the features of an effective literature review. The proposal and literature review for the MEd project must be accepted by the 598A course instructor and the student’s program supervisor.  
Note: Students who do not complete the course requirements may register a second time for the course. Incomplete course requirements in the second term will result in withdrawal from the program. There are appeal procedures for extenuating circumstances.  
Prerequisite(s): Admission to a Community-based MEd program.  
Grading: COM, INP, N, F.
### EDCI 598B
**Units:** 1.5
**Project**
The project proposal approved in 598A is to be completed and will include the approved literature review, an analytic and professional reflection on the contributions of the project. A project may be presented in any appropriate form - prose, performance, multimedia, or exhibition for example - but must include a written submission of moderate length. The successful completion of the project requires the approval of the course instructor and the student’s program supervisor.

**Note:** Students who have completed equivalent prerequisites may request permission to register in the course.

Students who do not complete the course requirements may register a second time for the course. Incomplete course requirements in the second term will result in withdrawal from the program. There are appeal procedures for extenuating circumstances.

**Prerequisite(s):**
- EDCI 598A, or
- admission to a Community-based MEd program.

**Grading:** COM, INP, N, F.

### EDCI 599
**Units:** 7.5
Formerly: ED-A, ED-B and ED-E 599
**Thesis - Curriculum and Instruction**

**Grading:** INP, COM, N, F.

### EDCI 601
**Units:** 1.5
**Interdisciplinary Doctoral Seminar**
The purpose of Doctoral Seminar is to create a community of scholars in which faculty and graduate students share and support each other’s current research projects.

**Note:** May be taken more than once for credit in different topics to a maximum of 6 units.

**Prerequisite(s):** Admission to a doctoral program.

### EDCI 602
**Units:** 1.5
**Doctoral Seminar in Arts Education**
Philosophical and sociological examinations of contemporary issues in arts education.

### EDCI 614
**Units:** 1.5
Formerly: 600
**Discourses in Educational Studies**
An opportunity for engagement in the research community, advancing the development of student’s own capacity for research, and a critical examination of contemporary literature on functional educational concepts, research issues and implications for curriculum and instruction.

**Note:** Credit will be granted for only one of EDCI 614, EDCI 600.

### EDCI 617
**Units:** 1.5
Formerly: 642A 642, half of ED-B 642
**Advanced Reading Processes: Research and Process**
Examines and analyzes research and models of reading, and the processes of reading and reading development.

**Notes:**
- Credit will be granted for only one of EDCI 642, EDCI 642A, ED-B 642.
- Students who have completed equivalent prerequisites may request permission to register in the course.

**Prerequisite(s):** EDCI 542 or ED-B 542.

### EDCI 632
**Units:** 1.5
**Discourses in Curriculum Design and Change**
Identification, analysis and critique of current discourses of curriculum development, implementation, and change found in educational practice and in theoretical literature.

**Note:** Credit will be granted for only one of EDCI 632, EDCI 532.

### EDCI 633
**Units:** 1.5
**Emerging Trends in Curriculum Studies**
An examination and theoretical critique of emerging trends and topics in the field of curriculum studies as they appear in recent publications, presentations, and conference proceedings.

**Note:** Credit will be granted for only one of EDCI 633, EDCI 533.

### EDCI 636
**Units:** 1.5
Formerly: 643A, 643, half of ED-B 643
**Advanced Language Processes: Oracy**
An examination of processes through which competence is developed in listening and speaking. Course will include analysis of research, methods and materials relevant to oracy.

**Note:** Credit will be granted for only one of EDCI 636, EDCI 643, EDCI 643A, ED-B 643.

### EDCI 656
**Units:** 1.5
Formerly: 643B, 643, half of ED-B 643
**Advanced Language Processes: Writing and Representing**
An examination of processes through which representational skills and competence in writing are developed. Course will include analysis of research, methods and materials relevant to instruction in composition.

**Note:** Credit will be granted for only one of EDCI 656, EDCI 643B, EDCI 643, ED-B 643.

### EDCI 672
**Units:** 1.5
**History and Philosophy of Math, Science, Educational Technology**
Selected moments in the history of science, mathematics and technology, and aspects of the writings of philosophers such as Bacon, Pascal, Descartes, Popper, Kuhn, Franklin, Harding, Matthews, Maturana, and Varela provide a context for understanding current issues and possibilities for reform in school science, mathematics, and educational technology.

### EDCI 673
**Units:** 1.5
**ICT in Environmental, Mathematics, Science Instruction**
Explores the changes information and communication technologies (ICT) have made on learning and instruction in environmental, mathematics and science education. Theoretical, classroom instruction, and research implications will be considered.

### EDCI 681
**Units:** 1.5
**Advanced Research Design**
Explores research methodologies appropriate to specific research problems, questions, and contexts. An examination of the purposes of research, the role of literature review, educational theories, and design of a research question considering the relationship between question and research method.

**Note:** Students who have completed a master’s level research methods course may request permission to register in the course.

**Prerequisite(s):** Permission of the faculty.

### EDCI 690
**Units:** 1.5 or 3.0
Formerly: ED-B 690
**Directed Studies - Curriculum and Instruction**
Under the direction of program supervisors, topics in the area of research interests of doctoral students will be examined, leading to the development of background material for a PhD dissertation.

**Notes:**
- May be taken more than once for credit in different topics.
- Pro Forma required.

**Prerequisite(s):** Set by department depending upon topic.

### EDCI 691
**Units:** 1.5 or 3.0
Formerly: ED-B 691
**Selected Topics in Curriculum and Instruction**
Issues pertaining to students’ research interests and faculty expertise will be examined.

**Notes:**
- May be taken more than once for credit in different topics.
- Pro Forma required.

**Prerequisite(s):** Set by department depending upon topic.

### EDCI 693
**Units:** 3.0
**Candidacy Examination - Curriculum and Instruction**
Candidacy Examinations must be passed as required for individual Doctor of Philosophy Programs within the Faculty of Education. Exams will be reviewed and graded by all members of the individual’s Doctoral Committee.

**Grading:** INP, COM, N, F

### EDCI 699
**Units:** 30.0
Formerly: ED-B 699
**PhD Dissertation - Curriculum and Instruction**
**Prerequisite(s):** EDCI 693.
**Grading:** INP, COM, N, F
ELEC 503 - Electrical Engineering

Department of Electrical and Computer Engineering
Faculty of Engineering

ELEC 503  Units: 1.5
Engineering Design by Optimization
The steepest descent and Newton methods for unconstrained optimization. Golden section, quadratic, cubic and inexact line searches. Conjugate and Quasi-Newton methods. The Fletcher-Reeves algorithm. Application to the design of circuits, control systems, filters, and mechanical systems using optimization techniques. Introduction to constrained optimization. Students are required to complete one project that applies some of the optimization techniques to be studied in the course to an engineering analysis or design problem.

Note: Credit will be granted for only one of ELEC 503, ELEC 403.

ELEC 504  Units: 1.5
Random Signals
Review of random variables, moments and characteristic functions; random processes, noise models, stationarity, ergodicity, correlation and power spectrum, spectrum measurements; response of linear systems to random inputs, cross-spectral densities, narrow band noise; introduction to discrete time and space processes. Students are required to complete a project.

Note: Credit will be granted for only one of ELEC 504, ELEC 400.

ELEC 509  Units: 1.0
Seminar
Expose Master’s students to different areas of research through seminar participation and provide a forum for the presentation of graduate student research. Required for all Master’s students every year of their program as an addition to the normal program except by departmental permission. One unit of credit shall be given upon completion.

Grading: INC, COM, N

ELEC 511  Units: 1.5
Error Control Coding
The channel coding problem; coding approaches and characteristics; linear block codes; bounds on codes; finite fields; cyclic, BCH and Reed-Solomon codes; convolutional codes and the Viterbi algorithm; error control in data storage and transmission systems. Students are required to complete a project.

Note: Credit will be granted for only one of ELEC 405, ELEC 511.

ELEC 512  Units: 1.5
Digital Communications
Source and channel descriptions. Source digitization, entropy and the rate distortion tradeoff; lossless source codes (Huffman and run length codes), optimal and adaptive quantization. Digital modulation techniques, optimal coherent receivers, performance evaluation, the incoherent case. Special topics - case studies, fiber optics, satellite systems, mobile radio systems. Students are required to complete a project.

Note: Credit will be granted for only one of ELEC 512, ELEC 450.

ELEC 514  Units: 1.5
Design and Analysis of Computer Communication Networks

Note: Credit will be granted for only one of ELEC 514, CENG 461.

ELEC 515  Units: 1.5
Information Theory
Information theory and its relationship to probability, statistics, and data compression; entropy, relative entropy and mutual information; Huffman coding, arithmetic coding and Lempel-Ziv coding; channel capacity; group codes; generator and parity check matrices; Hamming codes and bound; bounds on the dimension of a linear code; random coding bounds, code construction.

ELEC 516  Units: 1.5
Advanced Wireless Communications
Statistical fading channel models, digital communications over fading channels, diversity techniques for fading mitigation, channel adaptive transmission, multicarrier modulation/OFDM, spread spectrum techniques/CDMA, MIMO systems and space-time coding.

Note: Credit will be granted for only one of ELEC 516, ELEC 519A (if taken in the same topic).

ELEC 517  Units: 1.5
Software Defined Radio
Software defined radio architectures. Receiver design: radio frequency, digital signal processing, software. Application to analog and digital communications, cognitive radio, dynamic spectrum access. Implementation of software radio algorithms using GNU Radio, Simulink or other platforms. Students are required to complete a project.

Note: Credit will be granted for only one of ELEC 517, ELEC 417, ELEC 539A (if taken in the same topic).

ELEC 519A  Units: 1.5
Formerly: 619A
Selected Topics in Digital Communications
Notes:
• May be taken more than once for credit in different topics to a maximum of 3 units.
• Variable content course.

ELEC 519B  Units: 1.5
Formerly: 619B
Selected Topics in Computer Communications
Notes:
• May be taken more than once for credit in different topics to a maximum of 3 units.
• Variable content course.

ELEC 519C  Units: 1.5
Formerly: 619C
Selected Topics in Secure Communications
Notes:
• May be taken more than once for credit in different topics to a maximum of 3 units.
• Variable content course.

ELEC 522  Units: 1.5
Antennas and Propagation
Antenna and propagation fundamentals, Friis transmission formula, radar equation, Maxwell’s equations for radiation problems, antenna parameters, simple radiators, array theory, mutual coupling, wire and broadband antennas, aperture radiators, scattering and diffraction, multipath propagation and fading, antenna measurement techniques, surface-wave and ionospheric propagation, microwave and millimeter wave propagation. Students are required to complete a project.

Note: Credit will be granted for only one of ELEC 522, ELEC 453.

ELEC 524  Units: 1.5
Formerly: 624
Theory and Design of Waveguide Components
Modern integrated waveguide technologies, numerical analysis aspects and design strategies; mode-matching techniques; commonly used waveguides; transformers and transformer prototypes; phase shifts; power dividers; directional couplers; waveguide filters; multiplexers; polarizers; orthomode transducers; mode converters; angle diversity systems.

Note: Credit will be granted for only one of ELEC 524, ELEC 624.

ELEC 525  Units: 1.5
Advanced Photonics
Methods to understand optical devices. Following a basic review of electromagnetics, methods for analyzing photonic devices will be provided. Among other applications, these methods will be applied to the analysis of sensors (surface plasmon resonance), high-reflectivity and anti-reflection coatings, Bragg gratings, and semiconductor lasers.

ELEC 526  Units: 1.5
Formerly: 623
Advanced Optical Systems
Overview of the basic technologies and system design principles for modern optical communications. Component fundamentals, including optical fiber, lasers, transmitters, photodetectors, receivers, passive components, optical amplifiers. Optical modulation, demodulation, wavelength multiplexing techniques. Applications to wide-area and access networks, microwave photonics. System impairments related to noise, fiber dispersion, nonlinearity. Students work in groups to design a national-scale broadband system, combining primary course elements and commercial software.

Note: Credit will be granted for only one of ELEC 526, ELEC 623.
ELEC 534 Units: 1.5
Applications of Digital Signal Processing Techniques
Note: Credit will be granted for only one of ELEC 534, ELEC 459.

ELEC 535 Units: 1.5
Data Analysis and Pattern Recognition
Statistical data analysis and random processes, ergodicity and stationarity, Bayesian decisions procedures, feature extraction and selection, parametric and non-parametric pattern classification and clustering techniques. Applications to big data, data science, and computer security problems. Students are required to complete a project.
Note: Credit will be granted for only one of ELEC 535, ELEC 485.

ELEC 536 Units: 1.5
Computer Vision
Overview of the main concepts and methods in computer vision; geometry and physics of imaging, as related to image formation and image acquisition; low-level methods of image analysis, such as filtering, edge detection, feature detection, and segmentation; methods for extracting and representing three-dimensional scene information; motion analysis and algorithms for video understanding. Students are required to complete a project.
Note: Credit will be granted for only one of ELEC 536, CENG 427.

ELEC 539A Units: 1.5
Formerly: 639A
Selected Topics in Digital Signal Processing
Notes:
• May be taken more than once for credit in different topics to a maximum of 3 units.
• Variable content course.

ELEC 539B Units: 1.5
Formerly: 639B
Selected Topics in Image Processing
Notes:
• May be taken more than once for credit in different topics to a maximum of 3 units.
• Variable content course.

ELEC 539C Units: 1.5
Formerly: 679
Selected Topics in Underwater Acoustic Systems
Notes:
• May be taken more than once for credit in different topics to a maximum of 3 units.
• Variable content course.

ELEC 543 Units: 1.5
Design of Digital and VLSI Systems
Advanced combinational and sequential logic design. Optimization of finite state machines; timing methodologies and synchronization issues. Hardware description languages (HDL); structural and behavioural descriptions, simulations and testbenches, coding styles, design with HDL and FPGA implementation. Design for test: testing concepts, scan-based design and built-in self-test (BIST). Design for high speed: timing analysis, pipelining and retiming. Design for low power: sources of power dissipation, design transformations. Students will be required to complete a project.
Note: Credit will be granted for only one of ELEC 543, CENG 441.

ELEC 545 Units: 1.5
Nanotechnology
Nanoscale materials and devices. Techniques and tools of nanostructure fabrication and characterization. Properties of low-dimensional materials. Semiconductor nanostructures, metallic nanoparticles, carbon nanotubes, organic molecules, quantum dots. Applications including nanoelectronics and molecular devices, biotechnology, nanoscale computation, nanomechanical devices and nanophotonics. Students are required to complete a project.
Note: Credit will be granted for only one of ELEC 545, ELEC 420.

ELEC 546 Units: 1.5
Formerly: 642
Mapping DSP Algorithms onto Processor Arrays
Note: Credit will be granted for only one of ELEC 546, ELEC 462.

ELEC 547 Units: 1.5
Electronic Devices
Study of the operation of bipolar and field-effect devices in VLSI design. Study of photonic and opto-electronic devices used in transmission, modulation, demodulation and receivers. Principles, construction and design of lasers and their applications. Study of display devices, thin-film devices, imaging devices, transducers and micromachines and their interfacing. Sensor arrays and related system design. Students are required to complete a project.
Note: Credit will be granted for only one of ELEC 547, ELEC 412.

ELEC 548 Units: 1.5
Cyber-System Security
Introduction to abstract algebra and finite field arithmetic. Hardware attacks and mitigation techniques. Hardware trojans and hardware Trojan detection techniques. Trusted design in FPGAs. Security in embedded systems. Design for hardware trust. Security and testing. Crypto-processors and design for security. Students will be required to complete a project.
Note: Credit will be granted for only one of ELEC 548, CENG 448.

ELEC 549A Units: 1.5
Formerly: 688
Selected Topics in Electronics
Notes:
• May be taken more than once for credit in different topics to a maximum of 3 units.
• Variable content course.

ELEC 549B Units: 1.5
Formerly: 649B
Selected Topics in VLSI Design
Notes:
• May be taken more than once for credit in different topics to a maximum of 3 units.
• Variable content course.

ELEC 553 Units: 1.5
Introduction to Parallel and Cluster Computing
Overview of massively parallel and cluster computers. Processing models (shared memory versus message passing). Processes and threads. Standard algorithms utilizing parallelism. Matrix and vector operations. N-body problems, collective communications. Parallel application environments MPI and OpenMP. Includes significant exposure to parallel applications including developing and coding of sample parallel codes. Students are required to complete a project.
Note: Credit will be granted for only one of ELEC 553, CENG 453.

ELEC 559A Units: 1.5
Formerly: 659A
Selected Topics in Robotics
Notes:
• May be taken more than once for credit in different topics to a maximum of 3 units.
• Variable content course.

ELEC 564 Units: 1.5
Neural Networks and Their Implementation
Biological inspiration, historical background, learning in neural nets (backpropagation, hebian, etc.), single- and multi-layer networks, associative memories, classification and clustering models, recurrent networks. Neural network technology, implementation software and hardware technologies, algorithm definitions, computational requirements, solution methods, parallel processing hardware. VLSI and optical implementations of neural networks.
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<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Units</th>
<th>Hours</th>
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<tbody>
<tr>
<td>ELEC 567</td>
<td>Advanced Network Security</td>
<td>1.5</td>
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<td>Presents, from a practical perspective, underlying principles and</td>
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<td>techniques of network security. Students will be exposed to ethical</td>
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<td>hacking, and penetration testing. Various protection methods, used</td>
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<td>in practice to detect and respond to malicious network attacks, will</td>
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<td>be presented. Students will also learn how to implement successful</td>
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<td>security policies and defense mechanisms and strategies, with a</td>
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<td>particular focus on firewalls, intrusion detection and response,</td>
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<td>virtual private networks, and biometrics technologies.</td>
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<td>ELEC 568</td>
<td>System-on-Chip Engineering for Signal Processing</td>
<td>1.5</td>
<td>3-1.5</td>
<td>Design and System-on-Chip (SOC) implementation for signal processing</td>
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<td>applications. SOC design and testing methodologies, Platform-based</td>
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<td>design, Intellectual Property (IP) reuse, and built-in self-test.</td>
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<td>Controlling power consumption in SOC implementations. SOC multi-</td>
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<td>technology integration of analog and digital electronics, sensors</td>
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<td>and MEMS. Students are required to complete a project.</td>
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<td>Note: Credit will be granted for only one of ELEC 568, ELEC 466.</td>
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<tr>
<td>ELEC 569A</td>
<td>Selected Topics in Computer Engineering</td>
<td>1.5</td>
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<td>Formerly: 669</td>
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<td>Notes:</td>
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<td>• May be taken more than once for credit in different topics to a</td>
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<td>maximum of 3 units.</td>
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<td>• Variable content course.</td>
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<td>ELEC 570</td>
<td>Computer Forensics Methodologies</td>
<td>1.5</td>
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<td>• May be taken more than once for credit in different topics to a</td>
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<td>maximum of 3 units.</td>
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<tr>
<td>ELEC 571</td>
<td>Underwater Acoustic Systems</td>
<td>1.5</td>
<td></td>
<td>Propagation of acoustic plane waves in a homogeneous medium and its</td>
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<td>electrical equivalent model. Acoustic impedance. Pressure measurements</td>
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<td></td>
<td></td>
<td>and units. Acoustic transducers and equivalent circuits. Acoustic</td>
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<td>arrays, beam forming and beam steering. Sound transmission in the</td>
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<td>ocean. Ambient noise. Sonar equations. Performance analysis of active</td>
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<td>and passive sonar systems. Introduction to specialized acoustic systems.</td>
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<tr>
<td>ELEC 572</td>
<td>Security, Privacy, and Data Analytics</td>
<td>1.5</td>
<td></td>
<td>Explores the underlying theoretical foundations of information</td>
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<td>security and privacy issues from an engineering perspective.</td>
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<td></td>
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<td>Applications of information-theoretic concepts, techniques, and</td>
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<td>methods to the problem of quantifying achieved levels of security</td>
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<td></td>
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<td>and privacy in larger-scale systems in the presence of adversaries.</td>
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<td></td>
<td>Students are required to complete a project.</td>
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<td></td>
<td>Prerequisite(s): ELEC 567.</td>
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<tr>
<td>ELEC 573</td>
<td>Advanced Engineering Design by Optimization</td>
<td>1.5</td>
<td>Formerly: 603</td>
<td>Fundamentals of constrained optimization theory. Simplex</td>
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<td>methods for linear programming. Modern interior-point methods</td>
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<td>such as primal-dual path-following methods and Mehrotra’s predictor-</td>
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<td>corrector algorithm for linear programming. Active-set methods and</td>
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<td>primal-dual interior-point methods for quadratic and convex</td>
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<td>programming. Semidefinite programming algorithms. Sequential</td>
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<td>quadratic programming and interior-point methods for nonconvex</td>
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<td>optimization. Implementation issues and current software packages</td>
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<td>for constrained optimization. Applications in digital signal</td>
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<td>processing, control, robotics and communications.</td>
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<td>Notes:</td>
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<td>• Credit will be granted for only one of ELEC 573, ELEC 603.</td>
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<td>• Students who have completed equivalent prerequisites may request</td>
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<td></td>
<td></td>
<td>permission to register in the course.</td>
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<tr>
<td>ELEC 574</td>
<td>Practice of Information Security and Privacy</td>
<td>1.5</td>
<td></td>
<td>Aims to present a holistic view of various security engineering</td>
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<td>topics through practical case studies. Topics include enterprise</td>
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<td>security architecture, security threat and risk assessment, education</td>
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<td>and awareness, monitoring, investigation and forensics, application</td>
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<td>security, media handling and intellectual property, privacy, physical</td>
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<td>and environmental security, and business continuity planning.</td>
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<td>Also introduces information security-related certification and</td>
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<td>relevant professional associations. Students are required</td>
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<td>to complete a project.</td>
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<td>Note: Credit will be granted for only one of ELEC 574, SENG 460.</td>
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<tr>
<td>ELEC 581</td>
<td>Power Electronics</td>
<td>1.5</td>
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<td>Characteristics of power semiconductor switching devices, e.g.,</td>
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<td>silicon controlled rectifiers, bipolar and MOS power transistors,</td>
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<td>insulated gate bipolar transistors, gate-turn-off thyristors. Basic</td>
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<td>principles of phase controlled converters, dc to dc choppers, dc to</td>
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<td>ac inverters (square wave and pulse width modulated), switching power</td>
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<td>supplies, resonant converters. Applications to communication and</td>
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<td>computer power supplies, electric drives, induction heating, etc.</td>
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<td>ELEC 583</td>
<td>Digital Video Processing</td>
<td>1.5</td>
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<td>Representation of digital video. Image formation models.</td>
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<td>Spatio-temporal sampling and sampling structure conversion. Two- and</td>
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<td>three-dimensional motion estimation techniques. Optical flow, block-</td>
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<td>based and pel-recursive methods for motion estimation. Still image</td>
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<td>and video compression methods and standards. Interface compression and</td>
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<td>model-based methods for video compression. Digital video systems and</td>
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<td></td>
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<td>applications. Students are required to complete a project.</td>
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<td>Note: Credit will be granted for only one of ELEC 583, ELEC 483.</td>
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<tr>
<td>ELEC 584</td>
<td>Dynamics and Control of Switched Mode Power Supplies</td>
<td>1.5</td>
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<td>Introduction to switch mode power supplies. Detailed analysis of</td>
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<td>non-isolated converters (Buck, Boost, Buck-boost, Cuk, etc) and</td>
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<td>isolated converters (Flyback, Forward, Push-pull, Half bridge, Full</td>
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<td>bridge, Current Source converters, etc). State space averaging</td>
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<td>technique to model converters. Design of multi-loop controllers (inner</td>
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<td>current loop and outer voltage loop). Introduction to PWM switch</td>
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<td>model as an alternative to state space averaging technique. Students</td>
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<td>will need to complete a project.</td>
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<td>Note: Credit will be granted for only one of ELEC 584, ELEC 461,</td>
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<td></td>
<td>ELEC 689 (if taken in the same topic).</td>
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<tr>
<td>ELEC 585</td>
<td>Motor Drive Dynamics</td>
<td>1.5</td>
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<td>DC Machines: Modeling of dc machines with load inertia and damping.</td>
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<td>Design of current, speed and position controllers for closed loop</td>
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<td>operation. AC Machines: Induction machines: Scalar control. Space</td>
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<td>phasors and modeling of three phase induction machines. Field oriented</td>
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<td>control of Induction machines using space-phaser as well as</td>
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<td>synchronous reference frame theory approach. Reference frame theory</td>
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<td>and frame transformation. Description of stator, rotor and synchronous</td>
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<td>reference frames. Students will need to complete a project.</td>
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<td>Note: Credit will be granted for only one of ELEC 585, ELEC 462,</td>
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<td>ELEC 689 (if taken in the same topic).</td>
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<td>ELEC 586</td>
<td>Multiresolution Signal and Geometry Processing With C++</td>
<td>1.5</td>
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<td>Multirate signal processing, upsampling, downsampling, sampling rate</td>
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<td>conversion, polyphase techniques, multirate filter banks,</td>
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<td>multiresolution signal representations, wavelets, digital geometry</td>
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<td>processing, polygon meshes, subdivision surfaces/wavelets, efficient</td>
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<td>multiresolution signal processing. Applications in data compression,</td>
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<td>computer graphics/animation, geometric modeling, communications, and</td>
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<td>signal processing. C++ programming language, libraries such as</td>
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<td>OpenGL and CGAL. Students are required to complete a project.</td>
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<td>Note: Credit will be granted for only one of ELEC 586, ELEC 486.</td>
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<td>ELEC 589A</td>
<td>Selected Topics in Power Electronics</td>
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<td>Formerly: 689</td>
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<td>• May be taken more than once for credit in different topics to a</td>
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<td>maximum of 3 units.</td>
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<td>• Variable content course.</td>
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<td>Prerequisite(s): Permission of the department.</td>
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<tr>
<td>ELEC 590</td>
<td>Directed Study</td>
<td>1.5</td>
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<td>Graduate course in the Electrical Engineering program administered</td>
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<td>by the Faculty of Graduate Studies. A wide range of topics will be</td>
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<td>available. Notes:</td>
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<td>• May be taken more than once for credit in different topics.</td>
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<td>• Pro Forma required.</td>
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</table>
ELEC 591 Units: 0.5
Professional Foundation

Note: This course will be offered by the Engineering, Computer Science/Math Co-op and Career Services.

Prerequisite(s): Admission to MENG program in Telecommunications and Information Security.

ELEC 592A Units: 0.5
Formerly: part of ELEC 592
Professional Career Development I

Note: Credit will be granted for only one of ELEC 592A, ELEC 592.

Prerequisite(s): Admission to MENG program in Telecommunications and Information Security.

ELEC 592B Units: 0.5
Formerly: part of ELEC 592
Professional Career Development II

Note: Credit will be granted for only one of ELEC 592B, ELEC 592.

Prerequisite(s): Admission to MENG program in Telecommunications and Information Security.

ELEC 598 Units: 2.0
MEng Project
Grading: INP, COM, N, F

ELEC 599 Units: 12.0
MASc Thesis
Grading: INP, COM, N, F

ELEC 609 Units: 1.0
Seminar
Expose PhD students to different areas of research through seminar participation and provide a forum for the presentation of graduate student research. Required for all Doctoral students every year of their program as an addition to the normal program except by departmental permission. One unit of credit shall be given upon completion.

Grading: INP, COM, N, F

ELEC 621 Units: 1.5
Numerical Techniques in Electromagnetics

Note: Students who have completed equivalent prerequisites may request permission to register in the course.

Prerequisite(s):
- One of ELEC 521, ELEC 522, ELEC 524, ELEC 525; or
- permission of the department.

ELEC 693 Units: 3.0
PhD Candidacy Examination
The PhD Candidacy Examination consists of an oral examination. This examination should be taken and passed not later than three years from initial PhD registration. Required of all PhD students every term of their program until the oral examination is passed.

Note: ELEC 693 is a corequisite: all registrations in ELEC 693 must be accompanied by registration in ELEC 693 until ELEC 693 is passed.

Grading: INP, COM, N, F

ELEC 699 Units: 30.0-36.0
PhD Dissertation
Corequisite(s): ELEC 693
Grading: INP, COM, N, F

ENGL 503 Units: 1.5
Special Studies I

ENGL 505 Units: 1.5
Studies in Literary Theory: Area Course

ENGL 506 Units: 1.5
Studies in Literary Theory: Special Topic

ENGL 507 Units: 1.5
Digital Literary Studies: History and Principles

ENGL 508 Units: 1.5
Digital Literary Studies: Special Topic

ENGL 509 Units: 1.5
Digital Literary Studies: DHSI Proseminar

A directed studies course in an area of the digital humanities, to be combined with curriculum offered by the Digital Humanities Summer Institute as with HUMA 491 (see www.dhsi.org).

Note: May be taken more than once for credit in different topics.
Migrations, and Nations; Identity and Place. Compulsory for Borders and Regions; Historiographies; Pacific Diasporas, the West Coast. Primary areas of investigation include:

Core Seminar in Literatures of the West Coast Studies in Commonwealth and Postcolonial

ENGL 581

Units:

Studies in Commonwealth and Postcolonial

Units:

ENGL 572

Studies in Commonwealth and Postcolonial Literatures: Area Course

ENGL 581

Studies in Commonwealth and Postcolonial Literatures: Special Topic

ENGL 582

Core Seminar in Literatures of the West Coast

An introduction to interdisciplinary study in the literatures of the West Coast. Primary areas of investigation include: Borders and Regions; Historiographies; Pacific Diasporas; Migrations, and Nations; Identity and Place. Compulsory for students in the Literatures of the West Coast Concentration.

ENGL 583

Studies in the Literature of the West Coast

Units:

ENGL 585

Studies in Canadian Literature: Area Course

Units:

ENGL 586

Studies in Canadian Literature: Special Topic

ENGL 590

Directed Reading

Units:

ENGL 598

Master’s Essay or Project

Students are required to complete a Master’s Essay or Project and a final oral examination based on that essay or project. It should not exceed 10,000 words (or the equivalent in digital, editorial, or bibliographical components), plus notes and bibliography. This essay or project will normally be a revised and extended version of a paper or project prepared for one of the student’s courses.

Note: Students entering the program effective September 2009, and students doing a concentration in Literatures of the West Coast, will complete a Master’s Essay or Project (not to exceed 10,000 words) worth 4.5 units. All other students who entered the program prior to September 2009 will complete a Master’s Essay (not to exceed 6,500 words) worth 3 units.

Grading: INP, COM, N, F

ENGL 599

MA Traditional or Alternative Thesis

Grading: INP, COM, N, F

ENGL 693

Formerly: 698

Candidacy Examination

Notes:

• Credit will be granted for only one of ENGL 693, ENGL 698.
• Students are required to pass two exams (Major Field and Focused Field) within 24 months of registration as a doctoral candidate, and before registering in the Dissertation (ENGL 699).

Grading: INP, COM, N, F

ENGL 699

PhD Dissertation

Prerequisite(s): ENGL 693.

Grading: INP, COM, N, F

Entrepreneurship Certificate

Peter B. Gustavson School of Business

ENTC 510

Units: 1.5

Entrepreneurship Searching and Screening

Provides students with the tools to identify ideas for new ventures through systematic searching. Screening tools and techniques enable students to distinguish between a good idea and a good opportunity. Topics for the course include opportunity identification, opportunity analysis and proof of concept. Students will utilize criteria to successfully screen opportunities and recognize personal criteria that can be used in evaluating new ventures and innovation strategies.

Prerequisite(s):

• Admission to Graduate Certificate program in Entrepreneurship; or
• permission of the school.

ENTC 520

Units: 1.5

Entrepreneurship Planning and Financing

Develops the student’s ability to tell the “story” of a new venture idea with just enough facts and details to convey to investors that the business is viable. Topics for the course include strategies for commercialization, entrepreneurial finance and securing and protecting resources. Students will study how to raise money strategically and how to work with various potential investors and asset classes.

Prerequisite(s): Admission to Graduate Certificate program in Entrepreneurship.

ENTC 530

Units: 1.5

Entrepreneurship Set-up and Launch

Focuses on systems and models that enable the entrepreneur to maximize the business operating environment. Operations analysis tools and methodology are presented to assist in designing, planning, and controlling operations. Topics for the course include: securing commitment, entrepreneurial marketing and communications, entrepreneurial systems and exit strategies; gain strategic and tactical skills to launch and operate a new company with a limited budget for the first twelve to eighteen months of a company’s life.

Prerequisite(s): Admission to Graduate Certificate program in Entrepreneurship.

ENTC 540

Units: 1.5

Entrepreneurship Growth and Context Expertise

Enables students to grow their own entrepreneurial companies by emphasizing innovation and value capture in a dynamic environment. Topics for the course include managing growth and change and entrepreneurs as global citizens. Students will choose one of the following four special topics of focus for the final third of the course: (1) Technology-based ventures, (2) service-based ventures, (3) internet-based ventures, or (4) doing business in China.

Prerequisite(s): Admission to Graduate Certificate program in Entrepreneurship.

INP, COM, N, F
Plate Tectonics: the Geological Record
An examination of the processes of plate tectonics as revealed by the geological record, including Precambrian evolution of cratons; rifts and passive margins; convergent margins and orogens; plate motions through time.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>EOS 599</td>
<td>MSC Thesis</td>
<td>to be determined*</td>
<td>INP, COM, N, F</td>
<td></td>
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<tr>
<td>EOS 693</td>
<td>PhD Candidacy Examination</td>
<td>3.0</td>
<td>INP, COM, N, F</td>
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<tr>
<td>EOS 699</td>
<td>PhD Dissertation</td>
<td>to be determined</td>
<td>INP, COM, N, F</td>
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<tr>
<td>EPHE 500</td>
<td>Research Seminar</td>
<td>0</td>
<td></td>
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<tr>
<td>EPHE 561</td>
<td>Current Issues in Leisure Services</td>
<td>1.5</td>
<td>PE 561</td>
<td></td>
</tr>
<tr>
<td>EPHE 562</td>
<td>Administrative Planning Process</td>
<td>1.5</td>
<td>PE 562</td>
<td></td>
</tr>
<tr>
<td>EPHE 563</td>
<td>Community Leisure Service Development</td>
<td>1.5</td>
<td>Formerly PE 563</td>
<td></td>
</tr>
<tr>
<td>EPHE 570</td>
<td>Skill Acquisition in Physical Education and Sport</td>
<td>1.5</td>
<td>Formerly PE 570</td>
<td></td>
</tr>
<tr>
<td>EPHE 572</td>
<td>Physiology in Physical Education and Sport</td>
<td>1.5</td>
<td>Formerly PE 572</td>
<td></td>
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<tr>
<td>EPHE 573</td>
<td>Research Methods</td>
<td>3.0</td>
<td>Formerly PE 573</td>
<td></td>
</tr>
<tr>
<td>EPHE 574</td>
<td>Administration of Physical Education, Recreation and Sport</td>
<td>1.5</td>
<td>Formerly PE 574</td>
<td></td>
</tr>
<tr>
<td>EPHE 575</td>
<td>Applied Sport Psychology</td>
<td>1.5</td>
<td>Formerly PE 575</td>
<td></td>
</tr>
<tr>
<td>EPHE 576</td>
<td>Teaching and Coaching Effectiveness in Physical Education and Sport</td>
<td>1.5</td>
<td>Formerly PE 576</td>
<td></td>
</tr>
<tr>
<td>EPHE 577</td>
<td>Research Methods and Techniques in Coaching Studies</td>
<td>1.5</td>
<td>Formerly PE 577A or PE 577</td>
<td></td>
</tr>
<tr>
<td>EPHE 578</td>
<td>Biomechanics</td>
<td>1.5</td>
<td>Formerly PE 578</td>
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<tr>
<td>EPHE 579</td>
<td>Current Issues in Coaching Studies</td>
<td>1.5</td>
<td>Formerly PE 577B or PE 579</td>
<td></td>
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<tr>
<td>EPHE 580</td>
<td>Physiological Issues in Physical Activity and Health</td>
<td>1.5</td>
<td>Formerly PE 580</td>
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Notes:
- Credit will be granted for only one of EPHE 561, PE 561.
- Credit will be granted for only one of EPHE 562, PE 562.
- Credit will be granted for only one of EPHE 563, PE 563.
- Credit will be granted for only one of EPHE 564, PE 564.
- Credit will be granted for only one of EPHE 565, PE 565.
- Credit will be granted for only one of EPHE 566, PE 566.
- Credit will be granted for only one of EPHE 567, PE 567.
- Credit will be granted for only one of EPHE 568, PE 568.
- Credit will be granted for only one of EPHE 569, PE 569.
- Credit will be granted for only one of EPHE 570, PE 570.
- Credit will be granted for only one of EPHE 571, PE 571.
- Credit will be granted for only one of EPHE 572, PE 572.
- Credit will be granted for only one of EPHE 573, PE 573.
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- Credit will be granted for only one of EPHE 577, PE 577.
- Credit will be granted for only one of EPHE 578, PE 578.
- Credit will be granted for only one of EPHE 579, PE 579.
- Credit will be granted for only one of EPHE 580, PE 580.

* Normally 9 units.

Grading:
- INP, COM, N, F
EPHE 581  Units: 1.5
Psychological Issues in Physical Activity and Health
Examines selected current psychological issues affecting individual and group involvement in the different forms of physical activity and how these interact with performance and health from childhood to the senior years. Research in the field will be examined to assist the understanding of current beliefs and practices.
Note: Credit will be granted for only one of EPHE 581, PE 581.

EPHE 582  Units: 1.5
Formerly: PE 582
Neuroscience in Physical Activity and Health
A seminar on issues and research in neuroscience related to motor control across the lifespan and in typical and atypical populations.
Note: Credit will be granted for only one of EPHE 582, PE 582.

EPHE 583  Units: 1.5
Formerly: PE 583
Issues in Health Promotion and Wellness
Issues, research and values in health promotion and wellness related to physical activity. Topics may include community-based research in education, health, recreation and allied social service settings; social determinants of health and physical activity; and theory and practice of programs and policies affecting health, wellness and physical activity.
Note: Credit will be granted for only one of EPHE 583, PE 583.

EPHE 584  Units: 1.5
Formerly: PE 584
Pedagogical Issues in Physical Activity and Health
Current pedagogical research that influences national and provincial physical activity policies, school-based physical education programs and community-based physical activity programs.
Note: Credit will be granted for only one of EPHE 584, PE 584.

EPHE 585  Units: 1.5
Formerly: PE 585
Qualitative Research Genres Applied to Education, Health and Society
Examines issues surrounding the development of research representations that inform issues in education, health and society. A core component of the course will be to develop, gather data and report on a community based inquiry project. Qualitative genres based on different modes of inquiry will be explored and applied in a student developed inquiry project.
Note: Credit will be granted for only one of EPHE 585, PE 585.

EPHE 590  Units: to be determined
Formerly: PE 590
Directed Study
Notes:
• May be taken more than once for credit in different topics.
• Pro Forma required.
Prerequisite(s): Permission of the school.

EPHE 591  Units: 1.5 or 3.0
Formerly: PE 591
Selected Topics in Exercise Science, Physical and Health Education
A variable content course.
Notes:
• May be taken more than once for credit in different topics.
• Pro Forma required.

EPHE 597  Units: 1.5
Formerly: PE 597
Comprehensive Examination - Exercise Science, Physical and Health Education
Comprehensive examination which must be passed as required for individual Master of Education programs within the Faculty of Education.
Note: Credit will be granted for only one of EPHE 597, PE 597.
Grading: INP, COM, N, F

EPHE 598  Units: 3.0 - 4.5
Formerly: PE 598
Project - Exercise Science, Physical and Health Education
Note: Not open to students with credit in PE 598.
Grading: INP, COM, N, F

EPHE 599  Units: to be determined
Formerly: PE 599
Thesis - Exercise Science, Physical and Health Education
Note: Not open to students with credit in PE 599.
Grading: INP, COM, N, F

EPHE 673  Units: 3.0
Doctoral Seminar
Doctoral students will become engaged in the research community, advance the development of their own capacity for research, and gain a deeper understanding and appreciation of multiple approaches to the study of physical activity. Topics include: current research in Exercise Science, Physical & Health Education, critical issues in research, the need for knowledge translation and dissemination, and the critical examination of students’ emerging research questions.

EPHE 690  Units: 1.5 or 3.0
Directed Studies
Research topics will be pursued at the doctoral level under the direction of one or more faculty members.
Notes:
• May be taken more than once for credit in different topics to a maximum of 6 units.
• Pro Forma required.

EPHE 693  Units: 3.0
Candidacy Exam - Kinesiology
Grading: INP, COM, N, F

EPHE 699  Units: 18.0
PhD Dissertation - Kinesiology
Prerequisite(s): EPHE 693.
Grading: INP, COM, N, F

ES
Environmental Studies
School of Environmental Studies
Faculty of Social Sciences

ES 500  Units: 1.5
Perspectives on Environmental Theories, Methods and Skills I
An examination of contemporary theories, methods and skills that support environmental studies research. Weekly seminars will be preceded by a 3-day field camp in late August/early September (additional cost for field camp).
Note: Required core course.
Prerequisite(s): Admission to a graduate program in Environmental Studies.

ES 501  Units: 1.5
Perspectives on Environmental Theories, Methods and Skills II
Builds on the foundation laid in ES 500, and continues to explore theories, methods and skills appropriate to each student’s research program. A retreat is typically scheduled in mid-March (additional cost for field retreat).
Note: Required core course.
Prerequisite(s): Admission to a graduate program in Environmental Studies.

ES 503  Units: 3.0
MA/MSc Research Colloquium
The Graduate Colloquium meets weekly from September to April. Papers are presented by graduate students, faculty, and visiting scholars. The colloquium exposes students to a wide range of conceptual and substantive issues that reflect the breadth and depth of environmental research. Attendance and participation in the colloquium is strongly encouraged throughout the degree program. Students receive 3 units of pass/fail credit during their first year.
Note: Required core course.
Grading: INP, COM, N, F

ES 570  Units: 1.5
Field Study
Supervised research or organized projects related to environmental problems, supplemented by directed individual study. A formal report is required.

ES 580  Units: 1.5
Seminar in Political Ecology
Flexible topics course offered in a seminar format.
Note: May be taken more than once for credit in different topics to a maximum of 3 units.

ES 581  Units: 1.5
Seminar in Ethnoecology
Flexible topics course offered in a seminar format.
Note: May be taken more than once for credit in different topics to a maximum of 3 units.

ES 582  Units: 1.5
Seminar in Ecological Restoration
Flexible topics course offered in a seminar format.
Note: May be taken more than once for credit in different topics to a maximum of 3 units.
ES 590 - FORB 549D

ES 590  Units: 1.5
Directed Studies
Individual studies under the direct supervision of a faculty member. The content and evaluation must be approved by the School.

ES 593  Units: 1.5
Thesis Proposal Preparation
Students will work individually with their supervisor (or co-supervisors) and supervisory committee to develop a thesis proposal. An oral defense of the proposal shall take place no later than September 30th of the student's second year of full-time study or third year of part-time study. An annual research showcase will provide an opportunity for students to present their work in a formal setting. Credit shall be granted upon acceptance of the proposal with revisions (as necessary).
Note: Required core course.
Grading: INP, COM, N, F

ES 599  Units: 7.5
MA, MSc Thesis
Grading: INP, COM, N, F

ES 600  Units: 1.5
Advanced Perspectives on Environmental Theories, Methods and Skills I
An advanced examination of contemporary theory and research methods at the forefront of environmental studies research. Emphasis will be given to the intersection of scientific, humanistic, and traditional knowledge. A 3-day field camp will precede weekly seminars in late August/early September (additional cost for field camp).
Note: Required core course.
Grading: INP, COM, N, F

ES 601  Units: 1.5
Advanced Perspectives on Environmental Theories, Methods and Skills II
Takes a deep approach to different research methods, including qualitative and quantitative approaches, their strengths and weaknesses, rationales for their application, and how they can be combined in interdisciplinary research at the highest levels. PhD students will develop effective written, oral and graphical communication skills and an understanding of the range of ways for gaining reliable knowledge.
Note: Required core course.
Grading: INP, COM, N, F

ES 603  Units: 3.0
PhD Research Colloquium
The Graduate Colloquium meets weekly from September to April. Papers are presented by graduate students, faculty, and visiting scholars. The colloquium exposes students to a wide range of conceptual and substantive issues that reflect the breadth and depth of environmental research. Attendance and participation in the colloquium is strongly encouraged throughout the degree program. Students receive 3 units of pass/fail credit during their first year. Students will be required to make presentations of their own research.
Note: Required core course.
Grading: INP, COM, N, F

ES 670  Units: 1.5
Field Study
Supervised field research or organized projects related to environmental problems, supplemented by directed individual study. A formal report is required.

ES 680  Units: 1.5
Seminar in Political Ecology
Note: May be taken more than once for credit in different topics to a maximum of 3 units.

ES 681  Units: 1.5
Seminar in Ethnecology
Note: May be taken more than once for credit in different topics to a maximum of 3 units.

ES 682  Units: 1.5
Seminar in Ecological Restoration
Note: May be taken more than once for credit in different topics to a maximum of 3 units.

ES 690  Units: 1.5
Directed Studies
Individual studies under the direct supervision of a faculty member. The content and methods of assessment must be approved by the School.

ES 693  Units: 3.0
PhD Candidacy Examination
PhD students will prepare a comprehensive reading list, a dissertation proposal, and two major papers (on topics relevant to the PhD research field), and will sit for an oral examination related to the reading list.
Grading: INP, COM, N, F

ES 699  Units: 21.0-30.0
PhD Dissertation
Grading: INP, COM, N, F

FORB
Forest Biology
Department of Biology
Faculty of Science

FORB 515  Units: 1.5
Advanced Experimental Mycology

FORB 527  Units: 1.5
Advanced Plant Biochemistry and Biochemical Ecology
See BIOL 458. An additional research paper or presentation is required.

FORB 538  Units: 1.5
Also BIOL 538
Nutrient Cycling and Prokaryotes
An introduction to prokaryotes (bacteria and archaea) and their role in nutrient cycling in forests, lakes and oceans. Diversity and evolution of populations and communities of prokaryotes and their role in the major biogeochemical cycles: carbon, nitrogen, sulfur. Genetic, biochemical, physiological and ecological aspects of processes such as nitrogen fixation and methanogenesis; design of experimental approaches to assess cycling of elements in forests, lakes and oceans by prokaryotes.
Notes:
• Credit will be granted for only one of FORB 538, BIOL 438, BIOL 538.
• A combined undergraduate and graduate course.
Please contact instructor for more information.

FORB 549  Units: 1.5
Individual Study in Forest Biology
Notes:
• Credit will be granted for only NUM of FORB 549, FORB 549A, FORB 549B, FORB 549C, FORB 549D, FORB 549E, FORB 549F.
• Pro Forma required.

FORB 549A  Units: 1.5
Tree Physiology
Notes:
• Credit will be granted for only NUM of FORB 549A, FORB 549, FORB 549B, FORB 549C, FORB 549D, FORB 549E, FORB 549F.
• Pro Forma required.

FORB 549B  Units: 1.5
Tree Molecular Biology
Notes:
• Credit will be granted for only NUM of FORB 549B, FORB 549, FORB 549A, FORB 549C, FORB 549D, FORB 549E, FORB 549F.
• Pro Forma required.

FORB 549C  Units: 1.5
Trees and Fungi
Notes:
• Credit will be granted for only NUM of FORB 549C, FORB 549, FORB 549A, FORB 549B, FORB 549D, FORB 549E, FORB 549F.
• Pro Forma required.

FORB 549D  Units: 1.5
Forest Soils
Notes:
• Credit will be granted for only NUM of FORB 549D, FORB 549, FORB 549A, FORB 549B, FORB 549C, FORB 549E, FORB 549F.
• Pro Forma required.
<table>
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<th>Course Code</th>
<th>Units</th>
<th>Course Title</th>
<th>Notes</th>
</tr>
</thead>
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<tr>
<td>FORB 549E</td>
<td>1.5</td>
<td>Forest Ecology Portfolio</td>
<td>Credit will be granted for only NUM of FORB 549E, FORB 549F, FORB 549A, FORB 549B, FORB 549C, FORB 549D, FORB 549F. Pro Forma required.</td>
</tr>
<tr>
<td>FORB 549F</td>
<td>1.5</td>
<td>Forest Genetics</td>
<td>Credit will be granted for only NUM of FORB 549F, FORB 549A, FORB 549B, FORB 549C, FORB 549D, FORB 549E. Pro Forma required.</td>
</tr>
<tr>
<td>FORB 560</td>
<td>1.5</td>
<td>Forest Biology Seminar</td>
<td>Required of all graduate students in forest biology every year (if taken in the same topic). May be taken more than once for credit in different topics. Note: Pro Forma required.</td>
</tr>
<tr>
<td>FORB 570</td>
<td>1.5</td>
<td>Advanced Topics in Forest Biology</td>
<td>A series of lectures and seminars examining subjects of current interest that focus on the adaptations of trees and their interaction with the forest environment. Notes: May be taken more than once for credit in different topics. Pro Forma required.</td>
</tr>
<tr>
<td>FORB 571</td>
<td>0.5 - 3.0</td>
<td>Forest Biology Workshop</td>
<td>A series of advanced workshops providing intensive theoretical and practical training in three thematic areas: plant and microbial molecular biology; forest ecology, physiology and genetics; and bioinformatics and biostatistics. Workshops are designed to provide the tools for experimental design to address biological questions at all levels from the genome to the whole organism. Notes: May be taken more than once for credit in different topics. Pro Forma required.</td>
</tr>
<tr>
<td>FRAN 501</td>
<td>1.0</td>
<td>Portfolio</td>
<td>The construction of a critically-framed, social, course-related set of activities students engage in while they fulfill the requirements of the M.A. Note: Content will vary according to the student's area of research concentration. Compulsory for all M.A. students. Prerequisite(s): FRAN 500. Grading: COM, N, F</td>
</tr>
<tr>
<td>FRAN 502</td>
<td>1.5</td>
<td>Studies in Applied Linguistics</td>
<td>Credit will be granted for only one of FRAN 502, FREN 502 (if taken in the same topic). May be taken more than once for credit in different topics. Variable content course.</td>
</tr>
<tr>
<td>FRAN 503</td>
<td>1.5</td>
<td>Studies in French Linguistics</td>
<td>Credit will be granted for only one of FRAN 503, FREN 503 (if taken in the same topic). May be taken more than once for credit in different topics. Variable content course.</td>
</tr>
<tr>
<td>FRAN 504</td>
<td>1.5</td>
<td>Studies in Culture and Society</td>
<td>Credit will be granted for only one of FRAN 504, FREN 504 (if taken in the same topic). May be taken more than once for credit in different topics. Variable content course.</td>
</tr>
<tr>
<td>FRAN 505</td>
<td>1.5</td>
<td>Studies in Literary Theory and Criticism</td>
<td>Credit will be granted for only one of FRAN 505, FREN 505 (if taken in the same topic). May be taken more than once for credit in different topics. Variable content course.</td>
</tr>
<tr>
<td>FRAN 506</td>
<td>1.5</td>
<td>Studies in French Literature and Culture</td>
<td>May be taken more than once for credit in different topics. Variable content course.</td>
</tr>
<tr>
<td>FRAN 515</td>
<td>1.5</td>
<td>Studies in Québec or French-Canadian Literatures</td>
<td>Credit will be granted for only one of FRAN 515, FREN 515 (if taken in the same topic). May be taken more than once for credit in different topics. Variable content course.</td>
</tr>
<tr>
<td>FRAN 517</td>
<td>1.5</td>
<td>Studies in Francophone African or Caribbean Literatures</td>
<td>Credit will be granted for only one of FRAN 517, FREN 517, FREN 518 (if taken in the same topic). May be taken more than once for credit in different topics. Variable content course.</td>
</tr>
<tr>
<td>FRAN 524</td>
<td>1.5</td>
<td>Studies in Transmediation</td>
<td>Credit will be granted for only one of FRAN 524, FREN 524 (if taken in the same topic). May be taken more than once for credit in different topics. Variable content course.</td>
</tr>
<tr>
<td>FRAN 525</td>
<td>1.5</td>
<td>Studies in Translation</td>
<td>Credit will be granted for only one of FRAN 525, FREN 525 (if taken in the same topic). May be taken more than once for credit in different topics. Variable content course.</td>
</tr>
<tr>
<td>FRAN 580</td>
<td>1.5</td>
<td>Special Topics</td>
<td>An examination of topics in an emerging field or one not covered in regular offerings. Notes: Credit will be granted for only one of FRAN 580, FREN 580 (if taken in the same topic). May be taken more than once for credit in different topics.</td>
</tr>
<tr>
<td>FRAN 590</td>
<td>1.5 or 3.0</td>
<td>Directed Studies</td>
<td>A course designed to enable students to pursue individual interests. Notes: Credit will be granted for only one of FRAN 590, FREN 590 (if taken in the same topic). May be taken more than once for credit in different topics. Pro Forma required.</td>
</tr>
<tr>
<td>FRAN 598</td>
<td>3.0</td>
<td>Reading List/Oral</td>
<td>A reading list compiled in consultation with advisers, a short critical paper, and an oral exam. Note: Credit will be granted for only one of FRAN 598, FREN 598. Grading: INP, COM, N, F</td>
</tr>
</tbody>
</table>
FRAN 599  Units: 6.0
Formerly: FREN 599
Thesis/Oral
Thesis (topic to be selected in consultation with Graduate Committee as the development of coursework) and oral examination.

Notes:
- Credit will be granted for only one of FRAN 599, FREN 599.
- Thesis option is by invitation of the Graduate Committee only.

Grading: INP, COM, N, F.

GEOG
Geography
Department of Geography
Faculty of Social Sciences

GEOG 500A  Units: 1.5
Formerly: part of 500
Geographical Research Approaches
Examines the diverse approaches to geographical research. Students will participate in weekly seminar discussions and develop a context paper that reviews the geographical literature in their research area. Students are also expected to attend the departmental lecture series as part of their course participation.

Notes:
- Credit will be granted for only one of GEOG 500A, GEOG 500.
- Required core course for all students.

GEOG 500B  Units: 1.5
Formerly: part of 500
Research Design in Geography
Examines key strategies of research design and professional development in Geography. Students will participate in weekly seminar discussions and develop a master’s research proposal or doctoral scoping document that advances their primary research concentration. Students are also expected to attend the departmental lecture series as part of their course participation.

Notes:
- Credit will be granted for only one of GEOG 500B, GEOG 500.
- Required core course for all students.

GEOG 518  Units: 1.5
Advanced Spatial Analysis and Spatial Statistics
An opportunity to gain theoretical and applied experience in spatial statistics and advanced geographical analysis. Topics include: point pattern analysis, areal data analysis and spatial autocorrelation, and geostatistics (i.e., variograms and kriging). Labs and a final project are designed to provide students with hands on experience applying theory to a range of data sets and to a data set selected by the student.

Note: Students who have equivalent GIS experience may request permission to register in the course.

Master’s Program students are required to take one of GEOG 518, GEOG 523, GEOG 524.

Prerequisite(s):
- GEOG 328 and GEOG 329; or
- permission of the department.

GEOG 520  Units: 1.5
Introductory GIS for Graduate Research
Provides Geographic Information Systems (GIS) training for graduate students using GIS as a research tool. Topics include: GIS data types and representation, map projections, importing and exporting spatial data, data integration, attribute and spatial queries. Students completing this course will acquire the skills needed to conduct their own research using GIS.

GEOG 523  Units: 1.5
Qualitative Methods in Human Geography
This course will explore a range of theoretical and methodological approaches in qualitative analysis as it applies to human geography. Students expect to gain expertise in understanding epistemological orientations of objectivism, constructionism and interpretivism. Identification of a range of traditional and innovative methodologies that students may consider for research projects such as: ethnography, phenomenology, discourse analysis, etc. Common interview strategies and data collection and analysis methods and approaches will be explored.

Note: Masters students are required to take one of GEOG 518, GEOG 523, GEOG 524 or another ‘methods-based’ course on recommendation of the supervisory committee as approved by the Graduate Adviser.

GEOG 524  Units: 1.5
Advanced Quantitative Methods
Examines the use and interpretation of selected multivariate statistics.

Note: Master’s Program students are required to take one of GEOG 518, GEOG 523, GEOG 524.

Prerequisite(s): 1.5 units of 200-level STAT course.

GEOG 536  Units: 1.5
Advanced Seminar in Human Geography
An advanced overview of theoretical approaches and major research paradigms in contemporary human geography.

GEOG 537  Units: 1.5
Advanced Seminar in Physical Geography
Selected research topics in biogeography, climatology, hydrology, geomorphology and soil science. Course content will vary annually, depending on graduate and faculty research interests. Seminars, faculty and guest lecturers and individual research projects will be utilized.

Note: Credit will be granted for only one of GEOG 537, GEOG 525.

GEOG 538  Units: 1.5
Advanced Seminar in Geomatics
Identifies and reviews knowledge and influential thought that have shaped and advanced the science of geomatics and associated technology through time. Students are introduced to the contemporary knowledge in geomatics, areas of application, unresolved questions and the present and future research agenda. Includes presentations by guest lecturers, readings and literature reviews.

GEOG 539  Units: 1.5
Advanced Seminar in Resource Management
A seminar dealing with resources management areas currently (or recently) being researched by members of the department. Topics will include: problem formulation, conceptual/literature background, fieldwork/data issues, analytical approaches and results/interpretation.

Note: Credit will be granted for only one of GEOG 539, GEOG 552.

GEOG 546  Units: 1.5
Advanced Topics in Human Geography
A special topics seminar in human and social geography. Topics vary by instructor.

Notes:
- May be taken more than once for credit in different topics.
- Not offered on a regular basis.

GEOG 547  Units: 1.5
Advanced Topics in Physical Geography
An examination of contemporary theoretical and/or applied research subjects in physical geography.

Notes:
- May be taken more than once for credit in different topics.
- Not offered on a regular basis.

GEOG 548  Units: 1.5
Advanced Topics in Geomatics
An examination of contemporary theoretical and/or applied research subjects in geomatics.

Notes:
- May be taken more than once for credit in different topics.
- Not offered on a regular basis.

GEOG 549  Units: 1.5
Advanced Topics in Resource Management
A seminar dealing with conceptual and research design issues involved with a project or problem area in resource management of interest to a faculty member.

Notes:
- May be taken more than once for credit in different topics.
- Not offered on a regular basis.

GEOG 590  Units: 1.5
Directed Studies in Geography

Note: MA, MSc and PhD students may only take one GEOG 590 course as part of their minimum program requirements. If they wish to take additional GEOG 590 courses these can be added to their minimum course load. Individual titles will be assigned to each numbered section of the course arranged by supervisory committees.

GEOG 591  Units: 1.5
Advanced Topics in Geography
Various advanced special topics courses spanning the discipline of Geography.

Note: Master’s and Doctoral students may take only one GEOG 591 toward their minimum course requirements but may take additional courses in different topics beyond their minimum load on the advice of their supervisory committee.
GMST 503 Units: 1.5
Teaching in the Disciplines of Germanic and Slavic Studies
A practice-based introduction to course design, teaching strategies, methodologies and assessment tools in the teaching areas of Germanic and Slavic Studies.
Note: Credit will be granted for only one of GMST 503, SLST 503.

GMST 505 Units: 1.5
Advanced German Language Study
Research topics may include German morphology, phonetics, lexicology and language acquisition.

GMST 509 Units: 1.5
Special Topics Field School
Exploration of cultural studies topics in European, German-speaking or Slavic countries. Promotes intercultural and experiential learning through joint workshops with European students and field research working at relevant cultural sites and with relevant artefacts. Topics vary.
Note: May be taken more than once for credit in different topics.

GMST 510 Units: 1.5
Formerly: GER 510
Studieis in Medieval Literature
Note: Credit will be granted for only one of GMST 510, GER 510.

GMST 511 Units: 1.5
Studies in Film
A critical analysis and study of films of the 20th and 21st century by German-speaking filmmakers.

GMST 520 Units: 1.5
Formerly: GER 520
17th-Century Cultural Studies
Note: Credit will be granted for only one of GMST 520, GER 530.

GMST 521 Units: 1.5
Studies in Germanic Literatures and Cultures
Examination of literary works and cultural processes in Austria, Germany and/or Switzerland.

GMST 530 Units: 1.5
Formerly: GER 530
18th-Century Cultural Studies
Note: Credit will be granted for only one of GMST 530, GER 530.

GMST 531 Units: 1.5
Studies in Germanic Cultural History
A cultural studies approach to texts, films, performances, media and material objects and spaces in German-speaking societies.

GMST 540 Units: 1.5
Formerly: GER 540
19th-Century Cultural Studies
Note: Credit will be granted for only one of GMST 540, GER 540.

GMST 550 Units: 1.5
Formerly: GER 550
20th-Century Cultural Studies I
Note: Credit will be granted for only one of GMST 550, GER 550.

GMST 551 Units: 1.5
Formerly: GER 551
20th-Century Cultural Studies II
Note: Credit will be granted for only one of GMST 551, GER 551.

GMST 560 Units: 1.5
Studies in New Media in Second Language Acquisition
Examines contemporary texts and visual productions by migrant and immigrant authors, filmmakers and performance artists in Germany, Austria and Switzerland. Topics may include minority literature and film, hybridity, diasporic and borderland writing.
Note: Credit will be granted for only one of GMST 560, ENGL 503 (if taken as section A05 in Jan-Apr 2010 or Sep-Dec 2013), GER 550 (if taken in Jan-Apr 2010).

GMST 565 Units: 1.5
Adorno, Benjamin and Frankfurt School Critical Theory
Explores Frankfurt School Critical Theory through the cultural context of Weimar modernism through the fascist period to Germany in the 1960s. Juxtaposes the theory with relevant examples from media, film, literature, avant-garde and popular music.
Note: Credit will be granted for only one of GMST 565, GMST 465.

GMST 570 Units: 1.5
Formerly: SLT 570
Studies in New Media in Second Language Acquisition
Critical examination of the current research on teaching a foreign language. Focus on learning and teaching outside of the language environment, foreign language learning theories, teaching methodologies and practices.
Note: Credit will be granted for only one of GMST 570, SLST 570.

GMST 580 Units: 1.5
Formerly: HSTR 450
HSTR 450, HIST 387, HIST 389 (if taken in the same topic).

GMST 583 Units: 1.5
Teaching About the Holocaust
Introduces teaching approaches, methodologies and scholarly discourses in Holocaust Education. Analyzes a broad range of primary and secondary sources (oral testimonies, literature, film, mixed media art, photography and graphic novels), and discusses how they can be used in various educational settings both in Europe and North America.

GMST 585 Units: 1.5
Holocaust and Memory Studies
Explores issues of memory from the perspective of both gender and genre. Examination of issues of memory and post-memory, aspects of “truth” and positionality in memoirs, letters, diaries and documentaries, as well as the fascination with the Holocaust and WWII as a site of cultural memory.
Note: Credit will be granted for only one of GMST 585, ENGL 503 (if taken as section A04 in Sep-Dec 2010), GER 550 (if taken as section A01 in Sep-Dec 2010 or Sep-Dec 2012).
## GMST 587 - GS 500

### GMST 587  
**Units:** 1.5  
**Practicum in Holocaust Studies**  
An individually designed creative project, internship, or archival research paper based on a hands-on approach to Holocaust Studies.

### GMST 589  
**Units:** 1.5  
**I-witness Field School**  
Analysis of the ways in which the Holocaust is memorialized in Central Europe. One week of coursework at UVic, followed by three weeks in Central Europe. Promotes intercultural learning through a variety of activities including joint workshops with European students and visits to memorial sites, museums and monuments of the Holocaust.

### GMST 590  
Formerly GER 590  
**Directed Studies I**  
**Units:** 1.5  
**Note:**  
- Credit will be granted for only one of GMST 590, GER 590.  
- Pro Forma required.

### GMST 591  
Formerly GER 591  
**Directed Studies II**  
**Units:** 1.5 or 3.0  
**Notes:**  
- Credit will be granted for only one of GMST 591, GER 591.  
- Pro Forma required.

### GMST 598  
**Units:** 4.5  
**Research Paper or Project**  
A major research paper under the guidance of a supervisor and committee member. Students can also opt to submit a visual arts project, a performance-based production, or a creative writing project.

### GMST 599  
Formerly GER 599  
**Thesis**  
**Units:** 6.0-9.0  
**Notes:**  
- Credit will be granted for only one of GMST 599, GER 599.  
- Pro Forma required.

### GRS 501  
**Greek Literature**  
**Units:** 3.0

### GRS 502  
**Formerly:** 541  
**Greek History**  
**Units:** 3.0

### GRS 503  
**Latin Literature**  
**Units:** 3.0

### GRS 504  
**Formerly:** 542  
**Roman History**  
**Units:** 3.0

### GRS 505  
**Formerly:** 543  
**Ancient Art and Archaeology**  
**Units:** 3.0

### GRS 506  
**Ancient Philosophy**  
**Units:** 3.0

### GRS 590  
**Formerly:** CLAS 590  
**Directed Individual Study**  
**Units:** 1.5-3.0  
**Notes:**  
- May be taken more than once for credit in different topics to a maximum of 4.5 units.  
- Pro Forma required.

### GRS 599  
**Formerly:** CLAS 599  
**MA Thesis**  
**Units:** 6.0-9.0  
**Note:**  
Before beginning the thesis the candidate must arrange with the supervisory committee and the Graduate Adviser the number of units to be assigned.  
**Grading:** INP, COM, N, F

### GRS 601A  
**Readings in Classical Literature (Greek)**  
**Units:** 1.5  
**Grading:** INP, COM, N, F

### GRS 601B  
**Readings in Classical Literature (Latin)**  
**Units:** 1.5  
**Grading:** INP, COM, N, F

### GRS 602A  
**Readings in Ancient History (Greek)**  
**Units:** 1.5  
**Grading:** INP, COM, N, F

### GRS 602B  
**Readings in Ancient History (Latin)**  
**Units:** 1.5  
**Grading:** INP, COM, N, F

### GRS 603  
**Reading in Classical Archaeology**  
**Units:** 1.5  
**Grading:** INP, COM, N, F

### GRS 605  
**Archaeological Methods & Theory**  
**Units:** 1.5

### GRS 611  
**Seminar in Classical Literature**  
**Units:** 3.0

### GRS 612  
**Seminar in Ancient History**  
**Units:** 3.0

### GRS 613  
**Seminar in Classical Archaeology**  
**Units:** 3.0

### GRS 621  
**Topical Field in Classical Literature**  
An intensive study of a particular field (author, genre, time period) in Greek or Roman literature.  
**Units:** 3.0

### GRS 622  
**Topical Field in Ancient History**  
An intensive study of a particular field (time period, historical event, historical figure, historical topic) in Greek or Roman history.  
**Units:** 3.0

### GRS 623  
**Topical Field in Classical Archaeology**  
An intensive study of a particular field (time period, archaeological event, archaeological topic) in Greek or Roman archaeology.  
**Units:** 3.0

### GRS 693  
**Candidacy Exam**  
Students enrol in 693 after completing their topical fields requirements (GRS 621, 622, or 623).  
**Grading:** INP, COM, N, F

### GRS 699  
**PhD Dissertation**  
**Grading:** INP, COM, N, F

### GS 500  
**Special Topics**  
**Units:** 1.5 or 3.0  
**Notes:**  
- May be taken more than once for credit in different topics.  
- Students must seek prior approval from their supervisory committee and graduate adviser for inclusion of this course in their graduate program, although they will be permitted to register in it as “extra” to their program.  
Proposals for these courses must include approval by the funding academic unit(s) before being submitted to the Dean of Graduate Studies for final approval. Proposal forms and detailed instructions are available through the Faculty of Graduate Studies.
GS 501  Units: 1.5 or 3.0  
Interdisciplinary Topics  
Courses may be offered between academic departments through the Faculty of Graduate Studies.  
Notes:  
• May be taken more than once for credit in different topics.  
• At least one of the offering departments must have a regular graduate program.  
Students must seek prior approval from their supervisory committee and graduate adviser for inclusion of this course in their graduate program, although they will be permitted to register in it as “extra” to their program.  
Proposals for these courses must include approval by the funding academic unit(s) before being submitted to the Dean of Graduate Studies for final approval. Proposals forms and detailed instructions are available through the Faculty of Graduate Studies.

GS 502  Units: to be determined  
Approved Exchange  
University of Victoria students attending courses under approved exchange agreements are required to register in this course to maintain their UVic registration status.  
Prerequisite(s): Permission of the faculty.  
Grading: INP, COM, N, F

GS 503  Units: 3.0  
Canadian Visiting Research Internship  
Research Internship for students in research activities under the supervision of University of Victoria faculty as part of a regular graduate degree program at their home university.  
Prerequisite(s): Permission of the faculty.  
Grading: INP, COM, N, F

GS 504  Units: 3.0  
International Visiting Research Internship  
Research Internship for students in research activities under the supervision of University of Victoria faculty as part of a regular graduate degree program at their home university.  
Prerequisite(s): Permission of the faculty.  
Grading: INP, COM, N, F

GS 505  Units: 1.5  
Multi-Disciplinary Research Internship  
Courses may be offered between academic units through the Faculty of Graduate Studies. This multi-disciplinary course provides supervised opportunities for students to work on applied research projects in collaboration with community organizations. Research questions and project topics posed by the community partners allow students to make a difference by addressing issues of concern in our society. Students will meet weekly as a group with the course instructor to discuss topics in civically-engaged research. Students will also meet individually with a supervisor from the community partner to plan and conduct a research project.  
Notes:  
• May be taken more than once for credit in different topics.  
• Students must seek prior approval from their supervisory committee and graduate adviser for inclusion of this course in their graduate program, although they will be permitted to register in it as “extra” to their program.  
Proposals for these courses must include approval by the funding academic unit(s) before being submitted to the Dean of Graduate Studies for final approval. Proposals forms and detailed instructions are available through the Faculty of Graduate Studies.

GS 601  Units: 0.0  
Jointly Supervised Individual PhD (Study At Partner Institution)  
Jointly Supervised Individual PhD (JSIP) students attending courses at approved partner institution(s) may be registered in this course to maintain their UVic registration status.  
Prerequisite(s): Admission to Jointly Supervised Individual PhD program.  
Grading: INP, COM, N, F

HINF 501  Units: 1.5  
Database Design  
Addresses the issues facing a database designer in the development of database applications appropriate for health data of various kinds. The content includes the elements of conceptual, implementation and physical database design to support health information systems.  
Note: Credit will be granted for only one of HINF 501, HINF 591 (if taken in the same topic).

HINF 503  Units: 1.5  
Research Methods in Health Informatics  
Examines a variety of study designs used in health informatics and outcomes research. These include experimental designs, observational and predictive studies, and qualitative inquiries. For each study design, appropriate analytical approaches and use of related software will be covered.
HINF 535 Units: 1.5
Health Information Standards
The study of health information standards being deployed and used in Canada and elsewhere. The standards to be examined include data, messaging and terminology standards such as meta-data schemas, HL7v2.X, HL7v3, HL7- CDA, ICD, LR, Dicom, ICD11, SNOMED CT, archetypes and nursing terminologies. Topics include: the nature of standards, their historical evolution and lifecycles for standards from development and distribution to maintenance. Emphasis will be on both the strategic relevance of and practical skills in working with standards.
Note: Credit will be granted for only one of HINF 535, HINF 591 (if taken in the same topic).

HINF 536 Units: 1.5
Controlled Terminology Standards
Examines the adoption and management of controlled terminologies in health care organizations. In terminology adoption it covers the planning, design, implementation, use, support and evaluation of terminologies in health IT applications. Terminology management covers the development, publishing, distribution and maintenance of terminology content, services and tools as organizational assets. Examples of terminologies to be covered include SNOMED CT, ICD-10-CM/PCS, LOINC, NDC/PDP/ATC/RTC and nursing terminologies.
Prerequisite(s): HINF 535.

HINF 537 Units: 1.5
Health Information Exchange Standards
Explores the appropriate use of controlled terminologies in the adoption of health information exchange (HIE) standards in health care organizations. Covers the entire standards cycle in planning, development, implementation, use, maintenance and evaluation of HIE standards, resources and tools. Examples of HIE standards to be covered include HL7, CDA, FHIR, IHE, templates, IHE integration profiles, clinical information models and openEHR.
Prerequisite(s): HINF 535.

HINF 550 Units: 1.5
Health Information Systems Design

HINF 551 Units: 1.5
Electronic Health Record
Describes the EHR initiatives underway in Canada and around the world. Assesses the compatibility of selected provincial initiatives with the federal level EHR intentions. Contrasts Canadian EHR experiences with those in the United States and other parts of the world. Identifies the issues and challenges to the wide spread introduction of EHRs across the Canadian health care system.

HINF 552 Units: 1.5
Evaluation of e-Health
Practical insights and understanding of an evaluation process for e-health initiatives. Includes assessing the effectiveness of e-health programs, evaluation design, data collection and analysis, as well as recommendations to assist decision-makers.

HINF 560 Units: 1.5
Patient Safety and Quality in Health Informatics
Presents how health information technologies, methods, approaches and techniques can improve the safety and quality of care. Focuses on the design, development, implement and maintain ensure ongoing systems safety. Challenges and issues in developing health care information systems that reduce errors and do not inadvertently introduce new errors will be discussed.
Note: Credit will be granted for only one of HINF 560, HINF 591 (if taken in the same topic).

HINF 561 Units: 1.5
Project Management in Health Informatics
An introduction to the essentials of project management and project lifecycle. Students will also cover information technology management and change management knowledge areas as related to healthcare information technology project management. Course topics include project lifecycle management, and all project processes including project charter, network diagramming, scope management, cost management, risk management, issue management, change management, scheduling and schedule management.

HINF 562 Units: 1.5
Procurement in Health Informatics
An introduction to the procurement process in health informatics. Covers key decision making aspects in the analysis and selection of health information systems. An important goal is to have students appreciate the dynamics and compromises which take place when a health care authority/facility selects information technology to primarily support its work practices.

HINF 563 Units: 1.5
Epidemiology in Health Services Management
An examination of the principles and methods of managerial epidemiology. Focuses on the design, implementation and evaluation of epidemiological analyses as applied to management in the health and social services, including the role of epidemiology in health services planning and policy formulation, health status indicators, outcome measurement and utilization analysis.

HINF 564 Units: 1.5
Health Systems Data Analysis
Examines the major health system databases and how, with record linkage, they can be analyzed to create pictures of system components for strategic planning, ongoing program management, monitoring and evaluation. By working with real data and real problems, students will learn basic tools and methods of health system data analysis.

HINF 572 Units: 1.5
Health Informatics: An Overview
An overview of current developments, issues and challenges in the emerging field of health informatics. Historical development of the field will be covered. Addresses basic foundations of health informatics, including the field's theoretical and methodological underpinnings. Considers a range of emerging applications in health informatics as well as approaches to understanding and evaluating these innovations.

HINF 573 Units: 1.5
Applied Biostatistics
A computer laboratory course primarily designed to provide practical experience in running SPSS software, interpreting output and presenting findings in Figures and Tables, suitable for publications or dissertations. Topics include: understanding statistics, data management and cleaning, recode and compute statements, scale development (Cronbach’s alpha), t-tests, chi-square analyses, correlation and logistic regression. The skills learned are those commonly used in quantitative research for health and social sciences.

HINF 574 Units: 1.5
Modelling and Simulation in Healthcare
Examines a range of systems modeling tools and methodologies for dealing with complex health care systems. Uses systems thinking as a means of tackling health care domain problems where it involves interaction of many professionals across large complex organization structure. Includes qualitative and quantitative model building.
Note: Credit will be granted for only one of HINF 574, HINF 591 (if taken in the same topic).

HINF 575 Units: 1.5
Human Factors in Healthcare
Introduces a framework for considering human factors in health informatics. Includes study of human-computer interaction in the design of a range of health informatics applications, user analysis, workflow modelling, consideration of methods of evaluating system usability and socio-technical aspects of successful healthcare system design. In addition, approaches to the design of systems that are safe and that reduce human error in healthcare will be emphasized.

HINF 580 Units: 1.5
Health Informatics Graduate Seminar
Key themes, issues and trends in Health Informatics. Consists of presentations by faculty and students on different Health Informatics subject areas.

HINF 590 Units: 1.5
Directed Studies in Health Informatics
An opportunity to pursue directed readings or a project under the supervision of a faculty member. Students may take this course up to a maximum of two times throughout the program.
Note: A student's supervisor can instruct only one directed studies course.

HINF 591 Units: 1.5
Topics in Health Informatics
Advanced topics in various areas of health informatics. Topics vary depending on faculty interests and availability. Students may take this course more than once.
HINF 597 Units: 1.5
Field Project in Health Informatics
The student is required to carry out an independent field project within his/her field of specialization under the supervision of a faculty member.

HINF 598 Units: 3.0
Research Project
The student is required to conduct a major research project in health informatics under the supervision of a faculty member.
Grading: INP, COM, N, F

HINF 599 Units: 6.0
Health Informatics Thesis
The thesis provides the student with the opportunity of conducting original research and interpretation of those results in Health Informatics.
Grading: INP, COM, N, F

HINF 602 Units: 1.5
Theories in Health Informatics
Advanced course on scientific theories relevant to health informatics. Faculty will assign key readings from health informatics, information systems, computer science and related disciplines. Students will demonstrate the principles of theory and conceptual framework development for use in research; present critical appraisals of conceptual models and theoretical frameworks used in existing research and apply them to health informatics; and may identify an appropriate theory or conceptual model to incorporate into their subsequent dissertation research.

HINF 603 Units: 1.5
Methods in Health Informatics
Advanced course on methods that are relevant to health informatics. Faculty will assign key readings drawn from health informatics, information systems, computer science and related disciplines. Students are expected to present and critique the papers and to discuss their relevance to the health informatics discipline. Through this course students may select a method for incorporation in their dissertation research.

HINF 680 Units: 1.5
Health Informatics PhD Seminar
Key themes, issues, and trends in Health Informatics. Consists of presentations by faculty and students on different Health Informatics subject areas.

HINF 693 Units: 3.0
Candidacy Exam
Students enroll in 693 for the duration of their preparations for their candidacy examinations. This begins at the time a student first enrolls in the PhD program and continues until candidacy requirements have been completed, normally at the end of first year of program.
Grading: INP, COM, N, F

HINF 699 Units: 30.0
Dissertation
Prerequisite(s): HINF 693.
Grading: INP, COM, N, F

HINF 597 - HSTR 505

HINF 597
Human and Social Development Interdisciplinary Courses
Faculty of Human and Social Development

HINF 580
Units: 1.5 or 3.0
Special Topics in Human and Social Development
A variable content course focusing on the policy, practice and/or research interests of faculty and students in the Faculty of Human and Social Development.
Note: May be taken more than once for credit in different topics.

HINF 590
Units: 1.5-3.0
Directed Studies
Individual studies under the direct supervision of one or more faculty members. The content, credit value and method of evaluation must be approved by the instructor and the Graduate Adviser prior to registering in this course.
Notes:
• May be taken more than once for credit in different topics.
• Pro Forma required.

HIST 500
Units: 1.5
Formerly: HIST 500
Historiography
Surveys the diverse answers given to the question, "What is history?" Exploration of the nature of historical knowledge through examination of major changes in theory, method and practice within the discipline. Students articulate their understanding of what being an historian entails. Specific topics covered may vary with the instructor.
Note: Credit will be granted for only one of HSTR 500, HIST 500

HIST 501
Units: 1.5
American History
New and classic readings in the history of Colonial America and the United States. Themes include indigenous societies, conquest, gender, religion, race, slavery, sexuality, politics and economy.
Note: Credit will be granted for only one of HSTR 501, HIST 501A, HSTR 501B, HIST 501A, HIST 501B

HIST 502A
Units: 1.5
Formerly: HIST 502A
Early Modern British History
Social, cultural and political history of early modern England, with an emphasis on the 17th century. Topics include crime and print culture, the British Civil Wars, the execution of Charles I, radical religion and the Interregnum, patriarchy and authority, class conflict and social hierarchy, parents and children, marriage and gender. Provides advanced students a survey of some of the main primary sources, important secondary works and historiographical issues.
Note: Credit will be granted for only one of HSTR 502A, HIST 502A.

HIST 502B
Units: 1.5
Formerly: HIST 502B
Modern British History
Social, cultural and political history of modern England. Topics may include government and the state, war and society, crime and punishment, monarchy, and elite and popular cultures. Provides advanced students a survey of some of the main primary sources, important secondary works and historiographical issues.
Note: Credit will be granted for only one of HSTR 502B, HIST 502B.

HIST 503A
Units: 1.5
Formerly: HIST 503A
Pre-1900 Canadian History
Provides an in-depth look at historical writing about pre-1900 Canada. Explores a variety of historical approaches and covers a number of major topics in the field. Topics may include indigenous histories, First Nations-settler encounters, politics and war, rural and urban experiences, liberalism and the state, and issues of race, religion, gender and class. Focus on historiographical and analytical skills.
Note: Credit will be granted for only one of HSTR 503A, HIST 503A.

HIST 503B
Units: 1.5
Formerly: HIST 503B
Post-1900 Canadian History
Examines historical writing about 20th century Canada, taking a chronological and thematic approach to recent literature. Topics may include: gender and the family, law and moral regulation, work, the environment, First Nations, politics and the state, nationalism and regionalism, and the experience and commemoration of war. Focus on historiographical and analytical skills.
Note: Credit will be granted for only one of HSTR 503B, HIST 503B.

HIST 504A
Units: 1.5
Formerly: HIST 504A
Europe, 1500-1800
Advanced study of the transformation of European society and culture during the early modern period. May take a topical or temporal focus.
Note: Credit will be granted for only one of HSTR 504A, HIST 504A.

HIST 504B
Units: 1.5
Formerly: HIST 504B
Europe since 1800
Advanced study of the transformation of European politics, society and culture in the modern era. May take a topical or temporal focus.
Note: Credit will be granted for only one of HSTR 504B, HIST 504B.

HIST 505
Units: 1.5
Formerly: HIST 514, HIST 514
World History
Examines recent contributions to the field of world history that allow both for focussed study of particular themes as well as the exploration of broader historiographical and theoretical debates. Students are encouraged to pursue their own particular interests in the subject.
Note: Credit will be granted for only one of HSTR 505, HIST 514, HIST 514.
HSTR 506  Units: 1.5
Formerly: HSTR 506A, 506B, HIST 506A, 506B
Medieval Europe
The major fields, sources and approaches in medieval history and
medievalism.
Note: Credit will be granted for only one of HSTR 506, HSTR 506A, HSTR 506B, HIST 506A, HIST 506B.

HSTR 508A  Units: 1.5
Also: HIST 465A
Formerly: HIST 508A
China in Local and Global History
Examines the local history and global networks of Tibet, Taiwan, and Hong Kong as well as the North China Plain (around Beijing), the Yangzi River Delta (around Shanghai), and the Pearl River Delta (around Canton) in China up to the mid-20th century. Emphasis on both local and global approaches to the six regions and to modern China beyond the limits of its nation-state history.
Note: Credit will be granted for only one of HSTR 508A, HSTR 465 (if taken as A01 in Jan-Apr 2015), HSTR 465A, HIST 439 (if taken as A01 in Sept-Dec 2011), HIST 508A.

HSTR 508B  Units: 1.5
Also: HIST 465A
Formerly: HIST 508B
A Global History of the Chinese Overseas
Examination of the Chinese diaspora in Southeast Asia, North America and other regions. Emphasis on the emigration from China, transformation of Chinatowns and development of global networks and transnational identities of the Chinese overseas. May include exploration of the diasporic experiences of Japanese, Korean, Indian and other Asian migrants in the global arena.
Note: Credit will be granted for only one of HSTR 508A, HSTR 465 (if taken as A01 in Jan-Apr 2015), HSTR 465A, HIST 439 (if taken as A01 in Sept-Dec 2011), HIST 508B.

HSTR 509A  Units: 1.5
Formerly: HIST 509A
Modern Japanese History
A survey of historiographical issues in Japan’s history from the end of Tokugawa to the present day. Analyzes the debates regarding peasant struggles in late Tokugawa, the impact of imperial arrivals in the 1850s, the nature of the Meiji restoration, migration and the rise of Japanese imperialism, and the national polity in the interwar years. Concludes with World War II and Japan’s occupation and subsequent economic transformations.
Note: Credit will be granted for only one of HSTR 509A, HIST 509A.

HSTR 509B  Units: 1.5
Formerly: HIST 509B
Migration, Race and Empire: Canada and the Transpacific
Brings together the histories of the Pacific and British Columbia using a translocal lens to analyze critically the intersections between race, colonialism and indigeneity from 1840 to the 1950s. Specific attention to Asian Canadian experiences on Vancouver Island and the impact of conflicting empires (British, American and Japanese). Utilizes critical anti-racist and feminist theory, and offers possibilities for innovative public history projects and community-based, action research.
Note: Credit will be granted for only one of HSTR 509B, HIST 509B.

HSTR 511  Units: 1.5
Formerly: HIST 511
Military History
Explores historiographical issues in military history. Themes include: technology and science and war; social and cultural history of war and society; the evolution of military organization and military techniques; intellectual and philosophical writing on war and armed forces; military intelligence; history of air power; and naval and maritime affairs.
Note: Credit will be granted for only one of HSTR 511, HIST 511.

HSTR 512  Units: 1.5
Formerly: HIST 512
Intellectual History
Advanced study of intellectual history. Topics to be explored may include the history of intellectual history, the similarities and differences between intellectual history and other genres of historical analysis, the rise of atheism and unbelief in early modern Europe and Enlightenment in Europe.
Note: Credit will be granted for only one of HSTR 512, HIST 512.

HSTR 513  Units: 1.5
Formerly: HIST 513
History of Gender, Sexuality and the Body
Explores selected topics in gender history, the history of sexuality and the history of the body and addresses current theoretical and methodological debates within these fields. Focus is primarily on American history, although Canadian and British readings may be included. Explores shifting understandings of femininity, masculinity and sexualities, as well as relationships between gender and class, race, ethnicity, religion, sexualities and the body.
Note: Credit will be granted for only one of HSTR 513, HIST 513.

HSTR 515A  Units: 1.5
Formerly: HIST 515A
Public History
Provides an overview of the branch of the discipline that involves communicating the past to non-academic audiences and analyzing applications of history outside of the university. Students meet practitioners of public history, making professional contacts and exploring non-academic applications of their training. Connected with these practicalexperiences are analytical questions: as they contemplate how history can be carried outside of the academy, students also discuss its purpose, importance and meaning.
Note: Credit will be granted for only one of HSTR 515A, HIST 515A, HIST 519 (if taken in the same topic).

HSTR 516  Units: 1.5
Formerly: HIST 516
Digital History
Explores specific computing applications used in the field known as “digital history,” and how digital history is changing the way we think about history and the past. Emphasis on student projects, student presentations and discussions of selected readings on the big questions facing the discipline, including “Is this really a revolution?”
Note: Credit will be granted for only one of HSTR 516, HIST 516.

HSTR 517  Units: 1.5
Formerly: HIST 517
Cultural History and Theory
Explores the theory and practice of cultural history, focusing on culture as topic and as methodology. Students examine the approaches of cultural historians who either seek out new sources, or read traditional sources against the grain to provide answers to new questions. Themes may include: ritual, symbolism and meaning; objects and representation; colonialism and difference; popular culture, storytelling and language. Time period and geographical focus vary with the research area of the instructor.
Note: Credit will be granted for only one of HSTR 517, HIST 517.

HSTR 518  Units: 1.5
Formerly: HIST 518
Political History
Examines the evolution of the state and the negotiation of power in North America. Topics may include federalism, party and bureaucratic developments, mass media and politics, and political leadership.
Note: Credit will be granted for only one of HSTR 518, HIST 518.

HSTR 519  Units: 1.5
Formerly: HIST 519
Special Topics
Notes:
• Credit will be granted for only one of HSTR 519, HIST 519 if taken in the same topic.
• May be taken more than once for credit in different topics with permission of the department.

HSTR 521A  Units: 1.5
Formerly: HIST 521A, 521
Medieval Law and Administration
The origins and development of Western European civil, canon and common law. The history of law and jurisprudence, of the relationships of law and society and of the role of law in the growth of governance and order. Direct work on legal texts and records.
Note: Credit will be granted for only one of HSTR 521A, HIST 521, HIST 521.

HSTR 521B  Units: 1.5
Formerly: HIST 521, 521
British Legal History
Social, cultural and political history of the law in England. Topics include crime, policing, the administration of justice, and punishments. Intended to give advanced students a general introduction to some of the main primary sources, important secondary works and historiographical issues.
Note: Credit will be granted for only one of HSTR 521B, HIST 521, HIST 521.
HSTR 522  Units: 1.5  
Formerly: HIST 522  
The Social History of Religion  
Explores selected topics in the social history of religion in the context of Canada, the United States and Britain in the nineteenth and twentieth centuries. Focuses on Christianity, but also touches on other faith traditions. Topics to be explored may include popular religion, religion and mass culture, spirituality, colonialism, secularization, immigration and assimilation, religion and health, religious conflicts and prejudices and issues of class, race, gender, sexuality and family life as they relate to religion.  
Note: Credit will be granted for only one of HSTR 522, HIST 522.

HSTR 523  Units: 1.5  
Formerly: HIST 523  
History of Science and Technology  
Advanced study of the history of science. Topics to be explored may include the history of the history of science, the Scientific Revolution, the rise of the ‘science of man’ in early modern Europe, science and Enlightenment, science and religion, and science and society in Britain, 1600-1945. May include topics in the history of technology.  
Note: Credit will be granted for only one of HSTR 523, HIST 523.

HSTR 526  Units: 1.5  
Formerly: HIST 526  
Ethnohistory  
Examines the major issues facing ethnohistorians generally but with an emphasis on ethnohistory with respect to Indigenous peoples.  
Note: Credit will be granted for only one of HSTR 526, HIST 526.

HSTR 528  Units: 1.5  
Formerly: HIST 528  
Field School in Ethnohistory  
Experiential and community-based. Students move to the host First Nation’s community to work on research the community has prioritized. Four weeks are spent in the community followed by four weeks to complete the research project.  
Note: Credit will be granted for only one of HSTR 528, HIST 528.

HSTR 550  Units: 1.5  
Formerly: HIST 550  
Non-Thesis MA Historiography/Research Methods  
Note: Credit will be granted for only one of HSTR 550, HIST 550.

HSTR 590  Units: 1.5 or 3.0  
Formerly: HIST 590  
Directed Reading Geographical Field  
Notes:  
• Credit will be granted for only one of HSTR 590, HIST 590 (if taken in the same topic).  
• May be taken more than once for credit in different topics with permission of the department.

HSTR 591  Units: 1.5 or 3.0  
Formerly: HIST 591  
Directed Reading - Topical Field  
Notes:  
• Credit will be granted for only one of HSTR 591, HIST 591 (if taken in the same topic).  
• May be taken more than once for credit in different topics with permission of the department.

HSTR 598  Units: 6.0  
Formerly: HIST 598  
MA Major Research Paper  
Note: Credit will be granted for only one of HSTR 598, HIST 598.  
Grading: INP, COM, N, F

HSTR 599  Units: 9.0-10.5  
Formerly: HIST 599  
MA Thesis  
Note: Credit will be granted for only one of HSTR 599, HIST 599.  
Grading: INP, COM, N, F

HSTR 600  Units: 1.5  
Historiography for Dissertation

HSTR 601  Units: 1.5  
Advanced Topics in American History

HSTR 602A  Units: 1.5  
Advanced Topics in Early Modern British History

HSTR 602B  Units: 1.5  
Advanced Topics in Modern British History

HSTR 603A  Units: 1.5  
Advanced Topics in Pre-1900 Canadian History

HSTR 603B  Units: 1.5  
Advanced Topics in Post-1900 Canadian History

HSTR 604A  Units: 1.5  
Advanced Topics in Early Modern Europe

HSTR 604B  Units: 1.5  
Advanced Topics in Modern Europe

HSTR 605  Units: 1.5  
Advanced Topics in World History

HSTR 608A  Units: 1.5  
Advanced Topics in Chinese History

HSTR 608B  Units: 1.5  
Advanced Topics in the Chinese Diaspora

HSTR 609  Units: 1.5  
Advanced Topics in Japanese History

HSTR 611  Units: 1.5  
Advanced Topics in Military History

HSTR 613  Units: 1.5  
Advanced Topics in Gender and Sexuality

HSTR 615  Units: 1.5  
Advanced Topics in Public History

HSTR 616  Units: 1.5  
Advanced Topics in Digital History

HSTR 617  Units: 1.5  
Advanced Topics in Cultural History and Theory

HSTR 618  Units: 1.5  
Advanced Topics in Political History

HSTR 622  Units: 1.5  
Advanced Topics in Religious History

HSTR 623  Units: 1.5  
Advanced Topics in Science and Technology

HSTR 626  Units: 1.5  
Advanced Topics in Ethnohistory

HSTR 690  Units: 1.5  
Directed Study Geographical Field  
Note: May be taken more than once for credit in different topics with permission of the department.

HSTR 691  Units: 1.5  
Directed Study Topical Field  
Note: May be taken more than once for credit in different topics with permission of the department.
HSTR 693 - IGOV 575

HSTR 693  Units: 3.0
Formerly: HIST 693
PhD Candidacy Examinations
Students enrolling in 693 for the duration of their preparations for their candidacy examinations. This begins at the time a student first enrols in the PhD program and continues until candidacy requirements have been completed.
Note: Credit will be granted for only one of HSTR 693, HIST 693.
Grading: INP, COM, N, F

HSTR 695  Units: 1.5
Dissertation Proposal
Grading: INP, COM, N, F

HSTR 699  Units: 25.5 - 36.0
Formerly: HIST 699
PhD Thesis
Note: Credit will be granted for only one of HSTR 699, HIST 699.
Prerequisite(s): HSTR 693.
Grading: INP, COM, N, F

IED
Indigenous Education
Faculty of Education

IED 510  Units: 1.5
Leadership and Governance for Language Revitalization
Students will develop their understanding of leadership skills and processes necessary to implement successful language and culture programs. Topics will include: planning, proposal writing, budgeting, administration, project management, as well as the place & effect of language policies at the provincial, national, international levels, as well as tribal/Indigenous governance models.

IED 520  Units: 1.5
Program Design and Curriculum Development in Indigenous Language Revitalization
Leading practices in program design and curriculum development for Indigenous language revitalization will be examined. Processes through which competence in listening, speaking, reading and writing is developed will be explored. Analysis of program design, curriculum development and their implementation to promote language and culture revitalization will be addressed.

IED 530  Units: 1.5
Indigenous Research Methods
Indigenous methodologies, research practices and protocols are examined including specific topics such as research ownership, research process and outcomes. Approaches to research that are culturally respectful, ethical, and reciprocal will be explored.

IED 531  Units: 1.5
Also: LING 531
Researching Community-Based Initiatives in Language Revitalization
An examination of language research in Indigenous communities. This course is project-based and introduces students to a range of issues in community-based language revitalization research. The diversity of languages and of community approaches will be highlighted. Note: Credit will be granted for only one of IED 531, LING 531.

IED 572  Units: 1.5
SKILLS: Indigenous Epistemologies
An exploration of the natural laws of the world from an Indigenous perspective. Critical elements of examination will include: utilizing community stories (with permission) to enhance language learning opportunities and curriculum development; reinforcing the value of the knowledge that students bring to the classroom from their home communities; living in a bi-cultural, and the cultural effects of language and culture loss - creating places for healing.

IED 597  Units: 1.5
Comprehensive Examination
A required element of non-thesis graduate students. Areas of examination and examination format, either written or oral, will be determined by the supervisory committee in consultation with the candidate.
Grading: INP, COM, N, F

IED 598  Units: 3.0
Major Project
Evidence of independent research work will be presented in the form of an extended paper, project, or report as determined with the supervisory committee. Students will design their project in partnership with an Indigenous community or Indigenous organization. The project will enhance the community or organization’s capacity to support language revitalization while providing an opportunity for students to approach the real world challenges of language revitalization in an Indigenous context.
Grading: INP, COM, N, F

IED 599  Units: 4.5
Thesis
Research on a topic chosen in consultation with the student’s supervisory committee.
Grading: INP, COM, N, F

IGOV 530  Units: 1.5
Indigenous Research Methods
A perspective on the methods and approaches used in the study of Indigenous issues, providing the basic tools and methods used for conducting applied research, as well as an exploration of the practical, ethical, and political issues involved in conducting research in Indigenous communities.
Prerequisite(s): Admission to MA program in Indigenous Governance.

IGOV 540  Units: 1.5
Indigenous Resurgence
An introduction to the spiritual and cultural foundations of Indigenous governance systems, and an examination of how traditional values, principles and worldviews shape Indigenous thought and action in resistance to colonialism.
Prerequisite(s): Admission to MA program in Indigenous Governance.

IGOV 550  Units: 1.5
Indigenous Peoples and Self Determination
A focused analysis of current processes to decolonize the relationships between Indigenous peoples and states (as well as other colonial entities), with particular emphasis on questions of land tenure, sovereignty, nationhood, self-determination, and treaty-making in a comparative context.
Prerequisite(s): Admission to MA program in Indigenous Governance.

IGOV 560  Units: 1.5
Indigenous Peoples and Globalization
An examination of how processes of globalization and neo-colonialism impact Indigenous peoples worldwide and strategies Indigenous peoples around the world are using to confront these economic, social, political and cultural pressures in order to regenereate their communities.
Prerequisite(s):
  • Admission to MA program in Indigenous Governance; or
  • permission of the faculty.

IGOV 570  Units: 1.5
Indigenous Women and Resistance
An analysis of the strategies Indigenous women engage in resistance to colonialism with particular attention paid to women who root their resistance in traditional Indigenous philosophies, governance practices and ways of being.
Prerequisite(s):
  • Admission to MA program in Indigenous Governance; or
  • permission of the faculty.

IGOV 575  Units: 3.0
Formerly: 580
Mentorship
Mentorships provide students with counselling and advice to support personal well-being, professional development and academic performance, and consists of regular writing assignments and small group meetings with their faculty supervisor throughout the academic year.
Note: Credit will be granted for only one of IGOV 575, IGOV 580.
Prerequisite(s): Admission to MA program in Indigenous Governance.
Pre- or Corequisite(s): All of IGOV 520, IGOV 530, IGOV 540, IGOV 550.

SKÁLs: Indigenous Epistemologies
Units: 1.5
A perspective on the methods and approaches used in the study of Indigenous issues, providing the basic tools and methods used for conducting applied research, as well as an exploration of the practical, ethical, and political issues involved in conducting research in Indigenous communities.
Prerequisite(s): Admission to MA program in Indigenous Governance.

Indigenous Language Revitalization
Researching Community-Based Initiatives in Language Revitalization
An examination of language research in Indigenous communities. This course is project-based and introduces students to a range of issues in community-based language revitalization research. The diversity of languages and of community approaches will be highlighted. Note: Credit will be granted for only one of IED 531, LING 531.

Indigenous Governance
Faculty of Human and Social Development

IGOV 520  Units: 1.5
Indigenous Governance
A critical reading of important works in the field, an intellectual framework for understanding key questions and contemporary conflicts within Indigenous societies, and a critical perspective of the relationship between Indigenous peoples and the state.
Prerequisite(s): Admission to MA program in Indigenous Governance.
IGOV 590 - Units: 1.5
Directed Readings
Individually structured reading or research seminars under the direction of a participating faculty member, allowing students to pursue their interests in topics related to Indigenous governance but not specifically covered in the seminars.

Note: May not be taken more than once for credit.

IGOV 595 - Units: 1.5
Special Topics in Indigenous Governance
Seminars focusing on issues of particular interest and relevance.

Note: May be taken more than once for credit in different topics.

Prerequisite(s):
- Admission to MA program in Indigenous Governance; or
- permission of the faculty.

IGOV 598 - Units: 4.5 or 6.0
Community Governance Project
Graduate course in the Indigenous Governance program administered by the Faculty of Graduate Studies. Projects are geared toward providing a practical learning experience and opportunity for students to face the real world challenges of governance in an Indigenous context. They also serve as a crucial function for affiliated communities in providing access to the University’s resources and expertise through the students’ participation in projects to enhance the community’s governance capacity.

Community governance project interns will work on a designated research or policy development project in an Indigenous organization, under the direction of a project management team that includes community leaders and IGOV faculty. Internship placements must be approved by the Director, and will typically involve 100 hours of work in the community and the completion of a comprehensive report based on the internship experience.

Note: Only students who entered the MA program prior to September 2009 need to register in the 4.5 unit section of IGOV 598 (requires permission of the department). Students who start their MA program on or after September 2009 need to register in the 6.0 unit section of IGOV 598.

Prerequisite(s): All of IGOV 520, IGOV 530, IGOV 540, IGOV 550, IGOV 575.
Grading: INP, COM, N, F

IGOV 599 - Units: 6.0
Thesis
Grading: INP, COM, N, F

IN

Indigenous Nationhood
Faculty of Graduate Studies, Faculty of Human and Social Development, Faculty of Law, and Faculty of Social Sciences

IN 601 - Units: 1.5
Foundations of Indigenous Nationhood
An examination of key issues and debates, methods and frameworks in the study of Indigenous Nationhood. Includes a survey of the major literature in the fields of Indigenous politics, governance and law. This is a required foundational course for all IN Graduate Certificate students.

IN 697 - Units: 1.5
Capstone Experience
An integration and synthesis of concepts, principles and practices discussed throughout the program. Students must be able to demonstrate their knowledge of the field of Indigenous Nationhood through either a comprehensive examination of Indigenous Nationhood or a committee-approved internship, or other community-based work/service-integrated learning opportunity approved by the Program committee.
Grading: COM, N, F

IN 699 - Units: 1.5-12.0
Thesis
Grading: INP, COM, N, F

INTD

Interdisciplinary Program
Faculty of Graduate Studies

INTD 580 - Units: 1.5-3.0
Directed Studies for INTD Master’s Program
Note: May be taken more than once for credit in different topics.

INTD 599 - Units: 4.5-12.0
Thesis
Grading: INP, COM, N, F

ITAL

Italian
Department of Hispanic and Italian Studies
Faculty of Humanities

ITAL 503 - Units: 1.5
Core Reading List Course II
Also: SPAN 503
Grading: INP, COM, N, F

ITAL 505 - Units: 1.5
Medieval Literature
Also: SPAN 505

ITAL 507 - Units: 1.5
Renaissance and Baroque Literature
Also: SPAN 507

ITAL 590 - Units: 1.5 or 3.0
Directed Studies
Also: SPAN 590

ITAL 598 - Units: 3.0
Master’s Essay
Grading: INP, COM, N, F

ITAL 599 - Units: 6.0
MA Thesis/Oral
Grading: INP, COM, N, F

LAW

Law
Faculty of Law

LAW 501 - Units: 1.5
Graduate Seminar in Law and Society
A critical introduction to theoretical perspectives on Law and Society. Designed to expose students to a range of substantive issues in advanced legal research, as a foundation for the development of each student’s thesis research.
Prerequisite(s): Admission to a graduate program in Law.

Note: May be taken more than once for credit in different topics.

INTD 680 - Units: 1.5-3.0
Directed Studies for INTD Doctoral Program

INTD 693 - Units: 3.0
PhD Candidacy Examination
Corequisite(s): INTD 699.
Grading: INP, COM, N, F

INTD 699 - Units: 15.0-30.0
Dissertation
Pre- or Corequisite(s): INTD 693.
Grading: INP, COM, N, F

INTD 693 - Units: 3.0
PhD Candidacy Examination
Corequisite(s): INTD 699.
Grading: INP, COM, N, F

INTD 699 - Units: 15.0-30.0
Dissertation
Pre- or Corequisite(s): INTD 693.
Grading: INP, COM, N, F

INP, COM, N, F

ITAL 503 - Units: 1.5
Core Reading List Course II
Also: SPAN 503
Grading: INP, COM, N, F

ITAL 505 - Units: 1.5
Medieval Literature
Also: SPAN 505

ITAL 507 - Units: 1.5
Renaissance and Baroque Literature
Also: SPAN 507

ITAL 590 - Units: 1.5 or 3.0
Directed Studies
Also: SPAN 590

ITAL 598 - Units: 3.0
Master’s Essay
Grading: INP, COM, N, F

ITAL 599 - Units: 6.0
MA Thesis/Oral
Grading: INP, COM, N, F

LAW

Law
Faculty of Law

LAW 501 - Units: 1.5
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Prerequisite(s): Admission to a graduate program in Law.

Note: May be taken more than once for credit in different topics.

INTD 680 - Units: 1.5-3.0
Directed Studies for INTD Doctoral Program

INTD 693 - Units: 3.0
PhD Candidacy Examination
Corequisite(s): INTD 699.
Grading: INP, COM, N, F

INTD 699 - Units: 15.0-30.0
Dissertation
Pre- or Corequisite(s): INTD 693.
Grading: INP, COM, N, F

INTD 693 - Units: 3.0
PhD Candidacy Examination
Corequisite(s): INTD 699.
Grading: INP, COM, N, F

INTD 699 - Units: 15.0-30.0
Dissertation
Pre- or Corequisite(s): INTD 693.
Grading: INP, COM, N, F

INP, COM, N, F

ITAL 503 - Units: 1.5
Core Reading List Course II
Also: SPAN 503
Grading: INP, COM, N, F

ITAL 505 - Units: 1.5
Medieval Literature
Also: SPAN 505

ITAL 507 - Units: 1.5
Renaissance and Baroque Literature
Also: SPAN 507

ITAL 590 - Units: 1.5 or 3.0
Directed Studies
Also: SPAN 590

ITAL 598 - Units: 3.0
Master’s Essay
Grading: INP, COM, N, F

ITAL 599 - Units: 6.0
MA Thesis/Oral
Grading: INP, COM, N, F

LAW

Law
Faculty of Law

LAW 501 - Units: 1.5
Graduate Seminar in Law and Society
A critical introduction to theoretical perspectives on Law and Society. Designed to expose students to a range of substantive issues in advanced legal research, as a foundation for the development of each student’s thesis research.
Prerequisite(s): Admission to a graduate program in Law.

Note: May be taken more than once for credit in different topics.

INTD 680 - Units: 1.5-3.0
Directed Studies for INTD Doctoral Program

INTD 693 - Units: 3.0
PhD Candidacy Examination
Corequisite(s): INTD 699.
Grading: INP, COM, N, F

INTD 699 - Units: 15.0-30.0
Dissertation
Pre- or Corequisite(s): INTD 693.
Grading: INP, COM, N, F

INTD 693 - Units: 3.0
PhD Candidacy Examination
Corequisite(s): INTD 699.
Grading: INP, COM, N, F

INTD 699 - Units: 15.0-30.0
Dissertation
Pre- or Corequisite(s): INTD 693.
Grading: INP, COM, N, F

INP, COM, N, F

ITAL 503 - Units: 1.5
Core Reading List Course II
Also: SPAN 503
Grading: INP, COM, N, F

ITAL 505 - Units: 1.5
Medieval Literature
Also: SPAN 505

ITAL 507 - Units: 1.5
Renaissance and Baroque Literature
Also: SPAN 507

ITAL 590 - Units: 1.5 or 3.0
Directed Studies
Also: SPAN 590

ITAL 598 - Units: 3.0
Master’s Essay
Grading: INP, COM, N, F

ITAL 599 - Units: 6.0
MA Thesis/Oral
Grading: INP, COM, N, F

LAW

Law
Faculty of Law

LAW 501 - Units: 1.5
Graduate Seminar in Law and Society
A critical introduction to theoretical perspectives on Law and Society. Designed to expose students to a range of substantive issues in advanced legal research, as a foundation for the development of each student’s thesis research.
Prerequisite(s): Admission to a graduate program in Law.

Note: May be taken more than once for credit in different topics.

INTD 680 - Units: 1.5-3.0
Directed Studies for INTD Doctoral Program

INTD 693 - Units: 3.0
PhD Candidacy Examination
Corequisite(s): INTD 699.
Grading: INP, COM, N, F

INTD 699 - Units: 15.0-30.0
Dissertation
Pre- or Corequisite(s): INTD 693.
Grading: INP, COM, N, F

INTD 693 - Units: 3.0
PhD Candidacy Examination
Corequisite(s): INTD 699.
Grading: INP, COM, N, F

INTD 699 - Units: 15.0-30.0
Dissertation
Pre- or Corequisite(s): INTD 693.
Grading: INP, COM, N, F

INP, COM, N, F
LAW 502  Units: 1.5
Graduate Seminar in Applied Legal Methodology
A review of methodological approaches to advanced legal research, particularly as applied to the diverse research interests of seminar participants. Intended to support each student’s implementation of their research question through presentation, commentary and refinement.
Prerequisite(s): Admission to a graduate program in Law.

LAW 503  Units: 1.5
Introduction to Syntax
A graduate level introduction to the major subfields of syntax, reflecting recent developments in syntactic theory.

LAW 504  Units: 1.5
Current Issues in Morphology
Recent developments in morphological theory.
Note: May be taken more than once for credit to a maximum of 3 units.

LAW 505  Units: 1.5
Introduction to Phonology
A graduate level introduction to the major subfields of Phonology, reflecting recent developments in phonological theory.

LAW 507  Units: 1.5
Semantics
Recent developments in semantic theory.

LAW 508  Units: 1.5 or 3.0
Current Issues in Generative Grammar
Selected topics reflecting ongoing work in generative theory.
Note: May be taken more than once for credit.

LAW 509  Units: 1.5
Sociolinguistics
Selected topics in recent research related to language variation such as bilingualism, language and gender, language attitudes, social dialects. Each registrant will select a particular topic for individual research.
Note: May be taken more than once for credit in different topics to a maximum of 3 units.

LAW 510  Units: 1.5-3.0
Current Issues in Phonology
An examination of recent developments in phonological theory.
Note: May be taken more than once for credit.

LAW 517  Units: 1.5
Experimental Phonetics Laboratory
Review of recent research in the phonetic and acoustic analysis of speech and in spoken language processing. A focus on experimental procedures designed to allow students to pursue individual topics in speech research.
Note: May be taken more than once for credit to a maximum of 3 units.

LAW 520  Units: 1.5-3.0
Pacific Rim Languages
An overview of the structure of selected Indigenous languages spoken around the Pacific Rim.
Note: May be taken more than once for credit to a maximum of 3 units.

LAW 527  Units: 1.5
Topics in Historical and Comparative Linguistics
Study of principles of historical and comparative linguistics.
Note: May be taken more than once for credit to a maximum of 3 units.

LAW 531  Units: 1.5
Also: IED 531
Researching Community-Based Initiatives in Language Revitalization
An examination of language research in Indigenous communities. This course is project-based and introduces students to a range of issues in community-based language revitalization research. The diversity of languages and of community approaches will be highlighted.
Note: Credit will be granted for only one of LING 531, IED 531.

LAW 560  Units: 1.5
Also: ANTH 561
Linguistic Anthropology
Selected topics in Linguistic Anthropology.
Note: Credit will be granted for only one of LING 560, ANTH 560, ANTH 561.

LAW 570  Units: 1.5-3.0
Also: PSYC 570
Psycholinguistics
A seminar offered in collaboration with the department of Psychology. Selected topics of interest in understanding the comprehension and production of natural language are examined. The most recent topics have been word recognition and lexical access, sentence processing, discourse analysis, linguistic inference and the resolution of ambiguity, and the development of cognitive science interests in reasoning and discourse processes as well as the structure of mental representations.

LAW 572  Units: 1.5
The Structure of the Lexicon
An introduction to the study of representations of lexical forms, specifically as they relate to psycholinguistic dimensions of the mental lexicon. Issues related to the structure of both the first and second language mental lexicons will be examined.

LAW 573  Units: 1.5
Second Language Acquisition Theory and Research
A survey and critical examination of the research on second language acquisition (SLA). Current issues and research findings related to the teaching and learning of second languages inside second language classrooms are also discussed.

LAW 574  Units: 1.5
Seminar in Applied Linguistics
A seminar on issues in applied linguistics, including an overview of second language learning and teaching principles, TESL/TEFL methodology, language situation contacts and multilingualism. Each participant selects a topic area of individual interest to report to the seminar.

LING 502  Units: 1.5
Linguistic Field Methods
An introduction to the methods of data analysis, organization, and collection required in the field situation. Language of consultant may vary from year to year. The department has a particular interest in North American Native Languages.

LING 500  Units: 1.5
LING 501  Units: 1.5
LING 502  Units: 1.5
LING 503  Units: 1.5
LING 504  Units: 1.5
LING 505  Units: 1.5
LING 507  Units: 1.5
LING 508  Units: 1.5 or 3.0
LING 509  Units: 1.5
LING 510  Units: 1.5-3.0
LING 512  Units: 1.5
LING 517  Units: 1.5
LING 520  Units: 1.5-3.0
LING 527  Units: 1.5
LING 531  Units: 1.5
LING 560  Units: 1.5
LING 570  Units: 1.5-3.0
LING 572  Units: 1.5
LING 573  Units: 1.5
LING 574  Units: 1.5
LING 598  Units: 1.5
LING 599  Units: 9.0
LING 600  Units: 1.5
LING 610  Units: 1.5
LING 620  Units: 1.5
LING 630  Units: 1.5
LING 640  Units: 1.5
LING 650  Units: 1.5
LING 660  Units: 1.5
LING 670  Units: 1.5
LING 680  Units: 1.5
LING 690  Units: 1.5-3.0
LING 691  Units: 1.5
LING 692  Units: 1.5
LING 693  Units: 3.0
LING 694  Units: 3.0
LING 695  Units: 3.0
LING 696  Units: 3.0
LING 697  Units: 3.0
LING 698  Units: 3.0
LING 699  Units: 21.0-36.0
LING 700  Units: 1.5
LING 575  Units:  1.5  
Research Methods in Applied Linguistics  
Designed to assist graduate students in developing skills necessary to design and implement research in the field of second language (SL) acquisition and applied linguistics. Examines various methods for conducting research, types of research designs, and the steps involved in planning and executing SL research projects. Students also develop skills in reading and evaluating published research in second language acquisition and applied linguistics.

LING 576  Units:  1.5  
Form-Focused Instruction and Second Language Development  
Through a combination of reading and critical analysis of research studies, this course examines the current theoretical perspectives and research findings on the various roles that form-focused instruction and corrective feedback play in second language development.

LING 577  Units:  1.5  Hours:  3.0  
The Global Context of Language Revitalization  
Investigates language shift, maintenance, reclamation and revitalization. Topics may include global, social, cultural, economic, political, and historical factors involved in language use, and Indigenous and non-Indigenous language contexts around the world.

LING 578  Units:  1.5  
Sociocultural Theory and Second Language Learning  
Designed to introduce graduate students to aspects of second language learning from the perspectives of sociocultural theory and cognitive development. Students will become familiar with key concepts and principles of sociocultural theory, such as mediation, activity theory, the genetic method, internalization, the zone of proximal development, private speech, and scaffolding; examine the growing body of research in language learning and teaching from this theoretical perspective; and consider its implications for language pedagogy.

LING 580  Units:  1.5 or 3.0  
Linguistics Seminar  
The contents of this course will vary. 
Note: May be taken more than once for credit.

LING 586  Units:  1.5  
Sound Structures for Applied Linguistics  
An investigation of the relationship between sound structures (as understood through phonetic theory, phonological theory, speech analysis) and applied linguistics (especially pronunciation teaching and second language acquisition). 
Note: May be taken more than once for credit to a maximum of 3 units.

LING 590  Units:  1.5 or 3.0  
Directed Studies  
A course designed to enable students to pursue individual interests. 
Note: May be taken more than once for credit.

LING 592  Units:  1.5  Hours:  3.0  
Formerly: 591  
Labovian Variationist Sociolinguistics  
An examination of the foundations of language variation and change in the Labovian paradigm. Emphasis is placed on the study of phonological and grammatical features and their correlations with age, sex, ethnicity and other social variables. 
Note: Credit will be granted for only one of LING 591, LING 592.

LING 595  Units:  1.5  
Studies in Language and Gender  
A study of the relationship between gender socialization and pragmatics of language use. Each participant selects a topic of interest to research and report on as a term paper and to present as a seminar.

LING 596  Units:  1.5  
Cross-Cultural Communication  
An examination of pragmatic linguistic factors affecting communication between cultural groups. Each participant selects a topic of interest to research and report on as a term paper and to present as a seminar.

LING 597  Units:  0  
Comprehensive Examination  
Students enrolled in the non-thesis option will be examined orally on at least two previous substantial research papers or their equivalent. 
Grading: INP, COM, N, F

LING 598  Units:  3.0  
Major Research Paper  
A major research paper (40–45 pages) reporting independent research under the direction of a faculty member. Students meet in a seminar weekly with the course instructor to discuss research topics including research design, data collection and analyses, reporting and presentation research results, and other research related issues. 
Grading: INP, COM, N, F

LING 599  Units:  to be determined  
MA Thesis  
Grading: INP, COM, N, F

LING 601  Units:  1.5  
Current Directions in Syntactic Theory  
Selected topics reflecting current research in syntactic theory. 
Notes: 
• May be taken more than once for credit in different topics. 
• Students who have completed equivalent prerequisites may request permission to register in the course. 
Prerequisite(s): 
• LIN 503 or LIN 508; or  
• permission of the department.

LING 602  Units:  1.5–3.0  
Current Directions in Phonological Theory  
Selected topics reflecting current research in Phonological Theory. 
Notes: 
• May be taken more than once for credit in different topics. 
• Students who have completed equivalent prerequisites may request permission to register in the course. 
Prerequisite(s): 
• LIN 505 or LIN 510; or  
• permission of the department.

LING 690  Units:  1.5 or 3.0  
Directed Studies  
A research topic will be pursued in depth under the direction of the student’s supervisor. Students are expected to write a research paper (or papers) and to present a colloquium based on their work. 
Note: May be taken more than once for credit in different topics to a maximum of 3 units.

LING 693  Units:  3.0  
Candidacy Examination  
The candidacy requirement must be satisfied within three years of registration in the doctoral program (see Faculty of Graduate Studies regulations). The candidacy examination consists of two substantial, original research papers, one in the area of phonological or syntactic theory, understood broadly, and the other in an area agreed to by the student and the supervisor. 
Grading: INP, COM, N, F

LING 699  Units:  to be determined  
PhD Dissertation  
Note: Normally 18 units. 
Prerequisite(s): LING 693. 
Grading: INP, COM, N, F

MATH  Mathematics  
Department of Mathematics and Statistics  
Faculty of Science  

MATH 510  Units:  1.5  
Abstract Algebra  

MATH 511  Units:  1.5  
Topics in Matrix Theory and Linear Algebra  

MATH 520  Units:  1.5  
Number Theory  

MATH 522  Units:  1.5  
Combinatorics  
Prerequisite(s): Permission of the department.

MATH 523  Units:  1.5  
Graph Theory  
Prerequisite(s): Permission of the department.

MATH 529  Units:  1.5  
Topics in Discrete Mathematics  
Note: May be taken more than once for credit in different topics with permission of the department.
MATH 530  Units: 1.5
Real Analysis
Abstract measure and integration; product measures; measures on locally compact spaces and the Riesz representation theorem; the Stone-Weierstrass theorem.

MATH 531  Units: 1.5
Functional Analysis

MATH 532  Units: 1.5
Introduction to Operator Theory

MATH 533  Units: 1.5
Topics in Operator Theory and Operator Algebras
Note: May be taken more than once for credit in different topics with permission of the department.

MATH 535  Units: 1.5
Topics in Analysis
Topics may include some of the following: ergodic theory, dynamical systems, potential theory, harmonic analysis.
Note: May be taken more than once for credit in different topics with permission of the department.

MATH 538  Units: 1.5
Complex Analysis
Topics chosen from: conformal mappings, the Riemann mapping theorem, the maximum principle, infinite products, Picard’s theorem, normal families, $H^p$-spaces, approximation by rational functions, the Riemann zeta function, analytic continuation and Riemann surfaces.
Note: Students who have completed a course equivalent to MATH 438 may request permission to register in the course.
Prerequisite(s):
• One of MATH 330B, MATH 338, MATH 438; or
• permission of the department.

MATH 540  Units: 1.5
Topology
Also: MATH 449

MATH 549  Units: 1.5
Scientific Computing
Note: Credit will be granted for only one of MATH 549, MATH 449 (if taken in the same topic).
Prerequisite(s): Permission of the department.

MATH 550  Units: 1.5
Topics in Applied Mathematics
Note: May be taken more than once for credit in different topics with permission of the department.

MATH 551  Units: 1.5
Differential and Integral Equations

MATH 555  Units: 1.5
Topics in Probability
Note: May be taken more than once for credit in different topics with permission of the department.

MATH 563  Units: 1.5
Algebraic Number Theory

MATH 565  Units: 1.5
Topics in Mathematical Biology
Possible topics include population modelling, infectious disease dynamics, models of neural networks and models of gene regulatory networks.
Note: May be taken more than once for credit in different topics with permission of the department.

MATH 570  Units: 1.5
Topics in Pure Mathematics
Note: May be taken more than once for credit in different topics with permission of the department.

MATH 580  Units: 1.5
Directed Studies
Directed studies may be available in the areas of faculty interest.
Notes:
• May be taken more than once for credit in different topics with permission of the department.
• Pro Forma required.

MATH 585  Units: 0 or 1.5
Seminar
Note: May be taken only once for credit in any degree program.
The seminar leader will inform students of the requirements for credit before the seminar commences.

MATH 586  Units: 0 or 1.5
Operator Theory Seminar
Note: May be taken only once for credit in any degree program.
The seminar leader will inform students of the requirements for credit before the seminar commences.

MATH 587  Units: 0 or 1.5
Applied Math Seminar
Note: May be taken only once for credit in any degree program.
The seminar leader will inform students of the requirements for credit before the seminar commences.

MATH 588  Units: 1.5
Discrete Mathematics Seminar
Note: May be taken more than once for credit with permission of the department.

MATH 591E  Units: 1.5
Topics in Mathematics for Secondary Teachers
Intended for students enrolled in a master’s program specializing in Mathematics Education but open to students enrolled in other master’s programs in Education. One of the four topics: Geometry, Mathematical Modelling, Data Analysis, History and Philosophy of Mathematics will be taught in a given term. Topics will be rotated each term the course is offered.
Note: May be taken more than once for credit in different topics.
Prerequisite(s): 3 units of MATH courses numbered 300 or higher.

MATH 599  Units: 6.0
Master’s Thesis
Grading: INP, COM, N, F

MATH 693  Units: 3.0
Candidacy Examination
Grading: INP, COM, N, F

MATH 699  Units: 21.0-30.0
Dissertation
Corequisite(s): MATH 693.
Grading: INP, COM, N, F

MBA
Master of Business Administration
Peter B. Gustavson School of Business
PhD program in International Management and Organization is found under the BUS course code.

MBA 500  Units: 1.5-3.0
Essentials of Business and Leadership
An intensive course that constitutes the beginning of the MBA program. Provides students with a foundation on which to begin the study of business at an advanced level.
Key areas of skill development include business writing, presenting, teambuilding, case analysis, cross-cultural communication and career development.
Provides ethical frameworks for decision making and an exploration of issues relating to international business, sustainability and social responsibility.
Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 501  Units: 0
Applied Projects
Client-based business projects that integrate program subject material, usually in the context of examining a particular industry or organization. Requires reports and/or presentations. Will focus, when possible, on the Gustavson School of Business value pillars: International, Integrative, Innovative, Sustainable/Socially Responsible. One of these projects takes place in an international setting.
Note: Not open to students registered in or with credit in MBA 501A or MBA 501B.
Attendance and participation are mandatory. Students are required to register in this course for the duration of the MBA Program.
Students in a double-degree program or an international exchange will normally be waived from the international project.
Grading: INP, COM, N, F

MBA 501A  Units: 0
Integrative Management Exercise (IME)
One or more client-based business practice exercises which integrate program subject material, usually in the context of examining a particular industry or organization. Requires reports and/or presentations. Takes place on campus and will focus, when possible, on one or both of the International or Socially Responsible and Sustainable value pillars of the Gustavson School of Business.
Note: Registration is restricted to the Daytime MBA Cohort entering in summer session 2016. Attendance and participation are mandatory. Registration in MBA 501A is for the domestic, “on campus” IME.
Grading: INP, COM, N, F
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MBA 522 - MBA 555

MBA 522  Units: 1.5
Also: COM 415
Business and the Internet
Business is going global, and traditional markets are rapidly giving way to the electronic marketplace. Combines hands-on project for an existing organization with seminar style classes and invited speakers. Covers competitive advantages of electronic communications technologies; fundamentals of data communications; effective use of the Internet for business; and security, privacy, and intellectual property issues related to online business.
Note: Credit will be granted for only one of MBA 522, COM 415.
Prerequisite(s): Permission of the program.

MBA 524  Units: 1.5
Also: COM 445
Corporate Finance
Serves as a continuation of the introductory finance course to more advanced applications of the techniques, concepts, and tools of corporate finance. Main topics include short- and long-term financial management, cost of capital, capital structure, financial leverage, dividends policy, working capital management, leasing, mergers and acquisitions, and the use of derivatives for risk management.
Note: Credit will be granted for only one of MBA 524, COM 445.
Prerequisite(s): Permission of the program.

MBA 525  Units: 1.5
Also: COM 446
Investments
Covers the fundamental principles that are crucial to understanding the securities traded in international financial markets. The main topics include market structure, information efficiency, asset pricing models, valuation and trading of stocks, bonds, options and futures.
Note: Credit will be granted for only one of MBA 525, COM 446, COM 450 (if taken in the same topic), ECON 435.
Prerequisite(s): Permission of the program.

MBA 529  Units: 0.5-1.5
International Logistics and Supply Chain Management
Examines the issues involved in managing global supply chains and logistic flows. Topics are developed around the risks and opportunities of global sourcing. Topics include some of the following: designing and implementing global supply chains, foreign manufacturing, inventory management, coping with security concerns, outsourcing, service standards, transportation options and performance evaluation.
Notes:
• Credit will be granted for only one of MBA 529, MGB 519.
• The unit value of a course section will be specified according to the program in which it is delivered.

MBA 530  Units: 0.5-1.5
Managerial Finance
Provides a framework, concepts, and tools for analyzing financial decisions. Topics include discounted cash flow techniques, valuation of financial assets, financial statement analysis, capital budgeting decisions, risk and return tradeoffs, diversification and portfolio theory, capital market efficiency, and the cost of capital to the firm. Focuses on management-shareholder agency problems, ethical issues in financial decision-making, and issues related to sustainability and corporate social responsibility (CSR) in project valuation and portfolio investments.
Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 531  Units: 1.5
Also: COM 425
Taxation for Managers
Reviews the fundamentals of the income tax system for all taxpayers. It then examines tax planning techniques that maximize cash flow and return on investment. While the course emphasizes business decisions, it also includes personal financial planning issues.
Note: Credit will be granted for only one of MBA 531, COM 425.
Prerequisite(s): Permission of the program.

MBA 535  Units: 0.5-1.5
Operations Management
An introduction to the concepts for managing the systems organizations use for producing goods and services. Topics include some of the following: operations strategy, capacity and technology planning, purchasing and materials management, workflow planning, scheduling, and quality management and control.
Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 540  Units: 0.5-1.5
Applied Data Analysis and Decision Analysis
A decision-oriented course that focuses on the frameworks, concepts, theories and principles needed to organize and use information to make informed business decisions. Cases, exercises, discussion questions and other pedagogical tools are used to help participants build data gathering and analysis skills. Topics include collecting, summarizing, organizing and extracting data, probability theory and risk in decision making; and One-Way Analysis of Variance and Regression Analysis.
Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 544  Units: 0.5-1.5
Information Technology in the Organization
An introduction to the capabilities and utilization of information technology (IT), information systems (IS) and networks. Different approaches using IT and IS will be covered to provide an understanding of how they can be used effectively in today’s internetworked enterprise. Cases and other assignments will be used to illustrate the evolving role of IS and networks in today’s interconnected organization both within and external to it.
Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 546  Units: 0.5-2.0
Innovation and Design
Explores the topic of innovation in products, services and user experience through design methodologies and perspectives. Topics include identifying and framing the right ‘problem space’ through deep understanding of users and context, and techniques for eliciting creative ideas, such as structured brainstorming and rapid prototyping, to explore the ‘solution space’. Students become integrative, creative problem solvers who combine rigorous research with narrative, visual data and other knowledge forms to generate original, practical strategies.
Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 550  Units: 0.5-1.5
Strategic Analysis and Action
Introduces the integrative nature of management. Explores the overall general management of the organization, and the formulation and implementation of the strategic direction of the firm. Covers major strategic management concepts including analyses of external and internal environments, innovation, corporate social responsibility (CSR), managerial ethics, value co-creation, and leadership, as they relate to business strategy. Intended to develop an appreciation of the role of a general manager from conceptual as well as pragmatic standpoints.
Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 552  Units: 0.5-2.0
Collaboration in Organizations
Explores ways to lead and cultivate collaboration in both inter- and intra-organizational contexts. Topics may include identifying what effective collaboration looks like, when collaboration does (and doesn’t) make sense, organizational barriers to collaboration, the skills required to encourage others to collaborate effectively, and the characteristics of collaborative leadership.
Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 553  Units: 0.5-1.5
Managing People and Organizations I
Examines the behaviour of individuals, groups and organizations from an organizational design perspective. Topics include: the analysis of goals, environment structure and growth; teams, organizational culture, power, politics and conflict management; decision making, motivation, trust and leadership.
Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 555  Units: 0.5-1.5
Managing People and Organizations II
Examines the issues in managing employees in organizations. Topics include recruitment and hiring, retention practices, performance review, compensation design, layoffs and selected employment and human rights legislation.
Note: The unit value of a course section will be specified according to the program in which it is delivered.
MBA 558 - MBA 586

MBA 558
Also COM 403
Employment Law
Examines the constitutional, legislative and common law rules that govern the employment relationship in both unionized and nonunion workplaces. Examines the entire employment relationship including pre-hire issues, employer/employee rights and obligations, termination of employment and post-termination obligations.

Note: Credit will be granted for only one of MBA 558, COM 403, COM 450 (if taken in the same topic).
Prerequisite(s): Permission of the program.

MBA 560
Managing Legal Risks
Examines various legal risks (whether arising from the common law or through legislation) that must be identified and effectively managed within contemporary organizations (including for-profit businesses, not-for-profit firms and governmental organizations). Examines the legal risks associated with the manufacture, delivery and marketing of goods and services, the creation and protection of confidential information and other intellectual property, and risks arising from employment and contractor relationships. Also reviews risk management strategies available under the law of tort and contract.

Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 561
Entrepreneurial Planning and Finance
Part of the integrated MBA Entrepreneurship module, focuses on differences between ideas and opportunities, identifying necessary information to screen and analyze the risks associated with shaping opportunities into viable businesses, understanding financial data and use of quantifiable factors in the entrepreneurial decision process. Students understand essential elements of a business plan, the catalyst for skill development of entrepreneurial new venture ideas.

Note: Not open to students with credit in the Entrepreneurship Specialization courses previously offered under MBA 595. The unit value of a course section will be specified according to the program in which it is delivered.
Corequisite(s): MBA 562 and MBA 563.

MBA 562
New Venture Marketing
Part of the integrated MBA Entrepreneurship module, develops the thinking skills required to: develop valued products, understand customers and markets, and gain market acceptance with limited resources.

Note: Not open to students with credit in the Entrepreneurship Specialization courses previously offered under MBA 595. The unit value of a course section will be specified according to the program in which it is delivered.
Corequisite(s): MBA 561 and MBA 563.

MBA 563
Entrepreneurial Strategy
Part of the integrated MBA Entrepreneurship program, develops skills necessary to plan a venture’s strategy, business model and competitive position, to assess a strategy’s viability, and to develop implementation plans to realize that strategy. Models for international and social entrepreneurship and venture growth will also be discussed.

Note: Not open to students with credit in the Entrepreneurship Specialization courses previously offered under MBA 595. The unit value of a course section will be specified according to the program in which it is delivered.
Corequisite(s): MBA 561 and MBA 562.

MBA 564
Entrepreneurship
Entrepreneurship is about new value creation in new for-profit ventures, social enterprises, existing corporations, government, and other contexts. Takes prospective entrepreneurs through the opportunity (value) identification and realization process with a focus on developing entrepreneurial expertise and an entrepreneurial mindset. Learners will apply key theory, frameworks, concepts, and tools towards their own entrepreneurial pursuit with the aim of getting to the proof-of-concept stage of development with a lean business plan.

Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 565
International Business Environment I
Overview of international business and management, emphasizing globalization and its implications for individuals, organizations and nations. Explores topics in global and regional economic integration, sources of national competitive advantage, international trade and investment, corporate social responsibility (CSR) in international contexts, strategy and organization in multinational enterprises, emerging markets, and current issues related to the international business environment. Students will develop a world-view of today’s dynamic global marketplace and analytical skills for addressing complex global issues.

Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 566
International Financial Management
An examination of international financial markets and the financial decision making of multinational firms. Topics include international monetary systems, balance of payments, exchange rate determination, foreign currency derivatives, risk management techniques, and financing the firm in global financial markets.

Notes:
- Credit will be granted for only one of MBA 571, MGB 512.
- The unit value of a course section will be specified according to the program in which it is delivered.

MBA 567
International Business Environment II
This course is a continuation of topics covered in IB Environment I.

Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 570
International Business Environment I
Overview of international business and management, emphasizing globalization and its implications for individuals, organizations and nations. Explores topics in global and regional economic integration, sources of national competitive advantage, international trade and investment, corporate social responsibility (CSR) in international contexts, strategy and organization in multinational enterprises, emerging markets, and current issues related to the international business environment. Students will develop a world-view of today’s dynamic global marketplace and analytical skills for addressing complex global issues.

Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 571
International Financial Management
An examination of international financial markets and the financial decision making of multinational firms. Topics include international monetary systems, balance of payments, exchange rate determination, foreign currency derivatives, risk management techniques, and financing the firm in global financial markets.

Notes:
- Credit will be granted for only one of MBA 571, MGB 512.
- The unit value of a course section will be specified according to the program in which it is delivered.

MBA 572
International Marketing and Global Strategy
An examination of the strategic challenges facing businesses in an international context, with a focus on marketing issues. Topics include the problems associated with controlling and coordinating activities in multiple markets, managing diverse markets, responding to consumer and competitor differences, understanding the impact of different institutional structures, and coping with market consolidation.

Notes:
- Credit will be granted for only one of MBA 572, MGB 516.
- The unit value of a course section will be specified according to the program in which it is delivered.

MBA 573
Managing People and Relationships in a Global Context
An examination of the issues involved in managing subordinates and partners in an international context. Particular attention will be paid to how internationalization poses additional challenges to the development of human resource management practices and how cultural values affect interpersonal relationships.

Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 574
MBA 575
Cross-Cultural Management in Malaysia
Examines the cross-cultural issues involved in international management. In addition to 20 hours of classroom instruction in Canada, this course includes a 6-week field study in Kuala Lumpur, Malaysia, where students will be exposed to in-class instruction on the business environment of Malaysia and the ASEAN region, and a practicum in a Malaysian organization.

Note: The unit value of a course section will be specified according to the program in which it is delivered.
Prerequisite(s): Permission of the department.

MBA 576
International Business Environment II
This course is a continuation of topics covered in IB Environment I.

Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 577
Consulting Methods I
Provides an overview of management consulting to help students gain an understanding of management consulting skills and competencies. These consulting skills can be used in the pursuit of a consulting career or integrated as part of general management knowledge. Designed to prepare students for S01 Applied Projects and S96 Integrative Project.

Note: The unit value of a course section will be specified according to the program in which it is delivered.

MBA 578
Consulting Methods II
Continuation of topics covered in Consulting Methods I.

Note: The unit value of a course section will be specified according to the program in which it is delivered.
MBME

Master of Business Administration + Master of Engineering

MBME Program and Faculty of Engineering

Sardul S. Gill Graduate School of Business

Specifically for the MBA+MEng Double Degree Program which is jointly offered by the Sardul S. Gill Graduate School of Business and the Faculty of Engineering.

Other courses offered by the MBA Program are found under the following course code: MBA. Other courses offered by the MEng Programs are found under the following course codes: ECE and MECH.

MBME 598

Major Project

A substantial analysis of a specific issue related to both management and engineering contexts, prepared individually under the supervision of faculty advisers from both the Gustavson School of Business and the Faculty of Engineering.

Note: Students in consultation with their academic adviser should determine if they have an adequate background in research methodology prior to enrolling in MBME 598. This may require the student to take a research methods course. Students should consult with their academic adviser to identify an appropriate course.

Grading: INP, COM, N, F

MECH

Mechanical Engineering

Department of Mechanical Engineering

Faculty of Engineering

MECH 501

Introduction to Continuum Mechanics


MECH 504

Mechanical Vibration

Multi-mass linear systems; flexibility and stiffness matrices, natural frequencies, mode shapes and orthogonal properties, coupled and uncoupled system equations, solutions for damped or undamped response to arbitrary forcing and initial conditions. Linear continuous systems; wave equation problems and lateral beam vibration with classical boundary conditions. Effects of added mass or stiffness on frequencies and modes. Forced and transient response. Transfer matrix methods for lumped parameter systems and continuous systems; application to axial and torsional vibration of rods, shafts and beams with attached mass or stiffness. Non-linear vibration; basic methods for solution. Characteristic non-linear effects. Random vibration; elements of describing random response, Fourier transforms and frequency response functions.

MECH 510

Living Cells and their Molecules: Mechanics & Thermodynamics


Note: Credit will be granted for only one of MECH 510, MECH 580 (if taken in the same topic).

MECH 512

Introductory Haptics


Note: Credit will be granted for only one of MECH 512, MECH 580 (if taken in the same topic).

MECH 515

Biomaterials and Tissue Engineering

Introduction to the types of biomaterials and their associated properties. Experimental characterization techniques including microscopy, detection of chemical compositions, protein adsorption and immunoreactivity. Methods for combining biomaterials with cells to engineer tissues.

Note: Credit will be granted for only one of MECH 515, MECH 580 (if taken in the same topic).
MECH 520  Units: 1.5  
**Computer-Aided Design and Engineering**
Fundamentals of computer graphics; basic elements of geometric modeling of solids and curved surfaces; advanced topics in engineering drawings; use of integrated CAD/CAM system for modelling, simulation, engineering analysis, automated production, and parameter optimization of mechanical designs; input and output techniques, data management, and customization of CAD/CAM systems.  
*Note:* There is a 3-hour laboratory requirement on alternate weeks.

MECH 521  Units: 1.5  
**Computer-Aided Manufacturing (CAM)**
Introduction to machining operations features of numerically controlled machine tools and types of CNC programming. Manual part programming with G-codes, canned cycles, subprograms, and simulation program. CNC machine tools and control and machine tool kinematics. CNC machining of curved surfaces, and surface machining strategies. Rapid prototyping or 3D printing. Machining mechanics and dynamics.  
*Note:* There is a 3-hour laboratory requirement on alternate weeks.

MECH 522  Units: 1.5  
**Mechanics and Dynamics of Machining**
Cutting Mechanics: orthogonal cutting, oblique cutting, cutting force modeling, mechanistic modeling, specific cutting energy formulation and identification, milling and turning, tool wear, and cutting temperatures. Cutting Dynamics: structural vibrations, damping, dimensional form errors in machining, modal analysis, and chatter vibrations in orthogonal cutting and milling.  
*Note:* Credit will be granted for only one of MECH 522, MECH 580 (if taken in the same topic).

MECH 523  Units: 1.5  
**Modeling and Design of Advanced Hybrid Electric Vehicles**
Background of Hybrid Electric Vehicle (HEV) powertrain technologies; vehicle power plants, electric propulsion systems, transmissions, and energy storage system; vehicle performance modeling and simulation using advanced powertrain modeling tools; design and optimization of HEV powertrain system; other key issues in HEV design and developments; HEV related research and case study.  
*Note:* Credit will be granted for only one of MECH 523, MECH 580 (if taken in the same topic).

MECH 524  Units: 1.5  
**Planning and Control of Advanced Manufacturing Systems**
Introduction to manufacturing and production systems with the basic taxonomy of manufacturing, types of production processes, components of a production system, and concept of production control. Production process planning covering the experience-based process planning, knowledge-based approach using decision tables and decision trees, process capability analysis, group technology, and Computer-Aided Process Planning. Topics of planning and control of production systems, including forecasting, inventory system, aggregate production planning, material requirements planning, and operation sequencing and scheduling. Case studies on the planning and control of advanced manufacturing systems.

MECH 528  Units: 1.5  
**Formerly: 620  
Global Optimization and Quantitative Reasoning Techniques**  
Review of conventional engineering optimization methods, global optimization algorithms, introduction of metamodeling and metamodel-based global optimization techniques, multi-objective and multi-disciplinary optimizations, knowledge representation and reasoning, rule-based systems, fuzzy pattern clustering and recognition, and artificial neural networks; applications of metamodel-based global optimization and quantitative reasoning for computational design and optimal control.  
*Note:* Credit will be granted for only one of MECH 528, MECH 620.

MECH 531  Units: 1.5  
**Fluid Mechanics**

MECH 535  Units: 1.5  
**Computational Fluid Dynamics and Heat Transfer**

MECH 536  Units: 1.5  
**Microfluidics**

MECH 537  Units: 1.5  
**Non-equilibrium Thermodynamics and Kinetic Theory of Gases**
Conservation and balance laws, properties and property relations, 2nd law and interpretation of entropy, entropy generation and work loss, classical irreversible thermodynamics, cross effects and Onsager conditions. Kinetic theory of gases: Distribution function, Boltzmann equation, conservation laws, H-Theorem, continuum limit; the laws of Navier-Stokes and Fourier, higher order methods and moment equations, Knudsen layers, rarefaction effects.

MECH 538  Units: 1.5  
**Advanced Aircraft Design**
*Note:* Credit will be granted for only one of MECH 538, MECH 580 (if taken in the same topic).

MECH 540  Units: 1.5  
**Transport Phenomena**
Fundamentals of thermomechanics; kinematics, motion, stress, thermodynamics, fundamental principles of thermomechanics. Constitutive equations; basic principles and axioms, linearization of constitutive equations, constitutive equations of special materials such as Newtonian fluids and binary mixtures. Field equations for binary fluid mixtures. Mass transport; diffusivity and mechanisms of mass transport, examples of concentration distributions in binary solids and fluids (laminar flow), examples from ternary systems.

MECH 541  Units: 1.5  
**Advanced Thermodynamics**

MECH 542  Units: 1.5  
**Energy Systems and Exergy Analysis**
Macroscopic examination of energy systems, system architecture and evolution. Dynamics of energy systems. Characteristics and impacts of energy storage. Exergy balance and second law efficiency.

MECH 543  Units: 1.5  
**Cryogenic Engineering**

MECH 544  Units: 1.5  
**Renewable Energy**
Overview of major classes of renewable energy: solar photovoltaic, wind, biomass, hydro, solar thermal, tidal and wave. Examination of renewable energy from the perspective of: (1) extent, distribution and accessibility of the resource, (2) technologies for the conversion of the resource (3) current applications, and (4) prospects for future implementation.

MECH 546  Units: 1.5  
**Introduction to Ocean Engineering**
*Note:* Credit will be granted for only one of MECH 546, MECH 580 (if taken in the same topic).
MECH 547 Units: 1.5
Wind Power Systems
Note: Credit will be granted for only one of MECH 547, MECH 580 (if taken in the same topic).

MECH 549 Units: 1.5
Fuel Cell Technology

MECH 550 Units: 1.5
Advanced Control Theory

MECH 551 Units: 1.5
Advanced Kinematics of Manipulators
The material covered includes: point and direction, and line and screw motion description; homogeneous, line and screw coordinate, and quaternions representations; inverse displacement solution by analytic, root finding, hybrid and numerical methods; appropriate frames of reference; screw systems and transforms; local and globally optimum solution of redundant rates; overdetermined and near degeneration solutions; multi-arm kinematics. Application to open, closed parallel and hybrid, simple and general structures is considered.

MECH 554 Units: 1.5
Mechatronics
Introduction to mechatronic systems; modeling of mixed mechatronic systems; microcontroller programming and interfacing; theory, selection and implementation of sensors and actuators commonly used in mechatronics systems; control architectures and case studies in mechatronics systems.
Note: Credit will be granted for only one of MECH 554, MECH 580 (if taken in the same topic).

MECH 555 Units: 1.5
Micro-ElectroMechanical Systems

MECH 558 Units: 1.5
Fundamentals of Hybrid Vehicles
Background of hybrid electric vehicle (HEV) powertain technologies; vehicle power plants, electric propulsion systems, transmissions, and energy storage system; vehicle performance modeling and simulation using advanced powertain modeling tools; design and optimization of HEV powertain system; other key issues in HEV design and developments; HEV related design project and case study.
Note: Credit will be granted for one of MECH 558, MECH 580 (if taken in the same topic).

MECH 559 Units: 1.5
Theoretical Kinematics
Solution of nonlinear problems of kinematics involved in mechanism synthesis and manipulator solutions. Techniques including compatibility equations, 1/2 angle substitutions and elimination. Applications including 4 and 5 precision point mechanism synthesis, and the inverse displacement solution of general serial layout and the forward displacement solution of parallel manipulators.

MECH 564 Units: 1.5
Advanced Finite Elements
A continuation of Introduction to Finite Element models (420/563) that covers more advanced FEM applications to linear static problems in structural mechanics. In particular, axisymmetric solids, 3D solids, plates and shells, special elements and mesh generation. Emphasis will be given to modern formulations of high-performance finite elements, especially for plates and shells, as opposed to the classical displacement formulation covered in IFEM. Begins with an overview of variational formulations useful for FEM.

MECH 567 Units: 1.5
Engineering Ceramics
Engineering ceramics: structure, properties and applications. Topics to be covered: historical significance of ceramics; definition of ceramics and glasses; structures of ceramics; glasses and glass ceramics; properties and applications of oxide and silicate ceramics; properties and applications of carbide, boride and nitride ceramics; ceramic processing; mechanical properties; toughening mechanisms for brittle ceramics; design concepts; ceramic capacitors; ferroelectrics; piezoelectrics and electro-optic ceramics.

MECH 569 Units: 1.5
PhD Dissertation
Pre-requisite(s): MECH 693. Grading: INP, COM, N, F

MECH 601 Units: 1.5
Engineering Analysis
Introduction to mathematical methods used in engineering analyses with focus on the application to engineering problems rather than the rigorous proofs of mathematical concepts. Topics include: integral transformations including Laplace and Fourier transforms; complex analysis including analytic functions, theory of residues and conformal mapping; calculus of variations as applied to optimal control, finite element methods and wave equations; linear algebra including least squares problems, eigenproblems and matrix decompositions.
Note: Credit will be granted for only one of MECH 601, MECH 580 (if taken in the same topic).
MGB

Master of Global Business

Peter B. Gustavson School of Business

MGB 180  Units: 1.0
Formerly: S80
Language Skills I
Provides language instruction for students to significantly advance their skill and knowledge in another language. The essential points of structure and vocabulary will be taught, giving capability to function in everyday settings. Students will learn to share information about themselves in the target language and ask basic questions of those around them.
Notes:
• Credit will be granted for only one of MGB 180, MGB 580.
• May not be used for credit in any other undergraduate or graduate program.
Prerequisite(s): Admission to MGB program.
Grading: FNC.

MGB 181  Units: 1.0
Formerly: S81
Language Skills II
Further development of the language skills learned in 180.
Notes:
• Credit will be granted for only one of MGB 181, MGB 581.
• May not be used for credit in any other undergraduate or graduate program.
Pre- or Corequisite(s): MGB 180.
Grading: FNC.

MGB 182  Units: 1.0
Formerly: S82
Language Skills III
Further development of the language skills learned in 181.
Notes:
• Credit will be granted for only one of MGB 182, MGB 582.
• May not be used for credit in any other undergraduate or graduate program.
Pre- or Corequisite(s): MGB 181.
Grading: FNC.

MGB 502  Units: 0
Introduction to Professional Practice
Preparation and training to undertake MGB Internship work terms. Includes preparation of cover letters and resumes, skills assessment and analysis, networking and interview skill development and career planning.
Note: Students are required to register in this course during the first and second terms of their MGB program.
Grading: INP, COM, N, F.

MGB 510  Units: 1.0
The North American Business Context
Examines the socio-economic, political and legal factors that affect business operations in Canada and the United States. Topics include the Canada/US business regulatory environments, economies, governmental and legal systems, labour markets, protection of intellectual property and international trade relationships including the North American Free Trade Agreement.

MGB 512  Units: 1.0
International Financial Management
An examination of international financial markets and the financial decision making of multinational firms. Topics include international monetary systems, exchange rate determination, foreign currency derivatives, risk management techniques, and investments, financing and operations in global markets.
Note: Credit will be granted for only one of MGB 512, MBA 571.

MGB 516  Units: 1.0
International Marketing and Global Strategy
An examination of the strategic challenges facing businesses in an international context, with a focus on marketing issues. Topics include the problems associated with controlling and coordinating activities in multiple markets, managing diverse markets, responding to consumer and competitor differences, understanding the impact of different institutional structures, and coping with market consolidation.
Note: Credit will be granted for only one of MGB 516, MBA 572.

MGB 519  Units: 1.0
International Logistics and Supply Chain Management
Examines the issues involved in managing global supply chains and logistic flows. Topics are developed around the risks and opportunities of global sourcing. They include designing and implementing global supply chains, foreign manufacturing, inventory management, coping with security concerns, outsourcing, service standards, transportation options and performance evaluation.
Note: Credit will be granted for only one of MGB 519, MBA 529.

MGB 520  Units: 1.5
The Asian Business Context
An overview of business operations in the Asian context in various industry sectors. Also examines socio-economic, cultural and legal factors that impact doing business in Asia and that impact Asian firms doing business in regional and global settings.

MGB 525  Units: 1.5
Developing Business in International Entrepreneurial Environments
Examines the analyses and knowledge needed for successful new business ventures as well as within an international environment. Emphasis will be given to the various stages in the development of a business plan, from idea development to presentation of the plan.

MGB 530  Units: 1.5
The European Business Context
An overview of corporate governance structures, legal and economic systems and environmental sustainability issues in the European Union and beyond. Prepares students to apply their knowledge and global perspective to solving business issues and challenges.

MGB 535  Units: 1.0
Consulting Methods and Practice
Provides an overview of the process of management consulting, introduces students to consulting methods to help them gain knowledge of consulting and to highlight specific consulting and research skills. To practice the application of these methodologies, student teams will examine an issue or problem being faced by their assigned overseas organizations, and provide them with consulting advice. In addition, this course will ultimately prepare students for the MGB 536 International Research and Consulting Project.

MGB 550  Units: 1.5
Global Internship
Students must complete at least 300 hours of work with an organization that normally (1) has an international component linking two or more regions, or (2) is located in any region of the world, provided that it is not the student’s “home” region or country. Requires students to apply their learning through a reflective component that describes how the coursework and the Internship experience in particular have prepared them for global business related careers.
Note: Students who fail to complete an internship by the end of four academic terms may be required to withdraw.
Prerequisite(s):
• MGB 521;
• permission of the school.
Grading: INP, COM, N, F.

MGB 540  Units: 1.5
The South American Business Context
An overview of business operations in the South American context in various industry sectors. Also examines socio-economic, cultural and legal factors that impact doing business in South America and that impact South American firms doing business in regional and global settings.

MGB 550  Units: 1.5
The Middle East and North Africa (MENA) Business Context
An overview of business operations in the MENA context in various industry sectors. Also examines socio-economic, cultural and legal factors that impact doing business in the MENA region and that impact MENA region firms doing business in regional and global settings.

MGB 560  Units: 1.5
The Sub-Saharan African Business Context
An overview of business operations in the sub-Saharan context in various industry sectors. Also examines socio-economic, cultural and legal factors that impact doing business in the region and that impact sub-Saharan African firms doing business in regional and global settings.
MGB 570

Global Leadership and Cultural Intelligence
An examination of the various dimensions of culture and cross-cultural leadership and management. Topics include how cultural intelligence and global mindset impact teamwork, conflict management, negotiations, motivation and overall leadership in international settings. Compares how people from the three regions of the MGB program modules (e.g., North America, Asia and Europe) are similar and how they differ along these dimensions, including the challenges resulting from these differences and how to resolve them.

Pre- or Corequisite(s): MGB 180.

MGR 583

Language, Communication and Global Business
Provides a framework - in conjunction with students’ language courses - to explore relationships among language, communication, and culture, a subject highly relevant to global companies. Considers the process of language interaction in global organizations and shows how foreign language learning adds value to businesses and careers. Also examines example global companies that have shaped their language policies (often towards using English as the lingua franca), impacting individual and organizational performance.

MGB 580

Directed Studies in Microbiology
A wide range of microbiological topics will be available for assignment. Topics will be restricted to an analysis of recent advances. The student’s graduate advisor will not normally participate in directed studies taken for more than one unit of credit.

Notes:
- May be taken more than once for credit in different topics.
- Pro Forma required.

MGB 581

Special Topics

MGB 582

Special Topics

MUS 500

Selected Problems in Theory and Analysis
Note: May be taken more than once for credit with permission of the school.

MUS 501

Seminar in Musical Notations

MUS 502

Musical Aesthetics and the Theory of Criticism

MUS 503

Introduction to Graduate Study and Music Bibliography
Note: All students in musicology must register for this course in their first term of graduate study.

MUS 504

Seminar in Performance Practices
Note: May be taken more than once for credit with permission of the school.

MUS 506A

Advanced Recording Techniques
Advanced study to the theory and practice of recording audio technology, studio techniques and procedures. Study to include: advanced stereo microphone techniques, introduction to surround sound, high resolution formats including SACD, DVD-A, DSD, electroacoustic measurements and multi-track recording and theory. Practical work includes recording sessions, mixing and producing.

MUS 506B

Sound Recording Seminar
Advanced study of sound recording and music production techniques using the production of a full length CD or DVD as a model. Topics will include techniques in audio post-production and editing with advanced equipment, music production, location recording, and readings of current research and technical papers. Requires the completion of a full length CD or DVD project.

Prerequisite(s):
- MUS 506A; or
- permission of the school.
MUS 534  Units: 1.5
Advanced Research Forum in Musicology
Core seminar in advanced research skills for second-year degree candidates in Musicology that provides an interactive forum for completion of major program requirements. Students conduct research in diverse areas of inquiry in musicology and gain professional experience through the preparation of a conference presentation. Candidates for the MA complete their Comprehensive Examinations and a formal Thesis Proposal, while PhD candidates complete their formal proposal for the Comprehensive Examinations in the context of the Forum.
Prerequisite(s): MUS 533.
Grading: INC, COM, N, F.

MUS 540  Units: 0.5 or 1.0
Individual Tuition
Lessons in instrument or voice.
Note: May be taken more than once for credit with permission of the school.
Prerequisite(s): Permission of the school.

MUS 545  Units: 4.0
Major Instrument Study
Individual tuition, integrated performance seminar and master class.
Note: May be taken more than once for credit with permission of the school.
Prerequisite(s): Admission to MMus in Performance.

MUS 545Q  Units: 4.0
Major Instrument Study
For students in Master of Music (MMus) in Performance-
Emphasis in String Quartet program.
Notes:
• May be taken more than once for credit with permission of the school.
• MUS 545Q must be taken in each year of the program.

MUS 555  Units: 3.0
Individual Tuition in Composition
Note: May be taken more than once for credit with permission of the school.

MUS 561  Units: 1.5
Seminar in Composition
Seminar in Composition, taken each year.
Notes:
• May be taken more than once for credit.
• A combined undergraduate and graduate course (MUS 462A Undergraduate Seminar in Performance of New Music).

MUS 562A  Units: 1.5
Seminar in Performance of New Music
This seminar/workshop provides intensive professional training for performers who work together with composers in the creation, performance, and production of new music. Graduate performers will prepare new works composed specifically for them by the composers registered simultaneously in 562B. Training in contemporary notation and performance practices, extended techniques, instrumentation, analysis, conducting techniques, communication skills, and concert production. The final project will be a festival.
Note: A combined undergraduate and graduate course (MUS 462B Undergraduate Seminar in Contemporary Composition and Performance).

MUS 562B  Units: 1.5
Seminar in Contemporary Composition and Performance
This seminar/workshop provides intensive professional training for composers who work together with performers in the creation and production of new music. Composers will create new works designed for small mixed ensembles of performers registered simultaneously in 562A, and work with them to prepare the works for performance. Training in contemporary notation and performance practices, analysis, instrumentation, communication skills, and concert production. The final project will be a festival.

MUS 570  Units: 1.0
Ensembles
MMus candidates in Performance will normally register for both this course and 581 in each year of study. MA candidates in Musicology (with Performance) will normally select one of 580 or 581 each year, as determined in consultation with the supervisor.

MUS 581  Units: 1.0
Chamber Music
MMus candidates in Performance will normally register for both this course and 580 in each year of study. MA candidates in Musicology (with Performance) will normally select one of 580 or 581 each year, as determined in consultation with the supervisor.

MUS 582  Units: 1.0
MMus Practicum
Recital for performance candidates normally taken in first year.
Grading: INC, COM, N, F.

MUS 588  Units: 1.0
MMus Practicum
Recital for performance candidates normally taken in first year.
Grading: INC, COM, N, F.

MUS 590  Units: 1.5 or 3.0
Directed Studies
Note: May be taken more than once for credit with permission of the school.

MUS 596  Units: 1.5
Lecture-Recital
A lecture-recital of substantial duration, its topic likely related to the student’s thesis. For students in the MA program in Musicology with Performance.
Grading: INC, COM, N, F.

MUS 598A  Units: 1.5
MMus Practicum
Degree recital required for performance candidates in final year.
Grading: INC, COM, N, F.

MUS 598B  Units: 3.0
MMus Graduating Compositions
Grading: INC, INP, COM, N, F.

MUS 598C  Units: 4.5
MMus Project
Project required for Music Technology candidates in final year.

MUS 598Q  Units: 1.5
MMus Practicum
Students in the Master of Music (MMus) in Performance-
Emphasis in String Quartet Program must complete a total of 3 recitals to fulfill this requirement.
Grading: INC, COM, N, F.

MUS 599  Units: 3.0
MA Thesis
Grading: INP, COM, N, F.

MUS 689  Units: 1.5
Dissertation Proposal
For candidates for the PhD in Musicology.
Grading: INC, COM, N, F.

MUS 690  Units: 1.5 or 3.0
Directed Studies
Note: May be taken more than once for credit with permission of the school.

MUS 693  Units: 3.0
PhD Candidacy Examinations
Students enrol in MUS 693 for the duration of their preparation for their candidacy examinations. This begins at the time a student first enrols in the PhD program and continues until candidacy requirements have been completed.
Grading: INP, COM, N, F.

MUS 699  Units: to be determined
PhD Dissertation
Prerequisite(s): MUS 692.
Grading: INC, COM, N, F.

NRSC
Neuroscience
Division of Medical Sciences

NRSC 500  Units: 3.0
Fundamentals of Neuroscience
Provides graduate students with a foundational basis in neuroscience. Students cover the essentials of neuroscience, and receive comprehensive instruction in cellular, molecular, systems, behavioral and cognitive neuroscience from resident experts.
Note: This course is required for all students enrolled in the Neuroscience Graduate Program.
This course runs from September to April.
Prerequisite(s): Registration in a graduate program.

NRSC 501A  Units: 1.5
Advanced Topics in Cellular Neuroscience I
Seminar on current topics in Cellular Neuroscience.
Note: For admitted Neuroscience students, this course is required in the first year of their program.
The course runs from September to April.
A grade of INP (in progress) will be given until the second enrolled term is completed.

NRSC 501B  Units: 1.5
Advanced Topics in Cognitve Neuroscience I
Seminar on current topics in Cognitive Neuroscience.
Note: For admitted Neuroscience students, this course is required in the first year of their program.
The course runs from September to April.
A grade of INP (in progress) will be given until the second enrolled term is completed.
NRSC 502A Units: 1.5 Hours: 3.0
Advanced Topics in Cellular Neuroscience II
Seminar on current topics in Cellular Neuroscience.
Note: Registration in NRSC 502A is mandatory (after completion of NRSC 501A) every year the student is enrolled in the graduate program.
The course runs from September to April.
Prerequisite(s): NRSC 501A or NRSC 501B.
Grading: INP, COM, N, F

NRSC 502B Units: 1.5 Hours: 3.0
Advanced Topics in Cognitive Neuroscience II
Seminar on current topics in Cognitive Neuroscience.
Note: Registration in NRSC 502B is mandatory (after completion of NRSC 501B) every year the student is enrolled in the graduate program.
The course runs from September to April.
Prerequisite(s): NRSC 501A or NRSC 501B.
Grading: INP, COM, N, F

NRSC 587 Units: 1.5 - 3.0
Advanced Topics in Neuroscience
Topics of current interest in Neuroscience.
Notes:
• May be taken more than once for credit in different topics with permission of the program.
• Pro Forma required.
Prerequisite(s): Permission of the program.

NRSC 590 Units: 1.5 - 3.0
Directed Studies in Neuroscience
Research projects or directed readings.
Notes:
• May be taken more than once for credit in different topics with permission of the program.
• Pro Forma required.
Prerequisite(s): Permission of the program.

NRSC 595 Units: 1.5
MSc Thesis Preparation
Students will be engaged in preparing a thesis proposal for presentation to their supervisory committee. This course will need to be completed by all MSc students enrolled in the Graduate Program in Neuroscience before having a thesis proposal evaluated by their supervisory committee.
Grading: INP, COM, N, F

NRSC 599 Units: 9.0-12.0
MSc Thesis
A thesis comprising an original scientific study and/or scientific analysis of a problem germane to contemporary neuroscience.
Note: Students who have completed equivalent prerequisites may request permission to register in the course.
Prerequisite(s):
• NRSC 595, or
• permission of the program.
Grading: INP, COM, N, F

NRSC 600 Units: 3.0
Fundamentals of Neuroscience
This is a team-taught course that provides graduate students with a foundational basis in neuroscience. Students cover the essentials of neuroscience, and receive comprehensive instruction in cellular, molecular, systems, behavioral and cognitive neuroscience from resident experts.
Note: This course is required for all students enrolled in the Neuroscience Graduate Program.
The course runs from September to April.

NRSC 601A Units: 1.5
Advanced Topics in Cellular Neuroscience I
Seminar on current topics in Cellular Neuroscience.
Note: For admitted Neuroscience students, this course is required in the first year of their program.
The course runs from September to April.
A grade of INP (in progress) will be given until the second enrolled term is completed.

NRSC 601B Units: 1.5
Advanced Topics in Cognitive Neuroscience I
Seminar on current topics in Cognitive Neuroscience.
Note: For admitted Neuroscience students, this course is required in the first year of their program.
The course runs from September to April.
A grade of INP (in progress) will be given until the second enrolled term is completed.

NRSC 601A or NRSC 601B
Grading: INP, COM, N, F

NRSC 602A Units: 1.5
Advanced Topics in Cellular Neuroscience II
Seminar on current topics in Cellular Neuroscience.
Note: Registration in NRSC 602A is mandatory (after completion of NRSC 601A) every year the student is enrolled in the graduate program.
The course runs from September to April.
Prerequisite(s): NRSC 601A or NRSC 601B.
Grading: INP, COM, N, F

NRSC 602B Units: 1.5
Advanced Topics in Cognitive Neuroscience II
Seminar on current topics in Cognitive Neuroscience.
Note: Registration in NRSC 602B is mandatory (after completion of NRSC 601B) every year the student is enrolled in the graduate program.
The course runs from September to April.
Prerequisite(s): NRSC 601A or NRSC 601B.
Grading: INP, COM, N, F

NRSC 603 Units: 1.5 - 3.0
Advanced Topics in Neuroscience
Topics of current interest in Neuroscience.
Notes:
• May be taken more than once for credit with permission of the program.
• Pro Forma required.
Prerequisite(s): Permission of the program.

NRSC 609 Units: 1.5 - 3.0
Directed Studies in Neuroscience
Research projects or directed readings.
Notes:
• May be taken more than once for credit with permission of the program.
• Pro Forma required.
Prerequisite(s): Permission of the program.

NRSC 693 Units: 3.0
Candidacy Examination
The Candidacy exam will consist of a defence of a written proposal (10 page CIHR format) on the student's proposed dissertation research project and an oral exam based on the background material and research components of the proposal. The exam committee will be composed of a chair (current director of the neuroscience program or their designate) and at least three examiners. Members of the student's supervisory committee (excluding the supervisor) may serve as examiners but at least one examiner must be from outside of the supervisory committee and at least one of the examiners must be from outside of the candidate's supervisor's department. The candidate's supervisor is permitted to be present during the exam but is not permitted to participate or aid the student in any manner. Both the oral and written components of the exam must be successfully completed to advance in the program and a student may be required by the examining committee to be re-examined on either component if performance in the first instance is not deemed satisfactory. Students are only permitted one re-test of either component, and re-tests must be undertaken within two months of the initial exam. Failure on both components of the exam initially, or one component twice, will be considered grounds for removal from the Neuroscience Program. The candidacy examination must be held within 21 months of a student entering the PhD program. Students transferring from the MSc to the PhD program must complete the exam within 18 months from their entry into the PhD.
Note: Students enrol in NRSC 693 upon registering in the PhD program (or upon switching to the PhD program from the MSc program) and remain enrolled until all candidacy requirements are complete.
Grading: INP, COM, N, F

NRSC 699 Units: 21-39
PhD Dissertation
A dissertation containing an original scientific study which adds new knowledge to the field of neuroscience.
Note: Students who have completed equivalent prerequisites may request permission to register in the course.
Students possessing a MSc will require 21 units to fulfill the program requirements.
Students possessing a BSc will require 30 units to fulfill the program requirements.
Prerequisite(s):
• NRSC 693, or
• permission of the program.
Grading: INP, COM, N, F
NUED
Nursing, Advanced Practice:
Nurse Educator Option
School of Nursing
Faculty of Human and Social Development
All nursing courses are open to nursing students only unless otherwise noted in the course description. When a course is oversubscribed, preference will be given to nursing students who are closest to graduation. Contact the School of Nursing or refer to current timetable for course offerings.

Courses offered by the School of Nursing are also found under the following course codes: NUHI, NUNP, NURA, NURP, and NURS.

NUED 570 Units: 1.5
Formerly: NURA 530
Engaging with Pedagogy: Teaching and Learning in Nursing Education
Prepares students to explore and critically examine the philosophical, theoretical and ethical perspectives informing pedagogy in nursing education.

Note: Credit will be granted for only one of NUED 570, NURA 530.
Prerequisite(s): NUED 570.

NUED 571 Units: 1.5
Formerly: NURA 531
Critical Pedagogy in Nursing Education and Evaluation
Students identify and critique ideologies and discourses relevant to teaching, learning and evaluation.

Note: Credit will be granted for only one of NUED 571, NURA 531.
Prerequisite(s): NUED 570.

NUED 572 Units: 1.5
Formerly: NURA 532
Intersectoral Course and Curriculum Design in Nursing Education
Students apply theoretical and critical knowledge in the development of nursing curriculum, courses and learning activities for intersectoral nursing education practice.

Note: Credit will be granted for only one of NUED 572, NURA 532.
Prerequisite(s): NUED 570 and NUED 571.

NUED 573 Units: 1.5 Hours: 104
Nurse Educator Practice I
Students will have opportunities to further integrate their evolving knowledge of Advanced Practice Nursing. Nurse Educator option through working with expert teachers in clinical, academic, and/or community settings.

Prerequisite(s): NUED 570.
Corequisite(s): NUED 571.
Grading: INC, COM, N, F.

NUED 574 Units: 1.5 Hours: 104
Nurse Educator Practice II
Students integrate their evolving knowledge of Advanced Practice Nursing: Nurse Educator option through teaching practice with expert teachers in clinical, academic, policy and/or community settings.

Prerequisite(s): All of NUED 570, NUED 571, NUED 572, NUED 573.
Grading: INC, COM, N, F.

NUHI
Nursing and Health Information Science
School of Nursing
Faculty of Human and Social Development
Specifically for Double-Degree MN option in Nursing and Health Information Science.

All Nursing courses are open to Nursing students only unless otherwise noted in the course description. When a course is oversubscribed, preference will be given to Nursing students who are closest to graduation. Contact the School of Nursing or refer to current timetable for course offerings.

Courses offered by the School of Nursing are also found under the following course codes: NUED, NUNP, NURA, NURP, and NURS.

NUHI 599 Units: 6.0
Thesis
Students working independently, with faculty guidance from both Nursing and Health Information Science, complete a thesis to meet specific professional and academic goals. The thesis will entail research in a topic area chosen in consultation with the student’s supervisory committee. Evaluation of this course will be carried out as per Faculty of Graduate Studies regulations.

Grading: INP, COM, N, F.

NUNP
Nursing, Advanced Practice:
Nurse Practitioner Option
School of Nursing
Faculty of Human and Social Development
All Nursing courses are open to Nursing students only unless otherwise noted in the course description. When a course is oversubscribed, preference will be given to Nursing students who are closest to graduation. Contact the School of Nursing or refer to current timetable for course offerings.

Courses offered by the School of Nursing are also found under the following course codes: NUED, NUNP, NURA, NURP, and NURS.

NUNP 531 Units: 1.5
Applied Pathophysiology
Provides students with the advanced knowledge of pathophysiology required to understand, diagnose and treat health and illness in primary health care contexts. Includes an overview of individual and family growth and development as well as the epidemiology of health and disease across the lifespan. Students will learn about the etiology, signs and symptoms, assessment and treatment of common acute/episodic health conditions, diseases or disorders and chronic illnesses prevalent across the lifespan.

NUNP 532 Units: 1.5
Pharmacological Interventions in Health and Illness
An opportunity for students to gain advanced knowledge of pharmacology, including pharmacokinetics and pharmacodynamics. Students will learn about evidence informed practice in the selection, prescription and monitoring of drugs to treat diseases, disorders or conditions and injuries. By the end of the course they should know how to select drug therapy based on knowledge of pharmacology, drug interactions, client health history and client disease, disorder or condition. Students will be prepared to write prescriptions that meet both provincial and federal standards and legislative requirements, including responsibilities relevant to prescription and management of controlled substances. Further, students will examine the effects of the marketing practices of pharmaceutical companies on prescribing practices and explore the ethics and implications for practice as a family nurse practitioner.

NUNP 537 Units: 1.5
Family Nurse Practitioner Integration Internship
Students demonstrate synthesis of knowledge, skills and abilities, and integration of learning across the curriculum in preparation for NP registration and employment. Students complete 150 faculty and practice preceptor(s) supervised practice hours, and lead a community-based proposal addressing health service gaps, continuity of care, and/or health promotion/illness prevention. Required onsite component.

Note: Students may be required to demonstrate knowledge and skills obtained in all of NUNP 531, NUNP 532, NUNP 540, NUNP 541, NUNP 543, NUNP 544, NUNP 545, NUNP 546, NUNP 547, NUNP 548 upon enrolment in NUNP 537 if 12 months or more have lapsed between completing prerequisite courses and enrolling in NUNP 537.
Prerequisite(s): All of NUNP 531, NUNP 532, NUNP 540, NUNP 541, NUNP 543, NUNP 544, NUNP 545, NUNP 546, NUNP 547, NUNP 548 upon enrolment in NUNP 537.
Grading: INP, COM, N, F.
NUNP 540 - Units: 1.5
Advanced Assessment and Diagnostic Reasoning Theory

The theoretical knowledge, judgment, skills, and abilities required by advanced practice nurses, specifically nurse practitioners, to assess individuals across the lifespan, families and communities. Includes comprehensive and holistic health assessments that integrates the psychosocial, emotional, ethnic, cultural, and spiritual dimensions of health, health promotion and disease prevention, and diagnostic reasoning. Integration of an advanced practice nursing perspective will help students critique various approaches to assessment of health and illness.

Notes:
- Credit will be granted for only one of NUNP 540, NUNP 531.
- A student must pass both theory and practice corequisites to advance to the next set of corequisite theory and practice courses. If a student fails one corequisite course they may be required to complete both corequisites again the next time they are offered. Students may be required to demonstrate knowledge and skills obtained in NUNP 531, NUNP 532 upon enrolment in NUNP 540/541 if 12 months or more has lapsed between their completing these courses and enrolling in NUNP 540.

Prerequisite(s): NUNP 531 and NUNP 532.
Corequisite(s): NUNP 541.

NUNP 541 - Units: 1.5
Advanced Assessment and Diagnostic Reasoning Practice

An opportunity for 150 hours of practice experience through the application of theoretical knowledge required by advanced practice nurses, specifically nurse practitioners, to assess individuals across the lifespan, families and communities. The focus is on the development of students’ knowledge, judgment and skills related to the application of core nurse practitioner (NP) competencies of health assessment, health promotion and disease prevention and professional roles and responsibilities. There will be a required onsite component in this course.

Notes:
- Credit will be granted for only one of NUNP 541, NUNP 533.
- A student must pass both theory and practice corequisites to advance to the next set of corequisite theory and practice courses. If a student fails one corequisite course they may be required to complete both corequisites again the next time they are offered. Students may be required to demonstrate knowledge and skills obtained in NUNP 531, NUNP 532 upon enrolment in NUNP 540/541 if 12 months or more has lapsed between their completing these courses and enrolling in NUNP 540.

Prerequisite(s): NUNP 531 and NUNP 532.
Corequisite(s): NUNP 540.
Grading: INC, COM, N, F

NUNP 543 - Units: 1.5
Integrated Primary Health Care and Advanced Practice Nursing: I (Theory) (Adult I)

Advanced practice nursing with persons who experience episodic illness conditions, chronic diseases, and complex health challenges. Particular attention is paid to theoretical perspectives and skill development related to nurse practitioner core competencies with culturally diverse young to middle-aged adults and families. Selected concepts, theories, and research associated with health promotion and maintenance, and illness prevention are explored within the community context. Students will receive a letter grade upon completion.

Notes:
- Credit will be granted for only one of NUNP 543, NUNP 534, NUNP 550.
- A student must pass both theory and practice corequisites to advance to the next set of corequisite theory and practice courses. If a student fails one corequisite they may be required to complete both corequisites again the next time they are offered. Students may be required to demonstrate knowledge and skills obtained in NUNP 531, NUNP 532, NUNP 540 and NUNP 541 upon enrolment in NUNP 543/544 if 12 months or more have lapsed between completing prerequisite courses and enrolling in NUNP 543/544.

Prerequisite(s): All of NUNP 531, NUNP 532, NUNP 540, NUNP 541.
Corequisite(s): NUNP 544.

NUNP 544 - Units: 1.5
Integrated Primary Health Care and Advanced Practice Nursing: I (Practice) (Adult I)

An opportunity for 150 hours of practice experience through which students engage in advanced practice nursing under the guidance of a course instructor and clinical preceptor. Integration of philosophical, theoretical, and methodological perspectives gleaned from 543 as well as from core courses within the program is sought. There will be a required onsite component to this course. Upon completion of the practice component, students will receive a grade.

Notes:
- Credit will be granted for only one of NUNP 544, NUNP 534, NUNP 551.
- A student must pass both theory and practice corequisites to advance to the next set of corequisite theory and practice courses. If a student fails one corequisite they may be required to complete both corequisites again the next time they are offered. Students may be required to demonstrate knowledge and skills obtained in NUNP 531, NUNP 532, NUNP 540 and NUNP 541 upon enrolment in NUNP 543/544 if 12 months or more have lapsed between completing prerequisite courses and enrolling in NUNP 543/544.

Prerequisite(s): All of NUNP 531, NUNP 532, NUNP 540, NUNP 541, NUNP 543.
Corequisite(s): NUNP 545.
Grading: INC, COM, N, F

NUNP 545 - Units: 1.5
Integrated Primary Health Care and Advanced Practice Nursing: II (Theory) (Childbearing/rearing Families and Children)

Advanced practice nursing with persons who experience episodic illness conditions, chronic diseases, and complex health challenges. Particular attention is paid to theoretical perspectives and skill development related to nurse practitioner core competencies with culturally diverse childrearing families, infants, children, adolescents, and pregnant women. Health promotion and illness prevention are explored within the community context. After completion of the theory component, students will receive a letter grade.

Notes:
- Credit will be granted for only one of NUNP 543, NUNP 535, NUNP 556.
- A student must pass both theory and practice corequisites to advance to the next set of corequisite theory and practice courses. If a student fails one corequisite they may be required to complete both corequisites again the next time they are offered. Students may be required to demonstrate knowledge and skills obtained in NUNP 531, NUNP 532, NUNP 540, NUNP 541, NUNP 543 and NUNP 544 upon enrolment in NUNP 545/546 if 12 months or more have lapsed between completing prerequisite courses and enrolling in NUNP 545/546.

Prerequisite(s): All of NUNP 531, NUNP 532, NUNP 540, NUNP 541, NUNP 543, NUNP 544.
Corequisite(s): NUNP 546.

NUNP 546 - Units: 1.5
Integrated Primary Health Care and Advanced Practice Nursing: II (Practice) (Childbearing/rearing Families and Children)

An opportunity for 150 hours of practice experience through which students engage in advanced practice nursing under the guidance of a course instructor and clinical preceptor. Integration of philosophical, theoretical, and methodological perspectives gleaned from 545 as well as from core courses within the program is sought. There will be a required onsite component to this course. Upon completion of the practice component, students will receive a grade.

Notes:
- Credit will be granted for only one of NUNP 544, NUNP 535, NUNP 561.
- A student must pass both theory and practice corequisites to advance to the next set of corequisite theory and practice courses. If a student fails one corequisite they may be required to complete both corequisites again the next time they are offered. Students may be required to demonstrate knowledge and skills obtained in NUNP 531, NUNP 532, NUNP 540, NUNP 541, NUNP 543 and NUNP 544 upon enrolment in NUNP 545/546 if 12 months or more have lapsed between completing prerequisite courses and enrolling in NUNP 545/546.

Prerequisite(s): All of NUNP 531, NUNP 532, NUNP 540, NUNP 541, NUNP 543, NUNP 544.
Corequisite(s): NUNP 545.
Grading: INC, COM, N, F
NUNP 547 Units: 1.5
Integrated Primary Health Care and Advanced Practice Nursing: III (Theory) (Adult II)
Advanced practice nursing with persons who experience episodic illness conditions, chronic diseases, and complex health challenges. Particular attention is paid to theoretical perspectives and skill development related to nurse practitioner core competencies with culturally diverse older adults and families. Selected concepts, theories, and research associated with health promotion and maintenance, illness prevention, chronic disease management, and end of life care are explored within the community context. Upon completion of the theory component, students will receive a letter grade.

Notes:
• Credit will be granted for only one of NUNP 547, NUNP 534, NUNP 550.
• A student must pass both theory and practice corequisites to advance to the next set of corequisite theory and practice courses. If a student fails one corequisite they may be required to complete both corequisites again the next time they are offered. Students may be required to demonstrate knowledge and skills obtained in NUNP 531, NUNP 532, NUNP 540, NUNP 541, NUNP 543, and NUNP 544 upon enrollment in NUNP 547/548 if 12 months or more have lapsed between completing prerequisite courses and enrolling in NUNP 547/548.

Prerequisite(s): All of NUNP 531, NUNP 532, NUNP 540, NUNP 541, NUNP 543, NUNP 544.
Corequisite(s): NUNP 548.

NUNP 548 Units: 1.5
Integrated Primary Health Care and Advanced Practice Nursing: III (Practice) (Adult II)
An opportunity for 150 hours of practice experience through which students engage in advanced practice nursing under the guidance of a course instructor and clinical preceptor. Integration of philosophical, theoretical and methodological perspectives gleaned from 547 as well as from core courses within the program is sought. There will be a required onsite component to this course. At the completion of the practice component, students will receive a pass/fail grade.

Notes:
• Credit will be granted for only one of NUNP 548, NUNP 534, NUNP 551.
• A student must pass both theory and practice corequisites to advance to the next set of corequisite theory and practice courses. If a student fails one corequisite they may be required to complete both corequisites again the next time they are offered. Students may be required to demonstrate knowledge and skills obtained in NUNP 531, NUNP 532, NUNP 540, NUNP 541, NUNP 543, and NUNP 544 upon enrollment in NUNP 547/548 if 12 months or more have lapsed between completing prerequisite courses and enrolling in NUNP 547/548.

Prerequisite(s): All of NUNP 531, NUNP 532, NUNP 540, NUNP 541, NUNP 543, NUNP 544.
Corequisite(s): NUNP 547.
Grading: INC, COM, N, F.

NUNP 593 Units: 1.5
Evaluation Synthesis
The culminating educational experience for NP students, and the singular opportunity for faculty members to assess students’ evolution toward the terminal goals of the MN-NP program. Serves as an evaluation instrument in which students demonstrate their synthesis of coursework, knowledge, skills and experiential learning, to reveal a broad mastery of their learning across the curriculum in preparation for successful registration, initial employability and further career advancement.

Note: Students may be required to register in this course over two (2) consecutive terms.
Grading: INP, COM, N, F

NURP
Nursing Policy and Practice
School of Nursing
Faculty of Human and Social Development
All Nursing courses are open to Nursing students only unless otherwise noted in the course description. When a course is oversubscribed, preference will be given to Nursing students who are closest to graduation. Contact the School of Nursing or refer to current timetable for course offerings.

NURP 598 Units: 3.0
Formerly: 597
Practice Project
Designed for students not completing the Thesis Option (NURP 599). Students will complete a project that is creative, innovative and contributes to scholarly nursing practice in an area of professional interest. The project is intended to facilitate synthesis of students’ graduate experience and contribute to their development as a leader in nursing. Evaluation of this course will be carried out as per Faculty of Graduate Studies regulations.

Notes:
• Credit will be granted for only one of NURP 598, NURP 597.
• The examining committee of a student sitting a non-thesis oral will be comprised of a supervisor, a committee member, a Chair and an External Examiner.
Grading: INP, COM, N, F

NURP 599 Units: 6.0
Thesis
An alternative to the Practice Project (NURP 598). Students working independently, with faculty guidance, complete a thesis to meet specific professional and academic goals. The thesis will entail research in a topic area chosen in consultation with the student’s supervisory committee. Evaluation of this course will be carried out as per Faculty of Graduate Studies regulations.
Grading: INP, COM, N, F
NURS 508  
Methodological Knowledge and Advanced Practice Nursing  
Explores a variety of approaches to research guided by a philosophical framework that includes ontology, epistemology, and ethics. Emphasis will be placed on developing student's abilities to critically appraise and synthesize research studies with a view to clarity, consistency, and coherence.  
**Note:** Credit will be granted for only one of NURS 508, NURA 514, NURA 515.

Prerequisite(s): NURS 506.

NURS 509  
Evaluation of Health Care  
Exploration of concepts, theories and strategies for evaluating nursing care and health programs/services as applied to a range of health care settings.  
**Prerequisite(s):**  
- NURS 508 and NURA 516; or  
- permission of the school.

NURS 510  
Applied Statistics in Nursing  
Students will develop familiarity with advanced statistical methods as they are applied to nursing and health care. These will include multiple linear regression, factor analysis, and multivariate analysis of variance. A brief introduction to structural equation modelling and psychometric methods may be offered.  
**Prerequisite(s):**  
- NURS 425; or  
- permission of the school.

NURS 520  
Nursing Disciplinary Knowledge  
Explores philosophical discourses in the study of nursing, and introduces a philosophical framework that includes ontological, epistemological, and ethical knowledge for critique and expansion, including Indigenous perspectives. Emphasis is placed on paradigms of belief that inform and support innovation and creativity for human flourishing in advanced practice nursing.  
**Notes:**  
- Credit will be granted for only one of NURS 520, NURS 506, NURA 511, NURA 512.  
- NURS 520 is foundational to the MN program for all students and must be taken at the beginning of the program.

NURS 521  
Advanced Practice Nursing and Professional Identity  
Explores nursing as an academic field of study with emphasis on theories, including Indigenous perspectives that inform and shape the discipline of nursing, professional identity, and advanced practice nursing. Critique, expansion, and limits of theory are examined within a philosophical framework of ontological, epistemological, and ethical congruence.  
**Note:** Credit will be granted for only one of NURS 521, NURS 507, NURA 512, NURA 513.

NURS 522  
Nursing Ethics for Health System Transformation  
Explores various theories, including decolonizing practices and Indigenous perspectives that inform ethics for advanced practice nursing, collaboration, decision-making, and change in light of health care system trends, issues and roles for nurses. Critique, expansion, and limits of ethics are examined within a philosophical framework of ontological, epistemological, and ethical congruence.  
**Note:** Credit will be granted for only one of NURS 522, NURS 514, NURA 514.

NURS 523  
Disciplinary Research for Advanced Practice Nursing  
Develop an understanding of research processes comprising critical analysis of existing knowledge, including Indigenous perspectives, creating relevant research questions, discerning appropriate methodologies, and critiquing research within interpretive approaches and statistical literacy. Critique, expansion, and limits of research are examined within a researcher pathway, philosophical framework, and the integral role of research in advanced practice nursing.  
**Notes:**  
- Credit will be granted for only one of NURS 523, NURS 502A, NURS 507, NURS 508, NURA 512, NURA 513.  
- Students who have equivalent undergraduate level statistics and research course successfully completed within the past five years may request permission of the department to register in the course.

Prerequisite(s):  
- 1.5 units of 300- or 400-level STAT course; or  
- permission of the school.

NURS 524  
Professional Inquiry for Advanced Practice Nursing  
Develop coherent arguments for evaluation and program management, and understand diverse approaches to knowledge synthesis, translation and dissemination, including Indigenous perspectives. Critique, expansion, and limits of evaluation and program management are examined within a philosophical framework of ontological, epistemological, and ethical congruence.  
**Notes:**  
- Credit will be granted for only one of NURS 524, NURS 502B, NURS 508, NURA 515.  
- Students who have equivalent undergraduate level statistics and research course successfully completed within the past five years may request permission of the department to register in the course.

Prerequisite(s):  
- 1.5 units of 300- or 400-level STAT course; or  
- permission of the school.

NURS 549  
Health Services Research  
This course introduces nurses to health services research and examines the contributions that nurses make to this field of inquiry and to the health care system. Issues of significance for nurses and the knowledge nurses need to understand and engage in nursing health services research are explored. Key concepts such as population health, health care delivery, health policy, quality of care and related research methods will be examined.  
**Prerequisite(s):**  
- NURS 508; or  
- permission of the school.
NURS 568  Units: 1.5
Trends and Issues in Advanced Practice Nursing
Students have the opportunity to explore the notion of advanced practice nursing (APN) and to consider the mandate, competencies, and divergent perspectives and knowledge bases related to APN as they challenge and extend the boundaries of nursing practice and advance the profession. Students will consider issues related to the definitions, competencies, legal, and ethical issues related to APN locally, nationally and internationally.
Note: Not open for credit to students with credit in all of NURS 565, NURS 566, NURS 567.
Grading: INC, COM, N, F.

NURS 590  Units: To be determined
Directed Studies
An opportunity for students to develop individual studies at the graduate level (e.g., directed readings, research project etc.) with the supervision of one or more faculty members. A plan of study including focus, credit value and evaluation method is developed in consultation with a faculty member and must be approved by the graduate adviser prior to registering in this course.
Notes:
• May be taken more than once for credit in different topics with permission of the school.
• Pro Forma required.

NURS 593  Units: 1.5
Thesis/Project Seminar
Prepares students to select either a project or thesis option in their program and to finalize membership on the supervisory committee. Students will explore options for research and begin work on the project or thesis proposal.
Grading: INC, COM, N, F.

NURS 594  Units: 1.5
Scholarly Inquiry: Integrating Knowledge and Practice
Exploration of how scholarly inquiry and knowledge mobilization can promote evidence-informed nursing practice. Students also explore options for and discuss the process of completing a nursing practice, leadership, or education project.
Note: Credit will be granted for only one of NURS 594, NURS 593.
Grading: INC, COM, N, F.

NURS 596  Units: 1.5
Nursing Scholarship: Integration & Dissemination
Exploration of creative ways to integrate and disseminate what students have learned from the Master of Nursing program. Students will produce a scholarly paper, present their work, and respond to questions.
Note: Credit will be granted for only one of NURS 596, NURS 598.
Grading: INC, COM, N, F.

NURS 598  Units: 3.0
Practice Project
Students will complete a project that is creative, innovative and contributes to scholarly nursing practice in an area of professional interest. The project is intended to facilitate synthesis of students’ graduate experience and contribute to their development as advanced practice nurses. The project is an alternative to the Thesis Option (NURS 599).
Evaluation of this course will be carried out as per Faculty of Graduate Studies regulations.
Notes:
• Credit will be granted for only one of NURS 598, NURS 596.
• The examining committee of a student sitting a non-thesis oral will be comprised of a supervisor, a committee member and a Chair.
Grading: INP, INC, COM, N, F.

NURS 599  Units: 6.0
Thesis
Students working independently, with faculty guidance, complete a thesis to meet specific professional and academic goals. The thesis will entail research in a topic area chosen in consultation with the student’s supervisory committee. The thesis option is an alternative to the Practice Project (NURS 598). Evaluation of this course will be carried out as per Faculty of Graduate Studies regulations.
Grading: INP, COM, N, F.

NURS 601  Units: 1.5
Philosophy in Nursing
Explores the range of philosophical schools of thought and traditions that have influenced the development of the discipline of Nursing. Prepares students to participate in and contribute to knowledge development that will shape the evolution of the discipline.

NURS 602  Units: 1.5
Epistemological Discourses in the Study of Nursing
Explores the current state of theorizing that underpins nursing’s disciplinary and knowledge claims.
Pre- or Corequisite(s):
• NURS 601; or
• permission of the department.

NURS 604A  Units: 1.5
Research Methodology for Nursing and Health Care: Qualitative
Explores assumptions and claims underlying qualitative methodologies that inform research in professional nursing practice and health care.
Notes:
• Credit will be granted for only one of NURS 604, NURS 604A.
• NURS 604A is not a pre- or co-requisite of NURS 604B.
Prerequisite(s): NURS 601.

NURS 604B  Units: 1.5
Formerly: NURS 604.
Research Methodology for Nursing and Health Care: Quantitative
This portion of the course will explore assumptions and biases underlying various quantitative methodologies that inform research in professional nursing practice and health care. We will examine quantitative research designs with particular emphasis on their appropriateness for addressing nursing and health problems. Issues specific to the design of nursing health care studies are explored.
Notes:
• Credit will be granted for only one of NURS 604, NURS 604B.
• NURS 604A is not a pre- or co-requisite of NURS 604B.
Prerequisite(s): NURS 601.

NURS 620  Units: 1.5 or 3.0
Research Internship
Research Internships are arranged with a specific faculty member and may be taken over one or several terms. During the Research Internship, a learner will have hands-on experiences with several aspects of research, for example, the conceptualization of a study, study design, applying for funding, obtaining ethical approval, accessing the field, collecting and analyzing data, writing, and knowledge translation.
Prerequisite(s): Permission of the school.
Grading: INP, COM, N, F.

NURS 621  Units: 1.5
Doctoral Seminar
Opportunities to engage in dialogue about the contribution of doctoral education to the academic discipline and professional practice of nursing. This course will take place over two terms.
Grading: INP, COM, N, F.

NURS 622  Units: 1.5
Dissertation Seminar
Opportunities to engage in dialogue about topics that will support their preparation for doctoral candidacy exams and dissertation research. Students actively participate in the planning and process of the course, taking leadership roles and presenting their own scholarly work.
Grading: INP, COM, N, F.

NURS 630  Units: 1.5 or 3.0
Teaching Internship
Teaching Internships may be arranged with a specific faculty member and may be taken over one or several terms. During the Teaching Internship, a student will engage with several aspects of teaching, educational research initiatives and/or, writing line teaching, educational research initiatives and/or, writing.
### NURS 679 - DOCTORAL RESEARCH SEMINAR

**Units:** 1.5-4.5

Based on an understanding of scholarship as a social and communal activity, these seminars provide students from across cohort's opportunities to have conversations about research and scholarly activity, as well as topics relevant to becoming stewards of the discipline. Students do not need to be enrolled in a specific program in order to participate. The seminar provides opportunities for students to develop individual research and scholarly activity, as well as topics relevant to doctoral level. Based on student demand, courses on the following focused topics will be organized for individuals or groups of students: measurement, evaluation research, grounded theory, ethnography, hermeneutics and phenomenology, discourse analysis, historical analysis, instrument development and testing and participatory action research. This research-focused course is available to small groups of interested students and/or individuals by faculty members and/or visiting faculty.

**Notes:**
- May be taken more than once for credit in different topics with permission of the school to a maximum of 4.5 units.
- Pro Forma required.
- Students will be required to take 1.5 units of NURS 679 coursework and can, with permission of their program supervisor, enrol in as many as 4.5 units of NURS 679 coursework. Scheduled over two terms to facilitate student engagement among multiple cohorts.

**Grading:** INP, COM, N, F

### NURS 680 - SPECIAL TOPICS IN RESEARCH METHODS

**Units:** 1.5-4.5

Based on student demand, courses on the following focused topics will be organized for individuals or groups of students: issues of measurement, evaluation research, grounded theory, ethnography, hermeneutics and phenomenology, discourse analysis, historical analysis, instrument development and testing and participatory action research. This research-focused course is available to small groups of interested students and/or individuals by faculty members and/or visiting faculty.

**Notes:**
- May be taken more than once for credit in different topics with permission of the school to a maximum of 4.5 units.
- Pro Forma required.
- Students will be required to take 1.5 units of NURS 680 coursework and can, with permission of their program supervisor, enrol in as many as 4.5 units of NURS 680 coursework.

**Grading:** INP, COM, N, F

### NURS 690 - DIRECTED STUDIES

**Units:** 1.5 or 3.0

Provides opportunities for students to develop individual studies at the doctoral level (e.g., directed readings, research project etc.) with the supervision of one or more faculty members. A plan of study including focus, credit value and evaluation method is developed in consultation with a faculty member and must be approved by the graduate adviser prior to registering in this course. We encourage students interested in a research topic to register for a NURS 680 course rather than a NURS 690.

**Notes:**
- Pro Forma required.

**Prerequisite(s):** Permission of the school.

### NURS 693 - CANDIDACY EXAMINATION

**Units:** 3.0

Students enrol in NURS 693 to prepare for their candidacy examination. That includes: 1) completing candidacy exam papers or open-book exam and 2) successfully developing and defending a research proposal. Both milestones require an oral examination. The content of the papers or exam is related to course work, the substance and methodology of students’ research interests, and provides a basis for proposal development. Must be completed prior to registration in NURS 699.

**Grading:** INP, COM, N, F

### NURS 699 - DISSERTATION

**Units:** 30.0

All doctoral students are required to prepare a dissertation upon which a public examination and defense is conducted. The dissertation must qualify as a significant and original contribution to disciplinary knowledge.

**Prerequisite(s):** NURS 693.

**Grading:** INP, COM, N, F

### PAAS

#### PACIFIC AND ASIAN STUDIES

**Department of Pacific and Asian Studies**

**Faculty of Humanities**

**PAAS 500 - THEORIES OF PACIFIC REGION SOCIETIES**

**Units:** 1.5

Offers a critical review of contemporary social theory pertinent to the study of Pacific and Asian societies. Drawing from various scholarly approaches from the fields of sociology, anthropology, political science and history, readings will address the institutions, mechanisms and values involved in social, cultural and political transformations. Focuses on current theory about the nature and scope of globalization, commodification, or modernization, with particular emphasis on the effect of these on local social and cultural practice.

**PAAS 501 - CULTURAL, LINGUISTIC AND LITERARY THEORIES IN ASIA-PACIFIC STUDIES**

**Units:** 1.5

Focuses on an area of faculty specialization. The topic will vary but may include one of the following: migration studies; state and civil society; the politics of culture; global and local relations; and gender and ethnic identity.

**PAAS 520 - SPECIAL TOPICS IN PACIFIC STUDIES**

**Units:** 1.5

Focuses on an area of faculty specialization. The topic will vary but may include one of the following: theatre studies; postcolonial literature; linguistics; popular culture; cinema studies; and critical assessments of the works of individual authors and artists.

**PAAS 521 - SPECIAL TOPICS IN ASIA-PACIFIC LITERATURE, LINGUISTICS AND CULTURE**

**Units:** 1.5

Focuses on an area of faculty specialization. The topic will vary but may include one of the following: theatre studies; postcolonial literature; linguistics; popular culture; cinema studies; and critical assessments of the works of individual authors and artists.

**PAAS 550 - RESEARCH METHODOLOGIES**

**Units:** 1.5

Required of all graduate students. We will work through the mechanics of designing a thesis, from initial conceptualization through to methodologies and analysis. Students will design a full thesis proposal and participate in a mock defense.

**PAAS 580 - ADVANCED READINGS IN JAPANESE, CHINESE OR INDONESIAN**

**Units:** 1.5

Critical reading and analysis of advanced works in the original language.

**PAAS 590 - DIRECTED STUDIES**

A directed readings course, to be taken with the thesis supervisor, which will allow students to develop in-depth understanding of their topic/area of specialization.

**Note:** May be taken more than once for credit in different topics to a maximum of 3 units.

**PAAS 599 - MA THESIS**

**Units:** 6.0-9.0

**GRADUATE STUDIES**

**PAAS**

#### PUBLIC ADMINISTRATION DISPUTE RESOLUTION

**School of Public Administration**

**Faculty of Human and Social Development**

**PADR 501 - COLLABORATION AND ENGAGEMENT**

**Units:** 1.5

The 21st century workplace requires conflict resolution competence and collaborative skills to work effectively in public and non-profit sector environments. Prepares students to anticipate, identify, assess, prevent, mitigate, and manage or resolve conflict. A critical approach to theory and practice is adopted and three distinctive areas of learning are woven together: integral theory and conflict analysis; negotiation; and facilitation.

**Prerequisite(s):** Admission to MA program in Dispute Resolution or admission to MPA program (on campus).

**PADR 502 - ANALYSIS FOR THE PUBLIC AND NON-PROFIT SECTORS**

**Units:** 1.5

Formerly: PADR 502A

Provides an intensive introduction to qualitative and quantitative approaches and methods for research, policy analysis, evaluation and other analytical projects in the public and non-profit sectors. Offers students opportunities to learn and apply methodologies for evidence-informed decisions in organizational and inter-organizational settings.

**Note:** Credit will be granted for only one of 502, 502A, ADMN 502A, DR S 15, CD 505.

**Prerequisite(s):** Admission to MA program in Dispute Resolution or admission to MPA (on campus) program.
PADR 503 Units: 1.5
Professional Integrity in the Public and Non-Profit Sectors
Builds professional competencies and reflective practice skills for those working in the public and non-profit sectors. Using a case-based approach, topics include: ethical dilemmas and management of disputes, the issues of personal responsibility and accountability; loyalty to employer, political and professional neutrality and obligations to the public interest; conflict of interest; confidentiality and transparency; and privacy protection. Students study standards of conduct established in both sectors and the philosophical theories which underpin them.

Note: Credit will be granted for only one of PADR 503, ADMN 422, ADMN 554, DR 512.

Prerequisite(s): Admission to MA program in Dispute Resolution or admission to MPA program (on Campus).

PADR 504 Units: 1.5
Public Leadership and Management
Introduces theories of leadership and management development and practice. Examines the role of leaders, managers and conflict specialists as agents of positive influence in complex socio-technical systems. Leadership, management and dispute resolution competencies will be introduced and developed in individual, team, organizational, and inter-organizational contexts. Through experiential learning, students will apply concepts to self, others (as team members), leaders and managers.

Note: Credit will be granted for only one of PADR 504, ADMN 507, DR 511.

Prerequisite(s): Admission to MA program in Dispute Resolution or admission to MPA program (on Campus).

PADR 505 Units: 1.5
Policy-making and Policy Communities
Students learn about the public policy-making process and develop skills in the art and craft of policy analysis. Introduces key concepts and theories and then builds skills and knowledge with information-gathering exercises, case studies, and preparation and presentation of decision briefs. Students review policy-making in a broad context, pulling together evidence and different analytical lenses for a variety of organizations and identify and recommend strategies and develop workable implementation and communication plans.

Note: Credit will be granted for only one of PADR 505, ADMN 556.

Prerequisite(s): Admission to MA program in Dispute Resolution or admission to MPA program (on Campus).

PADR 509 Units: 0 Hours: 1.5
Co-op Seminar: Introduction to Professional Practice
Discusses the nature of co-operative education experiential expectations, how to bring learning into the co-op experience, and the services provided by the School of Public Administration Co-op Office. Guidance on how to succeed in co-op placements is provided: preparing résumés and covering letters, interviewing, networking, job development, managing diversity. Attendance at this non-credit course is required for all MADR and MPA On Campus students.

Notes:
• Credit will be granted for only one of PADR 509, ADMN 589, DR 589.
• Offered in the Fall academic term only.

Grading: INC, COM, N, F.

PHI 500 Units: 1.5 or 3.0
Topics in Philosophy
Note: May be taken more than once for credit in different topics with permission of the department.

PHI 514 Units: 1.5 or 3.0
Topics in Philosophy of Mind
Note: May be taken more than once for credit in different topics with permission of the department.

PHI 521 Units: 1.5 or 3.0
Topics in Philosophy of Science
Note: May be taken more than once for credit in different topics with permission of the department.

PHI 533 Units: 1.5 or 3.0
Topics in Applied Philosophy
Note: May be taken more than once for credit in different topics with permission of the department.

PHI 534 Units: 1.5 or 3.0
Topics in Ethics
Note: May be taken more than once for credit in different topics with permission of the department.

PHI 535 Units: 1.5 or 3.0
Topics in Social and Political Philosophy
Note: May be taken more than once for credit in different topics with permission of the department.

PHI 541 Units: 1.5 or 3.0
Topics in Aesthetics
Note: May be taken more than once for credit in different topics with permission of the department.

PHI 551 Units: 1.5 or 3.0
Topics in Epistemology
Note: May be taken more than once for credit in different topics with permission of the department.

PHI 552 Units: 1.5 or 3.0
Formerly part of PHI 551
Topics in Metaphysics
Notes:
• Credit will be granted for only one of PHI 552, PHI 551 (if taken in the same topic).
• May be taken more than once for credit in different topics with permission of the department.

PHI 561 Units: 1.5 or 3.0
Topics in Philosophy of Language
Note: May be taken more than once for credit in different topics with permission of the department.

PHI 570 Units: 1.5 or 3.0
Formerly part of PHI 551
Topics in Logic
Note: May be taken more than once for credit in different topics with permission of the department.

PHI 590 Units: 1.5 or 3.0
Directed Studies
Note: May be taken more than once for credit in different topics with permission of the department.

PHI 591 Units: 1.5
Research Methods Seminar
Exclusively for graduate students in philosophy. Aims to help students broaden their reading base and deepen their communication and critical skills by engaging with philosophical works and core issues in a variety of fields.

PHI 592 Units: 1.5
Professional Development Practicum
Students must attend and demonstrate participation in philosophy colloquia, including regular preseminars, throughout the year. Attendance and evidence of participation will be tracked by the Graduate Adviser and Graduate Coordinator.

Grading: COM, N, F.

PHI 598 Units: 4.5
Major Research Project
Students must complete a Major Research Project under the guidance of a supervisor and committee member. This project will normally take the form of a journal article-type submission. Normally the Major Research Project will be completed during the Summer Session following the first Winter Session. The Major Research Project is subject to Oral Examination by a committee.

Grading: INP, COM, N, F.

PHI 693 Units: 3.0
Candidacy Examination
Grading: INP, COM, N, F.

PHI 699 Units: 18.0
PhD Dissertation
Prerequisite(s): PHI 693
Grading: INP, COM, N, F.
PHSP

Public Health and Social Policy
School of Public Health and Social Policy
Faculty of Human and Social Development

PHSP 501
Public Health Epidemiology

An approach grounded in population-based data. Focuses on the distributions and determinants of disease, disability and mortality. Topics include: characteristics and dynamics of health and disease in human populations, including epidemiological strategies in examining the natural history of disease and the impact of disease on the population; population health assessment, surveillance and emerging social epidemiological models that attend to complex models of causation.

PHSP 502
Public Health Biostatistics

Uses an approach grounded in population-based data. Builds upon PHSP 501, and focuses on understanding health inequalities across diverse settings and populations using biostatistics and epidemiological data to understand the life course determinants of health. Includes an overview of design and analysis of health-related data collection methods including survey methods. The basic concepts and methods of epidemiological biostatistical analysis are covered.

PHSP 503
Public Health Practice I: Population Health and Health Promotion

Contributes to students’ theoretical and practical understanding of population health and its determinants as well as diverse constructions of health as a foundation for health promotion. Considers health promotion principles, models and approaches as well as inequalities in health in the context of social justice and cultural safety. Fosters understanding of health and its determinants, health inequalities in Canada and globally, and a more in-depth understanding in at least one area of health promotion.

PHSP 504
Supportive Environments and Healthy Public Policy

Social environmental factors that impact the health of the community. Using a social-ecological model, attends to understanding the integral role of policy in the development of supportive environments. With an emphasis on critical analysis of health policy, students explore the development of healthy public policy in the management of public health concerns.

PHSP 505
Public Health Practice II: Public Health Interventions

Focuses on the range of evidence-informed public health interventions employed in public health practice. Based on the BC Core Public Health Functions Framework, examines strategies used to improve the health of a population including provision of public health prevention and improvement programs, disease and injury prevention, environmental health and health emergency management; strategies for health protection, health promotion, disease surveillance; public health capacity and infrastructure; the impact of public health services on health inequity.

PHSP 506
Public Health Research and Evaluation

Emphasis on evidence-informed practice, and examining community-based research strategies to explicate applied knowledge within the field of public health. Topics include literature synthesis approaches; program evaluation; qualitative research methods; and mixed methods.

PHSP 507
Practicum

All graduate diploma students are required to complete a 225 hour practicum. This planned, supervised and evaluated practicum will usually be completed at the end of the student’s program of study. Graduate diploma students who complete the diploma and wish to then complete the Master of Public Health will be required to take PHSP 589.

Prerequisite(s): PHSP 501, PHSP 503, PHSP 504.
Corequisite(s): PHSP 508A.
Grading: INP, COM, INC, N, F

PHSP 508A
Culminating Report

As a culmination of the practicum experience all Graduate Diploma students are required to complete a report that demonstrates a synthesis and integration of coursework and other learning experiences in preparation for professional public health practice. Graduate diploma students who complete the diploma and wish to then complete the Master of Public Health will be required to take PHSP 508B.

Prerequisite(s): All of PHSP 501, PHSP 503, PHSP 504.
Corequisite(s): PHSP 507.
Grading: INP, COM, INC, N, F

PHSP 508B
Culminating Report

As a culmination of the practicum experience all Master of Public Health students are required to complete a report that demonstrates a synthesis and integration of coursework and other learning experiences in preparation for professional public health practice.

Notes:
• Credit will be granted for only one of PHSP 508B, PHSP 590 (if taken in the same topic).
• Students who register in PHSP 589 for 1.5 units over two terms may enrol in PHSP 506 concurrently.

Prerequisite(s): All of PHSP 501, PHSP 502, PHSP 503, PHSP 504, PHSP 505, PHSP 506.
Corequisite(s): PHSP 589.
Grading: INP, COM, INC, N, F

PHSP 540
Knowledge Development in Public Health Nursing

Examines the history of public health nursing focusing on exemplary leaders engaged in creating change in their community. The emergence of nursing knowledge and understanding public health nursing as a synthesis of public health and nursing science is emphasized. Includes a critical examination of the roles of nurses in public health as well as exploring exemplary nurse led community based programs, services and policies related to disease prevention, health promotion and primary health care.

PHSP 541
Social Justice and Public Health Nursing

Emphasis on social justice as a philosophical base for public health nursing. From a critical perspective, students explore and compare theories of social justice. Drawing on personal and professional experience and using case examples, students explore the embodiment of social justice as ethical nursing practice.

Note: A requirement of this course is a condensed five-day on-campus seminar.

PHSP 542
Advanced Public Health Nursing Practice

Focuses on leadership and the conceptualization and application of advanced practice in public health nursing. Students engage in a critical analysis of advanced practice nursing as it relates to public health in Canadian and comparative contexts. Professional issues and advanced practice strategies are explored.

PHSP 550
Perspectives in Social Policy and Public Health

Informed by values of social justice, equity and diversity, focuses on a range of theoretical and practical perspectives that critically assess social policy and practice and public health issues in Canada in historical, contemporary and comparative contexts.

Note: A requirement of this course is a condensed five-day on-campus seminar.

PHSP 551
Social Values, Ideologies, and Policy Analysis

Addresses how social determinants of health and well-being, including existing patterns of cultural, economic and political relations and resources, impact public policies and practices; and, in turn, how healthy public policy can positively affect social environments and determinants in Canadian communities and society. Graduate course in the Public Health and Social Policy program administered by the Faculty of Graduate Studies.

PHSP 552
Healthy Public Policy Strategies

Examines an assortment of public health approaches, including policy techniques and plans relating to health promotion, policy analysis and advocacy, capacity building, forming partnerships and collaborations, and strengthening communities. Also considers the importance of healthy public policies for various groups facing health disparities.

PHSP 589
Practicum

All MPH students are required to complete a 450 hour practicum. This planned, supervised and evaluated experience will usually be completed at the end of the student’s program of study.

Note: Students must take a total of 3.0 units of PHSP 589 in their MPH program.

Students who register in PHSP 589 for 1.5 units over two terms may enrol in PHSP 506 concurrently.

Students must pass both 1.5 unit sections of PHSP 589 in order to complete the course.

Prerequisite(s): All of PHSP 501, PHSP 502, PHSP 503, PHSP 504, PHSP 505, PHSP 506.
Corequisite(s): PHSP 5088.
Grading: INP, COM, INC, N, F
PHSP 590 - PHYS 546

**COURSE LISTINGS PHYS**

**PHYS 500A**
Units: 1.5  
**Formerly:** part of 500  
**Quantum Mechanics**  
Topics include angular momentum and symmetries, perturbation theory, scattering theory, density operators, quantum statistical mechanics.  
**Note:** Credit will be granted for only one of PHYS 500, PHYS 500A.

**PHYS 501A**
Units: 1.5  
**Quantum Theory and Quantum Fields**  
Further topics in quantum theory, and an introduction to quantum field theory focusing on quantum electrodynamics.  
**Note:** Credit will be granted for only one of PHYS 501A, PHYS 500B, PHYS 600A.

**PHYS 501B**
Units: 1.5  
**Advanced Quantum Field Theory**  
Further topics in quantum field theory.  
**Note:** Credit will be granted for only one of PHYS 501B, PHYS 600B.

**PHYS 502A**
Units: 1.5  
**Formerly:** half of 502  
**Classical Electrodynamics**  
The classical theory of electrodynamics. Topics may include: electrodynamics as a relativistic field theory; static and retarded potentials; waves and their propagation in dispersive media; radiation and scattering.  
**Note:** Credit will be granted for only one of PHYS 502A, PHYS 502.

**PHYS 507A**
Units: 1.5  
**Solid State Physics I**  
First course on the quantum and classical physics of condensed matter. Electron energy band structure in crystals; ground state and quasiparticle excitations of metals and semiconductors; phonons, photons and the interactions between them.

**PHYS 507B**
Units: 1.5  
**Solid State Physics II**  
Second course on the quantum and classical physics of condensed matter. Symmetries and group theory of states of matter; optical properties of solids, quantum coherence phenomena; magnetism.

**PHYS 508**
Units: 1.5  
**Topics in Nanophysics**  
Covers the physics of phenomena occurring on the nanometer length scale. Topics include semiconductor nanostructures and devices, nanomagnetism and spintronics, nanophotonics, and molecular electronics.

**PHYS 509**
Units: 1.5  
**Standard Model Phenomenology**  
An introduction to the Standard Model of particle physics, including its symmetries and field-theoretic structure. Further topics may include a brief introduction to Lie groups and their applications, spontaneous symmetry breaking, Goldstone’s theorem and the Higgs mechanism, aspects of quantum chromodynamics.  
**Note:** Credit will be granted for only one of PHYS 509, PHYS 500B.

**PHYS 511A**
Units: 1.5  
**Topics in Nuclear and Particle Physics I**  
A selection of advanced topics in nuclear and/or particle physics.  
**Note:** May be taken more than once for credit.

**PHYS 513**
Units: 1.5  
**Topics in Theoretical Physics**  
A graduate course covering more advanced techniques and/or topical subjects in theoretical physics. Content varies.  
**Note:** May be taken more than once for credit.

**PHYS 515**
Units: 1.5  
**Data Analysis Techniques for Physics and Astronomy**  
An advanced course in data analysis for the physical sciences. Topics may include: Numerical methods, probability theory, Monte Carlo methods, statistical analysis techniques, and signal and image processing.

**PHYS 521A**
Units: 1.5  
**Techniques in Nuclear and Particle Physics**  
Topics may include: interaction of particles in matter; particle detection techniques and technologies; principles of particle accelerators; survey of existing facilities.  
**Note:** May be taken more than once for credit in different topics with permission of the department.

**PHYS 522**
Units: 1.5  
**Topics in Accelerator Physics**  
**Note:** May be taken more than once for credit.

**PHYS 534**
Units: 1.5  
**Radiotherapy Physics I**  
Principles of dosimetry of ionizing radiation with emphasis on applications to radiotherapy and radiobiology. Provides the basics of linear accelerator design as well as design of X-ray generating apparatus; also provides basics of electron and photon interactions with media, energy deposition in media, and radiation protection and shielding.

**PHYS 535**
Units: 1.5  
**Radiotherapy Physics II**  
A continuation of 534. Covers the physics and applied dosimetry of current external and internal irradiation treatment techniques.

**PHYS 539**
Units: 1.5  
**Radiation Dosimetry**  
The fundamentals of radiation dosimetry, ionization cavity theories and radiation dosimetry protocols. A variety of absolute and relative dosimetry techniques are also covered, with hands-on experience provided through a series of lab exercises on medical linear accelerators. Monte Carlo simulation of radiation transport for dosimetry applications is introduced.

**PHYS 540**
Units: 1.5  
**Medical Imaging**  
Fundamental theory and application of medical imaging, including radiology, computed tomography, magnetic resonance imaging, ultrasound, and nuclear medicine imaging. Basic principles, image formation and reconstruction, imaging instrumentation and hardware, and current trends of each imaging modality will be given.

**PHYS 544**
Units: 1.5  
**Topics in Radiation Biophysics**  
Topics in radiation biophysics, including DNA strand breaks, cell survival curves, fractionation and dose rate effects, oxygen effect, relative biological effectiveness, tumour radiobiology, radiation pathology, radiobiological modelling, stochastic and deterministic effects, and molecular techniques in radiobiology.

**PHYS 545**
Units: 0.5  
**Anatomy and Physiology for the Medical Physicist**  
WebCT based course covering basics of anatomy and physiology. Aimed at students in medical physics who are interested in clinical and/or academic careers that will require interaction with radiation oncologists and other health care professionals.  
**Grading:** INP, COM, N, F

**PHYS 546**
Units: 0.5  
**Clinical Shadowing**  
Shadowing course designed to give the student some insight into the clinical aspects of the medical physics profession. Under the guidance of a clinical physicist, students progress through a series of clinical areas. Modules illustrate the collaborative nature of the profession and the interaction with other medical professionals.  
**Grading:** INP, COM, N, F
PHYS 560 - POLI 616

PHYS 560 Units: 0
Colloquium
Weekly physics and astronomy colloquium.
Grading: INP, COM, N, F

PHYS 580 Units: 1.0-3.0
Directed Studies
Notes:
• May be taken more than once for credit.
• Pro Forma required.

PHYS 599 Units: to be determined
MSc Thesis
Note: Normally 6 units.
Grading: INP, COM, N, F

PHYS 693 Units: 3.0
PhD Candidacy Examination
Students enrol in PHYS 693 during their preparation for the candidacy examination. This begins at the time a student first enrolls in the PhD program and continues until candidacy requirements have been completed. The candidacy examination is to be completed no later than two years after the student first registers in (or transfers to) the PhD program.
Grading: INP, COM, N, F

PHYS 699 Units: to be determined
PhD Dissertation
Note: Normally 30 units.
Corequisite(s): PHYS 693.
Grading: INP, COM, N, F

POLI
Political Science
Department of Political Science
Faculty of Social Sciences

POLI 505 Units: 1.5
Problems of Political Analysis
An examination of theoretical viewpoints in the study of politics.

POLI 507 Units: 1.5
Comparative Policy and Governance
The study of diverging governance practices and policy outcomes in different jurisdictions. Focuses on: policy determinants such as history, culture, institutions, and the economy; policy dynamics and processes such as agenda-setting and decision-making, networks and communities, and policy change; and policy styles and transfer, referring to the state's ability to design, coordinate, implement and learn from policy interventions. Students will review seminal studies and undertake a comparative policy project.

POLI 508 Units: 1.5
Comparative Politics
An examination of key issues and debates in the study of comparative politics. Involves a survey of the major literature in this field of political science.

POLI 509 Units: 1.5
Political Theory
An examination of key issues and debates in the study of political theory. Involves a survey of the major literature in this field of political science.

POLI 514 Units: 1.5
Politics of the European Union
An examination of key issues and debates in the study of the politics of the European Union. It will involve a survey of the major literature in this field.

POLI 516 Units: 1.5
Canadian Politics
An examination of key issues and debates in the study of Canadian politics. Involves a survey of the major literature in this field of political science.

POLI 533 Units: 1.5
Themes in Contemporary Politics
A seminar dealing with an important theme or themes in contemporary politics. The content will vary from year to year.
Note: May be taken more than once for credit with permission of the department.

POLI 540 Units: 1.5
International Relations
An examination of key issues and debates in the study of international relations. Involves a survey of the major literature in this field of political science.

POLI 580 Units: 3.0
Legislative Internship Report
Grading: INP, COM, N, F

POLI 590 Units: 1.5
Directed Readings
Note: May be taken more than once for credit with permission of the department.

POLI 599 Units: 9.0
Thesis
Grading: INP, COM, N, F

POLI 600 Units: 1.5
Professional Development Seminar
A compulsory seminar for PhD students in Political Science that runs from September until April. Students are introduced to the professional aspects of the discipline including: how to write grant applications, how to teach effectively, how to design a syllabus and a CV, how to contribute to the administrative and intellectual community in their department and in political science more broadly.
Grading: INP, COM, N, F

POLI 605 Units: 1.5
Problems of Political Analysis
A further examination of theoretical viewpoints in the study of politics. Intended for doctoral candidates preparing for comprehensive examinations.

POLI 607 Units: 1.5
Comparative Policy and Governance
The study of diverging governance practices and policy outcomes in different jurisdictions. Focus is on: policy determinants such as history, culture, institutions, and the economy; policy dynamics and processes such as agenda-setting and decision-making, networks and communities, and policy change; and policy styles and transfer, referring to the state's ability to design, coordinate, implement and learn from policy interventions. Students will review seminal studies and undertake a comparative policy project. Intended for doctoral candidates preparing for a comprehensive examination in the field.

POLI 608 Units: 1.5
Comparative Politics
An examination of key issues and debates in the study of comparative politics. Involves a survey of the major literature in this field of political science. Intended for doctoral candidates preparing for a comprehensive examination in the field.

POLI 609 Units: 1.5
Political Theory
An examination of key issues and debates in the study of political theory. Involves a survey of the major literature in this field of political science.

POLI 610 Units: 1.5
Also: ADMN 604
Theories of Public Management
Explores different theories and approaches to understanding public administration and reform. Considers variations in three areas: political and constitutional authority, accountability and responsibility, and the roles of elected and non-elected officials; government structures, responsibilities for policy and service delivery, and distributed governance; and patterns and trends in central decision-making, budgeting, control, transparency, and citizen engagement. Students will review seminal comparative studies on administrative practice and reform and undertake a comparative study on a selected topic.
Note: Credit will be granted for only one of POLI 610, ADMN 604.

POLI 614 Units: 1.5
Politics of the European Union
An examination of key issues and debates in the study of the politics of the European Union. It will involve a survey of the major literature in the field of European politics.
Note: Credit will be granted for only one of POLI 614, POLI 633 (if taken in the same topic).

POLI 616 Units: 1.5
Canadian Politics
An examination of key issues and debates in the study of Canadian politics. Involves a survey of the major literature in this field of political science. Intended for doctoral candidates preparing for a comprehensive examination in the field.
POLI 633  Units: 1.5
Themes in Contemporary Politics
A seminar dealing with an important theme or themes in contemporary politics. The content will vary from year to year.
Note: May be taken more than once for credit in different topics with permission of the department.

POLI 649  Units: 1.5
International Relations
An examination of key issues and debates in the study of international relations. Involves a survey of the major literature in this field of political science. It is intended for doctoral candidates preparing for a comprehensive examination in the field.

POLI 690  Units: 1.5
Directed Readings
Note: May be taken more than once for credit in different topics to a maximum of 3 units.

PSYC 500  Units: 1.5
Professional Development
Covers issues important to the academic and career success of graduate students in psychology. Topics include prerequisites to finding a job, preparing a curriculum vitae, the publication and review process, making presentations, obtaining grants, university policies (e.g., criteria and processes for tenure decisions), balancing family and career, and ethical issues in psychology.
Grading: INC, COM, N, F

PSYC 501  Units: 1.0-6.0
Practicum in Applied Psychology
Practicum in an applied setting. 1 unit of credit equals approximately 100 hours.
Note: May be taken more than once for credit in different topics with permission of the department to a maximum of 6 units.
Grading: INP, COM, N, F

PSYC 502  Units: 1.5-4.5
Research Apprenticeship
Notes:
• May be taken more than once for credit in different topics with permission of the department to a maximum of 4.5 units.
• Pro Forma required.
• The student must consult with the instructor about the area of study prior to registration.

PSYC 503  Units: 4.0
Practicum in Clinical Psychology
Practicum in a clinical setting. 1 unit of credit is equivalent to approximately 100 hours.
Prerequisite(s):
• Admission to a graduate program in Clinical Psychology; and permission of the department.
Grading: INP, COM, N, F

PSYC 504  Units: 1.5-6.0
Individual Study
Notes:
• May be taken more than once for credit in different topics with permission of the department to a maximum of 6 units.
• The student must consult with the instructor about the area of study prior to registration.
Prerequisite(s): Permission of the department.

PSYC 505  Units: 4.0
Clinical Intervention Practicum
Practicum in a clinical setting with emphasis on various forms of intervention. 1 unit of credit is equivalent to approximately 100 hours.
Prerequisite(s):
• Admission to a graduate program in Clinical Psychology; and permission of the department.
Grading: INP, COM, N, F

PSYC 506A  Units: 1.5
Formerly: 506
Psychology Clinic Practice
Supervised psychological practice in the Psychology Clinic, Department of Psychology.
Note: May be taken more than once for credit in different topics.
Prerequisite(s):
• Admission to a graduate program in Clinical Psychology; and permission of the department.
Grading: INP, COM, N, F

PSYC 506B  Units: 1.5
Formerly: 506
Psychology Clinic Practice: Test Mastery
Supervised test mastery in the Psychology Clinic, Department of Psychology.
Note: Credit will be granted for only one of PSYC 506B, PSYC 506.
Prerequisite(s):
• Admission to a graduate program in Clinical Psychology; and permission of the department.
Grading: INP, COM, N, F

PSYC 507  Units: 1.5
Personality
Notes:
• May be taken more than once for credit in different topics with permission of the department to a maximum of 6 units.
• The specific content area will be designated prior to registration.

PSYC 512  Units: 1.5-4.5
Research Practicum
Practicum in a research setting with emphasis on planning, conducting, analyzing, and/or writing up research results under the supervision of faculty.
Notes:
• May be taken more than once for credit in different topics.
• The student must consult with the proposed research supervisor about the content and nature of the research activity prior to registration and complete a Pro Forma. The content must differ from but may be related to 599 or 699.
Prerequisite(s): Permission of the department.
Grading: INP, COM, N, F

PSYC 513  Units: 1.5 - 6.0
Quantitative Analysis
Topical seminars on specialized issues related to quantitative analysis.
Notes:
• May be taken more than once for credit in different topics with permission of the department to a maximum of 6 units.
• The specific content area will be designated prior to registration.

PSYC 517  Units: 1.5
Research Methods in Psychology
Notes:
• May be taken more than once for credit in different topics with permission of the department to a maximum of 6 units.
• The specific content area will be designated prior to registration.

PSYC 518  Units: 1.5
Psychometric Methods
Topics typically include: historical background, sample descriptive statistics, norm referencing, (e.g., percentiles, Z-scores, T-scores), criterion referencing, sensitivity/specificity, classical true score test theory, item response theory (IRT), reliability, validity, standard errors, test development, standards for clinical tests, and assessment of reliable change.

PSYC 520  Units: 1.5
Survey of Social Psychology
In-depth examination of state-of-the-science theories and research in social psychology. Social thinking and social behaviour are explored through the study of individual processes (e.g., social cognition, motivation), interpersonal processes (e.g., social influence, helping, intimacy), and societal processes (e.g., group dynamics, intergroup relations, cultural and environmental influences). Emphasis is placed on the more recent advancements in social psychology and on the research interests and expertise of the instructor.
PSYC 521 Units: 1.5
Human Motivation
Seminar review of theory and research examining human motivation. Special topics include goals, intrinsic and extrinsic motivation, social and achievement motivation, self-efficacy, self-regulation, unconscious motivation, and growth motivation. Emphasis is placed on the social and cognitive perspective on motivation.

PSYC 526 Units: 1.5
Special Topics in Personality and Social Psychology
Topical seminars on specialized issues related to personality and social psychology.
Note: May be taken more than once for credit in different topics to a maximum of 6 units.

PSYC 527 Units: 1.5
Research Methods in Social Psychology
In-depth examination of state-of-the-art research methods in social psychology. The topics may include experimental and quasi-experimental research designs, survey research, cross-cultural and longitudinal methods, event-sampling methods, psychophysiological methods, implicit measure and priming techniques, content and narrative analysis, computer simulation, data analytical strategies, ethics. Emphasis is placed on the more recent advancements in research methods in social psychology and on the research interests and expertise of the instructor.

PSYC 530 Units: 1.5
The Social Self
Seminar review of theory and research examining current social psychological research and theory on the self. Special topics include self-concept, self-esteem, motivation and the self, and the self in close relationships. Emphasis is placed on the more recent advancement in social and personality psychology of the self.

PSYC 531 Units: 1.5
Environmental Psychology
Seminar review of theory and research in environmental psychology. The topics may include sustainability-related behaviour, social design of buildings, human behaviour as it is related to built and natural environments, environmental perception and cognition, and person-environment transactions in nature, residences, neighbourhoods, schools, workplaces, retail stores, and public spaces.

PSYC 532 Units: 1.5
General Linear Model - Univariate
Presents a model-comparison approach to the analysis of a single dependent variable. Topics include simple and multiple regression involving continuous independent variables, categorical independent variables (ANOVA designs), and mixtures of the two (covariance analysis). Also covered will be logistic regression, data screening and outlier detection, testing of model assumptions, data transformation, and repeated measures models.

PSYC 533 Units: 1.5
General Linear Model - Multivariate
Topics generally include multivariate multiple regression, principal component and factor analysis, canonical correlation analysis, multivariate analysis of variance, discriminant function analysis and logistic regression.
Prerequisite(s): PSYC 532.

PSYC 534 Units: 1.5
Univariate Design and Analysis
An examination of various factorial designs for univariate data from an advanced perspective. For a number of frequently used designs (e.g., completely randomized, randomized block, and repeated measures), planned comparisons, tests of the models’ assumptions, expected mean squares, and interpreting interactions (e.g., simple main effects) will be covered. Students will be required to learn and use statistical software packages, such as SPSS and SAS. Time and interest permitting, a brief introduction to other modelling procedures for response time and accuracy data will be offered.

PSYC 537 Units: 1.5
Multilevel Modeling
Provides an introduction to concepts and practical application of multilevel models for nested data structures, including experimental and longitudinal data.
Prerequisite(s): PSYC 532.

PSYC 540 Units: 1.5
Formerly: 515A
History and Theory in Neuropsychology
Survey of major topics and issues in clinical and experimental neuropsychology, including a historical introduction and recent material. Topics may include aphasia, agnosia, apraxia, agnophobia, other clinical syndromes, and hemispheric specialization.
Note: Students who have completed an equivalent undergraduate human neuropsychology course may request permission to register in the course.
Prerequisite(s):
• PSYC 315; or
• permission of the program.

PSYC 541 Units: 1.5
Formerly: 541/544
Research Design and Methods in Neuropsychology
Seminar on research methods and designs in studying brain/behaviour relationships, the strengths and limitations of various methods, and the populations and research questions for which they are used.

PSYC 543 Units: 1.5
Formerly: 535B
Behavioural Neuroanatomy
Introduction to human neuroanatomy, neurophysiology and neurochemistry, with an emphasis on relationships between structure, function and behaviour.
Prerequisite(s): Permission of the department.

PSYC 545 Units: 1.5
Neuropsychological Assessment
In depth examination of general approaches and models for neuropsychological assessment. This includes evaluation of multiple areas of cognitive functioning, including attention, memory, executive functions, language, perceptual skills and motor abilities; Test interpretation, case analysis, and report writing skills will also be emphasized.
Prerequisite(s):
• PSYC 584; and
• admission to a graduate program in Clinical Psychology.
Corequisite(s): PSYC 506B.

PSYC 546A Units: 1.5
Advanced Neuropsychology: Children and Adolescents
In depth examination of typical neurodevelopment and associated acquired and neurodevelopmental disorders of children and adolescents, including a discussion of cognitive and behavioural profiles and techniques of neuropsychological assessment.
Prerequisite(s):
• All of PSYC 506B, PSYC 540, PSYC 545, PSYC 584; and
• admission to a doctoral program in Clinical Psychology;
• permission of the department.
Grading: INC, COM, N, F.

PSYC 546B Units: 1.5
Advanced Neuropsychology: Adults
In depth examination of typical neurodevelopment and associated acquired and neurodegenerative disorders of adults, including a discussion of cognitive and behavioural profiles and the techniques of neuropsychological assessment.
Prerequisite(s):
• All of PSYC 506B, PSYC 540, PSYC 545, PSYC 584; and
• admission to a doctoral program in Clinical Psychology;
• permission of the department.
Grading: INC, COM, N, F.

PSYC 547 Units: 1.5
Formerly: 535D
Neuropsychological Intervention in Adults
Introduction to theory and techniques associated with management of neurological disorders. Topics include the relationship between impairment, disability, and handicap, current techniques in cognitive rehabilitation, and interventions with individuals and families.
Prerequisite(s): Permission of the department.
Grading: INC, COM, N, F.

PSYC 548 Units: 1.5
Formerly: 515D
Special Topics in Neuropsychology
Note: May be taken more than once for credit in different topics to a maximum of 6 units.

PSYC 549 Units: 1.5
Neuropsychological Intervention in Children and Adolescents
Introduction to theory, methods and techniques associated with management of neurological, neuropsychological and learning disorders in children and adolescents. Topics include the relationship among impairment, disability, and functional status, with current empirically-based approaches for remediation and/or compensation of cognitive and academic skill deficits. Interventions will focus on individual children and families within both educational and social contexts.
Note: Enrolment may be limited.
Prerequisite(s):
• Admission to a doctoral program; and
• permission of the department.
Grading: INC, COM, N, F.
PSYC 550  
Units: 1.5  
Formerly: 512A  
Physiological Psychology: Introduction  
Seminar discussing selected topics concerning fundamental neurobiological processes underlying behaviour, including synaptic transmission, motor and sensory activity, motivation, neural plasticity, and theories of neural organization.

PSYC 560  
Units: 1.5  
Formerly: part of 561  
Research Methods in Lifespan Psychology  
A critical examination of research designs and analytical approaches for understanding developmental and aging-related change and variation. Includes cross-sectional, longitudinal, sequential, experimental, and qualitative approaches.

PSYC 561  
Units: 1.5  
Formerly: 560B  
History and Theories in Lifespan Psychology  
Seminar review of major classical and contemporary theoretical perspectives and their implications for the study of psychological development across the lifespan. Emphasis on differences among theoretical perspectives with respect to central developmental issues such as concepts of change, sources of development, and the universality of developmental laws and findings.

PSYC 562  
Units: 1.5  
Formerly: 560C  
Infancy and Childhood  
Seminar review of theory and research examining psychological development from infancy through childhood. Special topics include personality/temperament, attachment, parent-child relations, and socialization process. Emphasis is placed on the role of the context in individual development.

PSYC 563  
Units: 1.5  
Formerly: 560D  
Adult Development and Aging  
Seminar review of theory and research examining psychological processes during adulthood and aging. Specific topics include memory, intelligence, problem solving, personality, social processes, and mental health. Attention is also given to the biological and sociocultural contexts of these developments.

PSYC 564  
Units: 1.5  
Formerly: 561A  
Advanced Analysis of Change and Variation  
The emphasis is the general linear mixed model for repeated measurements and other nested data structures. Both multilevel and structural equation models will be examined and applied to longitudinal data. Special topics include time-invariant and time-varying covariates, evaluation of alternative time structures, change in factor-level outcomes and analysis of intensive repeated measures designs.  
Note: May be taken more than once for credit in different topics with permission of the department to a maximum of 3 units.  
Prerequisite(s):  
• PSYC 532 and PSYC 533; or  
• permission of the department.

PSYC 565  
Units: 1.5  
Formerly: 561B  
Cognitive Development in Adulthood and Aging  
Seminar review of theory and research examining gains and losses in various cognitive skills from young adulthood to old age. Traditional experimental, psychometric, and cognitive science approaches are considered. Specific topics include age-related change in memory, intelligence, problem solving, reading skills, as well as practical and social cognition.

PSYC 566  
Units: 1.5  
Formerly: 562  
Special Topics in Lifespan Development  
Topical seminars on specialized issues related to lifespan development and aging.  
Note: May be taken more than once for credit in different topics to a maximum of 6 units.

PSYC 567  
Units: 1.5  
Dysfunctional Development in Adulthood and Aging  
Seminar review of theory and research examining dysfunctional and pathological processes in later life. Specific topics include dementia, depression, personality disorders, alcoholism and other addictions and suicide. Attention will be given to issues of etiology, diagnosis, treatment, and impact on caregivers.

PSYC 568  
Units: 1.5  
Adolescence  
Seminar review of theory and research examining psychological processes during adolescence. Specific topics include pubertal maturation, parent-adolescent relations, gender roles, sexuality, and problem behaviour. Attention will be given to the role of the context (e.g., family, school) in adolescent development.

PSYC 569  
Units: 1.5  
Formerly: 569  
Psycholinguistics  
A seminar offered in collaboration with the department of Linguistics. Selected topics of interest in understanding the comprehension and production of natural language are examined. The most recent topics have been sentence processing, discourse analysis, linguistic inference and the resolution of ambiguity, and the development of cognitive science interests in reasoning and discourse processes as well as the structure of mental representations.

PSYC 570  
Units: 1.5 or 3.0  
Also: LING 570  
Cognitive Methods: Psychological foundations, procedures for fitting models, and applications to cognitive psychology and cognitive neuroscience will be considered.  
Note: Credit will be granted for only one of PSYC 574B, PSYC 579 (if taken in the same topic).

PSYC 574B  
Units: 1.5  
Cognitive Methods: Functional Magnetic Resonance Imaging  
Introduction to theory and methods of functional magnetic resonance imaging (fMRI) for the study of mind and brain using lectures, discussions and hands-on lab exercises. Includes underlying physics and physiology, experimental design, data collection and preprocessing, statistical analysis, and various advanced methods.  
Note: Credit will be granted for only one of PSYC 574B, PSYC 579 (if taken in the same topic).

PSYC 574C  
Units: 1.5  
Cognitive Methods: Computational Modelling  
Exploration of methods of computational modelling of cognitive processes. Methods covered may include mathematical models, symbolic models, and neural network models. Theoretical foundations, procedures for fitting models, and applications to cognitive psychology and cognitive neuroscience will be considered.  
Note: Credit will be granted for only one of PSYC 574C, PSYC 576B (if taken in the same topic).

PSYC 576A  
Units: 1.5  
Cognitive Processes: Human Memory  
Exploration of current theories and research on selected aspects of human memory. One or more major topics within the domain of human memory will be studied in depth.  
Note: May be taken more than once for credit in different topics to a maximum of 6 units.

PSYC 576D  
Units: 1.5  
Cognitive Processes: Cognitive Control  
Exploration of selected theories and research in cognitive psychology and/or the cognitive neuroscience of cognitive control. One or more major topics within the domain of cognitive control (e.g. working memory, attention, error detection, conflict monitoring, response inhibition, and/or decision making) will be studied in depth.  
Note: May be taken more than once for credit in different topics with permission of department to a maximum of 6 units.

PSYC 576E  
Units: 1.5  
Cognitive Processes: Visual Perception  
Exploration of current theories and research on selected aspects of visual perception. One or more major topics (e.g., object recognition, Gestalt perception, neuropsychology of visual perception) will be studied in depth.  
Notes:  
• Credit will be granted for only one of PSYC 576E, PSYC 511 (if taken in the same topic).  
• May be taken more than once for credit in different topics with permission of department to a maximum of 6 units.
PSYC 577  
**Units:** 1.5  
**Cognitive Seminar**  
Weekly seminar throughout the Winter session, involving faculty and graduate students in the Cognitive Psychology Program. Seminar participants take turns hosting the meeting, typically by presenting a paper on recent or ongoing cognitive psychological research.  
**Note:** May be taken more than once for credit to a maximum of 9 units.  
**Prerequisite(s):**  
- Admission to a graduate program in Cognitive Psychology; or  
- permission of the department.  
**Grading:** INP, COM, N, F.  

PSYC 578  
**Units:** 1.5  
**Research Methods in Clinical Psychology**  
Psychological research design issues with clinical populations. Topics include randomized controlled trials, efficacy versus effectiveness research, statistical versus clinical significance, cross-sectional and longitudinal research designs with clinical populations, qualitative methods and content analysis, single case experiments and case study methods, cognitive and physiological measures, observational methods, meta-analysis, program evaluation, and clinical research ethics. Issues of gender, age, and cultural diversity in clinical research are discussed throughout the course.  

PSYC 581  
Formerly: half of 580  
**Psychopathology: Childhood and Adolescence**  
Discussion of conceptual models used to understand psychopathology; presentation of various mental disorders from multiple theoretical perspectives; discussion of diagnostic issues emphasizing the impact of gender and culture in the expression of “abnormal” behaviour. Emphasis is on disorders that emerge during childhood and adolescence. Topics are considered from a scientist-practitioner perspective. Includes discussion of relevant professional issues in clinical psychology.  
**Prerequisite(s):** Admission to a graduate program in Clinical Psychology.  

PSYC 582  
Formerly: half of 580  
**Psychopathology: Adulthood**  
Draws on models for understanding psychopathology developed in PSYC 581. Discussion of conceptual models used to understand psychopathology; presentation of various mental disorders from multiple theoretical perspectives; discussion of diagnostic issues emphasizing the impact of gender and culture in the expression of “abnormal” behaviour. Emphasis is on disorders that emerge during adulthood. Topics are considered from a scientist-practitioner perspective. Includes discussion of relevant professional issues in clinical psychology.  
**Prerequisite(s):**  
- PSYC 581; and  
- admission to a graduate program in Clinical Psychology.  

PSYC 583  
**Units:** 1.5  
**Formerly:** 535C  
**Professional and Ethical Issues in Clinical Psychology**  
Discussion of ethical standards for providers of psychological services and of registration requirements as required by BCPA, CPA and APA. Presentations by practising psychologists related to professional and interprofessional problems encountered in practice.  
**Note:** Enrolment may be limited.  
**Prerequisite(s):**  
- Admission to a graduate program in Clinical Psychology; and  
- permission of the department.  
**Grading:** INP, COM, N, F.  

PSYC 584  
**Units:** 1.5  
**Clinical Assessment: Cognitive Functioning**  
Introduction to theory and practice in the assessment of cognitive functioning and academic achievement, including test administration, scoring, interpretation, and report writing. Test administration proficiency and individual case study interpretation are required during formal laboratory experiences.  
**Prerequisite(s):** Admission to a graduate program in Clinical Psychology.  
**Grading:** INC, COM, N, F.  

PSYC 585  
**Units:** 1.5  
**Clinical Assessment: Psychosocial Functioning**  
Introduction to theory and practice in the psychological assessment of social, emotional and personality functioning.  
**Prerequisite(s):** Admission to a graduate program in Clinical Psychology.  
**Grading:** INC, COM, N, F.  

PSYC 586A  
**Units:** 1.5  
**Formerly:** half of 586; 624B  
**Advanced Clinical Assessment**  
Advanced theory and professional issues in the psychological assessment of social, emotional and personality functioning.  
**Note:** Enrolment may be limited.  
**Prerequisite(s):**  
- PSYC 585; and  
- admission to a graduate program in Clinical Psychology; and  
- permission of the department.  
**Grading:** INC, COM, N, F.  

PSYC 586B  
**Units:** 1.5  
**Formerly:** half of 586; 624B  
**Practice in Advanced Clinical Assessment**  
Supervised practice in the psychological assessment of social, emotional and personality functioning.  
**Note:** Enrolment may be limited.  
**Prerequisite(s):**  
- PSYC 585; and  
- admission to a graduate program in Clinical Psychology; and  
- permission of the department.  
**Grading:** INC, COM, N, F.  

PSYC 588  
**Units:** 1.5  
**Formerly:** half of 516  
**Child and Adolescent Therapy**  
Introduction to different theoretical approaches to child psychotherapy and a discussion of techniques; supervised experience will be offered in subsequent sections.  
**Notes:**  
- May be taken more than once for credit in different topics to a maximum of 4.5 units.  
- Enrolment may be limited.  
**Prerequisite(s):**  
- Admission to a graduate program in Clinical Psychology; and  
- permission of the department.  
**Grading:** INP, COM, N, F.  

PSYC 589  
**Units:** 1.5  
**Formerly:** 516  
**Introduction to Evidence-Based Adult Psychotherapies**  
Overview of theory, research, and practice in adult psychotherapy. Introduction to the major schools of psychotherapy and to the common factors present across forms of psychotherapy. Beginning therapy skills will be developed through role plays and experiential exercises. Supervised experience is offered in 590.  
**Prerequisite(s):** Admission to a graduate program in Clinical Psychology.  

PSYC 590  
**Units:** 1.5  
**Practical Issues and Challenges in Adult Psychotherapy**  
An advanced psychotherapy course that builds upon the introductory therapy skills developed in 589. Includes didactic seminar and group case consultation.  
**Note:** Enrolment may be limited.  
**Prerequisite(s):**  
- PSYC 589; and  
- admission to a doctoral program in Clinical Psychology; and  
- permission of the department.  
**Corequisite(s):** PSYC 590A.  
**Grading:** INP, COM, N, F.  

PSYC 591  
**Units:** 1.5  
**Formerly:** 628  
**Special Topics in Clinical Psychology**  
**Note:** May be taken more than once for credit in different topics to a maximum of 6 units.  
**Prerequisite(s):** Admission to a graduate program in Clinical Psychology.  

PSYC 593  
**Units:** 1.5  
**Family Interventions**  
Introduction to various theoretical approaches to family interventions. Specific techniques are explored through readings, discussions, assignments, and role plays.  
**Note:** Enrolment may be limited.  
**Prerequisite(s):**  
- PSYC 589; and  
- admission to a doctoral program in Clinical Psychology; and  
- permission of the department.  
**Grading:** INP, COM, N, F.
Special Topics in Clinical Intervention
Introduction to any one or more specialized therapeutic techniques for working with individuals in clinical settings.

Note: May be taken more than once for credit in different topics to a maximum of 6 units.

Prerequisite(s): Admission to a graduate program in Clinical Psychology.
Grading: INP, COM, N, F

Cognitive Behavioural Therapy
An advanced psychotherapy course that provides students with an understanding of the theory and clinical skills associated with Cognitive-Behavioural Therapy. Theory and specific techniques are explored through readings, class discussion, class assignments, and role-plays.

Note: Credit will be granted for only one of PSYC 595, PSYC 594 (if taken in the same topic).

Prerequisite(s):
- PSYC 589; and
- admission to a doctoral program in Clinical Psychology.
Grading: INP, COM, N, F

Interpersonal Therapies
An advanced psychotherapy course that provides students with an understanding of the theoretical underpinnings of the major interpersonal therapies and the role of interpersonal process in therapy in general. Specific theories and techniques are explored through readings, class discussion, and class assignments.

Note: Credit will be granted for only one of PSYC 596, PSYC 594 (if taken in the same topic).

Prerequisite(s):
- PSYC 589; and
- admission to a doctoral program in Clinical Psychology.
Grading: INP, COM, N, F

Clinical Psychology Colloquium
Weekly colloquium through the Winter session, involving faculty and graduate students in the Clinical Psychology Program. Colloquium participants take turns hosting the meeting, typically presenting on current clinical practice issues, cases, or research.

Note: May be taken more than once for credit to a maximum of 7.5 units.

Prerequisite(s): Admission to a graduate program in Clinical Psychology.
Grading: INP, COM, N, F

Thesis
Grading: INP, COM, N, F
SDH 500B Units: 1.5
Fundamentals of Health Research II
A continuation of 500A, an interdisciplinary seminar covering fundamental topics in health research such as: basics in epidemiology, ethics, policy, health and wellness, grant and proposal writing, academic presentations, critical review for publication, knowledge transfer and developing community partnerships. Topics to be covered in the core courses are central to health research scholarship and provide core competencies preparatory to the independent research component of the program.
Prerequisite(s):
- SDH 500A; or
- permission of the program.

SDH 500A Units: 1.5
Social Dimensions of Health Colloquium I
The SDH colloquium series exposes students to a wide range of conceptual and substantive issues that reflect the breadth and depth of health research generally. Attendance and participation in the colloquium is mandatory throughout their time in the SDH program. Students receive 3 units of pass/fail credit during their first year. Students will be required to make presentations of their own research in the colloquium.
Grading: INP, COM, N, F

SDH 501A Units: 1.5
Social Dimensions of Health Colloquium II
A continuation of 501A, a colloquium series that exposes students to a wide range of conceptual and substantive issues, which reflect the breadth and depth of health research generally. Attendance and participation in the colloquium is mandatory throughout their time in the SDH program. Students receive 3 units of pass/fail credit during their first year. Students will be required to make presentations of their own research in the colloquium.
Prerequisite(s):
- SDH 501A; or
- permission of the program.
Grading: INP, COM, N, F

SDH 590 Units: 1.5
Directed Studies
Notes:
- May be taken more than once for credit in different topics with the permission of the program.
- Pro Forma required.

SDH 599 Units: 6.0
Thesis
Grading: INP, COM, N, F

SDH 600A Units: 1.5
Fundamentals of Health Research I
An interdisciplinary seminar covering fundamental topics in health research such as: basics in epidemiology, ethics, policy, health and wellness, grant and proposal writing, academic presentations, critical review for publication, knowledge transfer and developing community partnerships. Topics to be covered in the core courses are central to health research scholarship and provide core competencies preparatory to the independent research component of the program.

SDH 600B Units: 1.5
Fundamentals of Health Research II
A continuation of 600A, an interdisciplinary seminar covering fundamental topics in health research such as: basics in epidemiology, ethics, policy, health and wellness, grant and proposal writing, academic presentations, critical review for publication, knowledge transfer and developing community partnerships. Topics to be covered in the core courses are central to health research scholarship and provide core competencies preparatory to the independent research component of the program.
Prerequisite(s):
- SDH 600A; or
- permission of the program.

SDH 601A Units: 1.5
Social Dimensions of Health Colloquium
The SDH colloquium series exposes students to a wide range of conceptual and substantive issues that reflect the breadth and depth of health research generally. Attendance and participation in the colloquium is mandatory throughout their time in the SDH program. Students receive 3 units of pass/fail credit during their first year. Students will be required to make presentations of their own research in the colloquium.
Prerequisite(s):
- SDH 601A; or
- permission of the program.
Grading: INP, COM, N, F

SDH 601B Units: 1.5
Social Dimensions of Health Colloquium II
A continuation of 601A, a colloquium series that exposes students to a wide range of conceptual and substantive issues, which reflect the breadth and depth of health research generally. Attendance and participation in the colloquium is mandatory throughout their time in the SDH program. Students receive 3 units of pass/fail credit during their first year. Students will be required to make presentations of their own research in the colloquium.
Prerequisite(s):
- SDH 601A; or
- permission of the program.
Grading: INP, COM, N, F

SDH 690 Units: 1.5
Directed Studies
Notes:
- May be taken more than once for credit in different topics with the permission of the program.
- Pro Forma required.

SDH 693 Units: 3.0
Comprehensive Exam
Three questions related to their particular research area will be crafted by the student in consultation with their supervisory committee. The questions will be answered in a written format, drawing upon pertinent literature and will be evaluated on a pass/fail basis.
Grading: INP, COM, N, F

SDH 699 Units: 15.0
Dissertation
Prerequisite(s): SDH 693.
Grading: INP, COM, N, F

SLST

Slavic Studies
Department of Germanic and Slavic Studies
Faculty of Humanities

SLST 501 Units: 1.5
Also: GMST 501
Introduction to the Disciplines of Germanic and Slavic Studies
An introduction to the research specialties that make up Germanic and Slavic Studies: literary and cultural studies, film studies, cultural history and second language acquisition. May include sessions on how to write a research grant proposal, do sophisticated library research, prepare a bibliography and write a thesis proposal.
Note: Credit will be granted for only one of SLST 501, GER 501, GMST 501.

SLST 502 Units: 1.5
Also: GMST 502
Theory and Practice
Introduces students to the theories and methodologies that animate the disciplines of Germanic and Slavic studies and may include topics such as professional skills, pedagogy and thesis writing.
Note: Credit will be granted for only one of SLST 502, GMST 502.

SLST 503 Units: 1.5
Also: GMST 503
Teaching in the Disciplines of Germanic and Slavic Studies
A practice-based introduction to course design, teaching strategies, methodologies and assessment tools in the teaching areas of Germanic and Slavic Studies.
Note: Credit will be granted for only one of SLST 503, GMST 503.

SLST 505 Units: 1.5
Advanced Russian Language Study
Research topics may include Russian morphology, phonetics, lexicology, and language acquisition.

SLST 509 Units: 1.5
Also: GMST 509
Special Topics Field School
Exploration of cultural studies topics in European, German-speaking or Slavic countries. Promotes intercultural and experiential learning through joint workshops with European students and field research working at relevant cultural sites and with relevant artefacts. Topics vary.
Note: May be taken more than once for credit in a different topic.

SLST 511 Units: 1.5
Studies in Film
A critical analysis and study of films of the 20th and 21st century by Slavic and East European filmmakers.

SLST 521 Units: 1.5
Studies in Russian Literature and Culture
Examination of literary works and cultural processes in Russian and/or Soviet society.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Units</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SLST 522</td>
<td>Studies in Ukrainian Literature and Culture</td>
<td>1.5</td>
<td>Examination of literary works and cultural processes in Ukraine.</td>
</tr>
<tr>
<td>SLST 531</td>
<td>Studies in Slavic Cultural History</td>
<td>1.5</td>
<td>A cultural studies approach to texts, films, performances, media and material objects and spaces in Slavic and East European nations.</td>
</tr>
<tr>
<td>SLST 560</td>
<td>Slavic-Canadian Studies</td>
<td>1.5</td>
<td>Examination of the culture of Slavic and East European diasporas in Canada, as well as their impact on the creative processes in their home countries.</td>
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<tr>
<td>SLST 570</td>
<td>Studies in New Media in Second Language Acquisition</td>
<td>1.5</td>
<td>Critical examination of the current research on teaching a foreign language. Focus on learning and teaching outside of the language environment, foreign language learning theories, teaching methodologies and practices. Note: Credit will be granted for only one of SLST 570, GMST 570.</td>
</tr>
<tr>
<td>SLST 581</td>
<td>Twentieth-Century Genocides in Eastern Europe</td>
<td>1.5</td>
<td>Examines the common and unique features of genocides, ethnic cleansings, and forced population transfers in twentieth-century Eastern Europe including the Ukrainian Famine, the Holocaust, and the Bosnian War.</td>
</tr>
<tr>
<td>SLST 590</td>
<td>Directed Studies in Slavic Studies I</td>
<td>1.5</td>
<td>Notes: * May be taken more than once for credit to a maximum of 4.5 units. * Pro Forma required.</td>
</tr>
<tr>
<td>SLST 591</td>
<td>Directed Studies in Slavic Studies II</td>
<td>1.5</td>
<td>Hours: 3-0 Notes: * May be taken more than once for credit in different topics to a maximum of 4.5 units. * Pro Forma required.</td>
</tr>
<tr>
<td>SLST 599</td>
<td>Thesis</td>
<td>6.0-9.0</td>
<td>Grading: INP, COM, N, F</td>
</tr>
<tr>
<td>SOCI 504</td>
<td>Contemporary Social Theory</td>
<td>1.5</td>
<td>Formerly: 500 Surveys major perspectives in, and critical responses to, contemporary social theory, including such formulations as postmodernism, poststructuralism, post-Marxism, psychoanalysis, and feminism and such theorists as Bauman, Beck, Bourdieu, Fraser, Giddens, Habermas, Hooks and Wallerstein. Note: Credit will be granted for only one of SOCI 504, SOCI 500.</td>
</tr>
<tr>
<td>SOCI 507</td>
<td>Statistical Analysis</td>
<td>1.5</td>
<td>An introduction to statistical methods for Sociology, including bivariate and multivariate analysis, with an emphasis on an introduction to regression models in the social sciences and on the use of computer statistical software to analyze sociological data. This course is equivalent to and may be taught as SOCI 471. Note: Credit will be granted for only one of SOCI 507, SOCI 471, SOCI 3718 (if taken prior to May 2011).</td>
</tr>
<tr>
<td>SOCI 508</td>
<td>Linear Models</td>
<td>1.5</td>
<td>Intermediate multivariate linear models and related methods with applications to sociological research, including a detailed assessment of model assumptions, diagnostics and extensions and the generalization of models to non-linear relationships. Includes the use of computer statistical software for the analysis of data. Note: Credit will be granted for only one of SOCI 508, SOCI 472, SOCI 501. Prerequisite(s): SOCI 507.</td>
</tr>
<tr>
<td>SOCI 510</td>
<td>Categorical Data Analysis</td>
<td>1.5</td>
<td>Introduction to statistical methods for analyzing categorical data. The emphasis is on practical applications rather than statistical theories. Note: Students who have completed a course equivalent to SOCI 501 may request permission to register in the course. Prerequisite(s): * SOCI 501; or * permission of the department.</td>
</tr>
<tr>
<td>SOCI 511</td>
<td>Research Design</td>
<td>1.5</td>
<td>Hours: 3-0 Planning sociological inquiry: formulating a problem, relating the problem to existing theory and research, and determining appropriate empirical strategies.</td>
</tr>
<tr>
<td>SOCI 515</td>
<td>Qualitative Research Methods</td>
<td>1.5</td>
<td>Key issues and methods in the systematic study of the social world through qualitative sociological research. Examination of the relationship between analytical perspective and methodological decisions, methods of gathering data and analysis, issues of language, representation, politics, social organization and participation. Note: Students who have completed a course equivalent to SOCI 374 may request permission to register in the course. Prerequisite(s): * SOCI 374; or * permission of the department.</td>
</tr>
<tr>
<td>SOCI 520</td>
<td>Selected Topics in Contemporary Sociology</td>
<td>1.5</td>
<td>A seminar on topics shaped by the interests of students and instructor. Topics may include current issues in contemporary social theory, environmental sociology, racialization, mass media and social power, feminist theory, the sociology of disability. Note: Credit will be granted for only one of SOCI 520, SOCI 610 (if taken in the same topic).</td>
</tr>
<tr>
<td>SOCI 525</td>
<td>Gender, Power and Social Justice</td>
<td>1.5</td>
<td>An exploration of the formation and transformation of gender in the contemporary world, drawing on sociological, feminist and other relevant frameworks. Themes may include the relations between gendered discourses, identities and bodies, the political economy of gender, and intersections between gender and other forms of social power.</td>
</tr>
<tr>
<td>SOCI 535</td>
<td>Political Sociology</td>
<td>1.5</td>
<td>Examines political behaviour, formal politics, non-conventional politics, the state and civil society in contemporary societies. The social bases for political support and contention, including the role of social class and other forms of social cleavage and solidarity, the dimensions and consequences of the distribution of power in contemporary societies, and the political role of various social groups are discussed.</td>
</tr>
<tr>
<td>SOCI 545</td>
<td>Sociology of Health</td>
<td>1.5</td>
<td>The social determinants of health and illness in human societies. Topics may vary from year to year and, to a certain extent, will be modified to reflect student interest. Applies major theoretical perspectives in its coverage of specific topics. Topics may include: the social and cultural determinants of health with an emphasis on the health of vulnerable populations; embodiment and health; substance use and addictions; the organization and use of health services; public health; the conduct of socio-medical research; and ethical issues in health research. Notes: * May be taken more than once for credit in different topics. * Students who have completed a course equivalent to SOCI 445 may request permission to register in the course. Prerequisite(s): * SOCI 445; or * permission of the department. Recommendation(s): SOCI 285 strongly recommended prior to SOCI 545.</td>
</tr>
<tr>
<td>SOCI 556</td>
<td>Social Inequality</td>
<td>1.5</td>
<td>Studies the structure of economic inequality in contemporary societies, from the perspective of theory and research in social mobility, gender inequality, occupational segregation, elite formation, race/ethnic segregation and social class. The role of the welfare state and global capitalistic social organization in the distribution of income and the form and extent of poverty across societies are discussed.</td>
</tr>
</tbody>
</table>
SOCI 566 - SOCW 515

SOCI 566 Units: 1.5
Social Movements
Studies the origins, strategies, ideologies and political implications of social movements in North America, Europe and beyond. Attention is given to ecology, feminist, gay/lesbian, anti-racist, and human rights movements, as well as to the formation of the New Right.

SOCI 585 Units: 1.5
Seminar on Aging
An advanced study of social gerontology. Topics may vary from year to year and may be modified to reflect student interest. Examples include: caregiving, inter-generational relations, and health care policies. Applies key theoretical perspectives to specific topics (such as examining the subjective worlds of caregivers to older adults from feminist and constructivist perspectives; critiquing neoliberal health care policies for an aging society from a political economy perspective). Not offered every year.

Note: Students who have completed a course equivalent to SOCI 385 may request permission to register in the course.

Prerequisite(s):
- SOCI 385, or
- permission of the department.

SOCI 590 Units: 1.5
Directed Studies
Note: May be taken more than once for credit to a maximum of 3 units.

SOCI 598 Units: 3.0
Major Research Paper
A piece of independent research work involving substantial analytical engagement with a defined area of sociology guided by one or more research questions.

Prerequisite(s): Normally, a student is expected to have completed at least one year of course work prior to registration.

SOCI 599 Units: 6.0
Thesis
Note: Students who have completed all coursework may request permission to register in the course. After 16 months of coursework, the student is required to have an approved proposal on file to maintain registration in SOCI 599.

Grading: INP, COM, N, F

SOCI 620 Units: 1.5
Selected Topics in Sociological Research Methods
In-depth examination and/or comparison of specific research methods, such as survey research, critical discourse analysis, social network analysis, historical/comparative method, multilevel and longitudinal quantitative analysis, and institutional ethnography.

SOCI 690 Units: 1.5
Directed Studies
Note: May be taken more than once for credit to a maximum of 3 units.

SOCI 693 Units: 3.0
PhD Candidacy Examinations
Students enrolled in SOCI 693 for the duration of their preparation for their candidacy examinations. This begins at the time a student first enrolls in the PhD program and continues until candidacy requirements have been completed. Students are expected to complete all required coursework and comprehensive exams within 25 months after entering the PhD program.

Grading: INP, COM, N, F

SOCI 699 Units: 21.0
PhD Dissertation
Prerequisite(s): SOCI 693.
Grading: INP, COM, N, F

SOCW

Social Work

School of Social Work

Faculty of Human and Social Development

SOCW 505 Units: 1.5
Advanced Child Welfare Seminar
Explores topics of special interest in the development of child welfare practice from a critical, anti-oppressive and social justice perspective. Students are expected to conduct an analysis on a current child welfare topic they select in conjunction with the instructor.

Notes:
- Credit will be granted for only one of SOCI 505, SOCW 525.
- Offered as resources permit.

SOCW 506 Units: 4.5
Advanced Practicum
A minimum of 450 hours of advanced social work practice and demonstration of the application of critical analysis to practice are required. Faculty of Human and Social Development regulations concerning practica apply to the MSW practicum.

Prerequisite(s):
- 6 units of coursework (4.5 units of Advanced Program core courses plus 1.5 units of elective), and
- admission to MSW Advanced program.

Grading: INP, COM, N, F

SOCW 506A Units: 4.5
MSW Practicum
A minimum of 450 hours of social work practice and demonstration of the application of critical analysis to practice are required. Faculty of Human and Social Development regulations concerning practica apply to the MSW practicum.

Prerequisite(s):
- 6 units of coursework (4.5 units of Advanced Program core courses plus 1.5 units of elective), and
- admission to MSW Advanced program.

Grading: INP, COM, N, F

SOCW 510 Units: 1.5
Also: SPP 510
Policy Context of Practice
Reviews and analyzes a number of explanations of the policy-making process. Examines who makes policy in both governmental and voluntary human service organizations and the impact of policy on consumers and practitioners. Analyzes the policy/practice interface and uses substantive policy domains to illustrate how policy both enhances and constrains practice and how practice in turn can influence policy. Students are encouraged to develop their own understandings of the contributions of practice to policy.

Note: Credit will be granted for only one of SOCW 510, SPP 510, HSD 510.

Prerequisite(s): Admission to MSW Advanced program.

SOCW 511 Units: 1.5
Contemporary Debates and Ethical Dilemmas in Social Work
Examines and critiques current debates, ideas and discourses relating to social work knowledge and practice, with a specific focus on ethics. Emphasis is placed on postmodern, feminist, anti-racist and Indigenous perspectives as they challenge prevailing assumptions about individualism, meritocracy, professionalism and philanthropy. Specifically looks at the contributions of these perspectives to a critical theorizing of professional practice and ethics.

Note: Credit will be granted for only one of SOCW 511, SOCW 501, SOCW 518.

SOCW 512 Units: 1.5
Knowledge and Inquiry: Re-Theorizing Social Work
Takes as its starting point the idea that responsible and effective professional and scholarly practice begins with a critical examination of how relations of power shape knowledge production. Over the term, assumptions underlying the creation of knowledge and different approaches to knowing authoritatively will be investigated. Questions of ‘how we come to know’ and ‘how we go about asking’ are explored through poststructural, postcolonial and critical race lenses.

Note: Credit will be granted for only one of SOCW 512, SPP 502, HSD 502.

Prerequisite(s): Admission to MSW Advanced program.

SOCW 515 Units: 1.5
Transnational Social Work
Transnational feminist theorists argue that transnationalism links contemporary notions of nationality, gender, race and class to earlier histories of colonization and present day imperialism. Students examine the practices of the securitized, neo-liberal Canadian welfare state towards transnational communities by: (a) understanding transnational feminist theories, (b) analyzing nation-making and global inequality, (c) reviewing practices of transnational feminist social justice activism, and (d) critiquing international social work in view of all of the above.
SOCW 516  Units: 1.5  
Also: SPP 516
Research Methodologies
Critically reviews a wide range of research methodologies commonly practised in the human services. Considers the kinds of opportunities and challenges presented by each methodology. Emphasizes the link between the development of a research question and the selection of methodological approaches.
Note: Credit will be granted for only one of SOCW 516, SPP 516, HSD 516.
Prerequisite(s): Admission to MSW Advanced program.

SOCW 517  Units: 1.5
Research Seminar
Focuses on specific methodological, analytical and/or theoretical aspects of research for the thesis. Is intended to support graduate students in the thesis research and writing that they undertake following the completion of their coursework. Content varies from year to year, depending on students’ interests and needs.
Note: Students who are completing a thesis may request permission to register in the course.
Registration in SOCW 517 is normally continued until the student’s thesis proposal has been approved by the supervisory committee.
Prerequisite(s):
• SOCW 516; and
• permission of the program.
Grading: INP, COM, N, F

SOCW 521  Units: 1.5
Indigenous Perspectives on Knowledge and Research
Explores the dimensions of Indigenous ways of knowing that influence researching activities in Indigenous communities. Students will explore how, and from where, their own knowing emerges as well as critically examine how knowledge is constructed within larger society. Focuses on how power, culture, ethics, protocols, language, place and spirit shape knowledge.

SOCW 523  Units: 1.5
Self-Conscious Traditionalism in Indigenous Social Work Practice Seminar
Critical exploration of alternative models of Indigenous social work practice drawn from the literature and from their own practice. Concepts and skills of Indigenous leadership are also explored.

SOCW 526  Units: 1.5
Seminar in Community Health Policy and Practice in Indigenous Communities
Examination of such critical issues in community health as sexual abuse, substance misuse and family violence along with the collective steps that Indigenous (and other) communities have taken to restore health. The critical issues to be examined are determined collectively by students and faculty.

SOCW 531  Units: 1.5
Critical Exploration of Leadership Roles for Social Workers in Health Care
Inquiry based opportunity for students to critically examine their leadership styles and develop a foundational knowledge and skill base for effective involvement in organizational change, staff management, coaching and supervision, coordination of inter-professional teams and development of policies to address the social determinants of health.
Note: Offered as resources permit.

SOCW 532  Units: 1.5
Introduction to Social Work in the Health Care Sector
Examines the knowledge and skills required for social workers to be effective advocates while carrying out a range of responsibilities in the health sector within the context of a practice framework that focuses on the social determinants of health. The challenges and opportunities provided by the cultural and organizational contexts of practice in health care will be an important focus of the course for examining the inter-professional nature of practice. Particular aspects of practice such as appropriate documentation, informed consent and community development will be included.
Note: Offered as resources permit.

SOCW 533  Units: 1.5
Working with Trauma
Current theories and practices regarding the neurobiological, psychophysical and socio-cultural components of trauma. Four dimensions of experience will be explored: shock, developmental, accumulated stress, and socially and culturally-produced traumatic stress. Emphasis will be placed on concrete skills and strategies that have applicability to a wide variety of contexts. As well, students will learn to reduce the prevalence of secondary traumatization on themselves, colleagues, agencies and communities.
Note: Credit will be granted for only one of SOCW 533, SOCW 433, SOCW 580 (if taken in the same topic).
Grading: INP, COM, N, F

SOCW 537  Units: 1.5
Environmental Justice and Social Work
Environmentalism has gained prominence in social work scholarship and earlier practice models that ignored the physical environment are now critiqued. Students enter with political allegiance to green issues; educators find compatibility between professional practice and views on spirituality, environmental justice, and social service provision. Fears over environmental destruction and a general sense of disconnection from nature are finding traction. Students will explore these themes through the lenses of race, space, and environmental justice.

SOCW 540  Units: 4.5
Foundation Practicum
A minimum of 450 hours of social work practice and demonstration of the application of critical analysis to practice are required. Faculty of Human and Social Development regulations concerning practice apply to the MSW practicum.
Prerequisite(s):
• SOCW 541; and
• 3 units of SOCW (Foundation program core) courses.
Pre- or Corequisite(s): SOCW 546.
Grading: INP, COM, N, F

SOCW 541  Units: 1.5
Critical Social Work Practice
Introduces strategies for socially just social work through the exploration of Indigenous, feminist, anti-racist, anti-colonialist and post-structural approaches to practice. The development of critical consciousness (historical, socio-cultural and political influences on professional and personal identities and experiences) is emphasized, and shifting sources and forms of professional power and authority are examined. Specific skills will include interpersonal communication, problem solving, and working in alliance and solidarity in the context of increased inequality and diminished resources.

SOCW 543  Units: 1.5
Theorizing Social Difference
How do we come to know who we are and how is this knowledge raced, embodied, engendered and embedded in a material context? These questions underpin social work knowledge and practice. Developing an analysis of social difference is a crucial skill for social workers. In this course students will be introduced to the concepts of marginalization and dominance as they play out in (primarily) North American contexts. The course will look at social work theories and knowledge as a departure point from which to explore interdisciplinary theorizations of concepts core to the profession.

SOCW 544  Units: 1.5
Social Work, the State and Citizenship
Taking the perspective of ‘citizenship as social’, explores the lived realities and experiences of citizenship as it is configured on the basis of geography, class, race, gender, and other identity locations. Using citizenship theories explores the nature of social inclusion and exclusion that mark citizens’ lives in the Canadian Welfare state, examines the emancipatory potential of citizenship-based social work that is grounded in a vision of social justice.

SOCW 545  Units: 1.5
Networks and Communities
Social work practice within communities and social networks. Definitions of community are explored as experienced and conceptualized from various locations. Critical historical and theoretical analysis and ethical dilemmas posed by various approaches to community work are examined. Students have the opportunity to develop theoretical and practical understandings of anti-oppressive, anticolonial and anti-colonial community practice as experiences within their own communities.

SOCW 546  Units: 1.5
Collaborative Conversations
Focuses on developing social work practice skills with individuals and communities in ways that are both difference-centred and collaborative in nature. Students will critically analyze and develop their own, individual and community development, practice skills in relation to working in various community contexts, within a social justice framework. Students will examine ways to further difference-centred practice to become more effective, participatory and collaborative with clients, social services and civil society.
SOCW 547 Units: 1.5
Historicizing Social Work: Friendly Visits to Social Justice
Critical examination of the constitution of social work practice and theories at different historical and contextual moments and its varying roles in regulating the boundaries between national subjects and ‘others’. Students engage in critical/reflective study of social work responses to so-called ‘problem populations’ in the context of changing political, social, economic, and moral climates and the making of citizenship and nation.

SOCW 549 Units: 1.5
Research Foundations
This course reviews foundational concepts and strategies of social work research with a focus on the comprehension, critique and utilization of research in social work practice settings. Students critically reflect on examples of research and examine how power shapes knowledge. Research approaches for conducting ethical, emancipatory and socially just research are examined.

SOCW 550 Units: 1.5
Social Justice, Social Work and the Law
Explores and critiques theories and critical perspectives on the law, the legal system and the legal processes that have an impact on professional social work practice. Students will critically examine the interplay between marginalization, structural inequalities, social work, social justice and the Canadian legal system.

SOCW 551 Units: 1.5
Indigenous Communities: Practice and Policy
Critically examines the historical processes of colonization in Canada and resulting barriers embedded in past and current policy and practices that affect Indigenous peoples. Students will deconstruct colonization, race, class and capitalism as embedded in social welfare. Students will have an opportunity to examine their self location, ideas, values and beliefs about working with Indigenous peoples and to develop a practice framework, based on social justice, for working with Indigenous communities.

SOCW 571 Units: 1.5
MSW Capstone
A culminating educational experience to consolidate learning and demonstrate preparation for advanced social work practice. Students will integrate, articulate, and evaluate learning from the courses and practica in the MSW program within the context of their other professional activities and prior academic experiences.
Prerequisite(s): Completion of all required coursework in the MSW program (excluding SOCW 506 or SOCW 506A).
Pre- or Corequisite(s): SOCW 506 or SOCW 506A.
Grading: INP, COM, N, F.

SOCW 580 Units: 1.5 or 3.0
Special Topics in Social Work and Social Welfare
A variable content course that deals with special issues in social welfare and approaches to social work practice.
Notes:
• May be taken more than once for credit in different topics.
• Offered as resources permit.

SOCW 590 Units: 1.5 or 3.0
Directed Studies
Individual studies under the direct supervision of a social work faculty member. The content, credit value, and method of evaluation must be approved by the instructor and the Graduate Adviser prior to registration.
Notes:
• May be taken more than once for credit in different topics.
• Pro Forma required.

SOCW 596 Units: 3.0
Team Graduating Research Project/Report
Exploration of creative ways to integrate and disseminate what students have learned from the Master of Nursing program. Students will produce a scholarly paper, present their work, and respond to questions.
Prerequisite(s): 6 units of coursework in the MSW Advanced program (including SOCW 516).
Grading: INP, COM, N, F.

SOCW 598 Units: 3.0
Individual Graduating Research Project/Report
Students working under social work faculty supervision complete a research project. This can include undertaking a research project for a social agency.
Prerequisite(s): 6 units of coursework in the MSW Advanced program (including SOCW 516).
Grading: INP, COM, N, F.

SOCW 599 Units: 6.0
Thesis
Specialized research on a topic area chosen in consultation with the student’s supervisory committee.
Note: After 16 months of coursework, the student is required to have an approved proposal on file to maintain registration in SOCW 599.
Prerequisite(s):
• Completion of all required coursework in the MSW Advanced program (Thesis option); or
• permission of the school.
Grading: INP, COM, N, F.

SPAN 505 Units: 1.5
Also: ITAL 505
MEDIEVAL LITERATURE
Notes: May be taken more than once for credit in different topics with permission of the department.

SPAN 507 Units: 1.5
Also: ITAL 507
RENAISSANCE AND BAROQUE LITERATURE
Notes: May be taken more than once for credit in different topics with permission of the department.

SPAN 511 Units: 1.5
Peninsular Literature from the 20th Century to the Present
Note: May be taken more than once for credit in different topics with permission of the department.

SPAN 512 Units: 1.5
Formerly: 509 and 517
SPANISH AND LATIN AMERICAN LITERATURE OF THE 19TH CENTURY
Notes:
• Credit will be granted for only one of SPAN 512, SPAN 509, SPAN 517.
• May be taken more than once for credit in different topics with permission of the department.

SPAN 515 Units: 1.5
Colonial Latin American Literature
Note: May be taken more than once for credit in different topics with permission of the department.

SPAN 519 Units: 1.5
Spanish and Latin American Literature from the 20th Century to the Present
Note: May be taken more than once for credit in different topics with permission of the department.

SPAN 590 Units: 1.5 or 3.0
Also: ITAL 590
Directed Studies

SPAN 598 Units: 3.0
Master’s Essay
Grading: INP, COM, N, F.

SPAN 599 Units: 6.0
MA Thesis/Oral
Grading: INP, COM, N, F.

SPP 580 Units: 1.5 or 3.0
Special Topics in Studies in Policy and Practice
A variable content course which will focus on the policy, practice and/or research interests of faculty and students in the SPP Program.
Note: May be taken more than once for credit in different topics.
Directed Studies
Individual studies under the direct supervision of one or more faculty members. The content, credit value, and method of evaluation must be approved by the instructor and the graduate advisor prior to registering in this course.

Notes:
- May be taken more than once for credit in different topics.
- Pro Forma required.

Extended Essay
An in-depth examination of a topic related to policy and/or practice.

Grading: INP, COM, N, F

Program Notes:
- INP, COM, N, F

Statistics
Department of Mathematics and Statistics
Faculty of Science

STAT 552 Units: 1.5
Applied Stochastic Models

STAT 553 Units: 1.5
Multivariate Analysis
Multivariate normal distribution; tests on covariance matrices; multivariate analysis of variance; discriminant analysis; classification analysis; cluster analysis; principal component analysis; factor analysis; multivariate regression analysis; canonical correlation; graphical procedures.

STAT 554 Units: 1.5
Time Series Analysis
Stationary time series; non-stationary time series; transformation; smoothing techniques; autoregressive moving average models; integrated models for non-stationary data; multiplicative seasonal ARIMA models; spectral analysis; linear filters.

STAT 556 Units: 1.5
Topics in Statistics
Topics include Analysis of Wildlife Populations, Bayesian Statistics, Bioinformatics, Biostatistics, Optimal design, Robust Statistics, Sampling Methods, Statistical Computing.
Note: May be taken more than once for credit in different topics with permission of the department.

STAT 558 Units: 1.5
Design and Analysis of Experiments
Basic principles of experimental design; factorial designs; block designs; fractional factorial designs; response surface designs; nested and split-plot designs; optimal designs; techniques of analysis of variance; fixed effects models; random effects models.

Survival Analysis
Theory and techniques for censored and truncated data; nonparametric estimation of survival and cumulative hazard functions and associated hypothesis tests; semiparametric proportional hazards regression; survival models; regression diagnostics; inference for parametric regression models.

Distribution Free Statistics
Classical distribution free methods: tests based on the binomial distribution, contingency tables, methods based on ranks, statistics of the Kolmogorov-Smirnov type. Computing intensive distribution-free methods: resampling methods and empirical likelihood methods.

Generalized Linear Models
Exponential family of distributions and generalized linear models; maximum likelihood estimation and inference; regression diagnostics; logistic regression; normal and ordinal logistic regression; Poisson regression and log-linear models; clustered and longitudinal data.

Statistics Seminar
Note: May be taken more than once for credit with permission of the department.

Master's Project
Grading: INP, COM, N, F

Master's Thesis
Grading: INP, COM, N, F

Candidacy Examination
Grading: INP, COM, N, F

Dissertation
Corequisite(s): STAT 693.
Grading: INP, COM, N, F

Advanced Problems in Directing
Advanced Problems in Costume Design
Advanced Problems in Scene Design
Advanced Problems in Lighting Design
Advanced Problems in Costume Design
Advanced Problems in Directing
MFA Practicum

Methods and Materials of Theatre Research
Formerly: THEA 500
Note: Credit will be granted for only one of THEA 500/500B, THEA 500.

Seminar in History and Criticism of Tragedy
Seminar in History and Criticism of Comedy
Seminar in North American Theatre History
Seminar in Theatrical Styles
Scene Design
Lighting Design
Costume Design
Production
Directing
Seminar in Theatre Aesthetics
Seminar in Design
Seminar in Directing
Seminar in Theatre History
Advanced Problems in Scene Design
Advanced Problems in Lighting Design
Advanced Problems in Costume Design
Advanced Problems in Directing
MFA Practicum
## THEA 535 - WRIT 598

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Units</th>
<th>Course Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>THEA 535</td>
<td>1.5</td>
<td>Research Methods in Applied Theatre</td>
</tr>
<tr>
<td>THEA 590</td>
<td>1.5 or 3.0</td>
<td>Directed Studies</td>
</tr>
<tr>
<td>THEA 598</td>
<td>4.5</td>
<td>MA Essay</td>
</tr>
<tr>
<td>THEA 599</td>
<td>6.0</td>
<td>MA Thesis</td>
</tr>
<tr>
<td>THEA 690</td>
<td>1.5-6.0</td>
<td>Directed Studies</td>
</tr>
<tr>
<td>THEA 693</td>
<td>3.0</td>
<td>Dissertation Proposal/Candidacy Exam</td>
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<tr>
<td>THEA 699</td>
<td>30.0</td>
<td>Dissertation</td>
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<tr>
<td>WRIT 500</td>
<td>1.5</td>
<td>Graduate Writing Workshop</td>
</tr>
<tr>
<td>WRIT 501</td>
<td>1.5</td>
<td>Special Topics in Advanced Studies in Writing</td>
</tr>
<tr>
<td>WRIT 509</td>
<td>1.5</td>
<td>Instructional Skill Preparation</td>
</tr>
<tr>
<td>WRIT 590</td>
<td>1.5</td>
<td>Directed Studies in Instructional Skills Preparation</td>
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<tr>
<td>WRIT 591</td>
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<td>Directed Studies in Writing</td>
</tr>
<tr>
<td>WRIT 598</td>
<td>9.0</td>
<td>Major Writing Portfolio</td>
</tr>
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</table>

### Description

**THEA 535 - Research Methods in Applied Theatre**

Introduces different methodological approaches to researching and interpreting applied theatre practice, including qualitative and quantitative methods of theatre action research, ethnography and practice as research. Allows first-hand experience of conducting a theatre-based project and/or performance that targets a specific community.

**THEA 590 - Directed Studies**

Note: May be taken more than once for credit in different topics with permission of the department.

**THEA 598 - MA Essay**

Grading: INP, COM, N, F

**THEA 599 - MA Thesis**

Grading: INP, COM, N, F

**THEA 693 - Dissertation Proposal/Candidacy Exam**

**THEA 699 - Dissertation**

Prerequisite(s): THEA 693.

Grading: INP, COM, N, F

**WRIT 500 - Graduate Writing Workshop**

A workshop in which students will focus on writing and workshopping in one genre: poetry, fiction, creative nonfiction, playwriting or screenwriting.

Note: May be taken more than once for credit in different topics to a maximum of 4.5 units.

**WRIT 501 - Special Topics in Advanced Studies in Writing**

A class that focuses on literary models, specific elements of craft, and topics of interest to writers in more than one genre.

Note: WRIT 509

**WRIT 509 - Instructional Skill Preparation**

A seminar which focuses on pedagogy and teacher training in creative writing.

**WRIT 590 - Directed Studies in Instructional Skills Preparation**

A course which focuses on teacher training in creative writing.

**WRIT 591 - Directed Studies in Writing**

A course tailored to the needs of a particular student in consultation with the supervisor and in the student’s area of studies.

**WRIT 598 - Major Writing Portfolio**

The creation of an original creative writing portfolio in one of the following genres: poetry (30-50 pages), creative nonfiction (60-120 pages), fiction (60-120 pages), a stage play (60-100 pages), a film script (60-90 pages) or a production project with script/manuscript in one of the above genres.

Grading: INP, COM, N, F